

Table of Contents

<u>European Symposium on Non-Lethal Weapons.....</u>	<u>2</u>
<u>Bioeffects of Selected Nonlethal Weapons.....</u>	<u>2</u>
<u>City of Richmond support of the Space Preservation Act and Treaty.....</u>	<u>2</u>
<u>The Communications Industry is in the position where it is spiralling out of any person's ability to control it – by Barrie Trower.....</u>	<u>2</u>
<u>ElectromagneticWeapons.info.....</u>	<u>2</u>
<u>MICROWAVE HARASSMENT AND MIND-CONTROL EXPERIMENTATION – by Julianne McKinney.....</u>	<u>2</u>
<u>THE LIDA MACHINE.....</u>	<u>2</u>
<u>RADIOFREQUENCYMICROWAVE RADIATION BIOLOGICAL EFFECTS AND SAFETY STANDARDS: A REVIEW – by Scfit M. Bolon.....</u>	<u>2</u>
<u>Infrared Laser Pointer – Invisible beam.....</u>	<u>2</u>
<u>Human auditory system response to modulated electromagnetic energy. – by Allan H Frey.....</u>	<u>2</u>
<u>Audio Spotlight (directed sound).....</u>	<u>2</u>
<u>Mind-blowing Advance? Direct Brain-to-Brain Communication Between Humans Demonstrated.....</u>	<u>2</u>
<u>COVERT HARASSMENT CONFERENCE 2014, BRUSSELS, 20 NOVEMBER 2014.....</u>	<u>3</u>
<u>Desmond Last letter to police.....</u>	<u>3</u>
<u>Electromagnetic Frequency Mind Control Weapons - by Stephen Lendman.....</u>	<u>3</u>
<u>Prime Ministry: telepathy may be involved in engineers' deaths.....</u>	<u>3</u>
<u>Greenham Common.....</u>	<u>3</u>
<u>Sonic device (LRAD) deployed in London during Olympics 2012.....</u>	<u>3</u>
<u>Michigan Passes Anti Electronic Harassment Law.....</u>	<u>3</u>
<u>Microwave hearing – by Mark Rich.....</u>	<u>3</u>
<u>New World War – Revolutionary Methods for Political Control – by Mark Rich.....</u>	<u>3</u>
<u>MICROWAVE MIND CONTROL – by Tim Rifat.....</u>	<u>3</u>
<u>Silent Guardian Protection System.....</u>	<u>3</u>
<u>Targeting the Human with Directed Energy Weapons – by Dr. Reinhard Munzert.....</u>	<u>4</u>
<u>Writing The Snowden Files: 'The paragraph began to self-delete'.....</u>	<u>4</u>
<u>US Electromagnetic Weapons and Human Rights.....</u>	<u>4</u>
<u>Microwaving of the USA embassy in Moscow, 1976.....</u>	<u>4</u>
<u>Letter to Senator Ron Wyden of Oregon by a group of victims, 11 Feb 2013.....</u>	<u>4</u>
<u>Mosquito Anti-Loitering Devices.....</u>	<u>4</u>
<u>How to Build a Speech-Jamming Gun.....</u>	<u>4</u>
<u>Secret Surveillance and Electromagnetic Torture by the Secret Services (Carl Clark interview, translated).....</u>	<u>4</u>

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Control – by Mark Rich**

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European Symposium on Non-Lethal Weapons

Every two year symposium in Ettlingen, Germany

URL:

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Non-Lethal Weapons

NON-LETHAL WEAPONS

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- 7th NLW-Symp.
- 6th NLW-Symp.
- 5th NLW-Symp.
- 4th NLW-Symp.
- 3rd NLW-Symp.
- 2nd NLW-Symp.
- 1st NLW-Symp.

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DEPARTMENT OF THE ARMY
UNITED STATES ARMY INTELLIGENCE AND SECURITY COMMAND
FREEDOM OF INFORMATION/PRIVACY OFFICE
FORT GEORGE G. MEADE, MARYLAND 20755-5995

REPLY TO
ATTENTION OF:

DEC 13 2006

Freedom of Information/
Privacy Office

Mr. Donald Friedman
Confidential Legal Correspondence
1125 Third Street
Napa, California 94559-3015

Dear Mr. Friedman:

References:

a. Your Freedom of Information Act (FOIA) request dated May 25, 2006, to the Department of the Army, Freedom of Information/Privacy Act Division (DA FOIA/PA DIV), for all documents pertaining to the microwave auditory effect, microwave hearing effect, Frey effect, artificial telepathy, and/or any device/weapon which uses and/or causes such effect; and any covert or undisclosed use of hypnosis. On September 5, 2006, the DA FOIA/PA DIV referred a copy of your request to this office. Your request was received on September 11, 2006.

b. Our letter of September 13, 2006, informing you of the search for records at another element of our command and were unable to comply with the 20-day statutory time limit in processing your request.

As noted in our letter, the search has been completed with another element of this command and the record has been returned to this office for our review and direct response to you.

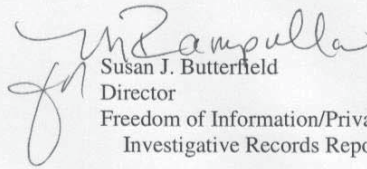
We have completed a mandatory declassification review in accordance with Executive Order (EO) 12958, as amended. As a result of this review, it has been determined that the Army information no longer warrants security classification protection and is releasable to you. A copy of the record is enclosed for your use.

Fees for processing your request are waived.

-2-

If you have any questions concerning this action, please feel free to contact this office at (301) 677-2308. Refer to case #614F-06.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. Butterfield".

Susan J. Butterfield
Director
Freedom of Information/Privacy Office
Investigative Records Repository

Enclosure

~~SECRET~~
~~NOFORN~~

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Bioeffects of Selected Nonlethal Weapons(fn 1)

This addendum to the Nonlethal Technologies--Worldwide (NGIC-1147-101-98) study addresses in summary, some of the most often asked questions of nonlethal weapons technology, the physiological responses observed in clinical settings of the biophysical coupling and susceptibility of personnel to nonlethal effects weapons. These results identify and validate some aspects of maturing nonlethal technologies that may likely be encountered or used as nonlethal effectors in the future including:

- Laser and other light phenomena.
- Radiofrequency directed energy.
- Aural bioeffects.

The study of electromagnetic fields and their influence on biological systems is increasing rapidly. Much of this work is taking place because of health concerns. For example, increased concern has arisen regarding the effects of operator exposure to the electromagnetic fields associated with short-wave diathermy devices, high power microwave ovens, radar systems, magnetic resonance imaging units, etc. In addition, much concern has arisen about extremely low frequency (60 Hz power frequency) electric and magnetic fields that originate from high-voltage transmission lines, industrial equipment, and residential appliances. Both occupational and residential long-term exposure have been the focus of epidemiological studies. The studies have suggested possible adverse effects on human health (e.g., cancer, reproduction, etc.). Laboratory research is still being pursued to identify possible mechanisms of interaction. However, other than thermal heating for microwave frequencies, there is no yet agreed-upon mechanism of action. As a consequence, our knowledge base is developed entirely with phenomenological observations. Because of this fact, it is not possible to predict how nonthermal biological effects may differ from one exposure modality to another. It is especially difficult, because of the small data base for fast pulses, to predict biological effects that might be associated with high-power pulses of extremely short duration.

There is, however, a growing perception that microwave irradiation and exposure to low frequency fields can be involved in a wide range of biological interactions. Some investigators are even beginning to describe similarities between microwave irradiation and drugs regarding their effects on biological systems. For example, some suggest that power density and specific absorption rate of microwave irradiation may be thought of as analogous to the concentration of the injection solution and the dosage of drug

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administration, respectively. Clearly, the effects of microwaves on brain tissue, chemistry, and functions are complex and selective. Observations of body weight and behavior revealed that rats, exposed under certain conditions to microwaves, eat and drink less, have smaller body weight as a result of nonspecific stress mediated through the central nervous system and have decreased motor activity. It has been found that exposure of the animals to one modality of radiofrequency electromagnetic energy substantially decreases aggressive behavior during exposure. However, the opposite effects of microwaves, in increasing the mobility and aggression of animals, has also been shown for a different exposure modality. Recent published data implicates microwaves as a factor related to a deficit in spatial memory function. A similar type of effect was observed with exposure to a "resonance tuned" extremely low frequency magnetic field. Thus, the data base is replete with phenomenological observations of biological systems "affected" by exposure to electromagnetic energy. (The fact that a biological system responds to an external influence does not automatically nor easily translate to the suggestion of adverse influence on health.) The objective of the present study was to identify information from this developing understanding of electromagnetic effects on animal systems that could be coupled with human biological susceptibilities. Situations where the intersection of these two domains coexist provide possibilities for use in nonlethal applications.

Incapacitating Effect: Microwave Heating

Body heating to mimic a fever is the nature of the RF incapacitation. The objective is to provide heating in a very controlled way so that the body receives nearly uniform heating and no organs are damaged. Core temperatures approximately 41° C are considered to be adequate. At such temperature a considerably changed demeanor will take place with the individual. Most people, under fever conditions, become much less aggressive; some people may become more irritable. The subjective sensations produced by this buildup of heat are far more unpleasant than those accompanying fever. In hyperthermia all the effector processes are strained to the utmost, whereas in fever they are not. It is also possible that microwave hyperthermia (even with only a 1° C increase in brain temperature) may disrupt working memory, thus resulting in disorientation.

Biological Target/Normal Functions/Disease State

The temperature of warm-blooded (homeothermic) animals like the human remains practically unchanged although the surrounding temperature may vary considerably. The normal human body temperature recorded from the mouth is usually given as 37° C, with the rectal temperature one degree higher. Variation between individuals is typically between 35.8° C and 37.8° C orally. Variations also occur in any one individual throughout the day--a difference of 1.0° C or even 2.0° C occurring between the maximum in the late afternoon or early evening, and the minimum between 3 and 5 o'clock in the morning. Strenuous muscular exercise causes a temporary rise in body temperature that is proportional to the severity of the exercise; the level may go as high as 40.0° C.

Extreme heat stress, such that the body's capacity for heat loss is exceeded, causes a pathological increase in the temperature of the body. The subjective sensations produced by this buildup of heat are far more unpleasant than those accompanying fever. In hyperthermia all the effector processes are strained to the utmost, whereas in fevers they are not. The limiting temperature for survival, however, is the same in both cases--a body temperature of 42° C. For brief periods, people have been known to survive temperatures as high as 43 ° C.

In prolonged hyperthermia, with temperatures over 40° C to 41° C, the brain suffers severe damage that usually leads to death. Periods of hyperthermia are accompanied by cerebral edema that damage neurons, and the victim exhibits disorientation, delirium, and convulsions. This syndrome is popularly referred to as sunstroke, or heatstroke, depending on the circumstances. When the hyperthermia is prolonged, brain damage interferes with the central thermoregulatory mechanisms. In particular, sweat secretion ceases, so that the condition is further exacerbated.

Mechanism to Produce the Desired Effects

This concept builds on about 40 years of experience with the heating effects of microwaves. Numerous studies have been performed on animals to identify characteristics of importance to the understanding of energy deposition in animals. As a result of the physics, the relationship between the size of the animal and the wavelength of the radiofrequency energy is most important. In fact, the human exposure guidelines to radiofrequency radiation are designed around knowledge of the differential absorption as a function of frequency and body size. The challenge is to minimize the time to effect while causing no permanent injury to any organ or the total body and to optimize the equipment function. The orientation of the incident energy with respect to the orientation of the animal is also important.

In a study of the effect of RF radiation on body temperature in the Rhesus monkey, a frequency (225 MHz) is purposely chosen that deposits energy deep within the body of the animal. A dose rate of 10 W/kg caused the body temperature to increase to 42° C in a short time (10-15 min). To avoid irreversible adverse effects, the exposure was terminated when a temperature of 42° C was reached. A lower dose rate of 5 W/kg caused the temperature to increase to 41.5° C in less than 2 hours. The reversible nature of this response was demonstrated by the rapid drop in body temperature when RF exposure was terminated before a critical temperature of 42° C was reached. It is estimated for rats that the absorbed threshold convulsive dose lies between 22 and 35 J/g for exposure durations from less than a second to 15 minutes. For 30-minute exposure, the absorbed threshold dose for decrease in endurance is near 20 J/g, the threshold for work stoppage approximately 9 J/g, and the threshold for work perturbation ranges from 5 to 7 J/g. All of the above measures, except convulsions, are types of nonlethal incapacitation.

A rough estimate of the power required to heat a human for this technology is on the order of 10 W/kg given about 15 to 30 minutes of target activation. Actual power levels

depend on climatic factors, clothing, and other considerations that affect the heat loss from the individual concerned. A method for expressing dose rate in terms of body surface area (i.e., watts per square meter) rather than body mass (i.e., watts per kilogram) would permit a more reliable prediction of thermal effects across species. However, there are large uncertainties in the ability to extrapolate thermoregulatory effects in laboratory animals to those in human beings.

This technology is an adaptation of technology which has been around for many years. It is well known that microwaves can be used to heat objects. Not only is microwave technology used to cook foods, but it is also used as a directed source of heating in many industrial applications. It was even the subject of the "Pound Proposal" a few years ago in which the idea was to provide residential heating to people, not living space. Because of the apparently safe nature of body heating using microwave techniques, a variety of innovative uses of EM energy for human applications are being explored. The nonlethal application would embody a highly sophisticated microwave assembly that can be used to project microwaves in order to provide a controlled heating of persons. This controlled heating will raise the core temperature of the individuals to a predetermined level to mimic a high fever with the intent of gaining a psychological/capability edge on the enemy, while not inflicting deadly force. The concept of heating is straightforward; the challenge is to identify and produce the correct mix of frequencies and power levels needed to do the remote heating while not injuring specific organs in the individuals illuminated by the beam.

A variety of factors contribute to the attractiveness of this nonlethal technology. First, it is based on a well-known effect, heating. Every human is subject to the effects of heating; therefore, it would have a predictability rating of 100%. The time to onset can probably be engineered to between 15 and 30 minutes; however, timing is the subject of additional research to maximize heating while minimizing adverse effects of localized heating. The onset can be slow enough and/or of such frequency to be unrecognized by the person(s) being irradiated. Safety to innocents could be enhanced by the application and additional development of advanced sensor technologies. Incapacitation time could be extended to almost any desired period consistent with safety. (Given suitable R&D, temperature or other vital signs could be monitored remotely, and temperature could be maintained at a minimum effective point).

Time to Onset

The time to onset is a function of the power level being used. Carefully monitored uniform heating could probably take place in between 15 and 30 minutes. Time to onset could be reduced but with increased risk of adverse effects. Minimum time is dependent on the power level of the equipment and the efficiency of the aiming device.

Duration of Effect

Assuming that the heating is done carefully, reversal of elevated body temperature would begin as soon as the source of heat is removed.

Tunability

This concept is tunable in that any rate of heating, up to the maximum capacity of the source, may be obtained. Thus it is suitable for use in a gradual force or "rheostatic" approach. If the situation allows, and the source is sufficiently powerful, there is the possibility to use this technology in a lethal mode as well. Prolonged body temperature above 43° C is almost certain to result in permanent damage to the brain and death.

Distribution of Human Sensitivities to Desired Effects

No reason has been identified to suggest that anyone would be immune to this technology. Individuals with compromised thermoregulatory mechanisms would be susceptible with a lower incident energy density. This would include people with organic damage to the hypothalamus, the part of the brain that integrates the autonomic mechanisms which control heat loss as well as people with compromised somatic features of heat loss (e.g., respiration, water balance, etc.).

The technologies needed for the thermal technology concept are relatively well developed because of the known biophysical mechanism, the universal susceptibility of humans to the mechanism of heating, and because of a well developed technology base for the production of radiofrequency radiation. Because the human body is inhomogeneous, certain organs are, by virtue of their size and geometry, more easily coupled with one radiofrequency wavelength than another. Therefore, to avoid permanent damage to the suspect or to innocent bystanders, it may be necessary to vary the frequency to avoid localized heating and consequent damage to any organ. Additionally, it will be necessary to avoid the conditions thought to be associated with the induction of cataracts. Thus, while the technology of microwave heating in general is mature, adaptation as a nonlethal technology will require sophisticated biophysical calculations to identify the proper regimen of microwave frequencies and intensities; it will also be necessary to optimize existing hardware to meet the biophysical requirements.

Possible Influence on Subject(s)

If the technology functions approximately as envisioned, the targeted individual could be incapacitated within 15 to 30 minutes. Because this technology is focused on a relatively slow onset, it should only be used in situations where speed is not important. The very uncomfortable nature of a high body temperature may be useful in negotiations or possibly for controlling crowds. It would be equally useful on single persons or crowds. Evidence also indicates a disruption of working memory, thus disorientation may occur because of an inability to consolidate memory of the recent (minutes) past.

Technological Status of Generator/Aiming Device

Equipment needed to explore this concept in the laboratory is available today. Design and construction of the RF/microwave generator will depend on the constraints posed by the calculations, potential generation devices, and energy-directing structures. A variety of

options exist for both of these equipment needs. The use of advanced frequency and modulation-agile RF generation and amplification circuitry will be required to assess fully the frequency/power/time envelope of RF heating profiles required. Although much equipment is commercially available, it is likely that custom hardware and software will be necessary because available equipment has not been designed with the need for frequency/intensity variability, which will probably be needed for safety purposes. In addition, the design of antennas and other energy-directing structures will almost certainly involve unique configurations. Since this technology utilizes radiofrequency energy, it can be defeated by the use of shielding provided by conductive barriers like metal or metal screen.

Incapacitating Effect: Microwave Hearing

Microwave hearing is a phenomenon, described by human observers, as, the sensations of buzzing, ticking, hissing, or knocking sounds that originate within or immediately behind the head. There is no sound propagating through the air like normal sound. This technology in its crudest form could be used to distract individuals; if refined, it could also be used to communicate with hostages or hostage takers directly by Morse code or other message systems, possibly even by voice communication.

Biological Target/Normal Functions/Disease State

This technology makes use of a phenomenon first described in the literature over 30 years ago. Different types of sounds were heard depending on the particulars of the pulse characteristics. Various experiments were performed on humans and laboratory animals exploring the origin of this phenomenon. At this time, virtually all investigators who have studied the phenomenon now accept thermoelastic expansion of the brain, the pressure wave of which is received and processed by the cochlear microphonic system, to be the mechanism of acoustic perception of short pulses of RF energy. One study (in 1975) using human volunteers, identified the threshold energy of microwave-auditory responses in humans as a function of pulse width for 2450 MHz radiofrequency energy. It is also found that about 40 J/cm^2 incident energy density per pulse was required.

Mechanism to Produce the Desired Effects

After the phenomenon was discovered, several mechanisms were suggested to explain the hearing of pulsed RF fields. Thermoelastic expansion within the brain in response to RF pulses was first studied and demonstrated in inert materials and was proposed as the mechanism of hearing of pulsed RF fields. A pressure wave is generated in most solid and liquid materials by a pulse of RF energy--a pressure wave that is several orders of magnitude larger in amplitude than that resulting from radiation pressure or from electrostrictive forces. The characteristics of the field-induced cochlear microphonic in guinea pigs and cats, the relationship of pulse duration and threshold, physical measurements in water and in tissue-simulating materials, as well as numerous theoretical calculations--all point to thermoelastic expansion as the mechanism of the hearing phenomenon.

Scientists have determined the threshold energy level for human observers exposed to pulsed 2450-MHz fields (0.5-to 32 micron pulse widths). They found that, regardless of the peak of the power density and the pulse width, the per-pulse threshold for a normal subject is near 20 mJ/kg. The average elevation of brain temperature associated with a just-perceptible pulse was estimated to be about $5 \times 10^{-6}^{\circ}\text{C}$.

Time to Onset

The physical nature of this thermoelastic expansion dictates that the sounds are heard as the individual pulses are absorbed. Thus, the effect is immediate (within milliseconds). Humans have been exposed to RF energy that resulted in the production of sounds.

Duration of Effect

Microwave hearing lasts only as long as the exposure. There is no residual effect after cessation of RF energy.

Tunability

The phenomenon is tunable in that the characteristic sounds and intensities of those sounds depend on the characteristics of the RF energy as delivered. Because the frequency of the sound heard is dependent on the pulse characteristics of the RF energy, it seems possible that this technology could be developed to the point where words could be transmitted to be heard like the spoken word, except that it could only be heard within a person's head. In one experiment, communication of the words from one to ten using "speech modulated" microwave energy was successfully demonstrated. Microphones next to the person experiencing the voice could not pick up the sound. Additional development of this would open up a wide range of possibilities.

Distribution of Human Sensitivities to Desired Effects

Because the phenomenon acts directly on cochlear processes, the thermoelastic pressure waves produce sounds of varying frequency. Many of the tests run to evaluate the phenomenon produced sounds in the 5 kHz range and higher. Because humans are known to experience a wide range of hearing loss due to cochlear damage, it is possible that some people can hear RF induced sounds that others with high frequency hearing loss cannot. Thus, there is a likely range of sensitivity, primarily based on the type of pulse and the condition of the cochlea. Bilateral destruction of the cochlea has been demonstrated to abolish all RF-induced auditory stimuli.

Recovery/Safety

Humans have been subjected to this phenomenon for many years. The energy deposition required to produce this effect is so small that it is not considered hazardous experimentation when investigating responses at the just-perceptible levels.

Possible Influence on Subject(s)

Application of the microwave hearing technology could facilitate a private message transmission. It may be useful to provide a disruptive condition to a person not aware of the technology. Not only might it be disruptive to the sense of hearing, it could be psychologically devastating if one suddenly heard "voices within one's head."

Technological Status of Generator/Aiming Device

This technology requires no extrapolation to estimate its usefulness. Microwave energy can be applied at a distance, and the appropriate technology can be adapted from existing radar units. Aiming devices likewise are available but for special circumstances which require extreme specificity, there may be a need for additional development. Extreme directional specificity would be required to transmit a message to a single hostage surrounded by his captors. Signals can be transmitted long distances (hundreds of meters) using current technology. Longer distances and more sophisticated signal types will require more bulky equipment, but it seems possible to transmit some type of signals at closer ranges using man-portable equipment.

Range

The effective range could be hundreds of meters.

Incapacitating Effect: Disruption of Neural Control

The nature of the incapacitation is a rhythmic-activity synchronization of brain neurons that disrupts normal cortical control of the corticospinal and corticobulbar pathways; this disrupts normal functioning of the spinal motor neurons which control muscle contraction and body movements. Persons suffering from this condition lose voluntary control of their body. This synchronization may be accompanied by a sudden loss of consciousness and intense muscle spasms.

Biological Target/Normal Functions/Disease State

The normal function of the brain is to control all forms of behavior, voluntary control of body, and the homeostatic parameters of the organism. In normal conditions, all the brain structures, neuron populations, networks, and single units function with specific rhythmic activity depending on the incoming sensory information, information from mnemonic structures, and signals from visceral organs. Each single neuron provides specific processing of information it receives and forms a specific pattern of impulse firing as outgoing information. Synchronization of neuron activity is a natural mechanism of the brain function that uses such controlling processes as motivation, attention and memory (experience) in order to organize behavior. For example, motivational processes are considered as activating ascending signals that synchronize the neuron activity of specific brain structures and neuron networks; this activation/synchronization in turn activates specific forms of behavior such as sexual, aggressive, ingestive activities.

In normal functioning the degree of neuronal synchronization is highly controlled. From experiments that record the neuronal activity in different brain areas simultaneously in animals, it is known that correlation of spike activity between neurons (measured by the correlation level of synchronization) changes depending on the stage of behavior, motivation, attention, or activation of the memory processes. However, under some conditions, such as physical stress, heat shock, or strong emotional stress, the level of synchronization may become higher, involving nonspecific large populations of brain neurons and the synchronization may become uncontrollable.

Depending on at which frequency the synchronization rhythm occurs and how many neurons are involved, it may produce different physical effects; muscle weakness, involuntary muscle contractions, loss of consciousness, or intense (tonic) muscle spasms. The higher level of synchronization takes place in persons affected with epilepsy when they experience periodic seizures since they have a pathologic source (e.g., from injury to the brain) of rhythmic synchronization. Because the neurophysiological mechanisms of epileptiform synchronization are better documented, this incapacitating technology is described in terms of epileptogenesis.

The neurophysiological mechanisms active in epileptogenesis involve changes in membrane conductances and neurotransmitter alterations as they affect neuronal interaction. In the process of epileptogenesis, either some neurons are discharging too easily because of alterations in membrane conductances or there is a failure of inhibitory neurotransmission. The actual discharges have been recognized to result from a neuronal depolarization shift with electrical synchrony in cell populations related in part to changes in membrane conductances. The ionic basis and biochemical substrate of this activation have been areas of considerable study but still leave many questions unanswered. What are the basic cellular properties, present in normal cells and tissue, that could contribute to the generation of abnormal activity? What parts of the systems are low threshold and function as trigger elements?

One of the current hypotheses is involved with microcircuitry, particularly local synaptic interactions in neocortical and limbic system structures. In the hippocampus, the role of the trigger element has been long attributed to the CA3 pyramidal cells—a hypothesis based on the fact that spontaneous synchronous burst discharge can be established in CA3 neurons. Some studies describe an intrinsically bursting cell type in the neocortex that plays a role similar to that of CA3 cells in the hippocampus and that of deep cells in the pyriform cortex. The intrinsic nature of these cells appears to be an important contributor to the establishment of synchronized bursting in these regions. Another apparent requirement in such a population is for a certain degree of synaptic interaction among neurons, such that discharge of even one cell enlists the activity of its neighbors. Given the presence of these bursting cells and the occurrence of excitatory interactions among them in normal tissue, it may actually be the morphologic substrate for epileptiform discharges.

Another hypothesis has focused particularly on the role of N-methyl-D-aspartate (NMDA) receptors. Various factors regulate the efficacy of NMDA receptors: their

voltage-dependent blockade by magnesium and modulation by glycine and polyamines. For example, in the low magnesium model, spontaneous synchronous burst discharge in hippocampal pyramidal cell populations is sensitive to NMDA antagonists. That finding suggests that it is the opening of NMDA channels, by relieving the magnesium blockade, that facilitates epileptiform activity.

Significant attention in the literature is also being given to gamma-amino butyric acid (GABA) receptors for the potential role in control of excitability. Changes in GABA inhibitory efficacy can lead to important effects on the excitability of the system. GABAergic inhibitory post-synaptic potentials (IPSPs) have been shown to be quite labile in response to repetitive activation of cortical cell populations, as may occur during epileptiform discharge. Scientists have shown that even a small percentage change in GABA inhibition can have profound effects on neocortical epileptogenesis. These changes in GABAergic inhibition may be the key to an explanation of how repetitive discharge patterns give rise to ictal discharge. Further, there appears to be a significant increase in excitatory postsynaptic potential (EPSP) frequency prior to seizure initiation an observation that is consistent with loss of IPSP efficacy prior to ictal onset.

The above hypotheses describe different mechanisms of epileptogenesis, but it is quite possible that all of these mechanisms take place, and they reflect large variety of types of epileptic seizures. The common principle of the mechanisms proposed is the change of membrane properties (i.e., conductance, permeability etc.) of certain neurons which results in depolarization and burst discharging. Some factors (e.g., trauma) can affect these specific neurons and initiate synchrony for neurons that control internal communication and communication with various muscle systems not associated with vital functions (i.e., heart beating, breathing). High strength pulsed electric fields could also be such a factor.

Mechanism to Reproduce the Desired Effects

Application of electromagnetic pulses is also a conceptual nonlethal technology that uses electromagnetic energy to induce neural synchrony and disruption of voluntary muscle control. The effectiveness of this concept has not been demonstrated. However, from past work in evaluating the potential for electromagnetic pulse generators to affect humans, it is estimated that sufficiently strong internal fields can be generated within the brain to trigger neurons. Estimates are that 50 to 100 kV/m free field of very sharp pulses (~ 1 nS) are required to produce a cell membranec potential of approximately 2 V; this would probably be sufficient to trigger neurons or make them more susceptible to firing.

The electromagnetic pulse concept is one in which a very fast (nanosecond timeframe) high voltage (approximately 100 kV/m or greater) electromagnetic pulse is repeated at the alpha brain wave frequency (about 15 Hz). It is known that a similar frequency of pulsing light can trigger sensitive individuals (those with some degree of light-sensitivity epilepsy) into a seizure and it is thought that by using a method that could actually trigger nerve synapses directly with an electrical field, essentially 100% of individuals would be susceptible to seizure induction. The photic-induced seizure phenomenon was borne out

demonstrably on December 16, 1997 on Japanese television when hundreds of viewers of a popular cartoon show were treated, inadvertently, to photic seizure induction (figure 31). The photic-induced seizure is indirect in that the eye must receive and transmit the impulses which initially activate a portion of the brain associated with the optic nerve. From that point the excitability spreads to other portions of the brain. With the electromagnetic concept, excitation is directly on the brain, and all regions are excited concurrently. The onset of synchrony and disruption of muscular control is anticipated to be nearly instantaneous. Recovery times are expected to be consistent with, or more rapid than, that which is observed in epileptic seizures.

Time to Onset

No experimental evidence is available for this concept. However, light-induced seizures latency onset in photosensitive epileptics varies from 0.1 to about 10 seconds. Because of the fact that the electrical impulses triggered by light must spread to other parts of the brain, photic-induced seizures are expected to have a generally slower onset than neural synchrony induced by high-strength pulsed electric fields.

Duration of Effect

For epileptic individuals, the typical duration of a petit mal event or a psychomotor event is 1 minute or 2, possibly longer, while the duration of a grand mal seizure is 1 to 5 minutes. In a non-epileptic individual who is induced by electromagnetic means, the durations of the different events are expected to be roughly the same as the epileptic individual's events after the external excitation is removed.

Tunability

There are many degrees of epileptic seizure in diseased persons, and it seems reasonable that electromagnetic stimulation of neural synchrony might be tunable with regard to type and degree of bodily influence, depending on the parameters associated with the chosen stimulus. Because there are no actual data to build on, these statements must be considered tentative. It is known that in the study of photic-induced seizures, parameters can be varied so that the individual under study does not actually undergo a grand mal seizure. This knowledge gives confidence that the proposed technology would be tunable.

Distribution of Human Sensitivities to Desired Effects

It is anticipated that 100% of the population would be susceptible. The mechanism is one that could act on many individual neuronal cells concurrently and hence does not depend on spreading regions of electrical activity as in the disease state.

Possible Influence on Subjects(s)

If the technology functions approximately as envisioned, the targeted individual could be incapacitated very quickly. Because there have been no reported studies using the

conditions specified, experimental work is required to characterize onset time. Different types of technologies could be employed to influence wide areas or single individuals. Because this technology is considered to be tunable, the influence on subjects could vary from mild disruption of concentration to muscle spasms and loss of consciousness. The subject(s) would have varying degrees of voluntary control depending on the chosen degree of incapacitation.

Technological Status of Generator/Aiming Device

An electric field strength of roughly 100 Kv/m over a time period of 1 nanosecond is approximately the condition thought to be necessary to produce the desired effect when provided to an overall repetition rate of 15 Hz. Such a field may be developed using a radar-like, high-peak-power, pulsed source or an electromagnetic pulse generator operated at 15 Hz. These technologies exist today sufficient to evaluate the disabling concept. Power requirements are not high because the duty factor is so low. Aiming devices are currently available, but a high degree of directionality at long distances will require development. It may be necessary to provide bursts of these nanosecond pulses in order to stimulate the desired effect. As the duty time increases so does the average power requirement for power source. Because there were no open literature reports from which to make inferences, there is some uncertainty about the power levels required.

Range

The effective range could be hundreds of meters.

Defeat Capabilities/Limitations

Shielding can be provided by conductive barriers like metal or metal screen. There are a number of drugs that are capable of inducing convulsive seizures and others, like phenobarbital, diphenylhydantoin, trimethadione, 2-4 dinitrophenol, and acetazolamide, which are anticonvulsive. Anticonvulsive drugs are known to be helpful in reducing the effect of seizures in epileptic patients, but their ability to reduce the effect of the proposed technology is unknown (possibly no effect) but expected to be less than for photic-induced seizures.

Incapacitating Effect; Acoustic Energy

The nature of the incapacitation consists of severe pressure sensations, nystagmus (a spasmodic, involuntary motion of the eyes), and nausea caused by high intensities of 9140-155 dB). Nystagmus occurs when convection currents are produced (cupula movement) in the lateral ear canal. This cupula movement causes the eyes to move involuntarily; hence, the external world is interpreted as moving. The subject "sees" his surroundings turning round him and at the same time experiences a sensation of turning. Persons exposed to these levels of sound experience nausea.

Biological Target/Normal Functions/Disease State

The two lateral semicircular canals, one located in each inner ear, alert a person to the fact that his upright head is experiencing angular acceleration. Within the ampulla of the canal are several so called hair cells. The cilia of these cells protrude into the lumen of the ampulla where they are encased in a mass of jelly-like material (the cupula) which is attached to the opposite wall of the canal. As the head accelerates, the cilia are bent by an inertial force of the cupula and the viscous liquid in the canal lumen. The bending of the cilia excites hair cells which in turn excite afferent neurons; these then alert the brain that a change of position of the head has occurred. Similar events occur when the head stops moving. The result of a strong hair cell stimulus to the brain is a rapid eye movement, call nystagmus, a feeling of dizziness and disorientation, and a possibility of nausea and vomiting.

Normal hearing is in the range between the frequencies of 20,000 to 16,000 Hz with the optimal sensitivity for most people between the frequencies of 500 to 6000 Hz.

Mechanism to Produce the Desired Effects

Because the end organs for acoustic and vestibular perception are so closely related, intense acoustic stimulation can result in vestibular effects. The hypothesis is that the sound of normal intensity produces oscillations of the endolymph and perilymph, compensated for by oscillations of the round window. High intensity sound produces eddy currents, which are localized rotational fluid displacements. High intensity sound can also produce nonlinear displacement of the stapes, causing a volume displacement, the result of which can be a fluid void in the labyrinth. To fill the void, fluid may be displaced along the endolymphatic duct and/or block capillary pathways, which, in turn, could stimulate vestibular receptors. Stimulation of the vestibular receptors may lead to nausea and vomiting if the sound pressure level is high enough. Conclude that both eddy currents and volume displacement serve to stimulate vestibular receptors in humans, when exposed to high levels of noise.

One study found nystagmus in guinea pigs exposed to high levels of infrasound via stimulation of the vestibular receptors. However, the same lab was unable to produce nystagmus in human subjects at 5- and 10-second exposures to a pure tone at 135 dB, broadband engine noise, or a 100 Hz tone at 120 dB, pulsed three times/s or 2 minutes. The same research was unable to elicit nystagmus at levels up to 155 dB, and also equally unable to produce nystagmus using infrasound levels of 112-150 dB in guinea pigs, monkeys, and humans. However, research with audible components in the sound spectrum with guinea pigs and monkeys produced nystagmus. Other researchers report other vestibular effects in addition to nystagmus at the following thresholds: 125 dB from 200-500 Hz, 140 dB at 1000 Hz, and 155 dB at 200 Hz. Decrements in vestibular function occur consistently for broadband noise levels of 140 dB (with hearing protection).

Human subjects listened to very high levels of low-frequency noise and infrasound in the protected or unprotected modes. Two-minute duration as high as 140 to 155 dB produced a range of effects from mild discomfort to severe pressure sensations, nausea, gagging,

and giddiness. Effects also included blurred vision and visual field distortions in some exposure conditions. The nature and degree of all effects was dependent on both sound level and frequency with the most severe effects occurring in the audible frequency range (as opposed to infrasound), at levels above about 145 dB. The investigators found no temporary threshold shift (TTS) among their subjects, and the use of hearing protectors greatly alleviated the adverse effects.

Since the early days of jet-engine testing and maintenance, anecdotal evidence has appeared linking exposure to intense noise, with such complaints as dizziness, vertigo, nausea, and vomiting. As a result of siren noise at 140 dB, subjects consistently reported a feeling of being pushed sideways, usually away from the exposed ear, and one subject reported difficulty standing on one foot.

These effects were not as dramatic as from the jet-engine (broadband) noise at 140 dB. This research concludes that the threshold of labyrinthine dysfunction is about 135 to 140 dB and that these effects occur during, but not after, exposure.

Time to Onset

No times to onset of nausea or nystagmus were identified in the literature but is presumed to be relatively immediate based on effects to the labyrinth system occurring during, but not after, exposure to sound pressure levels of 135 to 140 dB.

Duration of Effect

The incapacitation lasts only as long as the incapacitating sound is present.

Tunability

Based on the data presented above, it is unclear whether the degree of nausea or nystagmus is tunable, but similar symptoms caused by other stimuli are variable in degree.

Distribution of Human Sensitivities to Desired Effects

It is most probable that all individuals will be susceptible to this stimulus with the exception of those with a disease or defect (i.e., deaf mutes) of some part or parts of the vestibular system. Data showed no consistent decrease in vestibulo-ocular reflexes with increased age.

Recovery/Safety

Normal subjects are likely to recover immediately and experience no or unmeasurable changes in hearing unless well known frequency-intensity-time factors are exceeded. This is based on studies which found no temporary threshold shift in hearing of subjects tested at low frequency. Occupational safety personnel generally recognize that 115

dB(A) is to be avoided and that 70 dB(A) is assumed safe. It is believed that the noise energy with predominating frequencies above 500 Hz have a greater potential for hearing loss than noise energy at lower frequencies. Occupational standards for noise state that a person may be exposed continuously for 8 hours to 90 dB(A) or 15 minutes to 115 dB(A).

Possible Influence on Subject(s)

Induction of nystagmus and nausea will have variable effects on individuals. Effects may be sufficiently incapacitation to allow offensive advantage; the perception of sickness may make a subject susceptible to persuasion. It would be difficult to target single individuals at the present level of sound directing technology. This technology may be better suited for groups of people.

Technological Status of Generator/Aiming Device

Sound generating technology is well developed but not highly portable. Aiming devices are poorly developed.

Range

Under normal circumstances the sound pressure level decreases 6 dB(A) when the distance from the source is doubled. For example if the sound is 100 dB(A) at 100 ft, at 200 ft the sound would be 94 dB(A). At very high sound levels, certain conditions may lead to nonlinear effects in propagation and greatly increase range accuracy.

Defeat Capabilities/Limitations

Negative effects of audible sound are greatly decreased if hearing protection is worn. High frequency sound is more easily blocked than low frequency sound due to wavelength effects.

Laser-Induced Biological Effects

There are three basic damage mechanisms associated with exposure to laser radiation: chemical, thermal, and mechanical or acoustic-mechanical.

The laser-induced, chemical alterations in irradiated tissue are referred to as photochemical damage. The likelihood of laser radiation in the blue-light portion of the electromagnetic spectrum (.380 to .550 microns) inducing photochemical reactions progressively decreases with increasing wavelength. Photochemical effects are not observed upon exposure to radiation with wavelengths exceeding .550 to .650 microns because the kinetic energy associated with these photons is insufficient to initiate a photochemical change.

On the other hand, the thermal effect is a primary mechanism for laser-induced injury. The extent of the injuries induced depends upon the wavelength and energy of the incident radiation, duration of exposure, and the nature of the exposed tissue and its absorption characteristics. Generally, this mechanism predominates in the visible and the near-infrared (.760 to 1.4 microns) portions of the electromagnetic spectrum and for almost all CW and pulsed exposures between 0.1 milliseconds and 1 to 5 seconds.

The third injury mechanism associated with exposure to laser radiation is the mechanical or acoustical-mechanical effect. The radiant energy is absorbed into the tissue and, as a result of rapid thermal expansion following a short (1 nanosecond to 0.1 millisecond) laser radiation pulse, a pressure wave is generated that may result in explosive tissue injury.

Generally, all three mechanisms operate concurrently in an irradiated animal. Thermal effects currently predominate for continuous wave (CW) lasers, while mechanical effects are of increased significance for pulsed-mode lasers. With even higher power, one must also consider nonlinear phenomena such as multiphoton absorption and electromagnetic field effects.

The organs most susceptible to external laser radiation are the skin and eyes. The severity of injury is affected by the nature of the target, the energy density delivered to the target, the frequency and power of the laser, atmospheric attenuation of the beam, and the use of filtering or amplifying optics by the target, etc.

The primary effect on the skin is thermal damage (burns). The severity varies from slight erythema or reddening to severe blistering or charring, depending on such factors as total energy deposition, skin pigmentation, and the tissue's ability to dissipate heat.

The eye is particularly susceptible to intense pulse of laser radiation because of its unique sensitivity to light. The focusing effect is similar to that of a magnifying lens, which focuses the energy on a particular spot. Since the cornea and lens of the eye amplify the intensity of the light incident upon the retina, the retina is extremely sensitive to visible and near-infrared light, and damage to the retina may result in temporary or permanent loss of visual acuity. Laser eye injuries vary according to incident power, spot size, beam angle, temporal mode (CW or pulsed), and pulse repetition frequency. Reported effects include corneal lesions, burns, cataracts, and retinal lesions.

Some high-power lasers can cause antipersonnel effects by the deposition of thermal energy. These lasers must operate at a wavelength that is readily absorbed by the skin or the cornea. These generally include the far- and mid-IR regions (10 to 12 microns and 3 to 5 microns) as well as the ultraviolet region (<0.4 microns). However, ultraviolet wavelengths generally do not propagate well in the atmosphere, so the primary threat wavelengths to be considered are between 3 and 12 microns. Although relatively modest amounts of far-IR laser power are required to produce superficial burns on the skin at short ranges, and efforts to design rheostatically lethal laser weapons are on going.

Nonlethal blinding laser weapons generally use collimated beams with very low beam divergence, and the energy contained in the beam diminishes relatively slowly over great distances. Imaging systems such as eyes and EO vision systems have focusing optics that bring the incident plane wave of light to focus at the sensor plane. This results in a high optical gain (greater than 100,000 for eyes), which makes the associated sensor vulnerable to relatively low fluences of laser energy.

The effects of lasers on eyes are threefold:

- Dazzling or induced glare.
- Flashblinding or loss of night adaptation.
- Permanent or semipermanent blinding.

The severity of laser eye injuries varies according to the incident power, spot size, beam angle, pupil diameter (ambient light conditions), temporal mode (CW or pulsed), and PRF of the laser. Reported effects include corneal burns, cataracts (a permanent cloudiness of the lens), and retinal burns and perforations. Low-energy laser weapons are capable of causing the latter.

Exposure to relatively low laser energies can produce temporary changes in the ability to see without producing permanent injury. Exposure to laser light can produce an effect called glare or dazzle, which is similar to the temporary loss of vision experience when viewing the headlights of an oncoming car. The visual effects last only as long as the light is present in the field of view (FOV). At slightly higher energy exposures, the same laser radiation can saturate or flashblind the photoreceptor cells, resulting in after images that fade with time after exposure. Only visible radiation will induce veiling glare or after images; near-IR radiation will not produce these effects even though the radiant energy reaches the photoreceptor cells. Flashblindness and dazzle, while not permanent injuries, can cause discomfort and temporary loss of vision. Some studies have shown that dazzle and flashblindness can seriously impact mission performance, especially in highly visual tasks such as piloting an aircraft or aiming.

Blinding is the permanent or semipermanent loss of visual acuity. The effect can last from several hours onward and generally is evidenced by a dark spot in the field of vision. This spot is called a scotoma. The impact of the scotoma on visual acuity will vary with the size and position of the injury. Human vision is greatly affected when the laser damage is to the central vision area of the retina called the fovea. Nonfoveal laser damage may be less severe or even go unnoticed because it affects only the peripheral vision. The most serious retinal injuries occur when the incident light is so intense that a perforation in the retina is formed, resulting in a hemorrhage into either the subretinal layer or, in the most severe cases, the vitreous humor of the eye. Less severe exposures result in lesions on the retina.

Footnote:

1-(U) This appendix is classified FOR OFFICIAL USE ONLY in its entirety.

Information Cutoff Date: 17 February 1998

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RESOLUTION NO. 51-15

**RESOLUTION OF THE COUNCIL OF THE CITY OF RICHMOND, CALIFORNIA IN
SUPPORT OF THE SPACE PRESERVATION ACT AND THE SPACE
PRESERVATION TREATY TO PERMANENTLY BAN SPACE-BASED WEAPONS**

WHEREAS, the Space Preservation Act and the companion Space Preservation Treaty has established a permanent ban on all space-based weapons, on the use of weapons to destroy or damage objects or persons from or that are in orbit; and the permanent termination of research and development, testing, manufacturing, production and deployment of all space-based weapons; and

WHEREAS, the Space Preservation Act, companion to the Space Preservation Treaty, introduced by U.S. Congressmen Dennis Kucinich (D-Ohio), requires the U.S. President to continue enforcement of banning space-based weapons and the use of weapons to destroy or damage persons or objects that are in or from orbit; and

WHEREAS, the Space Preservation Treaty has established an outer space peacekeeping agency to monitor outer space and enforce the permanent ban of space-based weapons. In addition, this legislation serves as a safeguard for targeted individuals who claim to be under assault from weaponry that should be outlawed by the Space Preservation Act.

WHEREAS, the well-being of all residents is of the utmost importance to the City of Richmond.

NOW THEREFORE BE IT RESOLVED that the City Council of the City of Richmond hereby supports the Space Preservation Act and companion Space Preservation Treaty, to ensure that individuals will not be targets of space-based weapons

I CERTIFY that the foregoing resolution was adopted at a regular meeting of the City Council on May 19, 2015 by the following vote:

AYES: Councilmembers Bates, Beckles, Martinez, McLaughlin, and Vice Mayor Myrick.

NOES: Councilmember Pimplé and Mayor Butt.

ABSTENTIONS: None.

ABSENT: None.

PAMELA CHRISTIAN
CLERK OF THE CITY OF RICHMOND
(SEAL)

Approved:

TOM BUTT
Mayor

Approved as to form:

BRUCE GOODMILLER
City Attorney

State of California }
County of Contra Costa } : ss.
City of Richmond }

I certify that the foregoing is a true copy of **Resolution No. 51-15**, finally passed and adopted by the City Council of the City of Richmond at a regular meeting held on May 19, 2015.


Pamela Christian, City Clerk of the City of Richmond

Some of the data collected from spies using microwave weapons
The Communications Industry is in the position ①
where it is spiralling out of any person's ability to control it

An open letter Open Letter from Barrie Trower:

To whom it may concern...

The Communications Industry, because of its usefulness to Government, Finance, Intelligence gathering and Warfare, is really in the position where it is spiralling out of any person's ability to control it, with regard to advancing technology.

Initially, all systems "pulsed". However, when it was realised that stealth microwave warfare relies on entrainment of a brain from such pulses, now being used as a domestic instrument, the pulses had to be re-named as "modulations". The difference between them is infinitesimally small, but the effect is just the same. Only the name has changed.

I believe that this explains the **dramatic changes in behaviour** we are now witnessing - **group suicides, disruption in schools, aggression** and so on.

Over the years, I have compiled a list of known entrainment responses (followed by long-term potentiation) from these microwaves. It should be appreciated that each person will respond slightly differently, although the same area of brain/temporal/amygdaloid temporal/parotid/etc., will remain the same.

Pulses/Modulations
Per second/
Possible Result

- 1 Heartbeat Rhythm
- 1-3 Sleep Pattern
- 3-5 Paranoia/Hallucinations/Amnesia/Illusions/Drowsiness 'Absent' Feeling
- 6-7 Depression/Suicidal Feelings/Visual Distortion/Confusion
- 8-11 Cannot Relax/Feeling Unwell/Unhappy
- 11-13 Anger/Manic Behaviour/Problems with Movement/Flashes/Loss of Appetite
- 14-18 Small Seizures/Disturbed Orientation/Auditory/Visual Hallucinations
- 18+ Inability to make decisions/Sensory problems (sight/touch/sound)

*all of these pulse -
frequencies are added to
varying communication
devices.*

- 24+** Confusion/Flickering/flashing lights/Dizziness
- 35+ Mania/Hyperactivity
- 40+ Anxiety/Sleep disturbance/Reaction time slowed/Unable to make decisions

** It is worth mentioning that a mobile phone with a pulse/modulation frequency of 25 could act directly on visual sight (if being held at head), or heartbeat (if in a chest pocket). A frequency of 25 can disrupt both visual and heart neurotransmitters.

Clearly a susceptible person may have any combination of these. Electrosensitive persons may recognise many of their own symptoms. My work on electrosensitivity and the brain can be found on <http://www.mastsanity.org>.

I think the problem is that young Governments and young communications engineers have no knowledge of Cold War warfare and don't know who to ask; even if they did, the Government would probably be in denial. The situation is a mess, made worse by greed.

If anyone would like clarification of any of the foregoing, or I can help in any way, please let me know.

Barrie Trower
3 Flowers Meadow
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Devon
TQ12 6UP
01626 821014

Extracts from U.S. Defence Intelligence Agency Documents from 1972-1983.

Note: Comments in *bold italics* are mine.

(3)

1. Ref: DST-1810S-076-76 March 1976. "If the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavourable effects on industrial output and military functions".
2. Ref: DST-1810S-074-76 March 1976 "Personnel exposed to microwave radiation below thermal levels experience more neurological, cardiovascular, and haemodynamic disturbances than do their unexposed counterparts. Some of the effects attributed to exposure include bradycardia, hypotension, and changes in EKG indices." "Subjects exposed to microwave exhibited a variety of neurasthenic disorders against a background of angiodystonia (abnormal changes in tonicity of blood vessels). The most common subjective complaints were headache, fatigue, perspiring, dizziness, menstrual disorders, irritability, agitation, tension, drowsiness, sleeplessness, depression, anxiety, forgetfulness, and lack of concentration". *The very things that some mobile phone users report (Mild et al 1998)*
3. Ref: ST-CS-01-169-72 July 1972. "Low frequency electromagnetic fields have been found to generate sonic and ultrasonic oscillations in living organisms. These oscillations produce elastic deformations in the organism. If the frequency of the outside field corresponds to the oscillation frequency of the cells, the latter deteriorate "Since almost all of the Soviet data on electromagnetic radiation (below visible) applies to physiological response, one can only imply that they have substantial knowledge of the psychological effects". "The UCLA Brain Information Service in Los Angeles has compiled an extensive bibliographic list on the biological effects of electromagnetic fields (below visible frequencies) especially on the central nervous system". *Numerous studies have since confirmed this including Wever(1974), Konig (1974), Beale et al.(1997), Lilienfeld et al. (1978), Robinette et al.(1980).*
4. Ref: DST-1810S-074-76 March 1976 "Soviet research has produced guidelines which were used to establish a value of 10 uW/cm² per working day *UK standard 110* uW/cm²..... Should subsequent research result in adoption of the Soviet standard..... industries could be required to make costly modifications to protect workers. Recognition of the standard could also limit the application of new electronic technology by making the commercial exploitation of some products unattractive because of increased costs imposed by the need for additional safeguards. Another possibility is the alteration of the permeability of the blood-brain barrier. This could allow neurotoxins in the blood to cross. As a result, an individual could develop severe neuropathological symptoms and either die or become seriously impaired neurologically" *Proven by Salford et al.(1993)(1994)(1999). Parkinsons, Alzheimers, and vCJD are such possibilities.*
5. Ref: ST-CS-01-169-72 July 1972 "Low frequency emfs have been found to generate oscillations in living organisms. If the frequency of the outside field corresponds to the oscillation frequency of the cells, the latter deteriorate as a result of the mechanical resonance" *The human brain & heart function at frequencies within the spectra of cellphones, computers etc.*
6. DST-1810S-074-76 March 1976 "personnel exposed to microwave radiation below thermal levels experience more neurological, cardiovascular and hemodynamic disturbances than do their unexposed counterparts (*microwaves*)

Donald Stevens. Nov. 2000

(1) used in all cell phones, Wi-Fi, tablets etc. with pulse frequency added.

(2) Most common symptoms

(3) Now proven by experiment

(a 500 word essay for a magazine)

4

Are you being targeted?

The answer may surprise you.

Several individuals contact me on a weekly basis from all over the World, claiming that they, or specific areas of their bodies, are deliberately being microwaved. The initial questions are:

Is it possible? Is there evidence? Has it been done? Is there proof? Is it happening today? The simple answer is "Yes" to all of those questions!

The PANDORA project, funded by the CIA in the 60's was only one of very many experiments carried out on unknowing humans, to test how low-level microwaves cause physical and neurological harm. Dr Ross Adey claimed that: "...all aspects of human behaviour can be affected - even controlled...." (1) - Most secret experiments had the prefix MK before the codeword.

Even today, TETRA (Airwave) is an epidemiological study, until 2018, where neurological effects from calcium efflux is known to occur and the Government Scientists admit that they cannot exclude harm from the TETRA pulse system or cancer. TETRA is, of course, transmitted over approximately 150 countries. (2)

Synthetic telepathy (induced auditory influence) or, put more simply - hearing voices/suddenly having an impulse to do or act in some way - is legally transmitted to people in shops, supermarkets - in fact, anywhere. 'Patents' were taken out on such transmitters to:

- (i) communicate with the deaf - i.e. microwave pulses, etc., direct into the brain
- (ii) prevent people in shops from shoplifting, using a similar frequency (3)

It does not take a great leap of the imagination to realise that other experimental pulses/frequencies - known, from previous studies, to cause both neurological/physiological changes - could be used to the advantage of the transmitting body for a) research and b) profit.

NB: One US East Coast Store Chain has reported a \$600,000 profit in nine months from this technology. (3)

Should the reader care to look at the list of both physical and neurological effects from my list of microwave pulses, it will become clear that these patented devices (of which there are many) can be open to abuse. (4)

Notwithstanding all of the above, 'Agencies' can always know exactly where you are (with or without you carrying a cellphone), watch your movements on one of the types of 'human radar' (5), and listen to anything you say (even if your phone is turned off). (6) Put simply, everything you do and say can be monitored 24 hours a day, wherever you are, should an Agency wish it to be.

Therefore, if you can be monitored, you can be targeted (let's be honest - Agencies are not going to ask for volunteers!).

In 1991, Hamline Universities Public Administration report on **MK ULTRA (1988)** found that victims had to settle out of court, as the US and Canadian Governments cited 'National Security'. The UK Government's 'Porton Down' does not walk with clean hands on human experimentation, either.

So, what can you do if you are being targeted?

- i) Recognise the symptoms. (7)
- ii) Do not carry a cellphone. If you have to, carry it in a wire mesh shield or metal tin (child's school pen/pencil box). Few people realize that some phones can be activated (even if off) and act as a relay antennae for another person's call.
- iii) If you do not carry a phone, avoid being tracked by 'radar' – which eliminates static objects near you – by mingling for a few minutes in a crowd. The computer will confuse your 'signal' with that of others.
- iv) Wear shielding (specialized clothing) to reduce your absorption – hence symptoms.
- v) Shield your home (ES-UK produces company lists and articles on this, if you are a new reader).

In summary, microwave stealth weapons have been used from the '50's to the present day. They are a perfect Governmental asset; hence the Government's complicity to protect the Communications Industry – they need each other to continue.

With more powerful computers, these weapons grow accordingly and have to be tested – which is where you come in....

Will you stop them? In 1999 the EU Parliament called for a World Convention to ban all human experimentation/manipulation (28th January – A4-0005/99 EP1159)....

You have somewhere to go....

Finally, little used these days, but not obsolete, if you have an implant (chip) have it detected with a reader (microwave detector or reader like Vets use to identify stray pets), then have it x-rayed and removed.

In conclusion, several years ago in the West Country I approached a Knighted, top-Government Scientist and informed him that he could be causing brain damage, neurological damage and cancer to those being experimented upon in his 'trial'. He looked me straight in the eye and said "What's wrong with that?"

This is the mind-set of the decision-makers....

Barrie Trower

February 2012

(6)

(1) *Satellite Surveillance and Human Experimentation – Illegal experimentation on Humans P7*
Paul Bird. Feb 2009.

(2) *Most Confidential Report on the TETRA (Airwave) Communications System (Strictly for the Public & Commercial Services Union)*
B Trower June 2009

(3) *Advanced Electronics Security*
Microwave Detection: Remote Mind Control Technology P3
Patents: 6587729 USA 5123844 USA 5289438 USA
Anna Keeler May 2010

(4) *"The Communications Industry is in the position where it is spiralling out of any person's ability to control it"...*
B Trower – Open letter (Internet).

(5) *"Smart Antennae – they know where you are" Scientific American P48*
Martin Cooper July 2003
"Cellular" Electronic News
Steve Bush Dec 2002

(6) *"Your mobile phone is a wiretap – even if it is turned off".*
www.next-up.org 27.11.09

(7) *ES and EHS – ISBN 978-1-872072-20-3 P6*
ES-UK (See address in magazine)
Michael Bevington Feb 2010

What our governments do not tell us

Weapons based on radio waves - electromagnetic weapons

In 2009, the president of the United States of America, Barack Obama, [announced](#) that he was going to work hard towards a world without nuclear weapons. Of course he would say that, the United States has developed a whole new generation of weapons that are much more effective in torture and killing. Countries with these new weapons can only be threatened by nuclear weapons.

Nuclear weapons are of course terrible weapons; however, they cannot be used without leaving evidence. That is why their use is restricted. There is another, unknown to public domain, category of weapons that leaves no evidence. These are weapons based on radio waves. Attacks with these weapons are invisible and can go through walls. We are talking about electromagnetic weapons, also called electronic weapons. Examples include: microwave weapons, laser weapons, sound weapons, as well as equipment to read and influence the human mind. These weapons are widely used by secret services and the military. This happens all over the world, and due to their high-tech character, more commonly in our 'democratic West'. These weapons are rarely mentioned by popular media, never have been acknowledged by any government, but have covertly been used against people like: whistleblowers, activists, politicians - to steal, to eliminate - for several decades. And in order to develop and perfect these weapons, random ordinary men, women and children are non consensually used as guinea pigs to test them. These are often horrible crimes against humanity, and our governments aren't telling us anything about this.

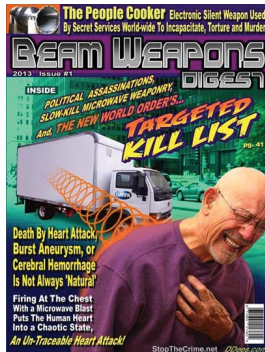
One of the most terrible implications of these weapons is that it is no longer possible to protect yourself, your children, your loved ones. You can no longer say: 'stay in this room, then you will be safe'. The attackers look through the walls of your house, cook, burn, control your body, and read and manipulate your thoughts. Police are not equipped to do anything and can't help you, no one can help you.

The rest of this page is split into two main topics:

- General information about electromagnetic weapons
- Victims of experiments and crimes with these weapons

[Click here](#) if you want to leave a comment.

Weapons-1. Suppression of information



It is unprecedented that information about electromagnetic weapons has been suppressed from the public in all possible ways and that governments of all countries go along with this secret in the fear of paybacks by the powerful. Instead governments choose to deny rather than recognize and expose the existence of these deadly weapons, thus failing to inform their

citizens. This actually shows that we are not ruled by politicians but by a self-proclaimed world's elite. The ultimate goal is the suppression of the population by this elite.

(Illustration [David Dees](#))

Weapons-2. History

The development of weapons based on radio waves started after the Second World War. The Nazis were already developing them and the Russians and the Americans followed. One of the first notable results was the LIDA machine (1950). By focusing radio waves on the brain you can almost instantly send someone to sleep. The same device can be used to keep people from their sleep as well. In the 1970s, the Americans discovered that their Moscow Embassy was irradiated with microwaves. This was not made public but

Victims-1. Experiments with these weapons



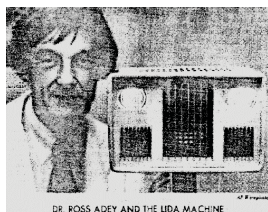
There is a group of people on whom these weapons are tested in order to further develop their capabilities and effectiveness.

They are often random, innocent civilians, and come from all over the world.

They call themselves **Targeted Individuals** and despite usually being kept totally isolated by their attackers, in recent years, they found each other via the internet. They are looking for recognition of the crimes committed against them. The experiments that are performed on them are illegal and often horrific, many are suffering and many die. One could argue that these are war crimes against citizens. **These are inhumane and degrading crimes against mankind, a disgrace to the human race!**

Victims-2. Wrong diagnosis

People who are attacked with such weapons initially end up in a kind of shock. They know that there are all kinds of things that don't add up but do not know what, as it's not something they have learned about or something that is in the newspapers. Family and friends will say they have to go to a family doctor, psychologist or psychiatrist. The symptoms that they show are similar to known physical symptoms and mental illness. That's no coincidence: this is intentionally done so that the victims will not be able to find anybody that



was the beginning of the arms race of weapons based on radio waves. Everyone knows the laser pen or laser pointer. Not only pilots were shone with it, also footballer Wesley Sneijder complained about he was being

blinded when taking a free kick. A kitchen microwave cooks meat with radio waves, you can easily imagine what a weapon based on it can do to the human body. A kidney stone pulverizer can from a distance crush a stone in the human body. All this is done with invisible radio waves. More recent there have been developments in which brain signals are used to control prostheses, for example, a hand.

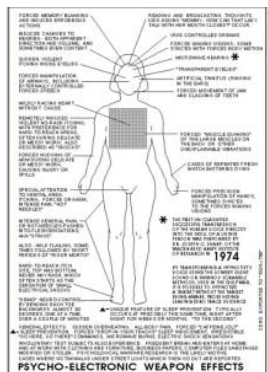
Weapons-3. Arms must be tested



The arms industry, the military, in combination with the secret services, develop weapons and torture methodology, which need to be tested on. No one however, wants to be a guinea pig of this kind of experiments as they

are very dangerous. Think of a microwave weapon, with which you cook the human body, knowing for certain that body functions will eventually fail. Imagine a weapon with which you can stop someone's heart. In the course of history, these organizations took it for granted that they could do this to unaware people. But that is all illegal of course, and so it is done secretly.

Weapons-4. Developed for the body



The development of weapons based on radio waves turned out to be a great challenge. The radar, after some adjustments was able to send focused energy, and shortly after the microwave was invented. The first weapons were primitive but already very effective. New developments lead to laser weapons, and later this was all grouped under the heading of 'Directed

Energy Weapons'. Many of these are classified as non-lethal weapons but in most cases, this is pure nonsense. Pointing a powerful laser weapon at the human body will have a similar result as a bullet being fired at it. Both can be very damaging, both can be deadly. Read also: [Bioeffects of](#)

DSM IV

Diagnostic and
Statistical Manual
of Mental Disorders

will listen to them when they claim that they are being attacked with these weapons. To get rid of this torture, victims commit suicide or accept the diagnosis of a psychiatrist, often paranoid schizophrenia. They end up in Psychiatric care where there are further experiments

made on them. A small group is able to understand what is happening and to offer resistance, and although they are often called crazy by those around them, they keep insisting they are being preyed upon.

Victims-3. Human rights, but not for everyone



The victims of these crimes go to the police, write letters to their government or, or the Mayor of their city, they contact established human rights organizations such as: Amnesty International, Human Rights Watch, United Nations or the International Criminal

Court. Comments are invariably negative. They are knocking on doors everywhere but nobody is really listening. They often leave their stories behind in the hope that something will happen. But they never hear anything back. The crimes that are committed against them are among the most serious in the human history. And, while all their human rights are being violated, the organizations where you would expect help from give no assistance.

Victims-4. Attack of the body



How do you call it, when you suddenly feel a strange pain in your arm, and then, quite suddenly, it seems to go away? You come back home, and it starts again. If you go and sit somewhere else, it disappears, but very soon, it comes back and burns you, again. It may take sometime before you realize the fact that you are being attacked with radiation that passes through a wall. And, from that moment on, it is called torture. The pain depends on the intensity and duration. In many cases, the torture follows you wherever you go. Some victims describe the feeling of being cooked alive, or burned alive. Another form of torture is making people hearing voices. The first successful experiments with this started in 1974! (Voice-

[Selected Non-Lethal Weapons declassified US Army Intelligence document, 1998.](#)

Weapons-5. Developed for the mind



The human body is extremely sensitive to electromagnetic radiation (radio waves). In addition, human body also sends out radiation. In other words, man is both: a bio-electromagnetic transmitter and a bio-electromagnetic receiver. For many years, research has been undertaken into the collection of signals from the brain

(mind-reading), as well as, effective ways to send signals to the brain (mind-influencing). In the beginning, electrodes and implants were needed/might have been required, but new developments in science and technology made this unnecessary. Now, it is not only possible to read minds from a distance, but it is also possible to force thoughts into minds, which appear as if they were their own (this is different from hearing voices). There are projects that explore how you can make large groups of people think of the same thing, and, also, how to prevent groups of people thinking of certain things. Another project is to take over a human as a person (see also the movie Avatar).

Weapons-6. Examples of use



Some examples of possible use of these weapons:

- On 21 July 2009 NATO boss De Hoop Scheffer suddenly got a heart attack while visiting Belgium during the Belgian national holiday.

- On July 26, 2009 the president of France fell to the ground while he was out running. We were told that his heart had beaten irregularly for a short period.
- On September 3, 2009, Dutch Minister Verburg collapsed whilst speaking on a subject in the House of Representatives.
- On September 14, 2010 Dutch swimming celebrity Erica Terpstra drove into a tree because of a huge coughing fit.
- In 2010 Gerard Kemkers sent Dutch champion ice skater Sven Kramer to the wrong lane at the Olympic 10 km.
- In recent years there have been several posts about groups of birds that have fallen from the sky, about groups of whales that were totally off course, and groups of cows that suddenly died.

Of course, it cannot be proven that all this was caused by electromagnetic weapons, but no one can say that this can not be done with these weapons.

And that is the reason why these weapons must be banned. A knife leaves a stab wound, a gun leaves a bullet hole, in both cases there is perceptible damage to the body. This is no longer the case with electromagnetic weapons. We can make

to-skull, V2K, microwave hearing). Often, these voices constantly belittle someone, aiming to drive them insane.

Victims-5. Attack of the mind

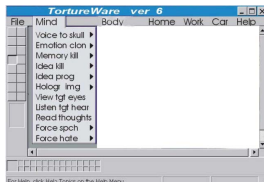


A device to read someone's mind is a weapon. After all, you attack this person; you attack not his body, but his mind. The same can be said of a device that forces thoughts into a brain without the victim knowing it. This not only is possible today, it is actually being done. A number of victims claim to be

robbed of ideas, others claim to be blackmailed with their, now no longer secret, thoughts, or have obsessive thoughts that keep repeating, or strange dreams. Mind reading is used to torment you through feedback on your thoughts.

Passers-by say things about you which only you can know about. The last thing you would expect to be private, your thoughts, is available to those that attack you, an incredibly terrible feeling. And those who do not realise and are guided by their thoughts, are actually no more than robots. As just can imagine, many victims have their thoughts about the 'bizarre' shooting incidents in which a disturbed person just carelessly kills people.

Victims-6. Examples of attacks



There are a number of physical effects that can occur; scratching, abdominal pain, need to urinate, urge to relief, diarrhoea, coughing, belching, farting, heart complaints, erectile dysfunction, sexual

stimulation, headache, sudden confusion, sudden memory loss.

Ways in which these weapons can be used to attack our brain are: mind reading, hearing voices, tinnitus symptoms, planting thoughts in your head with an inability to distinguish them from your own thoughts unless you are aware of this, dream manipulation.

Below the link to an article from 2003 by Carole Smith, psychoanalyst: [On the Need for New Criteria of Diagnosis of Psychosis in the Light of Mind Invasive Technology](#). She writes among other things: 'A doubly cruel sentence is being imposed on people who are the victims of the most appalling abuse by scientific-military experiments, and a totally uncomprehending society is indifferent to their evidence. For the development of a new class of weaponry now has the capability of entering the brain and mind and body of another person by technological means.'

Electronic torture is attacking someone 24/7 with these weapons. At home and outdoors: the environment is the torture chamber.

no distinction anymore between reality and what has been done.

Weapons-7. There's even more



Above is only very limited information. Weapons based on radio waves are now installed in airplanes and on warships. Smaller versions are being tested in prisons in the United States. Minds can be

controlled from nearby equipment or cell towers. Sound weapons are used to move people away from certain areas. In addition, there are the antenna-fields, also called HAARP installations. They use the atmosphere around the Earth to send energy across to other points. It is said that these installations are used to influence the weather and cause earthquakes.

Below is the link to the press release by Institute of Science in Society published on 29 May 2007: [Bio-electromagnetic Weapons: The ultimate weapon](#) At the beginning of the article Harlan Girard says: "A weapon system that operates at the speed of light, that can kill, torture, enslave and escape detection."

Finally

Thank you for reading and I hope this page supplements your knowledge. I also hope that you understand that this must be made public. If we don't, then humanity-as-we-know-it will come to an end, the world as we know it today will no longer exist. Everyone except the elite and some technicians, will be tied to the electronic chain. George Orwell wrote in his book 1984 about this thought policy. That's not science fiction anymore - we are already in this situation!

I also hope that you have gained some insight in the practices of secret services and the military. Snowden's revelations already showed that there are many cases where they act outside the law. But what you didn't know is that they perform gruesome experiments, war crimes, against ordinary innocent civilians. This should stop immediately, be further investigated, the guilty brought to justice, and the victims compensated.

Finally, I hope that I am contributing to a better understanding of the victims of these crimes. They can't go anywhere. I ask you therefore to have compassion for their often unimaginable stories. The extent of their suffering is hard to explain if you are not a victim.

More questions? Read more on the Internet ([directed energy weapons](#), [active denial system](#), [electronic harassment](#), [microwave hearing](#), [remote neural monitoring](#), [synthetic telepathy](#), [electronic torture](#), [voice-to-skull](#), i.e.) or contact me.

Peter Mooring

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M: +31 6 4124 3030.

Would you like to comment or be kept informed?

Leave your comment below and/or your email address.

Email address:

Comment:

Send

Victims-7. Organizations for victims

In addition to the countless websites and Web pages of victims there are now a number of organizations who are committed to disclosing these crimes and trying to support victims.

- STOPEG - STOP Electronic weapons and Gang stalking
Website: <http://www.stopeg.nl>
- Freedom From Covert Harassment and Surveillance (FFCHS)
Website: <http://www.freedomfchs.com>
- European Coalition Against Covert Harassment (EUCACH)
Website: <http://www.eucach.org>
- Christians Against Mental Slavery
Website: <http://www.slavery.org.uk>
- Verein gegen den Missbrauch psychophysischer Waffen e.V.
Website: <http://www.psychophysical-torture.de.tl>
- Initiative gegen elektromagnetische Folter
Website: <http://www.e-waffen.de>
- International Center Against Abuse of Covert Technologies (ICAAC)
Website: <http://www.icaact.org>

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By Julianne McKinney, Director

Electronic Surveillance Project

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Alumni

Silver Spring, Maryland

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The prospect of domination of the nation's scholars by federal employment, project allocations, and the power of money is ever present—and is gravely to be regarded. Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.

[President Dwight D. Eisenhower, January 17, 1961]

Covert actions are counterproductive and damaging to the national interest of the United States. They are inimical to the operation of an effective national intelligence system, and corruptive of civil liberties, including the functioning of the judiciary and a free press. Most importantly, they contradict the principles of democracy, national self-determination and international law to which the United States is publicly committed.

[Credo of the Association of National Security Alumni]

MICROWAVE HARASSMENT AND MIND-CONTROL EXPERIMENTATION

by Julianne McKinney

Director, Electronic Surveillance Project

Association of National Security Alumni

December 1992

Whither the KGB?

In February 1974, Georgetown University's Center for Strategic and International Studies (CSIS) hosted discussions on the plight of dissenters in the Soviet Union, and on the means by which the U.S. Government might most effectively intervene. Highlights of these discussions are reported in *Understanding the Solzhenitzyn Affair: Dissent and its Control in the USSR* (CSIS, 1974).

KGB strategies were addressed in some detail during these discussions. It was noted that the KGB's success depended on the extensive use of informant networks and *agents provocateurs*; and, following Brezhnev's rise to power, on the use of drugs and psychiatrists for further purposes of manipulation and control. Shadowing, bugging, slandering, blacklisting and other related tactics were also cited as serving KGB purposes. Participants in the conference agreed that the KGB's obvious intent was to divide and isolate the populace, to spread fear, and to silence dissenters.

Agencies of our own government are on record as having employed precisely these same tactics on a recurrent basis. The Church and Rockefeller Committee Hearings in the mid-1970's purportedly put an end to these practices. Based on recent developments, it would appear that the CIA's and FBI's Operations MKULTRA, MHCHAOS and COINTELPRO (the focus of these Senate Committee and Vice-Presidential-level Hearings) were instead merely driven underground. We are now in contact with a total of 25⁺ individuals, scattered throughout the United States, who firmly believe they are being harassed by agencies of the U.S. Government. Others have been brought to our attention whom we will be contacting in the future. The

majority of these individuals claim that their harassment and surveillance began in 1989.

The methods reportedly employed in these harassment campaigns bear a striking resemblance to those attributed to the CIA and FBI during Operations MKULTRA, MHCHAOS and COINTELPRO. The only difference now is that electronic harassment and experimentation also appear to be (more blatantly) involved.

The Berlin Wall is down, Communism is in the midst of a death rattle, and the KGB no longer poses the threat which purportedly served to justify the U.S. Government's resort to such operations as MKULTRA, MHCHAOS and COINTELPRO. The KGB, since 1989, has been reduced to an increasingly distant memory.

Reactivation of surveillance/harassment/mind-control operations in this country suggests that the KGB, as an institution, was never the real threat. A KGB "mentality," with its underlying pragmatic contempt for civil liberties, appears, instead, to have been the driving force behind MKULTRA, MHCHAOS and COINTELPRO, and the operations now being reported to us.

The KGB "mentality" is a matter of personal predilection, not ideology. Its objective is power and control, regardless of human cost. It is a corrupting, cancerous influence, which feeds on fear, conformity and government funding.

Four months ago, when this Project commenced, we approached these complaints of government harassment and experimentation with an admitted "high degree of caution." We are no longer skeptical. The growing numbers of independent complaints and the similarities between those complaints cannot be ignored. Under the circumstances, the KGB should be proud of itself. As a "mentality," the KGB appears to be accomplishing more in "burying this country" from within, than it could ever have hoped to have achieved as an institution. It would appear that this country has a serious problem on its hands which needs to be resolved.

Part I of this report, which is reprinted from the June-July 1992 edition of the Association's publication, *Unclassified*, preliminarily addresses the complaints brought to our attention as of July 1992. Our objective, as noted, was to weigh the legitimacy of those complaints in terms of the directed-energy technologies reportedly involved. Part II discusses the overt and covert patterns of harassment identified as a result of our investigations, to date. A part of our objective, here, is to limit the success of such operations in the future, by according them widespread publicity.

In Part II, we do not identify individuals by name, both to honor their privacy and because our investigations have not been completed. Part II, like Part I, is a preliminary finding. Our focus is on the similarities of the complaints being received—similarities which Federal and State legislators, the courts, the FBI, local law enforcement agencies, the medical and psychiatric professions, and organizations such as the ACLU and Amnesty International have so far chosen to ignore.

We frankly find it curious that more attention and credibility is being accorded purported victims of UFO experiences and spectral visitations, than to persons who complain of systematic harassment and experimentation by the U.S. Government, involving technologies which the U.S. Government is only now grudgingly admitting to possess. These complaints require investigation. In due course (and provided financial support is obtained), we hope to be able to acquire the technology and supportive medical expertise to substantiate the claims being made. We also hope to alter the institutional mindset that U.S. Intelligence can be trusted. History, repeatedly, has proven otherwise.

PART I - THE PROBLEM SURFACES

[Reprinted from the June-July 1992 edition of *UNCLASSIFIED* (Vol. IV, No. 3),

published by The Association of National Security Alumni, Washington, D.C.]

The August-September 1991 issue of *UNCLASSIFIED* reviewed Hamline University's *Public Administration* report on the resolution of MKULTRA cases in 1988. Although the shocking details of medical ethics abuses by the U.S. and Canadian governments were amply detailed, Washington and Ottawa—citing national security and government privilege—stalled for so long that the cases never came to trial. The surviving victims settled for a pittance in an out-of-court settlement.

Since no individuals or agencies were held legally accountable, the door was left open for possible resumption of similar “mind-control” activities.

In the context of that article, we mentioned briefly that some half-dozen people had contacted us with appeals for assistance in ending what they believe to be electronic harassment and mind-control experimentation, possibly involving the CIA. We decided to take a closer look at this situation.

We are now in touch with approximately a dozen individuals located throughout the United States who appear to be targets of harassment and mind-control experimentation involving directed-energy technologies. [By mid-November 1992, that number had increased to 25.]

Typically, persons who complain of being “zapped by radio waves” and of “hearing voices” are stigmatized as psychotic, delusional or schizophrenic. Being mindful of this, as well as aware of the treatment accorded UFO and psychic phenomena “freaks,” we approach this subject with a high degree of caution. Based on our preliminary investigation, including interviews with the affected individuals, we conclude that the matter is serious and should be pursued further.

The Existing Directed-Energy Arsenal

Our first step was to determine what, if any technology exists which might be used for electronic harassment. That information was found in a “white paper” published in 1991 by the U.S. Global Strategy Council—a Washington-based organization, under the chairmanship of Ray Cline, former Deputy Director of the CIA, who maintains very close ties with the U.S. Intelligence community. The “white paper” describes the foreign and domestic uses foreseen for laser weapons, isotropic radiators, infrasound, non-nuclear electromagnetic pulse generators, and high-power microwave emitters.

The term, “non-lethal,” used to describe this technology is misleading. The energy emitted from all of these weapons can kill when appropriately amplified. At lower levels of amplification, they can cause extreme forms of physical discomfort and debilitation.

The Department of Army (DA) identifies these same weapons as “non-conventional.” They were so identified in an exhibit at a DA-sponsored symposium on “The Soldier As A System,” in Crystal City, VA, on June 30, 1992. Beta wave incapacitators were separately mentioned during the symposium as being of particular interest to the U.S. Marine Corps.

We discussed these “non-conventional” directed-energy weapons with Mr. Vernon Shisler,

manager of the exhibit and the Army's delegate to NATO in matters pertaining to "The Soldier As A System." Mr. Shisler acknowledged not only that directed-energy weapons are in DoD's arsenal, but also that the American soldier will remain vulnerable to their effects, should they be employed in the battlefield.

The U.S. Global Strategy Council recognizes the issue of vulnerability, as well, and urges ongoing research into effective countermeasures.

Interested readers may want to send for the U.S. Global Strategy Council's complete project proposal on this subject: (Title: *Nonlethality: Development of a National Policy and Employing Nonlethal Means in a New Strategic Era*, prepared by Janet Morris). A number of references in this Proposal to unidentified, elusive "enemies" of the U.S. Government and to the potential domestic applications of this "non-lethal" technology invite serious consideration by the public at large.

The Council's address is 1800 K Street, N.W., Washington, D.C. 20006, (202) 466-6029.

Bioeffects of Microwave Radiation

Research into the biological and psychological effects of exposure to microwave radiation is voluminous. The U.S. public has been led to believe that the former Soviet Union leads in this research. The fact is, the CIA and DoD [Department of Defense] have jointly pursued precisely the same research since commencement of Project Pandora in the 1950's. The current primary users of this research appear to be the CIA, DoD, the National Security Agency (NSA) and the Department of Energy (DoE).

The Walter Reed Army Institute of Research (WRAIR) has participated in this research since Project Pandora. In 1973, WRAIR discovered that externally-induced auditory input could be achieved by means of pulsed microwave audiograms, or analogs of spoken words' sounds. The effect on the receiving end is the (schizophrenic) sensation of "hearing voices" which are not part of the recipients' own thought processes.

The experiment prompted the following comment in *The Body Electric: Electromagnetism and the Foundation of Life*, by Robert O. Becker, M.D., and Gary Selden (Wm. Morrow & Company, NY, 1985): "Such a device has obvious applications in covert operations designed to drive a target crazy with 'voices' or deliver undetectable instructions to a programmed assassin."

This research has continued, and the results are published in various publicly available scientific and technical journals. Interested readers might consult, for example: Lin, James C., *Electromagnetic Interaction With Biological Systems* (Plenum Press, NY, 1989). Professor Lin, then with the Department of Bioengineering, University of Illinois, Chicago, has published a number of books and articles on this subject. [He has more recently informed us that he had designed the experiment referenced above in Dr. Becker's book.]

WRAIR has more recently been studying the biological effects of exposure to high-power microwave radiation. WRAIR presented a paper on this subject to a DoD-sponsored symposium on "MW [microwave] Weapons" at the Naval Postgraduate School in Monterey, CA, in mid-1989.

A matter of interest to us is why WRAIR should be experimenting with auditory effects of pulsed microwave audiograms. Also, recent statements by an Army psychiatrist assigned to the Walter Reed Army Medical Center (WRAMC) suggest that WRAIR may be experimenting upon

select psychiatric inpatients with microwaves. This, too, is a matter of interest to us.

Congressional Oversight

The Government's past record of abuses in the area of civil rights is well documented. Within the past 30 years alone, we have witnessed the effects of Operations MKULTRA, MHCHAOS and COINTELPRO.

Primarily because of MKULTRA, MHCHAOS and COINTELPRO, Executive Orders and implementing regulations were published which prohibited military and CIA domestic covert intelligence operations. Experiments on involuntary human subjects, and the surveillance of/collection of personal information on U.S. citizens, except under strictly regulated conditions were also prohibited.

Congressional committees were created to oversee compliance with these (quasi-) legal prohibitions. We have evidence that this is not being done. Moreover, where there are laws and, in this case, no laws enacted, there are loopholes, as well as individual and institutions who deliberately capitalize upon the existence of loopholes. Iran-Contra is one of the more blatant recent examples. Loopholes are also found in government resort to "black" intelligence and weapons programs, in the use of contractors, and in the absence of clear definitions of such terms as "national security" and "national security risk."

Executive Orders and regulations which currently limit official U.S. Intelligence activities do not extend to non-intelligence government agencies or to their contractors. In fact, Executive Order 12333 specifies that government contractors do not need to know that their services support U.S. Intelligence objectives.

In its report of July 8, 1992, the Senate Subcommittee on Oversight of Government Management addresses the problem of tracking funds granted to government-contracted research and development (R&D) centers. The report notes that the problem is compounded by DoD's penchant for creating hard-to-monitor "shell" contractors as disbursement centers for funding programs.

Neither shell contractors nor their subcontractors are directly accountable to Congress. Being beyond Congressional oversight, they have the license to operate as Government surrogates in intelligence operations about which, "officially" they know nothing.

In this context, a publication disseminated at DA's "The Soldier As A System" symposium noted that the Army's Research and Technology Program sponsors 42 laboratories and R&D centers, employing approximately 10,000 scientists and engineers. The annual budget of \$1.3 billion is only a small part of overall DoD research spending.

Weapons research, which includes the development and testing of "non-lethal" weapons, is not governed by laws restricting the activities of U.S. Intelligence agencies, though it may be presumed that these agencies contribute to and benefit from such research.

Preliminary Findings

1. The technology exists for the types of harassment and experimentation reported to us.
2. About a dozen U.S. citizens have informed us of continuing experiences with effects which directed-energy weapons are designed to produce.
3. U.S. Government-sponsored research into the bioeffects of exposure to microwave radiation is extensive and continuing.
4. The U.S. Government has a past record of having engaged in mind-control experimentation; and various agencies of the Government have a record of circumventing legal restrictions upon their activities.
5. Neither Congress nor the courts appear willing to look closely into “black” intelligence and weapons procurement programs.
6. A number of U.S. Government agencies might have interest in testing directed-energy technologies on U.S. citizens under non-clinical/non-controlled circumstances—DoD, to test ranges and degrees of “non-lethality”; DoE, to explore “safety” limits; CIA, to test “mind-control” capabilities, and NSA, for technological refinement.

PART II - OVERT AND COVERT HARASSMENT

Since publication of the preceding article less than four months ago, the association of National Security Alumni/Electronic Surveillance Project has heard from an additional 13* individuals who report both overt harassment and a range of symptoms which coincide with the known effects of exposure to microwaves, electromagnetic/radio frequency (RF) radiation and/or infrasound.

The similarity of these symptoms will be addressed in greater detail in future Project reports. Suffice it to say, at this point, that the physical and psychological symptoms being reported to us are consistent with the effects which directed-energy weapons are designed to produce. Indeed, the numerous afflictions (or “infections”) being reported appear to parallel standard torture “sequelae,”^[1] (aftereffects).

Overt Harassment

Overt Harassment—which obviously is *meant* to be observed—may be intended to “precondition” individuals for eventual long-term electronic harassment. Persons terrified by unexplained overt harassment are not likely to cope with the sudden onset of electronic harassment in any more reasoned fashion. This phased pattern of harassment is apparent in all of the cases now being investigated. The fact that the overt harassment continues in these cases even after the electronic targeting commences suggests that the objective is to maintain long-term extremes of stress.

Many of the overt harassment tactics discussed below are surfacing in cases which (so far) have *not* involved discernible forms of electronic harassment. These are cases involving so-called “whistleblowers” who, because of their inside knowledge of certain potentially newsworthy events, pose particular threats of embarrassment to the Government or to government-affiliated employers. We have noticed that electronic harassment is beginning to surface as a form of retaliation against persons who try to assist electronic “harasseees.” Retaliation suggests loss of control. Under the circumstances, we are not entirely confident that “whistleblowers” will continue to be exempted from this type of harassment in the long term.

The individuals now in touch with the Project describe their circumstances as involving most, if not all, of the following overt forms of harassment:

- Sudden, bizarrely-rude treatment, isolation and acts of harassment and vandalism by formerly friendly neighbors.
- Harassing telephone calls, which continue even after the targeted individual obtains new, unlisted telephone numbers.
- Mail interception, theft and tampering.
- Noise campaigns.

While unrelenting harassing telephone calls might be considered in this context, other tactics are employed. Blaring horns, whistles, sirens, garbage disposal (run concurrently in apartment settings, for excessively prolonged periods of time), and amplified transmissions of recorded “general racket” have been used on a recurrent basis under circumstances intended to persuade the individual that he or she is under surveillance.

In all of these cases, the individuals’ neighbors apparently pretend to be oblivious and/or indifferent to these sudden, continuous explosions of noise.

Door slamming is also a popular pastime, particularly in apartment buildings. One individual reported that, during a peak period of harassment, the neighbor across the hall began entering and leaving his apartment every 10 minutes, slamming his door loudly on each occasion. This was a daily occurrence, encompassing periods of several hours, over a period of several months. It apparently served to trigger a door-slamming “chain reaction” on the part of neighbors both on that floor and on the floors immediately above and below. When our contact politely asked her immediate neighbor to close his door more quietly, he slammed the door in her face. Prior to commencement of this harassment, that neighbor had apparently been quite friendly and courteous.

In another case, the primary door-slammer is an employee of Radix Systems, Inc., Rockville, MD, a DoD contractor engaged in the “super-secret” research and development of some type of electronic equipment.

Several individuals reported recurrent, loud, strange noises in their ventilation systems

during the preliminary stages of their harassment. One individual complained of being recurrently awakened in the middle of the night by the sound of wires being fed into his (independent) ventilation system. On checking further, he found that a tubular construction had been built into his vent system which appears to lead to the apartment upstairs. His upstairs neighbor is employed by the Department of Justice.

A number of individuals report that occupants of upstairs and downstairs apartments appear to follow them from room to room, tapping on the floor or engaging in other activities which appear intended to advertise an ongoing surveillance.

The Justice Department employee mentioned above went so far as to offer an unsolicited apology to her downstairs neighbor for the all-night "pacing about" in her bedroom (in the event he had happened to notice it). She claimed to be an insomniac. That pacing-about continued during her recent 36-hour absence from the area. When our contact politely alerted her to the fact that her apartment had apparently been entered during her absence, she told him, in effect, to mind his own business and then immediately complained to the building manager that he was stalking her.

She conveniently forgot to inform the building manager that she had assiduously "courted" this individual for several months, without success; and that she had been stealing his newspapers on a regular basis. (On one occasion, she handed him a week's accumulation of those papers, claiming that they had been left outside the door of another apartment. Her reason for collecting and saving newspapers which had not been delivered to her directly is unknown.)

· Recurrent confrontations by unusually hostile strangers; and comments by strangers which appear intended to evoke "paranoid" reactions.

In this context, we note that several individuals have reported confrontations with "homeless" people who, on closer examination, were found to be fastidiously clean, though garbed in offbeat fashion (wigs included). The same "eccentric" confronted two of the individuals in contact with us, at separate distant locations. He is reported as having feigned mental illness on both occasions, and as having apparently enjoyed creating a public scene.

· Entries into the individual's residence, during late-night hours while he/she is sleeping, and/or during the day when the individual is elsewhere.

In virtually all such cases, the burglars leave evidence of their visits, such as by relocating objects, or by committing petty and not-so-petty acts of vandalism. In two cases, the burglar's "calling card" was to slaughter caged pets, leaving the mangled carcasses inside their locked cages.

In one case, the burglar stole several pieces of correspondence and left a packet of crack cocaine behind as a "calling card." Our contact in this case—an individual who has no criminal record and no history of experimentation with drugs—is also being harassed (stalked) by a police officer in her community. One of his recent acts was to "frame" her with a drug possession charge. After pulling her off the road (a frequent pastime) and subjecting her to an illegal search (done, twice, so far), he conveniently managed to find a glassine packet of cocaine eight feet away, in front of his squad car. He retrieved the packet with his fingers and then charged her with Possession. Our contact found the packet of crack cocaine in her apartment shortly after this investigator reminded the attorney handling her case that the police officer had smudged his only piece of evidence with his own fingerprints. It would appear that someone is interested in correcting that police officer's oversight.

In another case, the individual reports that a tremendous amount of money had been stolen from a hiding place in her apartment, within hours after she had withdrawn the money from her

bank. There were no obvious signs of entry into her apartment. The police conducted a cursory inquiry which failed to produce evidence of a crime worthy of investigation. (This case is an anomaly. Money is not usually stolen. Documents appear to be the preferred objects of theft, when thefts occur.)

In another case, the burglars replaced installed lightbulbs with “exploding” bulbs, many of which were *Made in Hungary*. The lightbulbs are now in our possession.

- Rapidly deteriorating health, generally of a digestive nature.

In two cases of the cases reported, massive rectal bleeding accompanied the sudden onset of severe gastrointestinal disturbances. One of these individuals abruptly terminated the deteriorative process simply by changing the locks on her door.

- Sleep disruption/deprivation.

This is achieved by means of both overt and electronic harassment. Sleep deprivation, as a tactic, invariably surfaces when the targeted individual begins exhibiting a strong emotional and irrational response to the other forms of harassment.

- Vandalism of privately-owned vehicles.

Vehicles invite peculiarly ferocious attacks in these harassment campaigns—slashed tires, smashed windows, oil drainage, oil contamination, destruction of electronic components and batteries (frequently involving wildly fluctuating, grounded fuel gages, often within range of weapons research facilities and/or other microwave emitters); and suddenly failed brakes and clutches (possibly involving anti-traction polymers, which are also in DoD’s “non-lethal” weapons arsenal). Recurrent auto thefts have also been reported.

Two individuals reported finding their oil contaminated immediately after having the oil changed by reputable mechanics. In one of these cases, the oil viscosified (thickened) while the individual was driving through a remote rural area. Her car ground to a halt. Getting the “gunk” cleaned out of her engine proved to be an expensive ordeal. (Viscosification agents are also lauded by the U.S. Global Strategy Council as serving “non-lethal” strategic purposes—a topic discussed in Part I of this publication. Had this woman been assaulted while awaiting help in the said isolated area, the “non-lethal” attributes of viscosification agents might have required redefinition.)

Most of those who have experienced these attacks on a recurring basis have abandoned driving all together—an objective apparently sought by their tormentors as a means of increasing their isolation.

- Staged accidents.

The majority of those in touch with us have reported these types of experiences. One individual, for example, was tailgated at a high rate of speed by two vehicles, while concurrently being threatened with a gun by one of the vehicles’ occupants. Two others narrowly avoided what appeared to be deliberately attempted collisions by drivers who quickly sped away from the scene. One avoided three attempts in four days at being run off the road. One survived being run off the road in two incidents within a one-week period, which resulted in “totaling” of her two vehicles. Another narrowly avoided being crushed into an expressway retaining wall, on four occasions, by an off-duty metro bus, as well as, within the same time frame, being “fried” by two suddenly-malfunctioned household appliances which subsequently repaired themselves.

It should be noted that, in some of these cases, “accidental” deaths do occur. One individual in contact with us reported that his mother drove off a cliff to her death, during a period when he

was researching evidence that a still-respected, high level State Department official had passed A-bomb secrets to the Soviet Government during World War II. The accident occurred shortly after her car had undergone routine maintenance. She was returning from a dental appointment when the accident occurred. Witnesses state that it appeared that she had suddenly stepped on the accelerator before running off the road. The accident served to terminate this person's research project.

We are also currently looking into the recent death of a woman in Lexington, MO, who was killed when the brakes on her tractor failed. We are informed that she had been collecting affidavits from persons who believe they are the targets of government harassment and experimentation when her "accident" occurred. We are also informed that those affidavits have disappeared.

Suicides might also qualify as "staged accidents," particularly where "plausibly deniable" government involvement has been surfaced. We are currently looking into the recent suicide of a man in Trappe, PA, who, as early as 1981, had asked the FBI and CIA to intervene in his case. We have copies of that early correspondence. The man, a former U.S. Army radar technician, had a highly technical and—given the date of his correspondence—"precocious" grasp of the experimental objectives apparently being sought in his case. It is apparent from his correspondence that he had wanted to believe that the Soviets were conducting these experiments. The FBI and CIA, of course, did not intervene. We are informed that members of his family have also been targets of this experimentation.

· Isolation of the individual from members of his/her immediate family—virtually assured when highly focused forms of electronic harassment commence.

The exception to this is when elderly parents and young children in the family become targets for apparent purposes of intimidation. This situation has been reported in eight of our cases, to date.

One individual (driven to extremes of stress by ongoing electronic harassment focusing on her children) killed one child in an effort to protect her from further pain.^[2] It appears that lasers were being used in this individual's case. The targeting intensified after she called the Soviet Embassy to report the harassment, which she believed to be U.S. Government-sponsored. It became even more deadly when, in a further show of defiance, she then called the representative of the Iraqi Government to portray the U.S. Government's war in the Middle East as "hypocritical." She is now hospitalized in a midwestern psychiatric facility, where, apparently, the experimentation is now continuing.

(That psychiatric facility is in a State where a disproportionate number of complaints of electronic harassment are beginning to surface. It is also within range of a U.S. Air Force base which houses a "super secret" research facility. We are currently looking into information that spouses and children of persons employed on that USAF base may be the targets of involuntary experimentation involving directed-energy weapons technologies.)

Another individual, during a telephone conversation, was told by an employee of a local power company that, if she valued the lives of her children, she would drop her public opposition to the company's installation of high power lines. Since receiving that threat, the individual's 11-year-old daughter has been reduced to extremes of pain, resulting in her recurrent hospitalization for treatment of illnesses which cannot be diagnosed. It is now also apparent to this individual that her three-year-old son is on the receiving end of externally-induced auditory input. (DoE figures prominently in this case.)

· Progressive financial impoverishment, brought on by termination of the individual's employment, and compounded by expenses associated with the harassment.

The majority of those now in contact with the Project—educated, white-collar professionals—have lost their jobs. Termination of employment in many of these cases involved prefatory harassment by the employer and co-workers, which coincided with the other overt forms of harassment discussed above.

The overt harassment tactics are being described as recurrent, non-sequential and overlapping. As noted above, the overt harassment continues even after the electronic harassment commences.

Failure of “Establishment” Support Systems

Those individuals who have tried to resolve their respective situations through resort to “establishment” channels have invariably encountered the following:

- Apathy, indifference and/or professed helplessness on the part of members of Congress and state legislators.
- Dismissal and/or attempted discrediting by psychiatrists who refuse to include the terms, “government harassment,” “mind-control experimentation” and “torture” in their vocabulary.

Several individuals, thinking that psychiatrists might help to alleviate the extreme stress associated with their harassment, were accorded “treatment” which clearly pointed to cooperation between their psychiatrists and members of the U.S. Intelligence community. One such psychiatrist, in fact, bragged about being a member of the U.S. Intelligence “inner circle,” informing our contact that her harassment was a “Pavlovian Experiment,” intended to “break” her.

- Lack of interest, courage and/or competency in legal circles.

Few of those in contact with us have been able to acquire legal assistance—not helped by their straitened financial circumstances. Most have found that few attorneys are willing to risk their careers by pursuing cases involving what is believed to be government-sponsored harassment and experimentation.

A few attorneys reportedly engaged in egregious violations of codes of professional conduct, in what appear to have been deliberate efforts at sabotaging our contacts’ cases. Subsequent attempts by two individuals at obtaining legal redress were met with stonewalling, obstruction, and high-level denials of wrongdoing.

- Refusal of the mass media to address this topic, except in those cases where suspected experimentees have been driven to the point of committing murder or suicide.

Such cases (particularly where an individual has claimed to be the victim of CIA-directed mind-control involving auditory input) are treated by the press as “curiosities.” An example of this is the individual who shot a Navy officer outside the Pentagon in mid-1991.^[3] He claimed to be a victim of CIA mind control, involving auditory input. According to the press, “he worried ‘about being run over by trains’...” (ref. incident described in following paragraph). He is now permanently residing in a psychiatric facility. He, being institutionalized, and others in the preliminary stages of his predicament are no longer of interest to the media.

Another recent case which received short-lived press attention^[4] involved a woman diagnosed as having “suffered from periods of confusion” who climbed over a fence onto a railroad track and walked into an oncoming train. Because the incident occurred in a community

in which an unusually large number of these mind-control experiments have been reported, we are looking into the situation. The woman was reportedly "under a physician's care" because of her "periods of confusion." A family member described the physician to this investigator as "a psychiatrist." We find that the alleged "psychiatrist" is a General Practitioner, otherwise non-accredited, practicing out of his home. We find also that the suicide may have been witnessed under peculiarly-timed circumstances by an alleged "homeless" person who has since disappeared. Needless to say, our interest has been whetted.

- Refusal and/or inability of local police to intervene.

The tendency of local police is to dismiss an individual's complaints of government harassment as the ravings of a "fruitcake." In one case, discussed above, it is apparent that one police officer is actively cooperating in the harassment. Some police agencies, while acknowledging the reality of the situation, hesitate to intervene in cases involving what they believe to be U.S. Intelligence. On a few occasions, certain police officials did attempt to intervene, based on what they perceived to be evidence of a systematic harassment/illegal surveillance campaign. Absent a clear mandate to prosecute "stalkers" acting under the aegis of U.S. Intelligence, the police obviously had their hands tied.

- Refusal of the FBI to intervene in any of the cases brought to our attention thus far.

FBI spokesmen do acknowledge that they have received a large number of requests for assistance from "mentally disturbed persons" who believe that they are being "zapped by radio waves" and/or "are hearing voices..." "from Mars, that is."

In one case, an FBI spokesman reacted in an angry, defensive and bizarre fashion when our contact briefly alluded to PROJECT SLAMMER as possibly being related to her surveillance. (PROJECT SLAMMER is a CIA-funded study, managed by CIA and FBI behavioral scientist, which explores the "mental make-up" of alleged security risks, along with their family members and close associates. Participants in PROJECT SLAMMER include NSA, DIA, and Army, Navy and Air Force Intelligence.)

Until PROJECT SLAMMER was mentioned, the FBI spokesman's approach in this case was to politely and redundantly explain that the law, as currently constructed, prevents the FBI's intervening in this individual's case. When she briefly pointed out that the surveillance activities might fall under the purview of PROJECT SLAMMER, the spokesman's response was to abruptly and angrily declaim, "**You** don't know who is conducting that surveillance! **You** don't know if that is a state police surveillance! ...or a local police surveillance! It could be a totally unrelated operation! **You** don't know who is conducting that surveillance! [etc., etc.]"

It was apparent from this response that the FBI was at least acknowledging the existence of a surveillance, if in somewhat emotional fashion. The individual in question subsequently furnished acquired evidence to the local police, who made it clear that they are not participants in the surveillance which, based on the evidence, pointedly suggest that our contact is the target.

- Refusal or inability of the ACLU and Amnesty International to intervene.

Both organizations acknowledge receiving many complaints from persons claiming to be the targets of some type of electronic harassment. An ACLU spokes-woman characterized the complaints as appearing to be rational, except in a few cases. The complaints are not being investigated, she said, because of "limited resources." We have to wonder, of course, why the ACLU could recently find resources to defend the rights of prostitutes and the Ku Klux Klan, yet remains incapable of intervening in cases such as we are now pursuing.

Amnesty International recently informed one of our contacts that they could not intervene in

her case because their focus is on the U.S. Government's treatment of prison inmates. While incarceration does appear to be one sought-for objective in these harassment/mind control experiments, we would like to think that protections by such organizations as Amnesty International can be achieved beforehand.

Related Covert Methodologies

The persons engaged in this harassment tend to become careless, possibly the result of arrogance born of an assumption that nobody can stop them. "Harasseees" who have noted this carelessness have furnished us with the following insights into the covert side of these harassment activities.

- Impersonation of military officers.

One individual found that her next-door neighbor had claimed to be a military intelligence officer, assigned to a space technology unit in California, on year-long "TDY" (temporary duty) in the individual's apartment building. It was subsequently determined that this alleged officer is not in fact a member of the U.S. Armed Forces; and that he had used this bogus status to acquire information from a major defense contractor. Our contact is certain that this person's apartment was used as a base of harassment operations.

- Use of concealment devices, and emitters detected to date.

Several individuals and supportive associates report having seen some of the electronic devices being used in these harassment campaigns.

One saw electronic equipment concealed inside a false-front upright piano being moved out of her apartment building. She had previously noted that all of her surrounding neighbors had identical upright pianos in their apartments, not one of which was ever played.

Other suspected participants in the harassment may be concealing devices in oversized stereo speakers, measuring approximately 5' in height x 3' x 3'. Several of our contacts have noted the presence of such speakers in adjacent dwellings.

One individual was told by a resident of her building that her upstairs neighbor has "microwave ovens" in his bedroom and livingroom, but none in the kitchen.

Another individual, while standing outside, looked into her neighbor's window to find that her bedroom appeared to be the target of a gray-colored, elongated box-like device, measuring approximately 1' in length x 5" in height (side view). A large, black-framed lens protruded from the end facing her window. The electrical cord, if any, was not visible from that vantage point. The equipment was being operated by a stranger in a three-piece suit, who appeared to be quite startled to find that he was being observed.

Another was given strong reason to believe that portable emitters are being concealed in oversized, extremely heavy, sometimes expandable "briefcases" for use in places of public assembly, such as meeting halls, auditoriums and restaurants. Smaller varieties are apparently being used on aircraft.

On one 3-hour flight, our contact noticed that the man sitting next to her seemed peculiarly intent on keeping the attaché case on his lap propped open with his fingertips, while he gazed "blankly" into the distance during the entire flight. She believed that she was being electronically harassed while on the flight (a common complaint, in most of the cases now being investigated).

Our contact reports that, when they prepared to land, the man opened his attaché case to hastily check its contents, thus disclosing the presence of a raised, built-in “concealment device” covering the entire bottom surface of the attaché case. The low-slung, lift-off cover did not appear to be capable of concealing a laptop computer. At one point during the flight — apparently aware that his “reverie” was inviting attention, —the man devoted approximately ten minutes to scribbling assorted entries on a sheet of lined paper, which he had placed on top of his briefcase two hours previously. He devoted roughly ten minutes to the effort (obviously preferring a pen to a laptop computer). His attaché case remained ajar during this process.^[5]

One individual reports that mobile emitters may be installed in certain oversized, non-attributable medical emergency vehicles, possibly for eventual use in civil disturbances. Her unsuccessful attempts at following the “medical emergency” vehicle which had surfaced in her case ended with a high-speed chase.

The phony military intelligence officer, when recently moving out of our contact's apartment building, was found to possess a device which resembles an oversized microwave oven, measuring approximately 4' in width x 2' in height x 2 1/2' in depth. A subsequent examination of his apartment revealed that he had tapped numerous additional lines into existing, in-house telephone and TV cables; and that he had gone to great pains to conceal a major excavation into one wall abutting the “harassee's.” Judging from photographs taken immediately after this person's departure, the wiring suggests that he was hooked by modem into a computer network, and that at least some of his electronic equipment was situated in a large walk-in closet, again abutting the “harassee's.”

When the alleged officer moved out, his equipment (except for the oversized “microwave oven”) was packaged in boxes identifying the contents only as stereo components. During his year-long residency in this building, no sounds emanated from his apartment to indicate use of this “stereo” equipment.

- Use of modified license plates and vehicle look-alikes.

Some individuals have noted that their neighbors' vehicles are periodically replaced (during peak periods of harassment) by others which qualify as “rough look-alikes.” The tags on these latter closely resemble those on the homeowners' vehicles, with a difference being noted in only one digit or one letter. These modified plates appear to have been acquired through State DMV channels, thus suggesting government/intelligence agency involvement.

In one case, where the individual has obtained police assistance, tracking of one plate surfaced evidence of a drug connection. That plate rapidly disappeared from the vehicle in question, to be replaced by another, again bearing a one-letter modification.

- Use of neighbors' residences as bases of operation and training.

One individual recently saw a team of “technicians” in the house behind hers—a consequence of the team's failure to close the curtains and/or dim lighting when puttering around in the kitchen at 5:00 in the morning. The three men (strangers to this individual, all stripped down to their T-shirts) behaved as if they were unaware that they were being watched. Their observer had long suspected that this house was being used as a base of electronic harassment operations. The harassment had been ongoing throughout the night.

To provoke a response from these men, the individual eventually commented aloud on their activities. They responded immediately by turning the lights off and switching to the use of flashlights. Why they failed to close the curtains is unknown.

This individual is working with the police in an effort at ending this surveillance and harassment, with mixed results.

* * *

Another individual, paying a surprise visit to the apartment upstairs, overheard one of her own telephone conversations being played on a tape recorder inside that apartment. Lacking both a legitimate pretext to enter the apartment and the support of the building's management personnel and/or the police, she was prevented from pursuing this further. Her upstairs neighbor is purportedly employed by Stanford University Hospital, in Stanford, CA.

The target of surveillance and harassment in this case is still *also* trying to recover from the effects of exposure to potentially lethal doses of radiation, administered in the 1970's by a dangerously "incompetent" dentist. This might explain the involvement of alleged Stanford University Hospital personnel in her situation.

The government is on record as having experimented on unwitting U.S. citizens with radioactive materials during the 1970's (and earlier).^[6] The House Subcommittee on Energy and Commerce based their investigation into this matter on a 30-year accumulation of documents maintained by the Department of Energy. Under the circumstances, it will come as no surprise if it is ultimately found that DoE has been involved in this woman's surveillance and harassment.

* * *

Another individual paid a surprise visit to the apartment immediately beneath hers, in an attempt to identify the source of a tremendous racket in her ventilation system. Standing outside the door, she could hear an individual moving around, a short distance from the door. She also heard the sound of rustling paper and the steady, sonar-like "pinging" of some type of electronic device. In response to her repeated knockings on the door, the person inside simply stopped moving about. The sound of rustling paper (perhaps a printout of some type) and the steady "...pin-ng! ...pin-ng!" sound continued. The occupant of this apartment resumed moving about only after it was (incorrectly) believed that our contact had departed the area. Typically, this situation could not be pursued further.

* * *

All of those who live in apartment buildings report unusual patterns of occupancy in the apartments surrounding their own; i.e., upstairs, downstairs and on all sides. They have become quite convinced—if only because of the highly focused nature of the symptoms being experienced—that these surrounding apartments are being used as bases of operation. Perhaps this encirclement facilitates studies of holographic human telemetries; or perhaps it is intended to increase the prospect of brain entrainment by electronic means ("entrainment" being one published objective sought in mind control experiments).^[7]

In examining this situation more closely, a number of individuals have found that surrounding apartments are either permanently vacant, for unknown reasons, or that they have been "sub-let" by the original occupants to persons who are purportedly unknown to the buildings' management personnel. In one case, the surrounding renters all list two residences in the local telephone book. Not one lives in the apartment building in question, though the address is identified as one of the renters' places of residence. One individual suspects that the original occupants of apartments surrounding hers have simply been relocated to other apartments in the same (large) building. Another suspects that an adjacent apartment, which has been permanently rented to the U.S. Government for use by "visitors" is also being used as a base of operations.

One individual found that an immediate neighbor's housemate has the same (unusual) name of a university professor who has engaged in extensive research on behalf of the government, studying the bioeffects of exposure to microwave radiation.

- Use of informants/*agents provocateurs*, frequently members of the opposite sex.

As noted in the U.S. House of Representatives Committee on Interior and Insular Affairs' draft report, *Alyeska Pipeline Service Company Covert Operation* (July 1992), the Wackenhut Corporation's Special Investigations Division adopted this tactic when pursuing Alyeska's critics.

A number of individuals in touch with us report a range of experiences with new "friends" who—apparently posing as confidants—used acquired personalia to abruptly end these "friendships" under deliberately degrading and humiliating circumstances. When taken in the context of the ongoing surveillances and harassment, these exercises appear intended to heighten emotional trauma, perhaps to provoke an uncontrolled response and/or to enforce isolation.

- Misuse of covert intelligence personnel (possible former case officers).

One individual, while under contract to the U.S. Government, properly reported what he believed to be an approach by a hostile intelligence service. Within a few weeks, alleged U.S. Intelligence officers contacted this individual. In addition to questioning him about his background, these alleged intelligence officers asked that he keep in constant touch with them, particularly when planning to travel.

It soon became apparent that the alleged intelligence officers were intent only on forcing this individual to report to them as directed, and to account for his activities. He was not asked to assist the U.S. Government in any form of intelligence operation; he was not asked to execute any form of secrecy affirmation statement acknowledging the classified nature of these meetings; nor was he told why these meetings—involving a total of seven alleged case officers—were necessary.

When he began to balk at a continuation of this process, one of his "handlers" conveyed a threat, suggesting that his continued compliance might be "enforced." Finally, when this individual adamantly refused to cooperate further, massive overt harassment commenced and is currently ongoing.

The operation (clearly intended to bully this individual into submissive compliance for purposes which are still unknown) involved crude tactics formerly prized by the KGB.

Whether or not legitimate U.S. Intelligence case officers were involved in this activity remains to be determined. Some private firms retain former U.S. Intelligence case officers for contracting out as "security specialist." The founder and CEO of one such firm (Gerald P. Burke, The Parvus Company, Silver Spring, MD) has informed us that the activities of contract case officers are neither monitored nor subject to formal restraint.

- Use of psychotropic drugs by cooperative physicians.

Shortly after resigning from the CIA, one of our contacts underwent a range of experiences which suggested that she had been massively drugged. One of the alleged perpetrators, whom we have met, alternately claims to be employed by NASA and/or by a firm in Miami, handling, "microwave equipment." NASA has no record of this person under the name furnished.

The "experimentee" ultimately sought the assistance of a psychiatrist, whom her parents had located as a referral. The psychiatrist treated her reported "flashbacks" by immediately placing her on a regimen of Stelazine, which quickly aggravated her condition. He also made comments to this individual which suggested that he had a foreknowledge of her situation, and that he was cooperating with U.S. Intelligence. On one occasion the psychiatrist intimated that our contact might be employable as an assassin; and he repeatedly urged her to move to Great Britain where, he said, she would be put in touch with an unidentified Member of Parliament.

Interestingly, he had a tremendous computer system in his office suite, which he explained as being connected by modem into a national level system which, in turn, connected into private residences. When showing her this equipment, this psychiatrist informed our contact that she had been “CAT scanned,” pointing out that she was the subject of the vast series of “A’s” and “B’s” being printed out by one of the many terminals at his disposal.

Our contact also found that this psychiatrist kept a military uniform in his closet which bore the rank and insignia of a three-star general.

The individual ultimately sought psychiatric support elsewhere. Her new psychiatrist, formerly employed by DoD, immediately put her on a regimen of Haldol Decanoate, Klonopin and Benzatropine. The combined effect of these drugs was loss of memory and a state of mind which, under other circumstances, might be diagnosed as Depersonalization or Dissociative Disorder. All three drugs proved to be highly addictive. Our contact, since severing contact with this psychiatrist as well, has finally successfully overcome the addiction.

* * *

Another individual—the one whose psychiatrist had informed her of her role in a “Pavlovian Experiment”—was subjected to attempted drugging by Trazodone, one of the strongest sedatives on the market. The psychiatrist in question kept no record of the individual’s outpatient visits, nor of her Trazodone prescriptions. Being unaware that the individual was not adhering to his regimen, the psychiatrist urged her to rapidly increase her dosage, renewing her 30-day prescription after a period of only 11 days.

Though aware of her heart condition, he failed to monitor her condition, dismissing her complaints of (electronically-induced) pains in her heart as inconsequential. Trazodone is known to aggravate heart conditions. Perhaps the intent was to have this individual succumb to a “heart attack” as the result of “imagined” government harassment. Neither the appropriate psychiatric society nor the FBI would touch this case.

* * *

Another individual (a clear target of retaliation) sought medical assistance to counter sudden massive headaches and recurrent attacks of vomiting—effects which can be produced by infrasound. The physician to whom she was referred (an alleged specialist in Internal Medicine) placed her on a combination of Compazine and Xanax, prescribing dosages which the Physicians’ Desk Reference warns against.

Compazine, in addition to being an anti-emetic, is used in the treatment of psychotic disorders. It can also cause tardive dyskinesia, an irreversible syndrome involving loss of motor control. Xanax is known to induce vomiting. Both drugs can lead to dependency and a worsening of the patient’s condition. The effects of all such drugs, in fact, can be mutated in high-energy fields, thus increasing the likelihood of adverse reactions.

We have recently found that this prescribing “physician” is not licensed to practice medicine in the State in which she has been practicing since at least 1989.

Our contact, being concerned about the long-term effects of Xanax and Compazine, consulted another physician in that same office. This physician immediately prescribed Prozac, failing to concurrently recommend that her patient discontinue the Xanax and Compazine prescriptions. When our contact refused to take any psychotropic drugs, the doctor became upset and asked, “Don’t you want to get well?”

This second physician is a licensed practitioner in Internal Medicine, with no background in Psychiatry. We have also found that she apparently refers her patients to yet a third physician in

the office who claims to be a psychiatrist. She, too, is licensed to practice Internal Medicine, only. Her receptionist described this third physician as having a psychiatric "sub-specialty," ... "as an internist." The receptionist also informed us that this internist "is treating a number of psychiatric patients."

On pursuing this further, we find that these physicians are in a small "medical group" which is not listed by specialty in standard regional telephone directories. The group bears the same name as one of the CIA's most infamous recruited physicians (perhaps best described as "the Mengele of MKULTRA").

The doctor's offices are located in a bank building, which, we have found, is a favored hiding place for security-oriented businesses and government agencies. Two computer firms, co-located with an attorney who represents "Island Resort Development, Ltd.," are situated immediately beneath the doctors' offices. The prospect of our finding island resort developments within 500 miles of this attorney's office is limited.

Our contact, being apprised of these findings, is seeking medical help elsewhere.

* * *

In two of our cases, urologists took it upon themselves to play the role of "psychiatrist"; i.e., they rendered psychiatric diagnoses and prescribed psychotropic drugs. One of these urologists, employed by The Mayo Clinic in Rochester, MN, prescribed Haldol, informing our contact that he perceived her to be "psychotic." His efforts at getting a Clinic psychiatrist to confirm this diagnosis were unsuccessful. The psychiatrist, apparently a rare individual who subscribes to codes of medical ethics, found nothing wrong with this woman, even given the nature of her complaints. The urologist's response to this was to issue his own Haldol prescription. Sensing that something was amiss, the woman refused to have the prescription filled.

* * *

Yet another individual ended up in the hands of a psychiatrist who, as a purported means of ending the stress associated with her harassment, offered to put her under hypnosis. She described the hypnotic state as "equivalent to floating" and (based on her overall experiences with this physician) has not ruled out the possibility that drugs may have been surreptitiously administered. The psychiatrist claimed to be interested in psychic phenomena and demonstrated an apparently remarkable ability to read this individual's mind.

While in her "hypnotic state, the individual felt a sharp, painful pressure inside her nose, as if something were being shoved up her nostrils to the sinus cavities. She awoke to find blood pouring out of her nostrils. The psychiatrist casually dismissed this as owing to a probable cold.

Shortly after that experience, the individual began to hear loud tones in her head, followed in due course by auditory input. Brain scans have failed to yield evidence of an implanted device. (We have recommended that she undergo a scan by means of a suitably adapted non-linear junction detector, as a preliminary.) Suffice it to say, this individual has severed contact with the psychiatrist and is continuing to cope with ongoing overt and electronic harassment by other non-medical means.

· Use of medical implant devices.

The situation just described is not our first encounter with the apparent use of medical implant devices in these harassment/mind-control cases. Another of our contacts began receiving auditory input roughly 15 years after she had 4 mm. cochlear implants placed in her ears. The "voices" claimed to be affiliated with the CIA and, among other things, expressed

intentions of running this woman as an agent in denied areas by "piggybacking" their audio transmissions onto standard FM frequencies to avoid detection.

We have been unable to locate the surgeon who implanted these devices, though we do have a copy of his operative reports. A recent CAT scan of this individual failed to disclose the presence of the cochlear implants.

Several years ago, the individual (now a psychologist) applied for a position with the CIA. She was interviewed by four Langley-based, purported psychologist, who allegedly informed her that her job would involve the assessment of certain criminals for purposes of weighing their prospects for loyalty to this agency.

During these interviews, she was told to read several books by such persons as Philip Agee, Stansfield Turner and Ralph McGehee, all of whom were unknown to her. The alleged psychologist claimed that these authors had described the CIA "as it really is." Our contact was not asked to execute a secrecy affirmation statement acknowledging the classified nature of these proceedings.

The unconventional manner of this interview process suggests that this individual was being toyed with, for reasons which remain to be determined. She did not get the job and in fact more recently lost her job with a state penitentiary. She was fired on the recommendation of the prison's psychiatrist, because of her insistence that she is receiving auditory input from CIA personnel who persist in feeding her classified information.

Interestingly, though this individual was deemed unfit to function as a psychologist in the penitentiary system, the State has rehired her, assigning her to a mental health facility where, apparently, she is to develop a behavioral modification program for retarded adults with diagnosed mental illnesses.

This individual claimed to be receiving and responding to externally-induced auditory "advice" while working with prison inmates. It may be presumed that the process will continue. Under the circumstances, we have to wonder if this case qualifies as a benchmark in mind-control experimentation; i.e., employment of a mind-controlled psychologist to run the equivalent of mind-control experiments on mentally-ill retarded adults. We will continue to monitor the situation.

* * *

The individual whom we previously identified as having challenged a local power company also appears to have been "tagged" by some type of implant device. During a recent symposium, she was approached by a man whose business card identifies him as "Program Manager, Electromagnetic Radiation Division," DoE. His approach was suitably sympathetic. Our contact ultimately accepted the man's invitation to continue discussing their common ranges of interest in his hotel room. During this meeting, she accepted the offer of a drink, blacked out after consuming it, and awoke four hours later, still in this man's hotel room, to find that the back of her ear had been punctured and was bleeding. There was no evidence of a sexual assault. The man glibly evaded this woman's requests for an explanation. She has since found two adjacent puncture marks behind her ear, which are not healing properly, and between which she can feel the presence of a "wire" measuring approximately 1/4" in length. We are pursuing this further.

The said DoE Project Manager has more recently initiated contact with yet another activist in touch with this Association. His call was unsolicited. He apparently wanted to know if this woman would be attending an upcoming conference. We have warned the individual to avoid any form of private meeting with the said Project Manager.

* * *

To date, we are aware of three cases involving clandestine behavior on the part of alleged DoE employees. The CIA figures prominently (if peculiarly) in the majority of our other cases. Two of those have been discussed above.

In another, also involving auditory input, the individual is certain that the current Director of Central Intelligence (DCI) participated in the "voice transmission" process on at least one occasion. She claims to have recognized his voice. When she commented aloud on the DCI's perceived involvement in this experimentation, the "voice" responded with stuttered and stammered denials. We are told that this particular "voice" has not been heard from since.

* * *

In yet another case involving auditory input, the individual has allegedly been informed by her "voices" that the technologies being used against her were stolen from the CIA by a maverick employee, whose group is now targeting her from a distance of 2,000 miles. She reported this to the DCI's office and was allegedly informed by the Deputy DCI that she will be awarded millions of dollars if she can produce the equipment and any of the personnel involved in her harassment.

One unusually-candid CIA spokesman also allegedly informed this individual that, "while the CIA does not deny having this equipment," they "do not use it in this country." Perhaps this explains why a number of our contacts have also been electronically harassed while traveling overseas.

This woman has also been repeatedly assured by CIA DDS (security) personnel of the Agency's sincere concern for her welfare. During a recent telephone conversation with that Office, we confirmed that she is indeed known to the CIA. Based on this, we asked that the Agency "put its money where its mouth is," so to speak, by conducting a long-term electronic sweep of this individual's premises. That was two months ago. No sweep has been conducted, though CIA spokesmen continue to "sympathize" with her predicament.

* * *

Another individual, a target of harassment and experimentation since 1952 (apparently singled out because of his student activism while at Penn State University) began hearing "voices" after having most of his teeth capped. He has more recently been informed by his "handlers" that implanted devices are no longer used for purposes of inducing auditory input. No explanation was offered. He was quite visibly surprised when informed by this investigator that auditory input can be achieved solely by means of pulsed microwave audiograms (discussed in Part I of this report).

This individual's "handlers" allegedly have also stated that their experiments on U.S. citizens are in pursuit of a variety of objectives; viz.,

- (1) develop an effective means for creating a perfect, "robotized" soldier;
- (2) alter individual sexual preferences, such as by turning heterosexuals into homosexuals (they allegedly claim to be having "difficulties" reversing the process); and
- (3) enhance or destroy levels of academic achievement, at will, such as by degrading the performance of otherwise brilliant students, and by drastically improving the performance of poor students.

Given the technology at the government's disposal and a predisposition on the part of

certain governmental agencies to “play God” in experimental fashion with citizens’ lives, these purported projects do not come across as being totally far-fetched.

* * *

Another case involves a woman whose experiences suggest that she, too, is an MKULTRA experimentee being kept on the books, so to speak. The woman, apparently a “pet” experimentee, found herself being introduced to a wide array of prominent individuals whose connections with the CIA she believed to be quite apparent. One of those she states, was Robert Jay Lifton, a well-known author and expert on brainwashing, whose books include *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (Basic Books, 1986).

Her experiences included a voluntary (“referral”) admission to Hollywood Hospital, Vancouver, British Columbia, Canada, in 1973, during an era when MKULTRA experiments at the Alan Memorial Institute, McGill University, Montreal, Canada, were only beginning to capture the attention of the U.S. Senate.^[8]

More recently, in 1990, she was transported to New York University’s Cameron Medical Center, in Westchester, NY (under circumstances which qualify as an abduction), where she was forcibly wrestled to the ground by approximately six Center staffers and forcibly confined for a period of approximately three weeks. She was neither psychiatrically counseled nor formally tested while in that facility. The psychiatrists assigned to her case appeared more intent on forcing her to take a combination of neuroleptic drugs, to include Haldol, Navane, and Cogentin. (Haldol and Navane can cause tardive dyskinesia.) She resisted those attempts.

A court ultimately ordered this woman released from the Center, stipulating that she was not to be administered drugs. On subsequently acquiring her medical records, under conditions which prevented censoring or doctoring of those records, she found that her psychiatrists had planned to inject her with drugs (in defiance of the court order) on the day of her release. As luck would have it, she was released a day early.

This woman states also that she has met Budd Hopkins, of the Intruders Foundation, and that she had a long-term, confiding relationship with John E. Mack, Professor of Psychiatry, Harvard Medical School, and founding Director of the Center for Psychological Studies in the Nuclear Age (previously named, Research Program for the Study of Human Continuity; and, still previously, rumored to have cooperated with the CIA in studies of “human ecology”).

At one point in their relationship, Professor Mack apparently accompanied this woman to a “support group” meeting of UFO abductees, who, she observed bemusedly, “spent their time comparing [extraterrestrially] implanted devices.” Professor Mack is on record as promoting the perception that UFO abductions are legitimate.^[9]

We frankly doubt that extraterrestrials who have a means to commute intergalactically would stoop to implanting comparatively primitive devices in human beings. However, should it be proved that the psychiatrist, surgeon and DoE Project Manager discussed above are extraterrestrials posing as humans, we will be happy to weigh that information. If it is similarly established that the vehicular “abduction” of the woman discussed above was the work of an extraterrestrial named Kaplan, who is posing as a human with Cornell Medical Center connections, we will be happy to ponder that as well.

In the meantime, it would seem reasonable that the government would want the public to believe that extraterrestrial visitations are on the upswing. Mind-altering drugs, externally-induced auditory input, holographic projections (also a DoD capability),^[10] appropriately focused directed-energy targeting, device implantations, special effects and abductions are all within this government’s capabilities and can be used for purposes of creating illusions of UFO experiences. Persons not cognizant of this might be more inclined to fall for the UFO

mythologies now being officially “legitimized.”

* * *

Other cases, possibly involving U.S. Navy Intelligence, NSA, the Drug Enforcement Agency (DEA) and, peripherally, members of former Soviet Bloc intelligence services will be discussed in future reports.

Harassment Objectives

In his book, *Psychiatry and the CIA: Victims of Mind Control*, Dr. Harvey Weinstein quotes the following passage from a book entitled, *Battle for the Mind: A Physiology of Conversion and Brainwashing*, by William Sargant (Greenwood Press, Westport, CT, 1957):

“By increasing or prolonging stresses in various ways, or inducing physical debilitation, a more thorough alteration of the person’s thinking processes may be achieved. ...If the stress or the physical debilitation, or both, are carried one stage further, it may happen that patterns of thought and behavior, especially those of recent acquisition, become disrupted. New patterns can then be substituted, or suppressed patterns allowed to reassert themselves; or the subject may begin to think or act in ways that precisely contradict his former ones.

“...If a complete sudden collapse can be produced by prolonging or intensifying emotional stress, the cortical slate may be wiped clean temporarily of its more recently implanted patterns of behavior, perhaps allowing others to be substituted more easily.”

Dr. Weinstein then comments: “The parallel with [Dr. Ewen] Cameron’s theory of differential amnesia is striking, and the relationship to brainwashing is abundantly clear.”^[11] Dr. Cameron, employed by McGill University’s Allan Memorial Institute in Montreal, Quebec, Canada, between 1943 and 1964, conducted brainwashing experiments upon select, non-volunteer psychiatric patients on behalf of the CIA. Dr. Weinstein’s father was one of Cameron’s victims.

Sargant’s theorems and Cameron’s associated experimental findings appear to be the driving force behind the harassment and experimentation now being reported to this Association. All of these individuals are being subjected to a series of overlapping circumstances which apparently are meant to induce and sustain long-term extremes of stress. All of these individuals have been effectively isolated. Unethical psychiatrists and physicians are involved in the majority of these cases. Mind-altering prescription drugs are being used for clearly non-therapeutic purposes. Evidence of LSD use is also beginning to surface (one of Cameron’s favored mind-altering substances). And “psychic driving” techniques—Cameron’s pet brainwashing method—are involved in all these cases, to a much greater and more potentially effective degree where auditory input is involved.

The long-term objectives of these harassment and experimentation campaigns appear to be quite fundamental; viz.,

(1) induce a sense of perverted “loyalty” toward the very agencies engaged in the individual’s harassment, to confuse his or her priorities where the possibility of obtaining legal redress might be concerned;

(2) redirect the targeted individual’s feelings of hopelessness, anger and frustration toward racial and ethnic groups, and toward select, prominent political figures, to include the President of the United States; and

(3) force the individual to commit an act of violence, whether suicide or murder, under conditions which can be plausibly denied by the government.

An operation's ultimate success apparently hangs on this latter objective. We have successfully obstructed this process in a number of cases now being investigated.

The "Stalker" Phenomenon

In recent weeks, considerable publicity has been given the trauma suffered by victims of "stalkers" (persons who obsessively surveil, harass and, in some cases, kill targeted individuals for assorted, unfathomable reasons). Movie stars who have been stalked recurrently make the news. Stalking, as a problem, is in fact becoming widespread, to the point where, in some States, the activity has finally been specifically proscribed by law.

The individuals in contact with our Association are reporting the same terrifying ranges of experiences as are now being reported in the press on behalf of other victims of stalkers. The only difference in the cases reported to us is that the stalkers operate in groups over extremely prolong periods of time, and (it would appear) with the blessing of certain agencies of the U.S. Government. The laws being passed to protect victims of stalkers are clearly being selectively applied. We hope to put an end to this situation; that is, in addition to achieving the objectives discussed above.

It should be noted that the FBI, though unwilling to intervene in the cases described above recently intervened on a massive scale to protect Joy Silverman, a Bush-appointed trustee of the J.F. Kennedy Center for the Performing Arts, from the ardent "stalkings" of her estranged paramour, Sol Wachtler, Chief Justice, Court of Appeals for the State of New York.^[12]

Wachtler had apparently threatened to kidnap Silverman's daughter if not paid \$20,000. Since no kidnapping had occurred, and the case qualified merely as an attempted extortion, a question arises as to why the New York State Police could not have handled this investigation. Mrs. Silverman resides in New York.

It would appear that the FBI devoted more than 100 agents and technicians to the effort, resolving the case within approximately 30 days. On November 7, 1992, the day of his arrest, Wachtler ran a gauntlet of 80 FBI special agents on the Long Island Expressway. Apparently the FBI does not have enough to do, if staking out a lone stalker is their top priority. We have to wonder, of course, if the FBI's massive response was prompted by what was perceived to be Wachtler's usurpation of governmental stalking prerogatives.

Mrs. Silverman's \$300,000 donations to Republican Party causes could be considered a basis for the FBI's solicitous concern for her welfare. It would appear, under the circumstances, that the "stalking victims" discussed above—being by now quite poverty-stricken—should abandon all hope of FBI intervention in their respective situations. FBI protection appears to have a price tag, which not one of our contacts can afford.

There can never be any justification for torture. It creates an escalation of violence in the internal affairs of states. It spreads like a contagious disease from country to country. It has lasting effects on the mental and physical health of the victim and brutalizes the torturer. It is our fundamental duty as human beings to express what is surely the conscience of humanity and to eradicate this evil.

[Amnesty International, February 1990, in the context of the U.S. Government's continuing failure to ratify the U.N. Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, dated December 10, 1984]

Footnotes

* 71 (7-30-93)

* 59 (7-30-93)

[1] Peters, Edward, *Torture*, Basil Blackwell, Inc., New York/London, 1985.

[2] *The Plain Dealer*, Cleveland, OH, June 28, 1991, p. 4-B ("Psychiatrist Testifies at mom's Hearing"); November 6, 1991, ("Woman Ruled Competent for Trial"); and December 21, 1991, p. 4-C ("Ruling Expected Monday on Sanity of Parma Mother/Woman says she stabbed her 3 children to protect them").

[3] *The Washington Post*, June 1, 1991, p. C-1 ("Voices' Led to Tragedy for 2 Men/Pentagon Suspect's Mother Says Institutions Should Have Held Son") and December 14, 1991, p. D-3 ("Suspect in Pentagon Killing Is Found Unfit to Stand Trial").

[4] *The Washington Post*, September 4, 1992, p. D-3 ("Freight Train kills Woman Near Home in Silver Spring").

[5] *Jane's Security and Co-In [Counter-Insurgency] Equipment*, (Surrey, UK, 1991-92), as a preliminary source, contains a number of references to attaché-case concealment devices, for use in surveillance/communications operations. The electronic components are built into the bottom interior of these cases. Obviously the man just described could not have carried a "microcircuitried" attaché case aboard a U.S. airliner without first clearing Security. We are advised by a former CIA DDS (Security) employee that credential-carrying members of U.S. Intelligence can bypass airport security checks of their carry- on luggage.

[6] *St. Paul Pioneer Press Dispatch*, October 15, 1986, p. 1-A ("U.S. Used Humans for Radiation Guinea Pigs").

[7] See, for example, Weinstein, Harvey M., M.D., *Psychiatry and the CIA: Victims of Mind Control*, American Psychiatric Press, Washington, D.C., 1990; Marks, John, *The Search for the "Manchurian Candidate": The CIA and Mind Control*, Times Books, New York, 1979; Delgado, Jose M. R., M.D., *Physical Control of the Mind: Toward a Psychocivilized Society*, Harper & Row, New York, 1969; and Hutchison, Michael, *Megabrain: New Tools and Techniques for Brain Growth and Mind Expansion*, Ballantine Books, New York, 1986.

[8] According to a *Vancouver Sun* archivist, Hollywood Hospital, Ltd. (a privately-owned institution), went out of business in 1975, two years after this woman's hospitalization and after approximately 30 years of doing business. The event coincided with findings by the U.S. Senate Church Committee concerning the CIA's brainwashing experiments under MKULTRA. Our contact also identified the Director of Hollywood Hospital as Dr. Ross MacLean—information also confirmed by the *Vancouver Sun*. Nothing in these records, copies of which are being obtained, points to CIA involvement with the hospital. Perhaps a portion of history has been overlooked. Cornell Medical Center's role in MKULTRA is a matter of public record. (See, for

example, Thomas, Gordon, *Journey Into Madness: The True Story of Secret CIA Mind Control and Medical Abuse*, Bantam Books, New York, 1989).

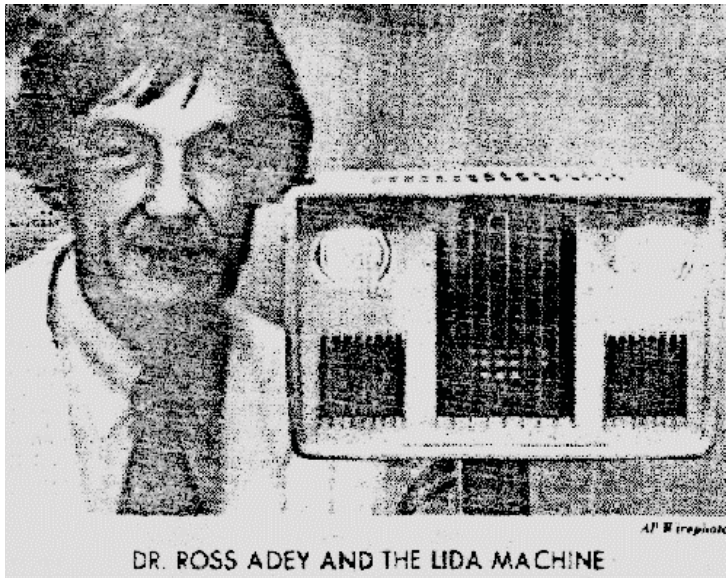
[9] The Roper Organization, *Unusual Personal Experiences: An Analysis of the Data from Three National Surveys*, (Bigelow Holding Corp., Las Vegas, NV, 1991. Contributors lending “credibility” to this publication include John Mack and Budd Hopkins.

[10] *Defense Week*, October 19, 1992, Vol. 13, No. 41, pp. I and II, (“Pentagon, State [Department] Collaborate on Counterterror Gear”).

[11] Op. cit., Weinstein, pp. 140-141.

[12] *The Washington Post*, November 10, 1992, p. A-I (“An Unlikely Suspect for Scandal/Top N.Y. Judge Accused of Breaking Law in Secret Life”).

THE LIDA MACHINE



An old medical, Russian-made device that transmits pulses of 40 MHz radio signal at pulse rates designed to match relaxed and sleeping states originally.

The machine, known as the LIDA, is on loan to the Jerry L. Pettis Memorial Veterans Hospital through a medical exchange program between the Soviet Union and the United States.

Hospital researchers have found in changes behavior in animals.

"It looks as though instead of taking a valium when you want to relax yourself it would be possible to achieve a similar result, probably in a safer way, by the use of a radio field that will relax you" said Dr. Ross Adey, chief of research at the hospital. [Dr. Adey is now deceased.]

[Missing one line on the photocopy] ... manual shows it being used on a human in a clinical setting, Adey said. The manual says it is a "distant pulse treating apparatus" for psychological problems, including sleeplessness, hyper-tension and neurotic disturbances.

The device has not been approved for use with humans in this country, although the Russians have done so since at least 1960, Adey Said.

Low frequency radio waves simulate the brain's own electromagnetic current and produce a trance-like state.

Adey said he put a cat in a box and turned on the LIDA.

"Within a matter of two or three minutes it is sitting there very quietly ... it stays almost as though it were transfixed" he said.

The hospital's experiment with the machine has been underway for three months and should be completed within a year, Adey said.

Eleanor White's comments (Dr. Byrd's statement follows):

1. Heavy "fatigue attacks" are a very common experience among involuntary neuro-electromagnetic experimentees. The LIDA device could, right out of the box, be used as a fatigue attack weapon, FROM HIDING, thru non- or semi-conductive walls.

2. If the LIDA machine is tuned for tranquilizing effect, then it might also be tuned for "force awake" and other effects too. This device is an electronic harassment weapon, AS IS. A TV documentary stated the Russian medical establishment considers this 1950s device obsolete. (Wonder what has taken its place?)

Below is a statement from Dr. Eldon Byrd, U.S. psychotronic researcher who funded Dr. Adey's work with the LIDA machine:

"The LIDA machine was made in the 1950's by the Soviets. The CIA purchased one through a Canadian front for Dr. Ross Adey, but didn't give him any funds to evaluate it.

"I provided those funds from my project in 1981, and he determined that the LIDA would put rabbits into a stupor at a distance and make cats go into REM.

"The Soviets included a picture with the device that showed an entire auditorium full of people asleep with the LIDA on the podium. The LIDA put out an electric field, a magnetic field, light, heat, and sound (of course light and heat are electromagnetic waves, but at a much higher frequency than the low frequencies of the electric and magnetic fields mentioned above).

"The purported purpose of the LIDA was for medical treatments; however, the North Koreans used it as a brain washing device during the Korean War. The big question is: what did they do with the technology? It could have been improved and/or made smaller. It is unlikely that they abandoned something that worked.

"Direct communication with Ross Adey: While he was testing the LIDA 4, an electrician was walking by and asked him where he got the "North Korean brain washing machine". Ross told him that it was a Russian medical device.

"The guy said he had been brain-washed by a device like that when he was in a POW camp. They placed the vertical plates alongside his head and read questions and answers to him. He said he felt like he was in a dream. Later when the Red Cross came and asked questions, he responded with what had been read to him while under the influence of the device. He said he seemed to have no control over the answers.

"The LIDA is PATENTED IN THE US. Why? They are not sold in the US--the only one I know

that exists is the one that was at Loma Linda Medical Center where Adey used to work. Eldon"

Involuntary neuro-experimentation activist Cheryl Welsh, Davis CA, sent in this clipping from an article by Dr. Ross Adey but without complete bibliographic references:

"Soviet investigators have also developed a therapeutic device utilizing low frequency square wave modulation of a radiofrequency field. This instrument known as the Lida was developed by L. Rabichev and his colleagues in Soviet Armenia, and is designed for "the treatment of neuropsychic and somatic disorders, such as neuroses, psychoses, insomnia, hypertension, stammering, bronchia asthma, and asthenic and reactive disturbances".

It is covered by U.S. Patent # 3,773,049. In addition to the pulsed RF field, the device also delivers pulsed light, pulsed sound, and pulsed heat. Each stimulus train can be independently adjusted in intensity and frequency.

The radiofrequency field has a nominal carrier frequency of 40 MHz and a maximum output of approximately 40 Watts. The E- field is applied to the patient on the sides of the neck through two disc electrodes approximately 10 cm in diameter. The electrodes are located at a distance of 2-4 cm from the skin.

[Eleanor White's comment: The fact that Dr. Ross Adey mentioned an "audience" being put to sleep by the LIDA suggests that the "E-field" electrodes may not play an essential role. The radio signal appears to be the primary cause of the sleep/trance effect.]

Optimal repetition frequencies are said to lie in the range from 40 to 80 pulses per minute. Pulse duration is typically 0.2 sec. In an 8 year trial period, the instrument was tested on 740 patients, including adults and children. Postivive therapeutic effects were claimed in more..."

AD-A282 886



RL-TR-94-53
in-House Report
June 1994



RADIOFREQUENCY/MICROWAVE RADIATION BIOLOGICAL EFFECTS AND SAFETY STANDARDS: A REVIEW

Scott M. Bolen

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**Rome Laboratory
Air Force Materiel Command
Griffiss Air Force Base, New York**

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This report has been reviewed by the Rome Laboratory Public Affairs Office (PA) and is releasable to the National Technical Information Service (NTIS). At NTIS it will be releasable to the general public, including foreign nations.

RL-TR-94-53 has been reviewed and is approved for publication.

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Radiofrequency/Microwave Radiation Biological Effects and Safety Standards: A Review

Scott M. Bolen
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Abstract

The study of human exposure to radiofrequency/microwave radiation has been the subject of widespread investigation and analysis. It is known that electromagnetic radiation has a biological effect on human tissue. An attempt has been made by researchers to quantify the effects of radiation on the human body and to set guidelines for safe exposure levels. A review of the pertinent findings is presented along with the American National Standards Institute (ANSI) recommended safety standard (C95.1-1982) and the United States Air Force permissible exposure limit for RF/MW radiation (AFOSH Standard 161-9, 12 February 1987). An overview of research that was conducted in the Soviet Union and Eastern Europe is also included in this report.

I. INTRODUCTION

In 1956, the Department of Defense (DOD) directed the Armed Forces to investigate the biological effects of exposure to radiofrequency/microwave (RF/MW) radiation. The Army, Navy, and Air Force Departments commissioned a Tri-Service Program under the supervision of the Air Force to meet the DOD directive [14], [15]. The Rome Air Development Center and the Air Research and Development Headquarters were ultimately given responsibility to manage the program. On July 15-16, 1957 the first of four Tri-Service Conferences was held to discuss the effects of RF/MW radiation. These conferences were the first major effort put forth by the scientific community to explore the biological effects of exposure to RF/MW radiation [14]. Since then, researchers have discovered a number of biological dysfunctions that can occur in living organisms. Exposure of the human body to RF/MW radiation has many biological implications. The effects range from innocuous sensations of warmth to serious physiological damage to the eye [1], [2], [5], [6], [8], [15]. There is also evidence that RF/MW radiation can cause cancer [8].

The absorption of RF/MW radiated energy causes biological reactions to occur in the tissue of the human body. In order to determine safe exposure levels and to understand the effect of RF/MW radiation it is necessary to know the absorption characteristics of the human tissue. The National Institute for Occupational Safety and Health (NIOSH) [8] has reported several physical properties that account for energy absorption in biological materials. Factors which govern energy absorption include: (1) strength of the external electromagnetic (EM) field, 2) frequency of the RF/MW source, 3) the degree of hydration of the tissue, and 4) the physical dimensions, geometry, and orientation of the absorbing body with respect to the radiation EM field [8]. There is some disagreement among researchers in determining a specific measure for the dose of RF/MW radiation contracted by

biological materials. The most commonly accepted measure is the Specific Absorption Rate (SAR). The SAR is defined as the rate at which RF/MW radiated energy is imparted to the body - typically in units of watts per kilogram (W/Kg) [4]. The deposition of energy specified in terms of milliwatts per square centimeter (mW/cm²) over the irradiated surface is also widely accepted [9].

Based on the known absorption rates and the inherent biological effects of RF/MW radiated energy, researchers have put forth a number of standards regarding safe exposure levels. In some instances standards recommended by different examining authorities are in conflict. For example, the USAF Standard 161-9 (enacted 12 February 1987) allows for a permissible exposure level of 10 mW/cm² for persons working in restricted areas and 5 mW/cm² for persons working in unrestricted areas [10]. The ANSI guideline specifies a maximum safe exposure level of 5 mW/cm² over the whole-body area for anyone in contact with RF/MW radiation [9]. These differences reflect the way in which each examining authority has interpreted the available RF/MW radiation exposure data.

II. BIOLOGICAL EFFECTS

Exposure to RF/MW radiation is known to have a biological effect on animals and humans. Damage to major organs, disruption of important biological processes, and the potential risk of cancer represent the dangers of RF/MW radiation to living organisms. Pulsed radiation appears to have the greatest impact on biological materials [8].

The response of biological materials to the absorption of thermal energy is the most perceptible effect of exposure to RF/MW radiation [7]. The energy emitted from an RF/MW source is absorbed by the human tissue primarily as heat. In this case, the radiated energy is disposed in the molecules of the tissue. Dipole molecules of water and protein are stimulated and will vibrate as energy is absorbed throughout the irradiated tissue area. Ionic conduction will also occur in the same area where the radiation is incident. It is from these two natural processes that radiant energy is converted into heat [11]. The thermal effect of continuous wave (CW) and pulsed radiation is considered to be the same [13].

Nonthermal responses can be less noticeable and are often more difficult to explain than thermal effects. These responses are related to the disturbances in the tissue not caused by heating. Electromagnetic fields can interact with the bioelectrical functions of the irradiated human tissue [8]. Research conducted in the Soviet Union and Eastern Europe suggests that the human body may be more sensitive to the nonthermal effects of RF/MW radiation [3].

There are many reported biological effects to humans and animals that are exposed to RF/MW radiation. A review of the important findings is given in the following:

A. Heating Effect on the Skin

Most RF/MW radiation penetrates only to the outer surface of the body. This is especially true for RF/MW frequencies greater than 3 GHz where the likely depth of penetration is about 1-10 mm [3]. At frequencies above 10 GHz the absorption of energy will occur mostly at the outer skin surface. Since the thermal receptors of the body are contained primarily in this region, the perception of RF/MW radiation at these frequencies

may be similar to that of infrared (IR) radiation [3], [6].

In 1937, J. Hardy and T. Oppel published an investigative paper on the thermal effects of IR radiation. Their findings were used by Om Gandhi and Abbas Riazi [6] to explain the thermal effect of RF/MW radiation on the human body (the reference for Hardy and Oppel can be found in [6]). Figure 1 shows the results obtained from the 1937 report. As described by Gandhi and Riazi, the findings presented by Hardy and Oppel show that sensations of warmth begin to occur when the whole-body is irradiated at a CW power density of about 0.67 mW/cm^2 . Hardy and Oppel based their work on exposure to IR radiation. From other published reports, Gandhi and Riazi noted that there is a correlation between the radiating frequency of the incident RF/MW energy and the threshold for perception. For example, on an exposed area of the forehead of 37 cm^2 a perception of warmth was reported for incident power densities of 29.9 and 12.5 mW/cm^2 from sources radiating at 3 and 10 GHz respectively [6].

Other observations made by Hardy and Oppel showed that when smaller body areas were irradiated, larger power densities were required to stimulate the thermal receptors in the skin. Gandhi and Riazi were able to confirm this result with reports from recent papers. They found that irradiation of an exposed body area of 40.6 cm^2 to a power density of about 21.7 mW/cm^2 yielded the same thermal perception as did the irradiation of a smaller body area of 9.6 cm^2 to a power density of about 55.9 mW/cm^2 . Hardy and Oppel reported that thermal sensations occurred within about 3 seconds after irradiation of the body tissue. More recent findings indicate a reaction time of closer to 1 second [6].

Gandhi and Riazi [6] have also reported that the depth of penetration of RF/MW radiation has an impact on the power density threshold needed to stimulate the perception of warmth. As a comparison, IR radiation will not penetrate the outer body surface as deeply as RF/MW radiation emitted at a frequency of 2.45 GHz . Clinical observations have shown that irradiation of the ventral surface of the arm by an RF/MW source radiation at 2.45 GHz will cause a sensation of warmth when the incident power density is about 26.7 mW/cm^2 . For incident IR radiation a perception of warmth occurs at a power density of 1.7 mW/cm^2 . They estimated that at millimeter wavelengths the perception of warmth may occur at a power density level of about 8.7 mW/cm^2 .

Exposure to higher levels of radiation can cause serious biological effects. Because of the physical dimensions and geometry of the human body, RF/MW radiated energy is nonuniformly deposited over the whole-body surface. Some areas on the skin and outer body surface will absorb higher amounts of the radiated energy. These areas will be marked by "hot spots" of high temperatures [7], [11], [16]. Experiments conducted on laboratory animals have shown, that skin burns typically occur in the areas of hot spots. The penetration of RF/MW radiation also causes skin burns to be relatively deep [11]. In experiments sponsored by the Tri-Service Commission, it was reported that RF/MW radiation burns over the rib cages of dogs caused severe subcutaneous damage that did not visibly appear for weeks after the injury was sustained [20]. Burns can cause increased vascular permeability. This can lead to significant losses of body fluids and electrolytes. Serious burns can suffer fluid losses for a few days. Blood circulation can be altered in the effected area and other biological functions could be indirectly affected [12].

B. Whole-Body Hyperthermia

Thermal energy absorbed by the whole-body can cause a rise in body temperature. When the human body is irradiated by an RF/MW source at an incident power density of 10 mW/cm² there will be a rise in body temperature of about 1° C. The total thermal energy absorbed at this power density is about 58 watts. Typically, at rest the human basal metabolic rate is about 80 watts and it is about 290 watts during periods of moderate activity. Exposure of the human body to low power RF/MW radiation does not appear to impose any appreciable thermal hazard. These figures were reported by The U.S. Department of Health, Education and Welfare [3].

Adverse biological effects can occur when the body is subjected to high doses of RF/MW radiation [16]. In this instance large amounts of thermal energy can be absorbed by the body. A dramatic influx of energy can overburden thermoregulatory mechanisms. If excess heat cannot be exhausted the core temperature of the body will rise to a dangerous level resulting in hyperthermia [12], [16]. The biological response to excess heat buildup is the dilation of blood vessels at the surface of the skin and the evaporation of water through sweating. These are the primary mechanisms for heat dissipation. Hyperthermia can cause severe dehydration and the loss of electrolytes such as sodium chloride. Other harmful effects include fever, heat exhaustion, and heat fatigue. Heat stress is the most serious consequence of hyperthermia. Cardiac failure and heat stroke can result from heat stress [12].

It has also been noted that hyperthermia may cause injury to blood-brain barrier (BBB) [19]. This barrier refers to the several biological materials that separate the essential elements of the central nervous system from the blood [18]. High cerebral temperatures exceeding 43°C may damage the BBB. The result can be a disruption of blood vessel continuity or integrity and degradation of the flow of blood and other body fluids in the brain [19].

C. Local Hyperthermia

The nonuniform deposition of RF/MW radiated energy over the whole-body surface causes the body to be heated unevenly. Local areas where temperatures rise above 41.6°C can experience damage to the tissue [16]. In these areas it is possible that harmful toxins could be released as result of the high temperatures. Heating can cause cell membranes and blood capillaries to become more permeable. An increase in capillary permeability can lead to a loss of plasma proteins. The denaturation of proteins can also occur within cells [11], [16]. This can lead to changes in the physical properties and biological functions of proteins [18]. Denaturation of proteins can also cause polypeptide and histamine-like substances to become active [11], [16]. Histamines can stimulate gastric secretion, accelerate the heart rate, and cause the dilation of blood vessels resulting in lower blood pressure [18]. Areas of the body where blood circulation is poor or where thermal regulation is insufficient, are more susceptible to injury [11].

D. Carcinogenic Effects

The carcinogenic effects of exposure to RF/MW radiation are not well known. It is difficult to clinically establish a link to cancer. The problem that researchers have in linking

RF/MW radiation to cancer is that the disease itself is prevalent and can be caused by a variety of environmental factors. In fact cancer is the second leading cause of death in the United States. There are, however, published reports that reveal some insights into the carcinogenic nature of RF/MW radiation. Nonthermal effects may provide important clues to the understanding of carcinogenic reactions in the human body [8],[32].

i. Pathological Reports

In 1962, S. Prausnitz and C. Susskind reported experimental results that showed an increase in cancer among test animals exposed to RF/MW radiation. In the experiment, 100 male Swiss albino mice were irradiated by a 10 GHz RF/MW source at an incident power density of about 100 mW/cm². The mice were exposed for 4.5 minutes/day, 5 days/week for a total of 59 weeks. It was noted that irradiation caused the whole-body temperature of the mice to rise about 3.3°C. Upon examination, it was found that 35% of the mice had developed cancer of the white blood cells. The disease was observed as monocytic or lymphatic leucosis or lymphatic or myeloid leukemia. Only 10% of a similar control group had developed cancer [21].

There have been a few allegations that RF/MW radiation has induced cancer in humans [8], [15]. The NIOSH Technical Report [8] cites charges made in the early 1970's against Philco-Ford and The Boeing Corporation that occupational exposure to RF/MW radiation caused cancer among employees. One incident was reported at each company. At Philco-Ford it was claimed that exposure caused a rare form of brain cancer to manifest in one worker that eventually resulted in death. In each case, there was no scientific proof that RF/MW radiation had induced cancer in the company employees. There was also a report that EM fields induced cancer in an individual that worked at the U.S. Embassy in Moscow. Again, there was no scientific evidence that supported the claim [8].

Recently, the Observer Dispatch, a local newspaper published in Utica, New York, reported that a major study has just been completed in Sweden. The study concluded that children who live near high power lines have a greater risk of developing leukemia than children who live farther away from the power lines. The study involved 500,000 people and provided some evidence to link the electromagnetic fields produced by low frequency power lines to cancer. The researchers, however, cautioned against drawing firm conclusions as a result of the research [33]

ii. Effect on Chromosomes

It has been observed that disturbances in chromosomal activity can cause cancerous aberrations to occur in the human body. In 1974, a paper published by K. Chen, A. Samuel, and R. Hoopingarner (reference found in [8]) reported that chromosomal abnormalities can be linked to chronic myeloid leukemia. Serious genetic mutations can also result from such abnormalities that can lead to malignancies in the tissue [8].

In 1976, A. A. Kapustin, M. I. Rudnev, G. I. Leonskaia, and G.I. Knobecva (reference found in [17]) reported alterations in the chromosomes of bone marrow cells in laboratory animals that were exposed to RF/MW radiation. They exposed inbred albino rats to a 2500 MHz RF/MW source at incident power density levels of 50 and 500 uW/cm². Irradiation lasted for 7 hours/day for 10 days. Upon examination of the animals, they

observed chromosomal anomalies that appeared in forms described as polyploidy, aneuploidy, chromatic deletion, acentric fragments and chromatic gaps [17].

The NIOSH Technical Report [8] summarizes the findings of several researchers. Chromosomal and mitotic anomalies have been observed in a variety of animal and human cells for varying exposures to RF/MW radiation. Pulsed and CW radiation ranging in frequency from 15 to 2950 MHz and power densities from 7 to 200 mW/cm² have caused abnormalities to occur in chromosomes. The reported affects include: linear shortening of the chromosomes, irregularities in the chromosomal envelope, abnormal bridges and stickiness, translocations, chromosomal breaks and gaps, chromatid breaks, acentric chromosomes, dicentric chromosomes, deletions, fragmentation, and ring chromosomes [8].

iii. Mutagenic Effects

Reported evidence indicates that biological interaction with EM fields can cause the formation of mutagens in cells. In 1974, three Soviet researchers, Danilenko, Mirutenko, and Kudrenko (reference found in [8]) published results showing a mutagenic effect of RF/MW radiation. Mutagens were observed to form in cells that were irradiated by a pulsed RF/MW source operating at 37 GHz and 1 mW/cm² power intensity. They concluded that irradiation of tissue by pulsed RF/MW sources causes cell membranes to become more permeable to destructive chemical mutagens [8].

Results published in 1963 by G. H. Mickey (reference found in [8]) showed hereditary changes to occur in drosophila germ cells that were exposed to pulsed modulated RF/MW radiation for carrier frequencies between 5-40 MHz [8]. Evidence of RF/MW induced teratogenesis in animals has also been reported by researchers. The effect of exposure to CW radiation was observed by Rugh and McManaway in 1976 (reference found in [8]). They found gross congenital abnormalities in rodent fetuses that were irradiated by a 2450 MHz RF/MW source at an incident power intensity of 107.4 mW/g [8].

iv. Lymphoblastoid Transformations

Lymphoblastoid Transformations refer to changes in the physical nature of lymphoblasts. Mature lymphoblast cells (i.e. lymphocytes) participate in the immune system of the body [18]. Lymphoblastoid transformations induced by RF/MW radiation appear to be similar to transformations present in disorders contributing to abnormal growth in lymphoid tissues and in certain types of leukemia. RF/MW radiation induced transformations, however, do not appear to be malignant and are not likely to spread among healthy cells [8].

W. Stodlink-Baranska reported (reference found in [8]) lymphoblastoid transformations to occur when human lymphocyte cells were exposed to a 2950 MHz pulsed RF/MW source at power density levels of 7 and 20 mW/cm². In 1975, P. Czerski also reported (reference found in [8]) observing lymphoblastoid transformations after irradiation of purified human lymphocyte suspensions by an RF/MW source radiating at 2950 MHz for variable power density levels. In addition, Czerski reported acute transformations occurring in adult mice and rabbits that were irradiated by a pulsed RF/MW source radiating at 2950 MHz and at low power density levels of 0.5 and 5 mW/cm² respectively [8].

v. Oncogenic Effects

Oncogenic effects have been linked to imbalances in the regulatory mechanisms of the body. A 1974 report published by E. Klimkova-Deutschova (reference found in [8]) claimed that persons exposed to RF/MW radiation experience biochemical reactions. The report indicated alterations in fasting blood sugar levels, a decrease in the ability to dispose of normal metabolic waste, and depressed serum levels of pyruvate and lactate. These biochemical reactions point to the possibility of regulatory malfunctions occurring in the body. It has been suggested that certain regulatory imbalances may promote the growth of tumors. A change in hormonal levels has been observed to cause oncogenic effects in tissues that require hormonal balances to function properly. The presence of hormones in other tissue areas may effect the development of existing tumors in those areas [8].

E. Cardiovascular Effects

Most of the cardiovascular effects of RF/MW radiation have been reported by researchers in the Soviet Union and Eastern Europe. Soviet investigators claim that exposure to low levels of RF/MW radiation that are not sufficient to induce hyperthermia can cause aberrations in the cardiovascular system of the body [7].

One experiment performed on rabbits indicates that several types of cardiovascular dysfunctions could be possible. An RF/MW source radiating at 2375 MHz was used to irradiate rabbits for a test period of 60 days under varying field intensities. For field strengths ranging from 3-6 V/M researchers noted a sharp increase in the heart rate of the animals. This effect was observed to subside with time. Exposure to field strengths of 0.5-1.0 V/M caused the heart rate to become slower than normal. No effect was reported for rabbits that were exposed to EM field intensities below 0.2 V/M [17]. Other effects that have been observed by Soviet researchers, are alterations in EKG and low blood pressure [7], [17].

The NIOSH Technical Report [8] references a Soviet study published in 1974 by M. N. Sadcikoiva that suggests some connection between RF/MW radiation exposure and the potential for cardiovascular disturbances in humans. Researchers examined 100 patients suffering from radiation sickness. It was found that 71 of the patients had some type of cardiovascular problem. Most of these patients had been exposed to RF/MW radiation for periods ranging from 5-15 years. A smaller group of patients exposed for shorter time periods also experienced cardiovascular irregularities. The study concluded that there is a probable link between exposure to RF/MW radiation and cardiovascular disease [8].

F. The North Karelian Project

In response to earlier Soviet reports, the World Health Organization (WHO) decided to conduct a comprehensive study on the biological effects of exposure to RF/MW radiation. In 1976, M. Zaret published the results of the study (reference found in [8]). The WHO investigation focused on the population of North Karelia, a remote area of Finland that borders the Soviet Union. This region was selected because of its close proximity to a then Soviet early warning radar station. North Karelia is geographically located in the path of intercontinental ballistic missiles that would originate from the midwest United States. To

detect these missiles, the Soviets constructed a number of high power tropospheric scattering radar units adjacent to nearby Lake Ladoga. The operation of these units exposes the residents of North Karelia to large doses of ground and scatter radiation. The WHO investigation found evidence linking exposure of RF/MW radiation to cardiovascular disease and cancer. The North Karelian population suffered from an unusually high number of heart attacks and cases of cancer. In addition, it was found that the affliction rate of these diseases was much higher among residents living closest to the radar site [8].

G. Hematologic Effects

There is evidence that RF/MW radiation can effect the blood and blood forming systems of animals and humans. Experiments conducted in the Soviet Union have indicated changes in blood cell levels and alterations in the biological activities of hematologic elements. Other investigators have reported similar effects [7], [8], [17].

The results of an experiment reported in 1979 by V. M. Shtemier showed a decrease in the biological activity of butyryl cholinesterase in rats that were exposed to pulsed RF/MW radiation (reference found in [17]). The experiment subjected 15 rats to a 3000 MHz pulsed RF/MW source with an incident power density of 10 mW/cm². The rats were irradiated for 1 hour/day over several days. After 42 days, there was a loss of biological activity of the butyryl cholinesterase enzyme caused by a decrease in the concentration of the enzyme in the bloodstream of the rats [17]. Cholinesterase is a catalyst in the hydrolysis of acetylcholine into choline and an anion. Choline is a useful enzyme that prevents the deposition of fat in the liver [18].

In another experiment, 20 male rats were exposed to a 2376 MHz pulsed RF/MW source with an incident power density of 24.4 mW/cm². Each rat was exposed for 4 hours/day, 5 days/week for 7 weeks. Blood samples were taken periodically and examined for anomalies. After repeated exposures, it was discovered that the number of lymphocytes and leukocytes (white blood cells) in the bloodstream of the rats was lower than normal. The biological activity of alkaline phosphatase in neutrophil leukocytes was also found to increase when the rats were irradiated [17].

The results of several other experiments are summarized in the NIOSH Technical Report [8]. RF/MW radiation has been observed to cause: an increase in the amount of exudate in bone marrow, the transient disappearance of fat cells from bone marrow, destruction and loss of essential bone marrow cells, underdeveloped marrow, a decrease in the number of red blood cells, and an imbalance in the number of lymphocytes in the bloodstream [8].

H. Effect to the Central Nervous System

There is documented evidence that exposure to RF/MW radiation can cause a disturbance in the central nervous system (CNS) of living organisms [3], [8], [11], [17]. Soviet investigators claim that exposure to low-level radiation can induce serious CNS dysfunctions. Experiments conducted in the Soviet Union and Eastern Europe have exposed live subjects to radiation levels that are near or below the recommended safe levels prescribed by the ANSI Standard and the USAF AFOSH Standard [17].

i. Pathological Report

Soviet investigators claim that the central nervous system (CNS) is highly sensitive to RF/MW radiation [3], [8], [11], [17]. The NIOSH Technical Report [8] summarized the results of a pathological study published by A. A. Letavet and Z. V. Gordon in 1960. The researchers reported that several CNS related disorders were discovered among 525 workers exposed to RF/MW radiation. The symptoms were listed as: hypotension, slower than normal heart rates, an increase in the histamine content of the blood, an increase in the activity of the thyroid gland, disruption of the endocrine-hormonal process, alterations in the sensitivity to smell, headaches, irritability, and increased fatigue. Other researchers have acknowledged similar biological responses [8].

ii. Soviet Union Experimental Results

Several experiments have been performed in the Soviet Union and Eastern Europe that demonstrate a variety of biological effects that can occur in living organisms. observations of laboratory animals subjected to low power EM fields showed alterations in the electrical activity of the cerebral cortex and disruptions in the activity of neurons [17].

L. K. Yereshova and YU. D. Dumanski (reference found in [17]) exposed rabbits and white male rats to a continuous wave 2.50 GHz RF/MW source. The animals were irradiated for 8 hours/day over a period of 3 to 4 months at power density levels of 1, 5, and 10 $\mu\text{W}/\text{cm}^2$. It was observed that rabbits exposed to the 5 and 10 $\mu\text{W}/\text{cm}^2$ power density levels suffered alterations in the electrical activity of the cerebral cortex and disturbances to the conditioned reflex response. They concluded that exposure to RF/MW radiation caused perturbations in the higher functioning centers of the CNS in the laboratory animals [17].

An experiment conducted by V. R. Faytel'berg-Blank and G. M. Frevalov demonstrated the biological effects of RF/MW radiation on the activity of neurons (reference found in [17]). They subjected chinchilla rabbits to a 460 MHz RF/MW source at incident power densities of 2 and 5 mW/cm^2 . Only the heads of the rabbits were irradiated and exposures lasted for 10 minutes. Exposure at the 2 mW/cm^2 power density level caused neuronal activity to increase and evoked an electroencephalogram (EEG) activation reaction. Neuronal activity was observed to decrease at the higher power density level. These results indicated that RF/MW radiation can cause neurophysiological alterations in animals. These biological responses may be dependent on the intensity of the radiation [17].

iii. Behavioral Effects

Exposure to RF/MW radiation has been observed to cause a disruption in the behavior of animals. Experiments conducted on rats and nonhuman primates indicates that conditioned responses can be altered as a result of irradiation. Researchers indicate that behavior may be the most sensitive biological component to RF/MW radiation [1], [7], [9], [29].

D. R. Justesen and N. W. King (reference found in [7]) reported experimental results that demonstrated a degenerative behavioral effect in laboratory animals that were exposed to RF/MW radiation. The results were published in 1970. They exposed rats to a 2450 MHz multimodal resonating cavity system. Exposure was periodic with irradiation times lasting for 5 minutes and recurring every 5 minutes. This cycle was sustained for 60 minutes. The

experiment tested the effect of irradiation at whole-body energy absorption rates of 3.0, 6.2, and 9.2 W/Kg. It was observed that for a SAR of 6.2 W/Kg the behavioral performance of the rats degraded significantly and activity usually terminated at the end of the 60 minute exposure period [7].

In 1977, James Lin, Arthur Guy, and Lynn Caldwell [29] reported experimental results that showed alterations in the behavioral response of rats that were exposed to RF/MW radiation. White female rats were trained to execute a "head raising" movement in return for a food pellet. The total number of such movements was counted during each exposure session in order to quantify the effect of irradiation. The animals were exposed to a 918 MHz RF/MW source at power density levels of 10, 20, and 40 mW/cm². Clinical observations showed that baseline responses remained unchanged for irradiation at the lower power density levels of 10 and 20 mW/cm². At 40 mW/cm², however, behavioral responses decreased rapidly after 5 minutes of continuous exposure. After about 15 minutes of exposure, behavioral activity terminated. It was determined that the peak energy absorption at 40 mW/cm² was about 32 W/Kg and the average absorption was 8.4 W/Kg over the whole-body surface [29].

iv. Synergetic Effect of Drugs RF/MW Radiation

In 1979, J. R. Thomas et al. reported that psychoactive drugs and RF/MW radiation may have a synergetic effect on living organisms (references for Thomas can be found in [1]). Experiments were conducted on laboratory animals. Male albino rats were administered dextroamphetamine and irradiated with a pulsed 2450 MHz RF/MW source at 1 W/cm² power intensity for periods of 30 minutes. It was found that the number of clinical responses observed per minute in the rats diminished more rapidly under the stimulus of both agents than in the control condition where just the drug was administered. This indicates that the effects of RF/MW radiation may be enhanced by certain drugs [1].

v. Analeptic Effect in Animals

Pulsed RF/MW radiation was reported to have an analeptic effect in laboratory animals. Experimental results presented by R. D. McAfee in 1971 showed that anesthetized animals could be awakened by irradiation from a pulsed 10 GHz RF/MW source. The energy incident on the test animals was estimated to have a power density of between 20-40 mW/cm². Experiments conducted on rats showed that these animals were aroused from states of deep sleep by irradiation. It was observed that the blood pressure of a rat decreased simultaneously with the arousal response and that laryngeal spasms would occur when the rat was awakened. McAfee reported that the laryngeal spasms would obstruct the airway causing convulsions, asphyxiation, and eventually death. Other experiments performed on rabbits, cats, and dogs showed that these animals could also be awakened by irradiation. The larger animals, however, did not asphyxiate themselves. The blood pressure of the dogs and cats was observed to rise as they were awakened. In all cases, the arousal response was stimulated only when the head of the animal was irradiated. The body temperature of the test animals was not observed to rise as a result of irradiation. This indicates that the analeptic effect of RF/MW radiation may be nonthermal in nature [20].

I. Immunological Effect

Exposure to RF/MW radiation has been observed to cause physical alterations in the essential cells of the immune system and a degradation of immunologic responses [7], [17]. Experimental results published by Soviet and Eastern European researchers indicate that irradiation can cause injury and trauma to the internal body organs that comprise the immune system. Even exposure to low levels of RF/MW radiation can impair immunologic functions [17].

As discussed earlier, lymphoblasts can undergo physical alterations as a result of irradiation. Lymphoblastoid mutagens are similar in structure to leukemia cells [8]. Lymphoblasts are the precursors to leukocyte cells that participate in the immune system [18].

In 1979, N. P. Zalyubovskaya and R. I. Kiselev (reference found in [17]) reported that exposure to RF/MW radiation caused serious damage to the immune system of laboratory animals. They exposed mice to an RF/MW source radiating at 46.1 GHz with an incident power intensity of 1 mW/cm² for 15 minutes/day for 20 days, it was observed that the number of leukocytes in the bloodstream of the mice decreased as a result of irradiation. Effective quantities of enzymatic proteins in serum that combine with antigen-antibody complex and antibacterial agents such as lysozyme were also reduced. Zalyubovskaya and Kiselev reported a decrease in the phagocytic activity of neutrophils and a diminished resistance to infections caused by tetanic toxins. Immunity to typhoid and other tetanic toxins induced by vaccination or by the administration of antitoxins was rendered ineffective. Further examination of the mice revealed injury and trauma to the internal body organs. Irradiation had caused physical alterations in the thymus, spleen, and lymph nodes. The lymphoid organs suffered a total loss of mass [17].

J. Effect on the Eye

Clinical studies indicate that exposure to RF/MW radiation causes physiological damage to the eye that can result in loss of sight. It has been observed that irradiation causes the formation of cataracts in the lens of the eye. Tissue damage appears to be the result of thermal trauma induced by the heating property of RF/MW radiation. Experiments conducted on laboratory animals have demonstrated severe ocular damage as a result of exposure [30], [31].

i. Ocular Sensitivity

Exposure of the eye to RF/MW radiation causes physical duress that can lead to damage of the ocular tissue. The incident power intensity and the duration of radiation exposure are factors that determine the amount of tissue damage. The lens of the eye appears to be most susceptible to RF/MW energy radiated at frequencies between 1-10 GHz. For this frequency range, it has been observed that lens fibers will suffer irreversible damage to a greater extent than other ocular elements [30]. Lens fibers are elongated, thread-like structures that form the substance of the lens [18]. In 1979, Stephen Cleary reported [30] that cataracts are formed in the lens as a result of alterations in the paracystalline state of lens proteins. Physical, chemical or metabolic stress may be responsible for opacification of

the lens [30].

ii. Experiments on Rabbits

Severe tissue damage has been observed in rabbits that have been exposed to RF/MW radiation. Stephen Cleary [30] reports that intense radiation exposure can cause "immediate tearing, injection, pupillary constriction, and anterior turbidity" in the rabbit eye. Lens opacities can occur when the eye is irradiated by a 2450 MHz RF/MW source at incident power density levels of 100-300 mW/cm². At this exposure level, cataracts have been observed to form 24-48 hours after irradiation [30]. In 1976, Kramer, Harris, Emery, and Guy (reference found in [30]) reported observing the formation of cataracts in rabbit eyes that were exposed to 2450 MHz RF/MW radiation at an incident power density level of 180 mW/cm² for an exposure time of 140 minutes [30].

Acute ocular damage and the formation of cataracts appears to be the result of local hyperthermia of the eye. It has been observed, however, that trauma induced by heating of the ocular tissue may be unique to the exposure effects of RF/MW radiation [30]. In 1975, Kramer, Harris, Emery, and Guy (reference found in [30]) reported subjecting rabbits to hyperthermia not induced by exposure to RF/MW radiation. Heating caused the intra-ocular temperature of the eye to rise above normal. The retrolental temperature was reported to be about 42°C during the test period. Hyperthermia was sustained for approximately 30 minutes. Despite heating conditions that were similar to exposure from RF/MW radiation, lens opacities did not occur in the rabbit eyes [30]. Similar results have been reported by other researchers [30]. These results indicate that hyperthermia alone may not be sufficient to cause the formation of cataracts. Direct exposure to RF/MW radiation may be necessary to induce opacities in the lens [30].

iii. Cataracts in Humans

Exposure to RF/MW radiation is known to cause cataracts in the human eye. Several cases have been documented that report RF/MW induced cataracts in humans. Typically, lens opacities have resulted from exposure levels that are greater than specified by the various safety standards. However, minimum exposure levels sufficient to cause ocular damage are not certain [30].

In 1970, Zaret, Kaplan and Kay (reference found in [30]) reported a large number of cataracts induced in humans as result of occupational exposure. This report cited 42 cases of chronic exposure to RF/MW radiation. They reported that workers suffered damage to the posterior lens capsule. In one case, exposure periods lasted about 50 hours/week for 4 years. During most of the 4 year period the incident average power density level was approximately 10 mW/cm². For one 6 month period, however, power density levels may have reached 1 W/cm² [30].

In 1966, S. Cleary and B. Pasternack (reference found in [30]) published the results of an epidemiological study of military and industrial microwave workers. It was reported that minor alterations had occurred in the ocular lenses of the workers as a possible result of chronic RF/MW radiation exposure. Defects were found in the posterior pole of the lens. Cleary and Pasternack noted that the number of minor ocular defects was related to the specific occupational duties of the workers. The greatest number of defects was found

among persons working in research and development jobs. The results of the study were based on a comparison of the microwave workers with a similar control group. The researchers concluded that exposure to RF/MW radiation had caused the lens of the eye to age faster than normal [30].

Similar cases of RF/MW radiation induced ocular damage have been reported by other researchers. In one case, a 22 year old microwave technician was exposed 5 times over a 1 month period to a 3 GHz radiation source. The incident power density level was about 300 mW/cm² and irradiation lasted approximately 3 minutes during each exposure time. It was reported that the technician had developed bilateral cataracts as a result of irradiation [30]. In another case, M. Zaret (reference found in [30]) reported that a 50 year old woman had developed cataracts after intermittent exposure to a 2.45 GHz microwave oven. The incident power density levels were about 1 mW/cm² during operation of the oven and as high as 90 mW/cm² when the oven door was opened [30].

K. Auditory Effect

Individuals exposed to pulsed RF/MW radiation have reported hearing a chirping, clicking or buzzing sound emanating from inside or behind the head. The auditory response has been observed only for pulsed modulated radiation emitted as a square-wave pulse train. The pulse width and pulse repetition rate are factors that appear to determine the type of sound perceived [1], [31].

James Lin [31] reports that the sensation of hearing in humans occurs when the head is irradiated at an average incident power density level of about 0.1 mW/cm² and a peak intensity near 300 mW/cm². Auditory responses have been observed for a frequency range of 200-3000 MHz and for pulse widths from 1-100 us [32].

III. RF/MW ENERGY DEPOSITION

The absorption of RF/MW radiated energy causes biological reactions to occur in living organisms. In order to understand the potential effects of RF/MW radiation, it is important to quantify the absorption characteristics of biological materials. Researchers have identified several principal factors that govern the absorption of RF/MW energy by the human body. Experimental results have indicated that clothing thickness, physical dimensions, degree of hydration, and the resonance frequency of the human body are important parameters that determine the amount of energy absorbed by the body [1], [8], [9], [16], [22].

A. Specific Absorption Rate (SAR)

The specific absorption rate (SAR) is a measure of the dose of RF/MW energy absorbed by biological materials. It is intended to give a quantitative understanding to the absorption of energy. The SAR is defined as the amount of energy that is imparted to the body as a function of body mass [4]. SAR's are usually expressed in terms of watts of incident power per kilograms of irradiated body mass (W/Kg) [4], [9].

B. Depth of Energy Penetration

It is known that RF/MW radiated energy will be absorbed by the tissue of the human body. The depth of energy penetration into the tissue depends primarily on the wavelength of the incident radiation and the water content of the tissue [3], [6].

Energy emitted in the millimeter-wave band is not likely to penetrate to more than about 1 or 2 mm into the tissue [6]. Essentially, RF/MW energy radiated at wavelengths less than 3 centimeters will be captured in the outer skin surface. RF/MW wavelengths from 3 to 10 centimeters will penetrate to a depth of about 1 to 10 mm. The greatest depth of penetration into the body will occur at wavelengths between 25 to 200 centimeters. At these wavelengths RF/MW radiated energy can directly effect internal body organs and cause serious injury. The human body is reported to be "transparent" to RF/MW radiated energy emitted at wavelengths greater than 200 centimeters. Also, at frequencies above 300 MHz it has been observed that the depth of energy penetration fluctuates rapidly with changes in frequency. In general, the depth of energy penetration into the body will decline as the frequency of the incident radiation increases. At 10 GHz, the absorption of RF/MW energy will be similar to IR radiation [3]. These figures were published by the U. S. Department of Health, Education and Welfare [3].

The water content of the human tissue will also influence the depth of energy penetration into the body. Millimeter-wave radiation is reported by Ghandi and Riazi [6] to penetrate less than 2 mm into the body because of the "Debye relaxation of the water molecules" in the tissue [6]. The Debye Effect was observed by a Dutch physicist named Peter Debye [23]. He discovered that EM waves are absorbed by a dielectric because of molecular dipoles present in the dielectric material [24]. Water molecules are essentially dipoles constructed from atoms of hydrogen and oxygen. Biological materials such as skin are dielectrics that consist mostly of water. Hence, these dielectrics are rich in molecular dipoles and are able to quickly absorb millimeter-wave radiation. High frequency radiation emissions are not expected to penetrate deeply into the human body [6].

C. Effect of Geometry

The orientation of the human body with respect to the incident EM field will determine the amount of RF/MW energy that is absorbed by the tissue. Experimental results published by Om Gandhi in 1980 indicate that the condition for maximum absorption occurs when the electric field is parallel to the major axis of the body and the direction of the field propagation is from arm to arm. Figure 2 shows the amount of energy absorbed versus the radiating frequency for various EM field orientations [22].

D. Effect of the Resonance Frequency

Researchers have reported that the human body will absorb the greatest amount of RF/MW energy from sources radiating at the whole-body resonance frequency [1], [9], [22], [25], [27]. The ANSI Standard [9] reports that the human body will absorb 7 times more energy from radiation emitted at the resonance frequency than at a frequency of 2450 MHz [9]. Experiments conducted on fabricated human models have been used to determine the resonance frequency of the human body [22]. Partial-body resonances have also been

observed by researchers. Computer simulation techniques have been used to estimate the resonance frequency of the human head [26].

The free space whole-body resonance frequency is reported to be between 61.8-77 MHz for a Standard Model of Man [9], [22], [25]. The standard model depicts an average man standing 175 cm tall [9]. Experimental results tend to differ somewhat from numerical calculations. The ANSI Standard [9] reports the whole-body resonance frequency to be 70 MHz [9]. Similarly, experimental results presented by Hagman, Gandhi, and Durney [25] indicate the resonance frequency to be between 68-71 MHz. However, calculations put forth by the same researchers place the whole-body resonance at 77 MHz [25]. In 1980, Om Gandhi reported that the maximum absorption of energy will occur at frequencies where the free space wavelength (λ) of the incident radiation is about 2.50-2.77 times greater than the major length (L) of the body (i.e. $\lambda > 23.50L-2.77L$). This formula puts the value of the resonant frequency between 61.8-68.5 MHz for a standard model of man. When the human body is in contact with the electrical ground, the whole-body resonance frequency is reduced to about 47 MHz [22]. Figure 3 shows the SAR versus the incident EM field frequency for conditions of free space and grounding [22].

Numerical calculations have been presented by Hagman, Gandhi, D'Andrea, and Chatterjee [26] that indicate the free space resonance frequency of the human head to be about 375 MHz [26]. In a separate report, Gandhi determined that the head resonance will occur when the free space wavelength of the incident radiation is about 4 times the diameter of the head [22]. The condition for maximum energy absorption occurs when the direction of the EM field propagation is parallel to the long axis of the body. This orientation differs from the condition determined for RF/MW energy absorption by the whole-body. Figures 4 and 5 show the absorption of energy versus frequency for different EM field orientations [26].

E. Effect of Clothing

Clothing can act as an impedance matching transformer for RF/MW radiation. In 1986, Gandhi and Riaz [6] reported that the coupling efficiency of clothing may be as high as 90-95 percent for incident radiation in the millimeter-wave band. They determined that the thickness of the clothing and frequency of the incident radiation are important factors in the coupling condition. Figure 6 shows the relationship between clothing thickness and coupling efficiency as a function of frequency. The authors note that wet or damp clothing may actually reduce the amount of energy absorbed by the body because of the Debye relaxation of the water molecules [6].

IV. RF/MW RADIATION EXPOSURE STANDARDS

Exposure of living organisms to RF/MW radiation can have a potentially dangerous biological effect. To ensure the public safety and to safeguard the workplace against unnecessary RF/MW radiation exposure, protective guidelines have been adopted by the United States and several other nations. The maximum safe exposure levels recognized by individual examining authorities tends to vary as a result of differing interpretations of the

available RF/MW exposure data. There is a large distinction between permissible exposure levels observed in the United States and the Soviet Union. East Block countries have set more stringent standards than nations in the West [3], [8], [11], [22].

A. ANSI Standard C95.1-1982

In response to the need for a national RF/MW radiation protection guide, the American Standards Association commissioned the Department of the Navy and The Institute of Electrical and Electronics Engineers to cooperate in formulating an acceptable standard for safe radiation exposure levels. In 1960, the Radiation Hazards Standards Project was established to coordinate the efforts of researchers. Since then, work has progressed and in 1982 a modern RF/MW radiation protection guide was established. The American National Standards Institute (ANSI) designated this guide as C95.1-1982 [9]. Presently, a new ANSI guide is due for publication in May 1993. The new guide is entitled "ANSI/IEEE C95.1-1992". This guide will supersede C95.1-1982 when it is published.

i. Recommendations

The ANSI C95.1-1982 Standard specifies the maximum recommended RF/MW radiation exposure levels over a frequency range of 300 KHz to 100 GHz. Typically, the standard calls for an exposure of no more than 5 mW/cm² for frequencies between 1500 MHz to 100,000 MHz. The reader should consult with the actual ANSI publication for the detailed recommendations. In addition, the standard limits the whole-body SAR to 0.4 W/Kg and indicates that the spatial peak SAR should not exceed 8.0 W/Kg over any one gram of tissue. For both CW and pulsed EM fields the exposure time should not exceed 6 minutes at the recommended levels. These maximum safe levels are not intended to apply to the medical treatment of patients where irradiation is sometimes useful in combating diseases like cancer. The standard does pertain to the general public and to persons that work in electromagnetic environments. There are two exceptions to the recommendation: 1) at frequencies between 100 KHz and 1 GHz the maximum exposure levels may be exceeded as long as the stated SAR values are not violated and 2) at frequencies between 300 KHz and 1 GHz the exposure levels may be exceeded if the output power of the radiating device is less than 7 W [9].

ii. Philosophy

An explanation of the recommended maximum exposure levels is given as part of the protection guide. The ANSI Standard is intended to afford the best possible protection of human life against RF/MW radiation exposure. The biological effect on the human body for all RF/MW frequencies and modulation schemes is not known, therefore, investigators sought to interpret the available data in a way that would allow for the construction of the best possible RF/MW radiation protection guide. Investigators emphasized studies that reported harmful or potentially serious biological effects. Unlike past standards, researchers agreed that the modern protection guide would also account for the nonthermal effects of RF/MW radiation [9].

The safe exposure levels expressed by the ANSI guideline were determined for far field exposures. The plane wave model used to specify the maximum exposure levels may not be accurate to describe conditions in the near field. However, the power density levels expressed in the protection guide are not considered great enough to induce EM fields with sufficient energy intensities capable of exceeding the recommend SAR's [9].

In selecting a measure for the dose of RF/MW radiation, it was recognized that the SAR does not encompass all of the important factors necessary to determine safe exposure levels. The modulation frequency and peak power of the incident EM field should also be considered. Some of the investigators warned that extra care should be taken by persons that are subjected to pulsed EM fields or by fields that are modulated near the whole-body resonance frequency [9].

In assessing the biological effects, it was found that behavior was the most sensitive biological component to RF/MW irradiation. It was observed that behavioral effects were reversible for exposure to carrier frequencies between 600 MHz and 2450 MHz when whole-body SAR's were limited to between 4 and 8 W/Kg. For these SAR's, power densities were calculated or measured to range from 10 mW/cm² to 50 mW/cm². Behavioral effects were considered to be among the most serious consequences of exposure to RF/MW radiation [9].

It was established that in order to ensure an acceptable margin of safety the whole-body average SAR should not exceed 0.4 W/Kg. Most of the researchers concluded that this was a necessary and reasonable standard. The exceptions cited in the recommendations were justified on the basis of the total rate of energy absorption by the human body. The Standard reports that small radio transceivers are able to emit EM fields that exceed the prescribed power density levels. Such devices, however, are not expected to compromise the prescribed maximum SAR levels. In general, compliance with the ANSI RF/MW protection guide is the best safeguard against harmful biological effects [9].

B. USAF PEL (AFOSH Standard 161-9, 12 February 1987)

Since the early investigations of the Tri-Service Commission, the United States Air Force has recognized the need to establish an RF/MW protection standard. The USAF permissible exposure level (PEL) is specified in AFOSH Standard 161-9 enacted 12 February 1987. This standard stipulates maximum safe RF/MW radiation exposure levels over a frequency range of 10 KHz to 300 GHz. The PELs are shown in Figures 7 and 8 [10].

In general, the USAF protection guideline agrees with the ANSI Standard except that a distinction is made between exposure to persons in restricted and unrestricted areas. No explanation for this policy is given in the USAF Standard. The PEL for restricted areas shows only a slight alteration from the ANSI recommendation. For a frequency range of 1500-300,000 MHz the USAF PEL is given as 10 mW/cm². The PEL put forth by the USAF is intended to protect personnel from harm by limiting the whole-body SAR to 0.4 W/Kg. Exposure periods at the maximum safe levels should be limited to 6 minutes. It is also recommended that exposure in the near zone to RF/MW sources radiating at less than 30 MHz may require a separate evaluation to determine safe exposure levels of irradiation [10].

C. Canada Western Europe

Concern over safe RF/MW radiation exposure levels has sparked controversy and sharp debate in many countries around the world. The ANSI Standard is currently recognized by most countries of the Free World including Canada, the United Kingdom, Sweden, France, and West Germany [8], [22].

D. Soviet Union & Eastern European Standards

The RF/MW radiation exposure standards prescribed in the Soviet Union and Eastern Europe are more conservative than standards adopted by countries in the West [3], [8], [11]. In the Soviet Union, permissible exposure levels for whole-body irradiation are specified for various time intervals. RF/MW radiation exposures may not exceed 0.01 mW/cm^2 for 3 hours/day, 0.1 mW/cm^2 for 2 hours/day, and 1.0 mW/cm^2 for 15-20 minutes provided that safety goggles be worn [3]. Czechoslovakia has recommended a maximum exposure level of 0.025 mW/cm^2 for an average working day [8].

Investigators in the Soviet Union and Eastern Europe have placed a great emphasis on the nonthermal effects of biological exposure to RF/MW radiation. They contend that electromagnetic interactions with the bioelectrical and biochemical functions of the body constitute a more serious health risk than effects from thermal heating. Nonthermal disruptions have been observed to occur at power density levels that are much lower than are necessary to induce thermal effects. Soviet researchers have attributed alterations in the central nervous system and the cardiovascular system to the nonthermal effect of low level RF/MW radiation exposure [3], [8].

The U. S. Department of Health, Education and Welfare [3] reports that the differing standards put forth by the East and West may be attributed to philosophical differences in basic research. Soviet investigators were intent on examining the effect of RF/MW radiation on the conditioned reflex response of living organisms whereas their counterparts in the West do not view this effect as an appropriate endpoint to research [3]. Recently, however, researchers in the West have sought to account for nonthermal effects in modern permissible RF/MW radiation exposure standards [9].

V. CONCLUSION

Exposure to RF/MW radiation is known to have a biological effect on living organisms. Research conducted over the past 30 years has provided a basis for understanding the effect of irradiation of biological materials. Experimental evidence has shown that exposure to low intensity radiation can have a profound effect on biological processes. The nonthermal effects of RF/MW radiation exposure are becoming important measures of biological interaction with EM fields. Modern RF/MW radiation protection guides have sought to account for the effects of low level radiation exposure. Adherence to the ANSI Standard [9] should provide protection against harmful thermal effects and help to minimize the interaction of EM fields with the biological processes of the human body [9].

It is essentially the absorption of RF/MW energy that causes stress and trauma to biological systems. The greatest amount of energy will be absorbed when the incident radiation is emitted at the resonance frequency of biological material [9], [22]. In this regard, RF/MW radiation emitted at nonresonant frequencies should be absorbed to the

greatest extent when the radiating mode is a pulsed signal. The generation of such signals creates transient responses that will match the resonant frequencies of biological materials. Nonresonant pulsed RF/MW radiation may be more harmful to living organisms than CW radiation emitted at nonresonant frequencies.

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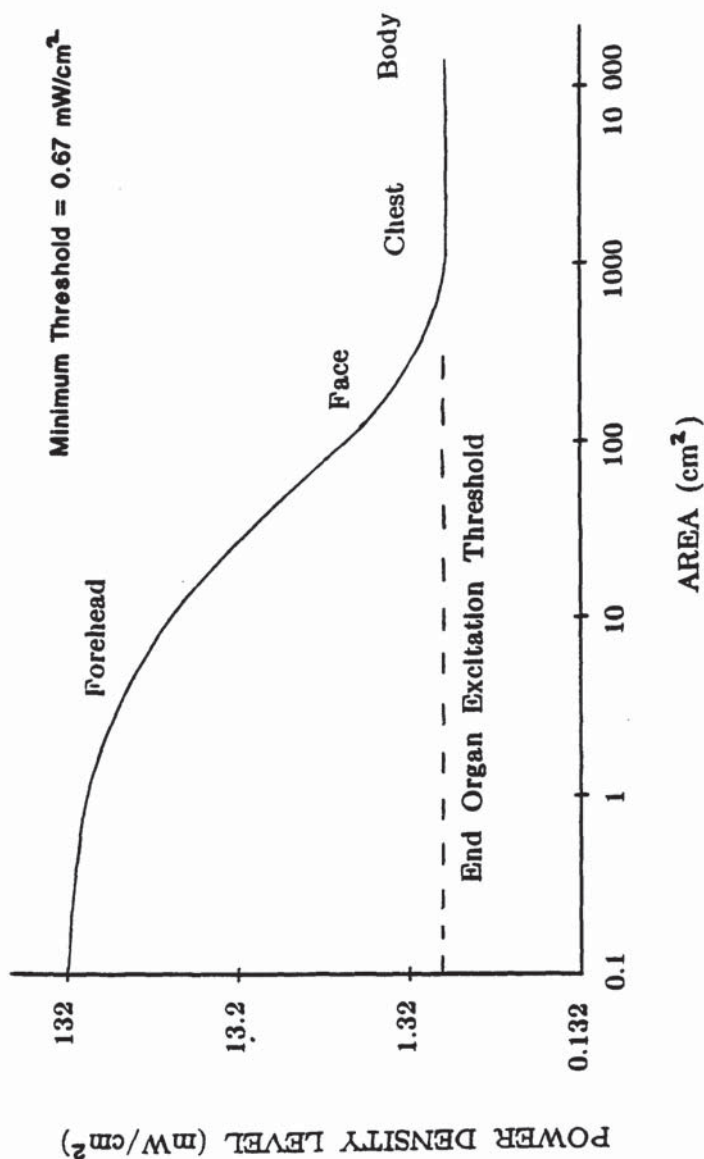


Figure 1: Observed threshold of infrared perception.

Absorbed continuous wave intensity versus exposed body area.

(ref: J. Hardy & T. Oppel, results reported by Om Gandhi and Abbas Riaz, IEEE MTT-34, pp. 228-235, Feb 1986)

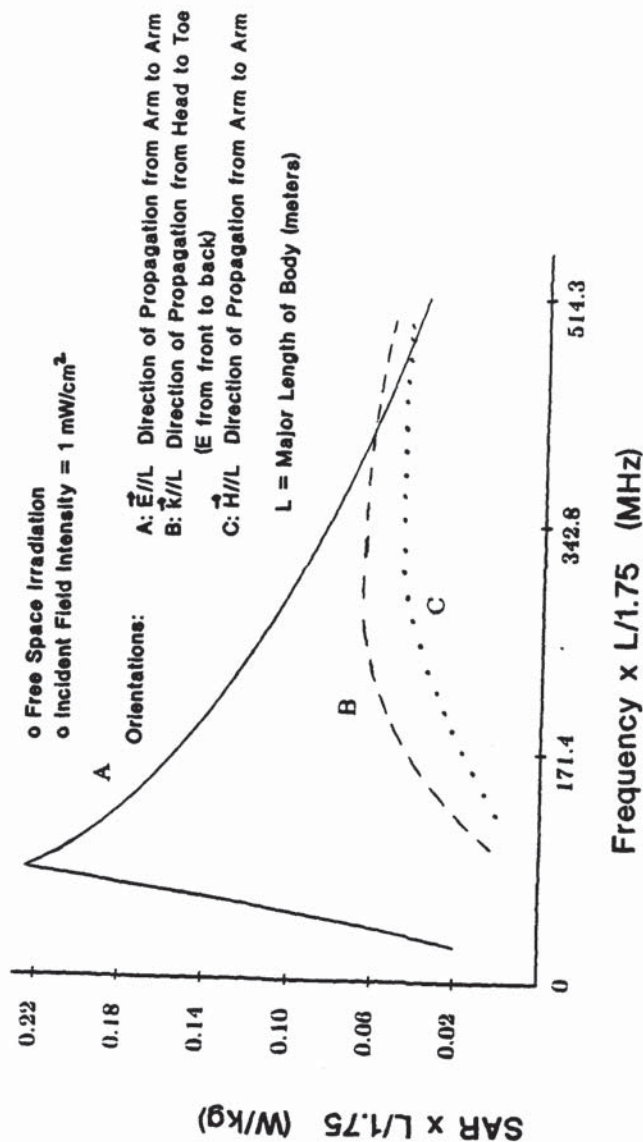


Figure 2: Comparison of field orientations for whole-body exposure of humans. Normalized SAR versus normalized radiated wave frequency.

(ref: Om Gandhi, Proceedings IEEE, Vol. 68, pp. 24-32, Jan 1980)

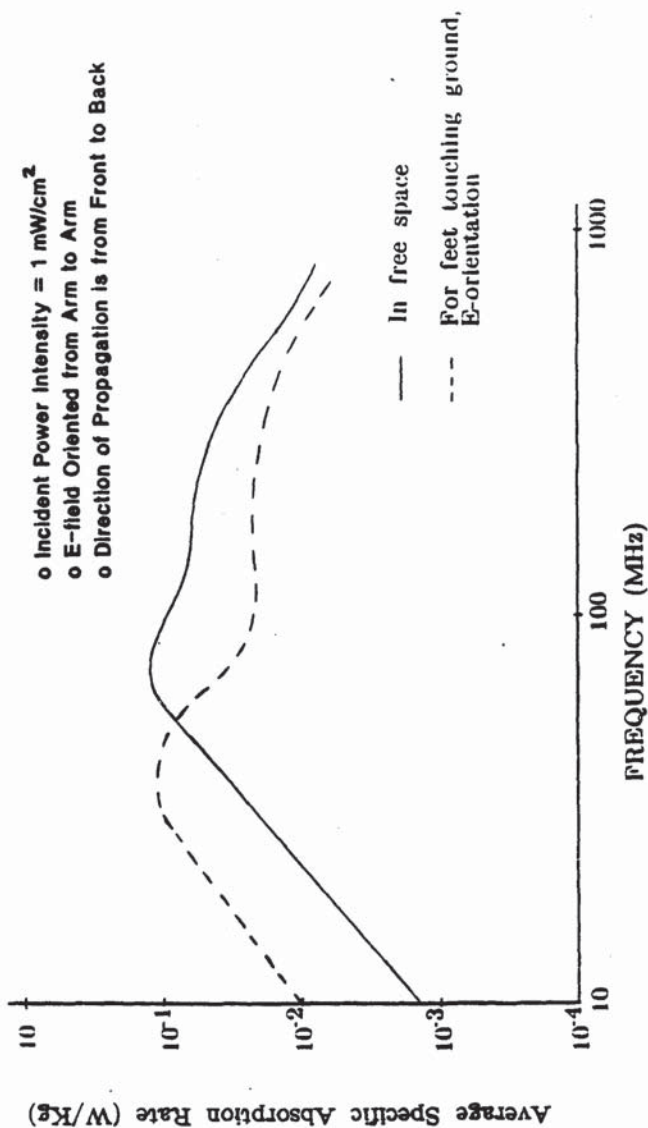


Figure 3: SAR versus frequency of incident radiation for a homogenous model of man.

(ref: OM Gandhi, Proceedings IEEE, Vol. 68, pp. 24-32, Jan 1980)

- o Incident Power Intensity = 10 mW/cm^2
- o E-field Oriented from Front to Back
- o Direction of Propagation is from Head to Toe

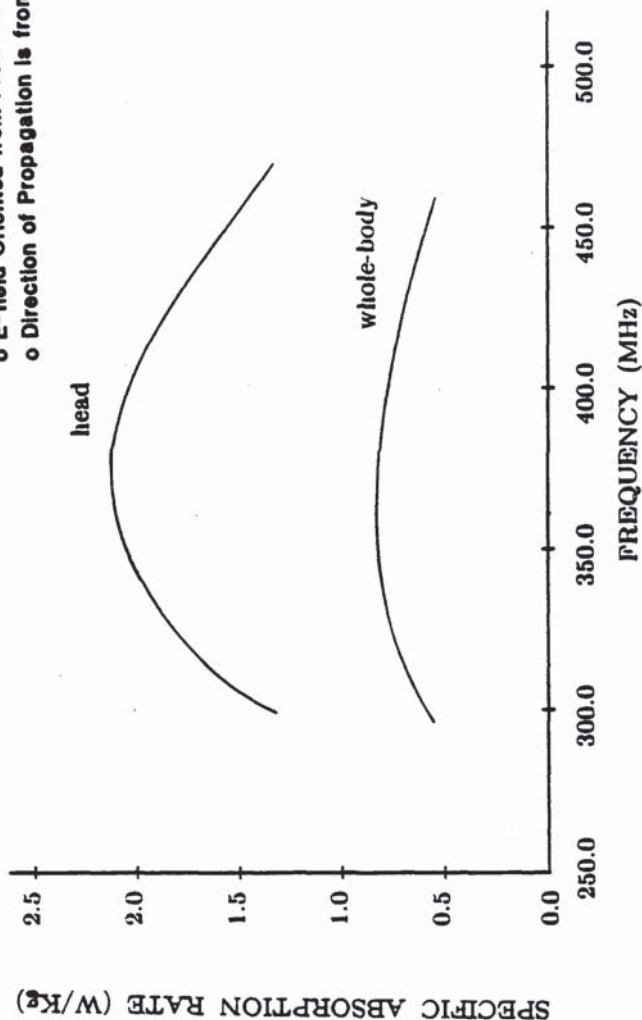


Figure 4: Head and whole-body energy absorption.
SAR versus frequency of incident radiation.

(ref: Hagmann, Gandhi, D'Andera, and Chatterjee, IEEE MTT-27,
pp. 809-813, Sep 1979))

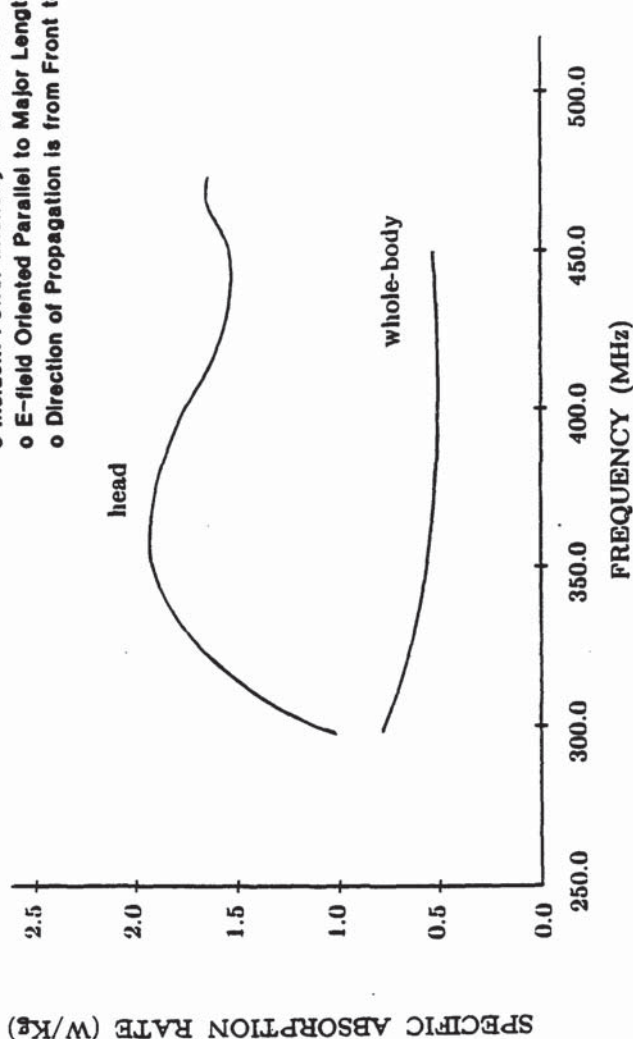


Figure 5: Head and whole-body energy absorption for $\vec{E} // L$.
 SAR versus frequency of incident radiation.

(ref: Hagmann, Gandhi, D'Anders, and Chatterjee, IEEE MTT-27,
 pp. 809-813, Sep 1979)

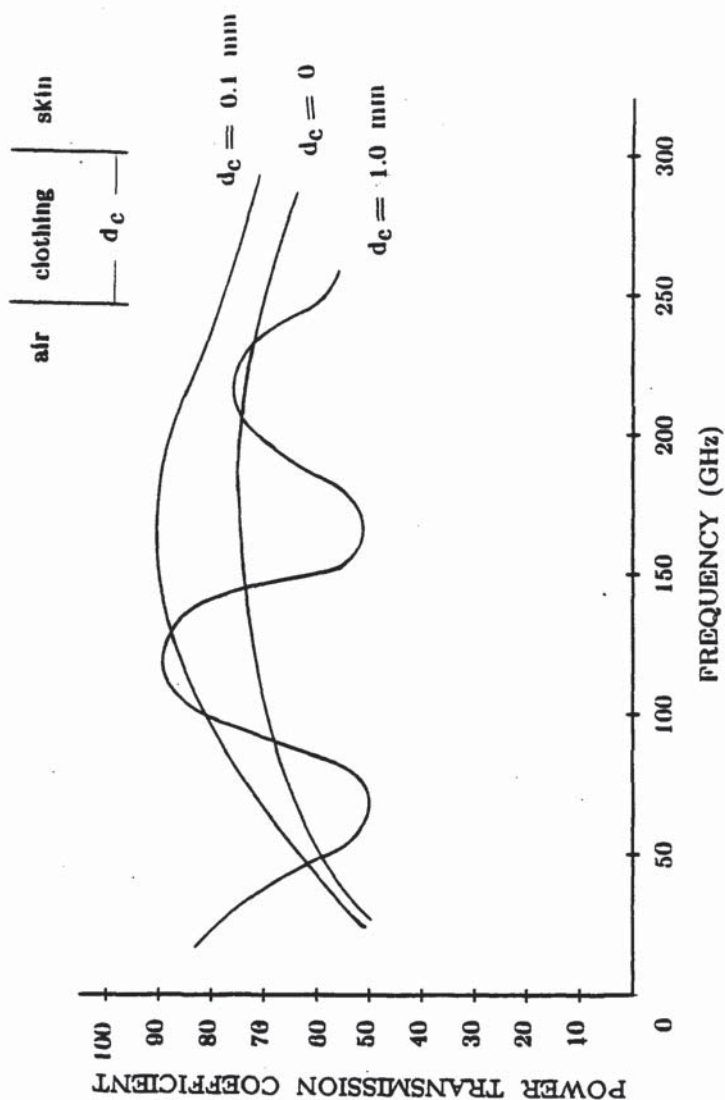


Figure 6: Comparison of transmission coefficient with and without clothing; no air gap between skin and exterior clothing.

(ref: Om Gandhi and Abbas Riaz, IEEE MTT-34, pp. 228-235, Feb 1986)

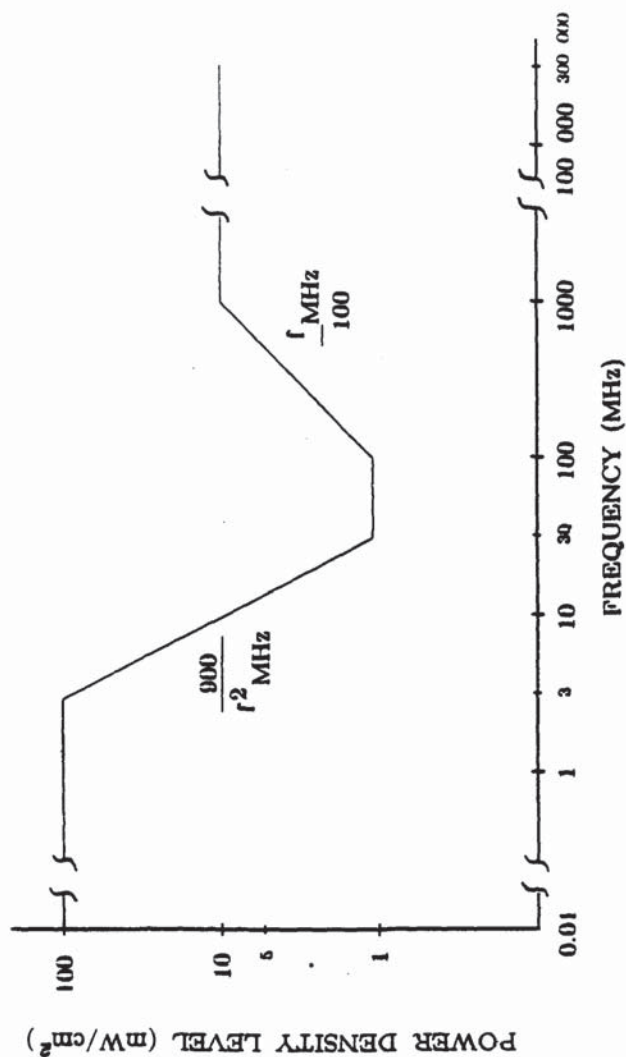


Figure 7: USAF RF/MW radiation permissible exposure limit (PEL) for humans working in restricted areas.

(ref: AFOSH Standard 161-9, 12 Feb 1987)

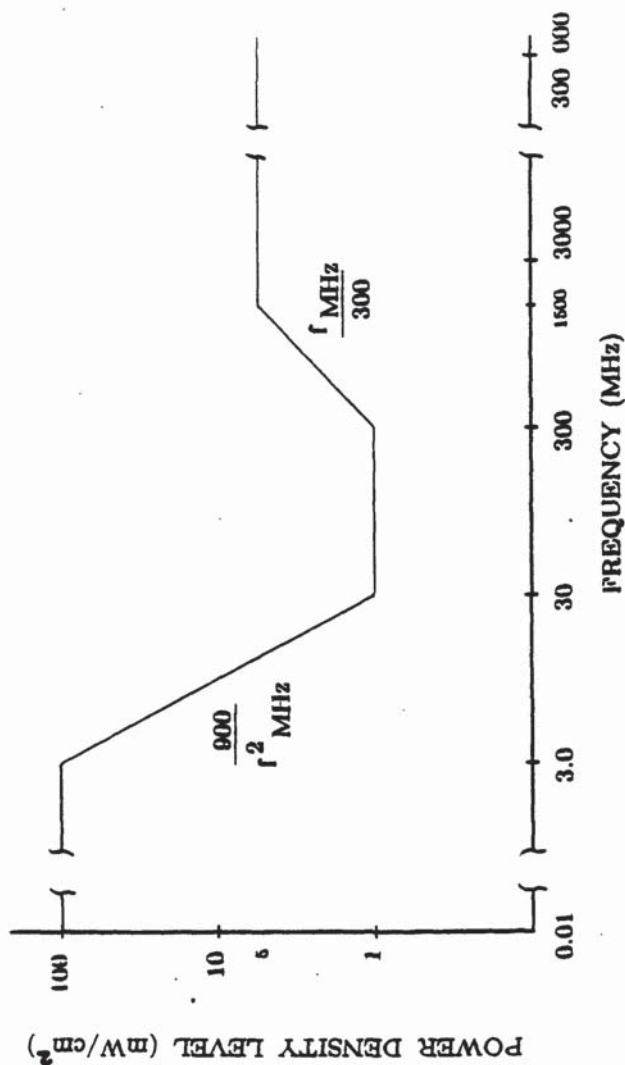


Figure 8: USAF RF/MW radiation permissible exposure limit (PEL) for humans working in unrestricted areas.

(ref: AFOSH Standard 161-9, 12 Feb 1987)

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Human auditory system response to Modulated electromagnetic energy.

ALLAN H Frey

General Electric Advanced Electronics Center

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Frey, Allan H. *Human auditory systems response to modulated electromagnetic energy.*

J. Appl. Physiol. 17(4):689-692. 1962-

The intent of this paper is to bring a new phenomenon to the attention of physiologists. Using extremely low average power densities of electromagnetic energy, the perception of sounds was induced in normal and deaf humans. The effect was induced several hundred feet from the antenna the instant the transmitter was turned on, and is a function of carrier frequency and modulation. Attempts were made to match the sounds induced by electromagnetic energy and acoustic energy. The closest match occurred when the acoustic amplifier was driven by the rf transmitter's modulator. Peak power density is a critical factor and, with acoustic noise of approximately 80 db, a peak power density of approximately 275 mw/cm² is needed to induce the perception at carrier frequencies of 425 mc and 1,310 mc. The average power density can be at least as low as 400 uw/cm². The evidence for the various possible sites of electromagnetic energy sensor are discussed and locations peripheral to the cochlea are ruled out.

A significant amount of research has been concerned with the effects of radio-frequency (rf) energy on organisms (electromagnetic energy between 1Kc and 100 Gc). Typically, this work has been concerned with determining damage resulting from body temperature increase. The average power densities used have been on the order of 0.1-1 w/cm² used over many minutes to several hours. In contrast, using average power densities measured in microwatts per square centimeter, we have found that other effects, which are transient, can be induced with this energy. Further, these effects occur the instant the transmitter is turned on. With appropriate modulation, the perception of various sounds can be induced in clinically deaf, as well as normal, human subjects at a distance of inches up to thousands of feet from the transmitter. With somewhat different transmitter parameters, we can induce the perception of severe buffeting of the head, without such apparent vestibular symptoms as dizziness or nausea. Changing transmitter parameters again, one can induce a "pins-and -needles" sensation.

Experimental work with these phenomena may yield information on auditory system functioning and, more generally, information on nervous system function. For example, this energy could possibly be used as a tool to explore nervous system coding, possibly using Neider and Neff's procedures (1), and for stimulating the nervous system without the damage caused by electrodes. Since most of our data have been obtained on the "rf sound" and only the visual system has previously been shown to respond to electromagnetic energy, this paper will be concerned only with the auditory effects data. As a further restriction, only data from human subjects will be reported, since only these data can be discussed meaningfully at the present time. The long series of studies we performed to ascertain that we were dealing with a biologically significant phenomenon (rather than broadcasts from sources such as loose fillings in teeth) are summarized in another paper (2), which also reports on the measuring instruments used in this work. The intent of this paper is to bring this new phenomenon to the attention of physiologists. The data reported are intended to suggest numerous lines of experimentation and indicate necessary experimental controls. Since we were dealing with a significant phenomenon, we decided to explore the effects of a wide range of transmitter parameters to build up a body of knowledge which would allow us to generate hypotheses and determine what experimental controls would be necessary. Thus, the numbers given are conservative; they should not be considered precise, since the transmitters were never located in ideal laboratory environments. Within the limits of our measurements, the orientation of the subject in the rf field was of little consequence. Most of the transmitters used to date in the experimentation have been pulse modulated with no information placed on the signal. The rf sound has been described as being a buzz, clicking, hiss, or knocking, depending on several transmitter parameters, i.e., pulse width and pulse-repetition rate (PRF). The apparent source of these sounds is localized by the subjects as being within, or immediately behind, the head. The sound always seem to come from within or immediately behind the head, no matter how the subject twists or

rotates in the rf field.

Our early experimentation, performed using transmitters with very short square pulses and high pulse repetition rates, seemed to indicate that we were dealing with harmonics of the PRF. However, our later work has indicated that this is not the case; rather, the rf sound appears to be the incidental modulation envelope on each pulse, as shown in Fig. 1

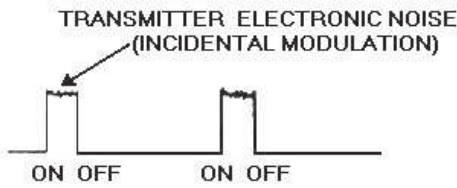
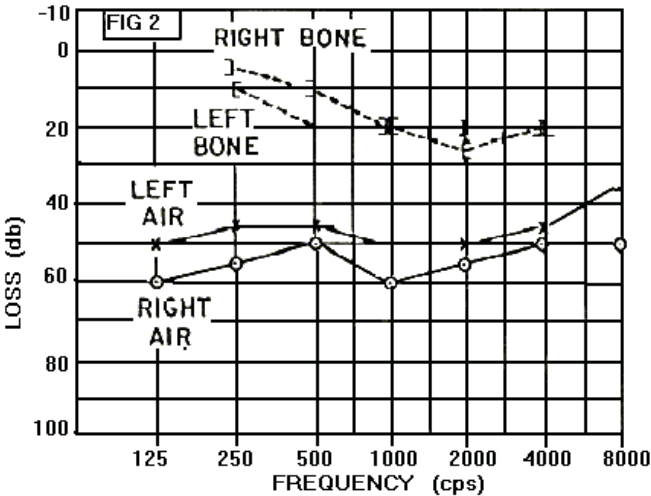


Fig 1 Oscilloscope representation of transmitter output over time (pulse-modulated)

Some difficulty was experienced when the subjects tried to match the rf sound to ordinary audio. They reported that it was not possible to satisfactorily match the rf sound to a sine wave or white noise. An audio amplifier was connected to a variable bandpass filter and pulsed by the transmitter pulsing mechanism. The subjects, when allowed to control the filter, reported a fairly satisfactory match. The subjects were fairly well satisfied when all frequencies below 5Kc audio were eliminated and the high-frequency audio was extended as much as possible. There was, however, always a demand for more high-frequency components. Since our tweeter has a rather good high frequency response, it is possible that we have shown an analogue of the visual phenomenon in which people see farther into the ultraviolet range when the lens is eliminated from the eye. In other words, this may be a demonstration that the mechanical transmission system of the ossicles cannot respond to as high a frequency as the rest of the auditory system. Since the rf bypasses the ossicle system and the audio given the subject for matching does not, this may explain the dissatisfaction of our subjects in their matching. At one time in our experimentation with deaf subjects, there seemed to be a clear relationship between the ability to hear audio above 5Kc and the ability to hear rf sounds. If a subject could hear above 5Kc, either by bone or air conduction, then he could hear the rf sounds. For example, the threshold of a subject whose audio-gram appears in Fig. 2 was the same average power density as our normal subjects. Recently, however, we have found people with a notch around 5Kc who do not perceive the rf sound generated by at least one of our transmitters.



Audiogram of deaf subject (otosclerosis) who had a "normal" rf sound threshold

THRESHOLDS

TABLE 1 Transmitter parameters

Trans- mitter Cycle	Frequency mc	Wave- length cm	Pulse Width usec	Pulses/Sec	Duty
A .0015	1,310	22.9	6	224	
B .0004	2,982	10.4	1	400	
C .0038	425	70.6	125	27	
D	425	70.6	250	27	.007
E	425	70.6	500	27	.014
F	425	70.6	1000	27	.028
G	425	70.6	2000	27	.056

H

8,900

3.4

2.5

400

.001

As shown in Table 1, we have used a fairly wide range of transmitter parameters. We are currently experimenting with transmitters that radiate energy at frequencies below 425 mc, and are using different types of modulation, e.g., pulse-repetition rates as low as 3 and 4/sec. In the experimentation reported in this section, the ordinary noise level was 70-90 db (measured with a General Radio Co. Model 1551-B sound-level meter). In order to minimize the rf energy used in the experimentation, subjects wore Flent antinnoise ear stoppers whenever measurements were made. The Ordinary noise attenuation of the Flents is indicated in Fig. 3. Although the rf sounds can be heard without the use of Flents, even above an ambient noise level of 90 db, it appears that the ambient noise to some extent "masked" the rf sound.

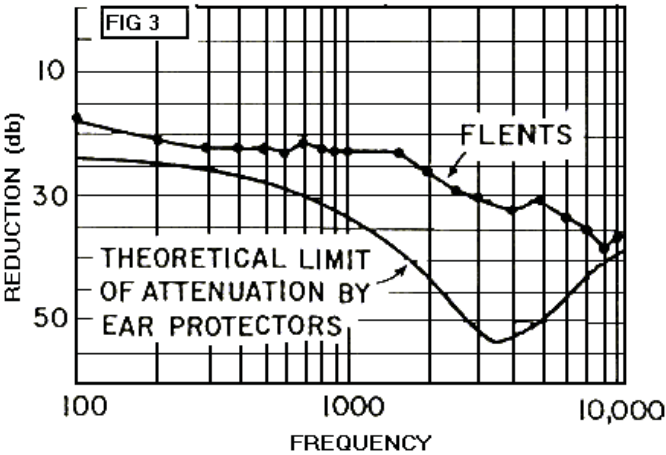


FIG 3 Attenuation of ambient sound with Flent antinnoise ear stopples (collated from Zwislocki (3) and Von Gierke (4))

TABLE 2 Threshold for perception of rf sound (ambient noise level 70 - 90 db)

						Peak
			Avg	Peak	Peak	
Magnetic			Power	Power	Electric	Field
Trans-	Frequency	Duty	Density	Density	Field	amp
mitter	mc	Cycle	mw/cm2	mw/cm2	v/cm	
turns/m						
A	1,310	.0015	0.4	267	14	4

B	2,982	.0004	2.1	5,250	63	17
C	425	.0038	1.0	263	15	4
D	425	.007	1.9	271	14	4
E	425	.014	3.2	229	13	3
F	425	.028	7.1	254	14	4

Table 2 gives the threshold for perception of the rf sounds. It shows fairly clearly that the critical factor in perception of rf sound is the peak power density, rather than the average power density. The relatively high value for transmitter B was expected and will be discussed below. Transmitter G has been omitted from this table since the 20 mw/cm2 reading for it can be considered only approximate. The field-strength-measuring instruments used in that experiment did not read high enough to give an accurate reading. The energy from transmitter H was not perceived, even when the peak power density was as high as 25 w/cm2. When the threshold energy is plotted as a function of the rf energy (Fig 4), a curve is obtained which is suggestive of the curve of penetration of rf energy into the head. Figure 5 shows the calculated penetration, by frequency of rf energy, into the head. Our data indicate that the calculated penetration curve may well be accurate at the higher frequencies but the penetration at the lower frequencies may be greater than that calculated on this model.

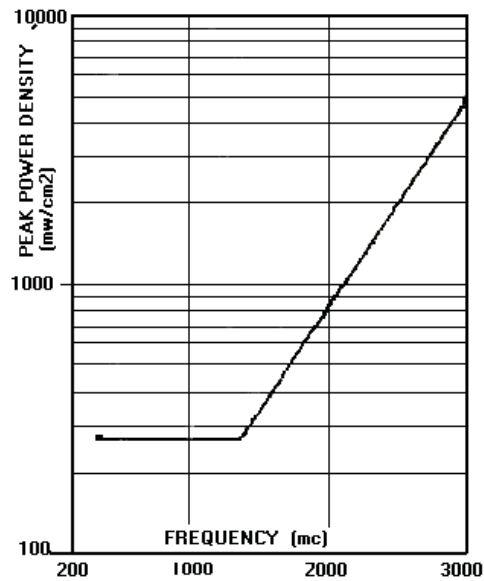


Fig 4 Threshold energy as a function of frequency of electromagnetic energy (ambient noise level 70 - 90 db)

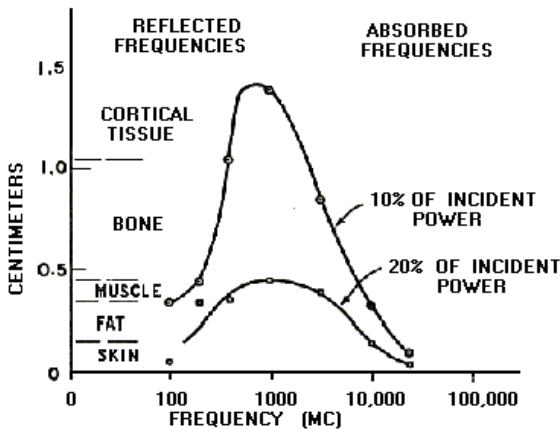


FIG 5 Microwave power distribution in the forehead model neglecting resonance effects and considering only first reflections [from Nieset et al (5), modified]

As previously noted, the thresholds were obtained in a high ambient noise environment. This is an unusual situation as compared to obtaining thresholds of regular audio sound. Our recent experimentation leads us to believe that, if the ambient noise level were not so high, these threshold field strengths would be much lower. Since one purpose of this paper is to suggest experiments, it might be appropriate to theorize as to what the rf sound threshold might be if we assume that the subject is in an anechoic chamber.

It is also assumed that there is no transducer noise.

Given: As a threshold for the rf sound, a peak power density of 275 mw/cm² determined in an ambient noise environment of 80 db. Earplugs attenuate the ambient noise to 30 db.

If: 1 mw/cm² is set equal to 0 db, then 275 mw/cm² is equal to 24 db.

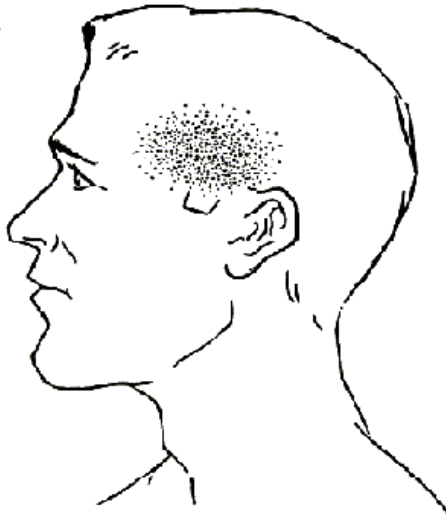
Then: We can reduce the rf energy 50 db to -26 db as we reduce the noise level energy from 50 db to 0 db. We find that -26 db rf energy is approximately 3 uw/cm².

Thus: In an anechoic room, rf sound could theoretically be induced by a peak power density of 3 uw/cm² measured in free space. Since only 10% of this energy is likely to penetrate the skull, the human auditory system and a table radio may be one order of magnitude apart in sensitivity to rf energy.

RF DETECTOR IN AUDITORY SYSTEM

One possibility that seems to have been ruled out in our experimentation is that of a capacitor type effect with the tympanic membrane and oval window acting as plates of a capacitor. It would seem possible that these membranes, acting as plates of a capacitor, could be set in motion by rf energy. There are, however, three points of evidence against this possibility. First, when one rotates a capacitor in an rf field, a rather marked change occurs in the capacitor as a function of its orientation in the field. When our subjects rotate or change positions of their heads in the field, the loudness of the rf sound does not change appreciably. Second, the distance between these membranes is rather small, compared with the wavelengths used. As a third point, we found that one of our subjects who has otosclerosis heard the rf sound.

Another possible location for the detecting mechanism is in the cochlea. We have explored this possibility with nerve-deaf people, but the results are inconclusive due to factors such as tinnitus. We are currently exploring this possibility with animal preparations. The third likely place for the detection mechanism is the brain. Burr and Mauro (6) presented evidence that indicates that there is an electrostatic field about neurons. Morrow and Sepiel (7) presented evidence that indicates the existence of a magnetic field about neurons. Becker (personal communication) has done some work indicating that there is longitudinal flow of charge carriers in neurons. Thus, it is reasonable to suspect that possibly the electromagnetic field could interact with neuron fields. As yet, evidence of this possibility is inconclusive. The strongest point against is that we have not found visual effects although we have searched for them. On the other hand, we have obtained other nonauditory effects and found that the sensitive area for detecting rf sounds is a region over the temporal lobe of the brain. One can shield, with a 2-in.sq. piece of fly screen, a portion of the stripped area shown in Fig. 6 and completely cut off the rf sound.



**FIG 5 Area most sensitive to electromagnetic energy
(shaded portion)**

Another possibility should also be considered. There is no good reason to assume that there is only one detector site. On the contrary, the work of Jones et al (8), in which they placed electrodes in the ear and electrically stimulated the subject, is sufficiently relevant to suggest the possibility of more than one detector site. Also, several sensations have been elicited with properly modulated electromagnetic energy. It is doubtful that all of these can be attributed to one detector. As mentioned earlier, the purpose of this paper is to focus the attention of physiologists on an unusual area and stimulate additional work on which interpretations can be based. Interpretations have been deliberately omitted from this paper since additional data are needed before a clear picture can emerge. It is hoped that the additional exploration will also result in an increase in our knowledge of nervous system functions.

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[a second paper by Alan Frey](#)

[Hearing in Electromagnetic Fields \(extract\) by Clyde E Ingalls](#)

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Mind-blowing Advance? Direct Brain-to-Brain Communication Between Humans Demonstrated

By Emily Waltz

Posted 4 Sep 2014 | 20:09 GMT



Starlab Barcelona

In an experiment that one rival scientist dubbed a "stunt," Spanish researchers claim to be the first to have demonstrated (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0105225#abstract0>) direct brain-to-brain communication between humans. The researchers, led by Giulio Ruffini, CEO of Starlab (<http://www.starlab.es>) in Barcelona, successfully transmitted the words "hola" and "ciao" in binary code from the brain of a person in India to the brains of three people in France. Electroencephalography (EEG), which monitors electric currents in the brain, was used to record the information from the sender's brain, and robotized transcranial magnetic stimulation (TMS), which causes neurons to fire from an electric current that is generated by a rapidly changing magnetic field, was used to deliver the message to the brains of the receivers in France.

Researchers have for years been developing noninvasive systems for translating information directly from the human brain to the computer. These systems, called brain-computer interface, often involve brain activity-sensing tools such as EEG, functional near-infrared spectroscopy (fNIRS) (<http://spectrum.ieee.org/tech-talk/biomedical/imaging/wearable-brain-scanner-tells-your-computer-when-youre-overwhelmed>), and functional magnetic resonance imaging (fMRI). Researchers have also, to a lesser extent, experimented with translating information from the computer to the brain, using brain stimulating tools such as TMS — variations of which have also been used to treat depression (<http://spectrum.ieee.org/biomedical/devices/electromagnetic-depression-treatment-nears-approval>) — and transcranial focused ultrasound (FUS), which has been used to link the brains of rats

(<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0060410>).

The Starlab experiment integrates two of these existing technologies to move a message from human brain to computer to human brain. The experiment was set up like this: While hooked up to an EEG device the sender was asked to imagine moving his hands or feet when shown an image that represented a 1 or 0, respectively. The EEG data was transmitted to the computer, translated into binary code, and emailed to the system at the recipients' end. The recipients, blindfolded, received electric pulses from the robotized TMS system in the visual cortex of their brains. That triggered the experience of phosphenes: the perception of seeing flashes of light that are not actually there. The recipients reported verbally when they experienced a flash, and this was translated into binary code and then to the message. It's super slow — the equivalent of telepathic Morse code. Still, the message was delivered.

The authors published the experiment in *PLoS One*, describing it as "the first human brain-to-brain interface." Ruffini at Starlab said the work stemmed from his company's involvement in a [four-year collaborative project](http://hive-eu.org/about) (<http://hive-eu.org/about>) funded by the European Commission to develop noninvasive brain stimulation technologies. The paper was "a way to show that our technologies work," said Ruffini in a phone interview.

It's a fun experiment, and it's exciting to think about potential (but far-fetched) applications, like [soldiers with high-tech helmets communicating silently behind enemy lines](http://http://www.defenseone.com/ideas/2014/09/actual-telepathy-one-step-closer-battlefield/92954/?oref=d-river) (<http://http://www.defenseone.com/ideas/2014/09/actual-telepathy-one-step-closer-battlefield/92954/?oref=d-river>). But some researchers not involved with the experiment say the paper doesn't really present a "first" and smacks of publicity grubbing. It's "pretty much a stunt I think as it's all been shown before," said Christopher James, a professor of biomedical engineering at the University of Warwick in the UK, in an email to *IEEE Spectrum*.

A group at the University of Washington in Seattle led by Rajesh Rao last year [demonstrated in an unpublished pilot study](http://homes.cs.washington.edu/~rao/brain2brain/experiment.html) (<http://homes.cs.washington.edu/~rao/brain2brain/experiment.html>) a very similar experiment involving EEG on the brain-to-computer end of the experiment and TMS on the computer-to-brain end. In that study, the researchers stimulated the motor cortex of the brain, causing the message receiver's hand to move subconsciously to strike a keyboard. The university [declared](http://www.washington.edu/news/2013/08/27/researcher-controls-colleagues-motions-in-1st-human-brain-to-brain-interface/) (<http://www.washington.edu/news/2013/08/27/researcher-controls-colleagues-motions-in-1st-human-brain-to-brain-interface/>) it "the first noninvasive human-to-human brain interface." That was in August 2013. Rao told *IEEE Spectrum* he was "surprised and disappointed" that his experiment wasn't acknowledged in some way in Ruffini's paper.

Ruffini says he had seen Rao's experiment before publication of his, but that since it was unpublished "there was no paper to refer to." And he maintains that his paper was no stunt. "I believe such comments stem from not having read carefully the paper and missing the point," he says. Ruffini's experiment adds to scientific literature because unlike previous work, including Rao's, he stimulated the visual cortex, bypassing all peripheral nervous system involvement, and resulting in a conscious, rather than subconscious, brain-to-brain communication, Ruffini says. Rao's experiment "is interesting work. But I don't think it's really brain-to-brain," he says.

Future experiments will no doubt help us define what "brain-to-brain interface" really means. In the meantime, we'll have to squabble over the few experiments under our belts.

COVERT HARASSMENT CONFERENCE

CHC - BRUSSELS - 2014

COVERT HARASSMENT CONFERENCE 2014 BRUSSELS, 20 NOVEMBER 2014

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Update 9 February 2015: Very sad news reached us today. Rauni-Leena Luukanen Kilde passed away last night.



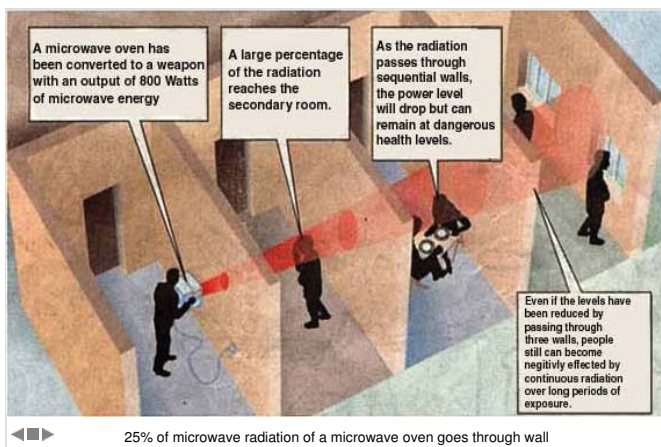
Rauni-Leena Luukanen-Kilde's last words at the CHC 2014:

'We have to help ourselves. Nobody is going to help us. No institute, no government, because we are under the government. And these are government crimes, crimes against humanity. And it is on the very highest level in every single country. You can go up to the prime minister or the president ... and they are behind false flag operations.

So what can we do? First of all it's awareness, awareness, awareness. Talk about it to anybody. And people who are not victims they will not listen, and they don't want to listen because they are afraid. Because if they listen they know they may become victims. So they just deny everything. But we have to. Because one thing that helps us, I think. We know there is no death, we have an energy body. And it does keep us going and if it doesn't keep you going, it keeps me going because you know you cannot die. And that's why I am not afraid.' [Video](#).

Rauni's lecture: Bright light on black shadows, man is a mind, not a body

EUROPEAN CONFERENCE ON COVERT HARASSMENT OF CIVILIANS 2014



We are very proud to announce our first conference on covert harassment. The conference is the first of an annual human rights conference with the aim to create awareness on the covert harassment of civilians. Not only whistle blowers, activists and political opponents are targeted, but also thousands of innocent civilians are subjected to non-consensual testing and mind control experimentation by a myriad of non-lethal weapons and covert community harassment by government and non-government agencies. The conference addresses these issues on individual and global scale, and is also about trying to find

TI-EVENT-2014

The conference is part of the TI-EVENT-2014, a single day event to bring together the targeted individuals from all over Europe. It aims at creating more awareness on the covert crimes committed against them and humanity.

[Go to the TI-EVENT-2014 website >](#)

CONFERENCE SPEAKERS



Magnus Olsson

Economics at Cesar Ritz in Switzerland, American University of Paris and Harvard, Boston, USA.

[More >](#)



Peter Mooring

Electronics and Computer Architecture at Delft University of Technology, The Netherlands.

[More >](#)



William Binney

NSA whistleblower. Former employee of NSA, Consultant to US government intelligence agencies including CIA, NRO, Homeland Security.

[More >](#)



Dr. Henning Witte

Law School at Munich, Uppsala (Sweden) and Bonn. Dr. of law at Frankfurt University,

Germany.

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Dr. Rauni Kilde

Former acting director of ENVIRONMENTAL Health and Health education of National Institute of Health

solutions for all those targeted, which soon will be all children of our world.

News:

24 december 2014: [Summary including videos of the Covert Harassment Conference 2014 online](#)

22 November 2014: Thank you so much!

The conference took place, we had some 115 participants (excluding speakers), few journalists and doctors, most were TI's. We had visitors from Russia, Ireland, Norway, Bulgaria, Italy, Malaysia, etc. We will publish details later. We understand that for most TI's it is very difficult to come. For this it is almost impossible to express our gratitude to all who came. We also want to thank our speakers, without them, the conference would not have been possible. And we also want to thank the people who asked questions during the panel discussion, we value your input very much!

The participants list will be send soon, we will put the lectures online in weeks (please be patient) and will contact everyone who sent us messages.

This conference is not over yet!

From our hearts we thank you.

Peter, Melanie, Magnus, Kim, Beata

11 November 2014: [The programme is more or less final](#)

5 November 2014: [Press release Covert Harassment Conference: WORLD'S FIRST INTERNATIONAL CONFERENCE ON COVERT HARASSMENT EXPOSES ROBOTIZATION OF HUMANS](#)

29 October 2014: [Background information in Polish](#)

18 October 2014: [John Allman to speak at the conference](#)

10 October 2014: [Magnus Olsson announces NSA whistleblower William Binney speaking at the Covert Harassment Conference!](#)

9 October 2014: [Buy your tickets online](#)

3 October 2014: [Download the promotion documents](#)

BACKGROUND INFORMATION

Read more about the conference in [English](#), [Français \(French\)](#), [Deutsch \(German\)](#), [Nederlands \(Dutch\)](#), [česky \(Czech\)](#), [Polski \(Polish\)](#).

WHO SHOULD ATTEND

Everyone concerned with the direction our world is going to. Especially politicians, journalists, human rights organizations and activists, lawyers, police and military personnel, doctors and psychiatrists should not miss this conference. And of course we hope to welcome many victims of these crimes joined by friends and/or family members.

AIMS OF THE CONFERENCE

The aims of the Covert Harassment Conference 2014:

- To challenge general ignorance, governments denial and mainstream media silence regarding the development and existence of the sophisticated spectrum of harassment methodologies and bio-electromagnetic technology (a.k.a. mind-control technology), capable of not only influencing the human body, behaviour, emotions and cognitive processes, but also torturing and/or killing at the speed of light without leaving any evidence.
- To raise awareness and inspire reflection among the public on these human rights violations committed non-consensually and covertly on innocent civilians.
- To stimulate the debate at the European and world level, forming a basis for international legislation and policies addressing the use of remote technology weapons and/or methodologies, including: thought reading and thought control technologies, directed energy weapons (DEW), gang stalking (a.k.a. organized stalking) and ensuring citizens' protection.
- To prompt recognition and acknowledgement of the stories of targeted individuals, instead of ignoring them and often labelling as 'crazy'.
- To engender independent investigations into mind-control experimentation related crimes.

of Finland in Helsinki and govt. of Finland's representative in WHO Geneva

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Mojmir Babáček

Philosophy and Economy
at Charles University in
Prag. Writer, Czech
Republic.

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Alfred Lambremont

Webre, MA, JD

Yale University, Yale Law
School international law.
NGO delegate United

Nations.

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John Allman

Open University
Mathematics and Science,
Software development,
Post-graduate Diploma in

Law.

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More to be added ... [All speakers](#)

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- To encourage everybody to look for the solutions to protect citizens against the crimes committed with the use of these remote technology weapons and/or methodologies and diligently promote the care for victims of stalking crimes who have limited resources or avenues for a safe environment.

SPEAKERS

The following persons have already acknowledged to speak at the conference:

- [Magnus Olsson](#) - Director of EUCACH - European Coalition Against Covert Harassment
- [Peter Mooring](#) - Founder of STOPEG Foundation - STOP Electronic weapons and Gang stalking
- [William Binney](#) - NSA whistleblower
- [Dr. Henning Witte](#) - Founder of White TV, Sweden's first uncontrolled medium
- [Dr. Rauni Kilde](#) - Medical specialist and advisor
- [Mojmír Babáček](#) - Writer, Czech Republic
- [Alfred Lambremont Webre, MA, JD](#) - Active with human rights and social justice
- [John Allman](#) - Founder of Christians Against Mental Slavery/BanMindWeapons.org

More to be added ... [All speakers](#)

PROGRAMME

The program is being finalized at the moment. Please see [Programme](#).

ORGANIZATION

The Covert Harassment Conference 2014 is organized by:

**European Coalition
Against
Covert Harassment
(EUCACH)**



www.eucach.org

**STOPEG Foundation
(STOP Electronic weapons
and
Gang stalking)**



www.stopeg.com

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Valerie Copping
Quality & Standards Unit, PSD
Thames Valley Police Headquarters
Oxford Road
Kidlington
Oxon, OX5 2NX

E-mail: Professional.Standards@Thamesvalley.pnn.police.uk
Tel: 101

Date: 5th June 2015

Mr Desmond Last
18 Old Place Yard
Bicester
Oxfordshire OX26 6AU

Our Ref: DG/00891/15

Dear Mr Last

We are in receipt of your complaint made to the Independent Police Complaints Commission (IPCC) on 4th June 2015 regarding the advice given to you by our Officer, Insp Hibbert, in May 2015.

It is regrettable that you are unhappy with the advice you received, however it is correct that any concerns you have regarding the dangers of microwave and direct energy weapons and associated technologies are not a matter for the Police. You need to direct your concerns to the UK Ministry of Defence as recommended in the letter you received from the Safer Communities Directorate of the Scottish Government.

Your complaint is not a conduct or direction and control issue as defined by the Police Reform Act 2002 and subsequent legislation and therefore will not be recorded. You may not be happy with my decision not to record your complaint. If this is the case you have a right of appeal to the IPCC against my decision not to record this as a formal complaint against police. The IPCC are the appeal body to consider all appeals when a complaint is not recorded. You have 28 days from the date following the date of this letter within which to make your appeal. Appeals received after 28 days may not be allowed unless there are exceptional circumstances. Information on how to appeal can be found at www.ipcc.gov.uk/appeals

Yours sincerely

A handwritten signature in black ink, appearing to read "Valerie Copping".

Valerie Copping
Quality & Standards, Professional Standards Dept
DCC Directorate

SteveLendmanBlog

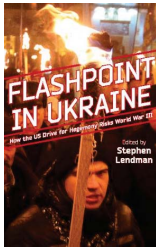
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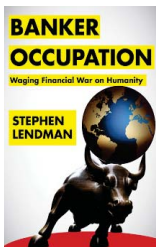
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TUESDAY, JANUARY 04, 2011

Electromagnetic Frequency Mind Control Weapons

Electromagnetic Frequency Mind Control Weapons - by Stephen Lendman

Directed energy weapons include lasers, high power microwave, and millimeter wave ones among others. A relevant December 2007 Department of Defense (DOD) report called them a "transformational game changer in military operations, able to augment and improve operational capabilities in many areas," for both lethal and non-lethal purposes.

Access the full text through the following link:

<http://www.acq.osd.mil/dsb/reports/ADA476320.pdf>

Among other applications, EMF weapons/devices are used for harassment, surveillance and mind control. Agencies like the Pentagon, CIA and NSA use them to monitor people, manipulate their minds, harm, and at times kill them. The Navy Times called them the "most feared and controversial weapon(s) of (the) modern age."

Human experiments in America go back decades, an earlier article addressed MK-ULTRA (and others), accessed through the following link:

<http://sjlendman.blogspot.com/2010/02/mk-ultra-cias-mind-control-program.html>

Begun in 1953, it was the code name for a secret CIA mind control program to perfect a truth drug. It followed earlier WW II hypnosis, primitive drugs research, and the US Navy's Project Chatter, identifying and testing drugs on both animal and human subjects. These and other experiments aimed to control human behavior through psychedelic and hallucinogenic drugs, electroshock, radiation, graphology, paramilitary techniques, and various psychological/sociological /anthropological methods, among others.

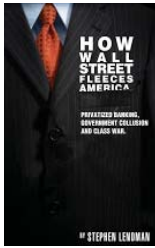
They comprised a vast open-field of mind experimentation, using anything that might work, legal or not on willing and unwitting subjects. For example, Dr. Ross Adey worked on the CIA's Pandora Project, using microwaves to send signals to human brains. Cataloguing the results, he showed how they affected emotional and pathological states. He also learned that human brains could be controlled remotely through extremely low frequency modulated microwave beams, able to cause psychological and physical harm.

People could be turned in zombies, their minds easily controlled. Physical harm also resulted, affecting their blood, cardiovascular system, cells, central nervous and digestive systems, glands, metabolism, reproduction, eyesight, and hearing. In addition, subjects could be made suicidal or driven mad. Moreover, sounds and speech can be placed in victims' brains, actual voices they can't control or stop.

Other effects include unexplainable burning, itching, tickling or pressure; "humming" or "buzzing" causing sleeplessness and anxiety; loss of body control, producing sudden twitching or jerking of an arm or leg; and feelings of dread, rage, lust, sorrow, or other emotions that come and go quickly.

Moreover, microwave cooking can heat people to death by increasing the radiation field intensity, causing local hot spots in eyes, gall bladders, and other body parts. Paralysis can also be induced. Memories are erased or impaired. Cancerous cells can be produced, and behavior modified the way authorities wish, even turning people into killers, microwave signals directing them. The entire mobile phone network can be used for these purposes, yet people are unaware of what's happening.

Post-WW II, human radiation experiments were conducted, affecting thousands of US citizens. Millions more were exposed to radioactive fallout from over 200 atmospheric and underground tests. At the Nevada site in the 1950s and 1960s, detonations affected over 200,000 "atomic vets," thousands more downwind also in Nevada, Utah, Colorado and New Mexico. These and numerous other physical and psychological experiments caused enormous harm to hundreds of thousands of unwitting people, victimized by their own country.



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Privatized Banking, Government Collusion and Class War

By Stephen Lendman

This book provides a powerful tool for showing angry Americans how they've been fleeced, including a plan for constructive change.

For reviews, a synopsis, and Sales info, please click one of the following links:

[Claritypress: How Wall Street Fleeces America](#) or [Amazon.com](#)



The Iraq Quagmire: The Price of Imperial Arrogance

By Stephen Lendman and J.J. Asongu

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Electronic harassment and mind control technologies direct energy through lasers, radio frequency energy beams, holography, interferometry, electromagnetic radiation, radio and sound waves, satellites, radar, miniature electronic robots, smart dust, and other means. All do it invisibly over thousands of miles. They can penetrate walls, buildings, metals, concrete, mountains and thousands of miles of earth.

Intersecting energy beams create radiation pockets in victims, engineered to contain sound waves, messages, heat and pressure stress, simulated forms of electromagnetic radiation, telepathic images, as well as holographic and virtual reality simulations. Directed energy beams can also track, locate and target people harmfully. They can only be blocked by force fields or materials that absorb or deflect them. What they are remain top secret.

Bush I declared the 1990s "The Decade of the Brain," an effort "to enhance public awareness of the benefits to be derived from brain research," keeping its dark side hidden.

The Pentagon's DARPA (Defense Advanced Research Projects Agency) conducted research and development in "augmented cognition," what universities call "cognitive science." It's the interdisciplinary study of how information is represented and transformed in the brain. The Pentagon's purpose was for military applications, including manipulating the emotions and behavior of adversaries.

Used globally, it's applicable individually, for crowd control, or larger groups, using millimeter waves, pulsed energy projectiles, and high power magnetic weapons, subjects unaware of what's hitting them.

The NSA's Signals Intelligence (SIGINT) involves decoding EMF waves to tap into computers wirelessly and track people. Using EMF Brain Stimulation to monitor individuals, organizations and nations, it complements the CIA/Defense Intelligence Agency's (DIA) Human Intelligence (HUMINT), and National Geospatial-Intelligence Agency's Imagery Intelligence (IMINT). NSA's DOMINT can track millions of people simultaneously. It can also inflict harm, control subjects psychologically and kill.

In conflict zones like Iraq and Afghanistan, "Project Sheriff" is used to give "troops working in urban terrain more options" against combatants and noncombatants alike. Humvees and armored personnel carriers have been retrofitted with non-lethal weapons, including microwave-like pain rays (an Active Denial System) and a Long Range Acoustic Device emitting earsplitting sounds.

Pulsed Energy Projectiles (PEPs) travel nearly at the speed of light. With pinpoint accuracy, they emit invisible laser pulses, electromagnetic radiation, stunning targets, knocking them off their feet, paralyzing them in pain. Their long-term effects, however, are unknown, including on the brain.

Voice to Skull directed acoustic devices are neuro-electromagnetic non-lethal weapons, able to produce mood-altering sounds in a person's head. Remote Neural Monitoring (RNM) uses satellite transmitted extra low frequencies (ELF) to send voice to brain communications. Long Range Acoustic Devices (LRADs) are used for crowd control. They produce 150-decibel acoustic beams, "designed to communicate with authority and exceptionally high intelligibility in a 15 - 30 degree beam." They emit verbal challenges over distances beyond 500 meters, with warning tones to influence behavior. They can also inflict physical harm, manipulate minds, and cause death.

The field of Augmented Cognition includes Transcranial Magnetic Stimulation (TMS), used therapeutically and for military purposes. The latter is to emit close proximity electrical impulses to the brain to affect mood, sleep patterns, and improve cognitive abilities in areas of learning, memory, attentiveness, visualization, and decision-making. The long-term neurological effects are unknown. The potential for human harm is considerable.

Transmitted over long distances, silent psychotronic weapons can cause illness or death for no apparent reason. In his 1970 book, "Between Two Ages," Brzezinski Brezezinski, discussed technologies to conduct secret warfare, saying:

"It is possible - and tempting - to exploit, for strategic-political purposes, the fruits of research on the brain and on human behavior....Accurately timed, artificially excited electronic strokes could lead to a pattern of oscillations that produce

[Obama Year Two: Continued Betrayal and Failure \(Pa...](#)



relatively high power levels over certain regions of the earth....In this way, one could develop a system that would seriously impair the brain performance of a very large population in selected regions, over an extended period."

Most people know nothing about directed energy weapons, manipulating, incapacitating and killing many thousands who have no idea what hit them. America has been a longtime global offender, developing and using them for decades to surveil, harass, intimidate, manipulate, torture, and kill. They can also read minds and turn people into zombies. Why? To achieve total unchallengeable control.

So-called "non-lethal weapons" can be as harmful as killer ones. Ongoing research, in fact, is chilling. Waging war on human minds and bodies, it's morally, ethically, and legally indefensible. Continuing, however, atrocity technologies are produced, mostly without public knowledge or that governments like America use them against their own people and others. For ill, of course, not good. Dr. Mengele lives.

Stephen Lendman lives in Chicago and can be reached at lendmanstephen@sbcglobal.net. Also visit his blog site at sjlendman.blogspot.com and listen to cutting-edge discussions with distinguished guests on the Progressive Radio News Hour on the Progressive Radio Network Thursdays at 10AM US Central time and Saturdays and Sundays at noon. All programs are archived for easy listening.

<http://www.progressiveradionetwork.com/the-progressive-news-hour/>.

posted by Steve Lendman @ [2:29 AM](#)

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Prime Ministry: telepathy may be involved in engineers' deaths



Engineer Halim Ünsem Ünal (back, L), who worked for ASELSAN and is believed to have committed suicide, is pictured with his family. (Photo: Cihan)

August 05, 2013, Monday/ 17:31:00/ AHMET DÖNMEZ

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A report the Inspection Board of the Prime Ministry has recently completed on the mysterious deaths of some engineers working for a Turkish defense industry giant, [aselsan](#), maintains that the young engineers may have been driven to commit suicide after being exposed to telepathic attacks aimed at destroying them psychologically.

Four engineers working for ASELSAN died in mysterious and consecutive deaths in the years 2006 and 2007. Following the initial probe conducted after the deaths of Hüseyin Başbilen, Halim Ünsem Ünal, Evrim Yançeken and Burhaneddin Volkan, the press reported that the unexpected deaths of the four engineers were believed to be suicides, but question marks about the deaths have lingered on, with the families of the victims usually skeptical about their suicides.

Last year, the Inspection Board of the Prime Ministry launched a probe into the engineers' deaths. After completing a one-year investigation into the incidents, the Inspection Board has drawn up a final report, which, after being presented to Prime Minister Recep Tayyip Erdoğan this week, was also submitted to the Ankara Chief Prosecutor's Office, which is in charge of the investigation.

Despite previous claims in the media that the four engineers had worked on some important

defense projects, "They were not working on critical projects," the report said. One of the most striking things in the report is the suggestion that the four engineers may have been led to commit suicide after being subjected to telepathic attacks aimed to induce depression. In the report, inspectors also urged the Ankara Chief Prosecutor's Office to investigate the deaths from this perspective.

The report doesn't provide a clear answer as to whether the deaths should be labeled as murder or suicide. After enumerating the findings about the deaths, the inspectors drawing up the report highlighted the fact that video images of the period immediately before the deaths, particularly in the cases of Başbilen and Yançeken, are needed, but as the deaths were seven years ago, it is no longer possible.

All four engineers were undergoing psychological treatment before their deaths. But inspectors find it suspicious that, after Başbilen's death, all three other engineers had, one after the other, started to undergo psychological treatment. The inspectors conceded in the report, however, that no connection between the four deaths has been found.

Hüseyin Başbilen (31), a cryptology expert, was found dead in his car, with his throat and wrist cut, in Ankara on August 2006. Authorities announced that Başbilen, who had been married for two months, had committed suicide. Six months after Başbilen's death, Halim Ünsem Ünal, 29, was found dead, shot in the head by a pistol belonging to his father, in his car. The death of Ünal, who was to be married in three days, was also recorded as suicide.

Only eight days after Ünal's death, another electrical engineer, Evrim Yançeken (26), lost his life, falling from the balcony of the apartment in which he was living with his parents in Ankara. About ten months later, Burhanettin Volkan, a software engineer, apparently committed suicide on October 9, 2007, with his own gun while on guard duty as part of military service. Volkan, who had started to receive psychological treatment before being enlisted, was married during his military service. He died only 40 days after being married.

Initially, all four cases were closed after being labeled as suicides. But Fikret Seçen, the prosecutor conducting the Ergenekon investigation, an illegal gang charged with plotting to overthrow the government, referred the files of Başbilen, Yançeken and Volkan to the Ankara Chief Prosecutor's Office in 2010.

Başbilen's case is particularly suspicious. In the report drawn up by the Security Directorate, the theory of Başbilen's murder is given a higher probability by experts, while out of the eight members of the Council of Forensic Medicine (ATK), five said the Başbilen case was suicide, with three opting for murder. The investigation is still ongoing regarding the deaths of the ASELSAN engineers. Vehbi Başbilen, father of Hüseyin, wrote a letter to Erdoğan in August last year, saying he didn't believe his son would have committed suicide. It was following this letter that Erdoğan instructed the Inspection Board to investigate the case.

The Inspection Board examined almost everything, from the projects the four engineers worked on to the victims' family life, psychological treatment they were receiving, trips abroad

and files prepared by the prosecutor's office. Members of the Inspection Board also talked with the families, the psychologists of the victims and with experts in telepathy.

Keywords: aselsan , TSK

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Greenham Common

http://www.bibliotecapleyades.net/scalar_tech/esp_scalartech21.htm

Rather than belabor the obvious, for when DOD develops a weapon it can be said with certainty that it will be tested and, if possible, where it would be useful to meet their goals; another example will put motives and, at least, one type of application in more realistic perspective. Women peace activists have kept an ongoing vigil at the periphery of the U.S. Air Force base at Greenham in England since 1981.

They are protesting build-up of nuclear weapons. The U.S. Cruise missiles, which are nuclear warheads small enough to be mounted on the back of a truck called a launcher vehicle, arrived at the base in March, 1984.

Since then the women in the encampment and members of the Cuisewatch network have insured that when the launcher vehicle and its convoy are taken out into the British countryside, the "dispersal exercises" aren't as secret as the military intended them to be. The women of the network, non-violent activists, have been subjected to intense harassment in an effort to be rid of their presence. In the Fall of 1984, things changed dramatically; many, if not most of the women began suffering illness; and, simultaneously, the massive police and military presence at the base virtually disappeared, and new and different antenna were installed at the base.

In a report prepared by Rosalie Bertell, commissioner for International Commission of Health Professionals for Human Rights, a non-governmental organization based in Geneva, Switzerland, the unusual patterns of illness ranged from "severe headaches, drowsiness, menstrual bleeding at abnormal times or post-menopausal, to bouts of temporary paralysis, faulty speech coordination and in one case apparent circulatory failure requiring hospitalization." Other symptoms documented by peace activist Kim Bealy, who coordinates investigations into reports of illness at specific places around the base, included; vertigo, retinal bleeding, burnt face (even at night), nausea, sleep disturbances and palpitations.

Psychobiological symptoms included lack of concentration, disorientation, loss of memory, irritability and a sense of panic in non-panic situations. The symptoms have virtually all been associated in medical literature with exposure to microwaves and most listed can be induced through low intensity or non-thermal exposures. Measurements were taken around the base by members of Electronics for Peace and by others. Strong signals, up to one hundred times the normal background level were detected on a number of occasions. In fact, signals ten times stronger than those felt to be emanating from normal base transmitting systems were found. The strongest signals generally appeared in the areas where the women

said that they suffered ill effects. For instance, they were found to cover the women's encampment near the "green gate" (gates to the base are designated by color), but stopped abruptly at the edge of the road leading to the gate.

The strength of the signals were also found to reflect the activity of the women: e.g., they increased rapidly when the women started a demonstration. Visitors to the encampment, both men and women, reported experiencing the same types of symptoms and the same pattern of variation as the Greenham women. It may be revealing that British personnel who guard the perimeter of the base work very short shifts (two hours at a time) and only for two weeks. What else has been used against the women of Greenham Commons?

If high frequency verbal transmissions are used in U.S. department stores and have a significant effect in meeting their security goals, it seems likely that the military would also exploit the same technology.

What would such a message tell the women? "There is something wrong with this place, 'I want to get out of here, 'I don't like it here..." Perhaps auditory transmissions would be simultaneous with the transmissions that were making them feel unwell. In a review prepared by National Bureau of Standards, Law Enforcement Standards Laboratory, for Nuclear Defense Agency, Intelligence and Security Directorate, use of low intensity microwaves was considered for application as a "psychological deterrent."

The report stated, "...microwave radiation has frequently been cited as being responsible for non-thermal effects in integrated central nervous system activity. The behavioral consequences most frequently reported have been disability, listlessness and increased irritability." The report fails to mention just as frequently cited low intensity microwave health effects as,

- chromosome damage

- congenital birth defects

- autonomic nervous system dysregulation, including disruption of bio-cycles

- impaired immune function

- brain damage and other neurological abnormalities, including leaks in the blood brain barrier and depletion of some neurotransmitters

- among a host of other health impairments not to be taken lightly

A reckless form of biological and psychological control has been perpetuated whether the source of the symptoms of the Greenham Commons is radar surveillance aimed at the women, or if there is conscious application of the microwaves as a "deterrent" or a means to

drive the women away.

Calculated efforts were also directed at preventing or eroding community support. In the summer of 1985, women planning to visit the camp had to be notified that long term health effects might ensue for women who were pregnant or intended to be.

As activist Kim Bealy put it, "It would now appear that we are protecting the missiles by killing people slowly." Health complaints similar to those of the women at Greenham Common are being made by women peace activists at Seneca, New York, and from activists at other locations.

The symptoms at Greenham seem to occur on an occasional basis now, perhaps due to the Intermediate Range Nuclear Forces (INF) treaty, which applies to the missiles housed there, or due to somewhat increased public or congressional awareness. It is not necessary that the transmission take place from equipment in the vicinity of a target (although the Greenham women seemed to be suffering from transmissions made from within the base.)

Propagation of microwaves has been very well studied and is very sophisticated, e.g., a two inch beam can be sent from a satellite, point to point, to a receiving dish on earth; and, it was reported in 1978, that the CIA had a program called Operation Pique, which included bouncing radio signals or microwaves off of the ionosphere to affect the mental functions of people in selected areas, including Eastern European nuclear installations. In the U.S. the military has intentionally obfuscated discussion of environmental health effects. With their ally "industry" they have won, at least for the time being, the right to perpetuate their interests, to the detriment of the public's best interests. Scientists who have spoken up on the environmental impact of military microwave or electromagnetic systems have been treated as security risks, and have had their funds cut, so great is the military's concern in protecting their communications systems by ensuring themselves unlimited use of radio frequencies or microwaves. The upshot is that in the U.S. at this time, there is no legally enforceable microwave standard. There never has been an enforceable standard for the public or the workplace. Microwaves at intensities within the suggested "guideline" have finally been shown, even by U.S. research, to cause health damage. Worse, some industrial exposures are extraordinarily high. For instance, plastic sealers, a low income group comprised mainly of women within childbearing years, use equipment that exposes them to over 10,000 microwatts of microwaves or radio frequencies throughout an eight hour day, and in some case, to hundreds of milliwatts. As energy absorbed from their equipment flows to ground, so much heat has been felt in the ankles of some workers that they have learned to do their tasks with their feet elevated on plastic. They are not provided metal shielding as workers are in more health conscious countries. While most of the public are only exposed to very low levels of microwaves and radio frequencies, a considerable number (between one and two percent) live or work near emitters, such as radio and television transmitters, military

and airport radar, and industrial tools utilizing these frequencies. Therefore, it is likely that they are exposed to levels that have been proven to be unhealthful or downright dangerous.

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Sonic device deployed in London during Olympics

By Gavin Thomas
BBC News

12 May 2012 | [London](#)

The Ministry of Defence has confirmed a sonic device will be deployed in London during the Olympics.

The American-made Long Range Acoustic Device (LRAD) can be used to send verbal warnings over a long distance or emit a beam of pain-inducing tones.

The equipment was spotted fixed to a landing craft on the Thames at Westminster this week.

The manufacturer denies it is a weapon and the MoD said it would be used "primarily in the loud hailer mode".

A spokesman for the San Diego-based LRAD Corporation said the **1000Xi** was "an effective long range communications system that broadcasts focused, highly intelligible, multi-language messages, instructions and warnings over distances up to 3,000 metres to peacefully resolve uncertain situations".

Royal Marines operating in patrol craft from HMS Ocean are also heavily armed with conventional firearms.

The piercing beam of sound emitted by the device is highly directional. Some



The company deny it is a weapon and say it can be used to "peacefully resolve uncertain situations"

versions of the LRAD are capable of producing deafening sound levels of 150 decibels at one metre.

But the device, which was used this week during Exercise Olympic Guardian, can also be used to broadcast verbal warnings, such as ordering crowds to disperse.

LRAD Corporation has previously sold the device to the US Army, which deployed them in Iraq for crowd control.

They have also been bought by the US Navy and Air Force as well as a number of police forces worldwide.

It has been successfully used aboard ships to repel Somali pirates.

The panel-shaped LRAD is mounted onto steerable gimbals and said to be far more efficient than a normal loudspeaker.

A Ministry of Defence spokesman said: "As part of the military contribution to the police-led security effort to ensure a safe and secure games, a broad range of assets and equipment is being used by our armed forces".

"This includes the LRAD (Long Range Acoustic Device) which will be deployed during the Olympic Games primarily to be used in the loud hailer mode as part of the measures to achieve a maritime stop on the Thames."

The LRAD spokesman said: "LRAD systems are far superior to bullhorns, which have limited range and poor sound quality.

"LRAD systems enable homeland security and law enforcement personnel to communicate safely and clearly to individuals on land or water and assist in keeping high profile events safe for all participants."

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This page was last updated on Monday, 8th March 2004.

For the first time about which I am aware there is the recognition that electronic and electromagnetic radiation devices can be used as destructive weapons. Michigan has recognised this in its Penal Code effective 1st January 2004 by including such devices.

In keeping up with technology used to harass and terrorise Michigan has enacted a law updating terrorism and harassment by all current means including electronic or electromagnetic.

This criminalises such unlawful purposes as intending to actually harm or imitate such intention in order to frighten, terrorise, intimidate, harass, injure or kill any person. This also applies to property damage.

The criminal penalties are quite severe starting at prison sentences up to 15 years for just doing this, up to 20 years for property damage, up to 25 years for personal injury, life for impairment of a bodily function and life without parole in the event of death.

To cause a false belief of being subjected to this has a penalty including up to five years in prison.

Under this law those carrying out the electronic and electromagnetic terror and torture campaign against me 24/7 for years would be liable to life in prison for having destroyed my eyesight. There are other impairments of bodily functions and personal injuries as well as property damage.

Given this explicit passage of a law in the State of Michigan in the US effective 1st January 2004 recognising the great harm which can be done by such devices and activity it is amazing that this is allowed to be carried out freely without penalty in the UK.

What is even worse is that the Government is doing this to me and has been behind this activity 24/7 for 66 months since the end of August 1998. The intent to cause personal injury and death has been clear by both verbal statements and actions.

I have been threaten with a bomb: "I'll get a bomb and blow him out of there."
This was witnessed by someone whom I believe was connected with the police who subsequently verified that this threat was made on another occasion. There are explosives included in this law.

Is the legislation base of this country [UK] already second class? This is in reference to the statement this week in the UK by the Lord Chief Justice that the new Supreme Court proposed by the Labour Government will be second class because it will not be able to determine the constitutionality of laws, and it will not be independent.

I have excerpted the parts of the Michigan law below which apply to electronic and electromagnetic devices.

This is Public Law 256 2003 and 257 2003. Go to:

<http://www.michiganlegislature.org/mileg.asp?page=PublicActs>

and enter the above law number and year information for the full law.

Michigan Public Law 256 2003
THE MICHIGAN PENAL CODE (EXCERPT)
Act 328 of 1931
750.200h Definitions.

Sec. 200h.

As used in this chapter:

(e) "For an unlawful purpose" includes, but is not limited to, having the intent to do any of the following:

(i) Frighten, terrorize, intimidate, threaten, harass, injure, or kill any person.

(ii) Damage or destroy any real or personal property without the permission of the property owner or, if the property is public property, without the permission of the

governmental agency having authority over the property.

(k) "Harmful electronic or electromagnetic device" means a device designed to emit or radiate or that, as a result of its design, emits or radiates an electronic or electromagnetic pulse, current, beam, signal, or microwave that is intended to cause harm to others or cause damage to, destroy, or disrupt any electronic or telecommunications system or device, including, but not limited to, a computer, computer network, or computer system.

(m) "Imitation harmful substance or device" means a substance or device that is designed or intended to represent 1 or more of the following or that is alleged to be 1 of the following but that is not any of the following:

(vii) A harmful electronic or electromagnetic device.

(n) "Serious impairment of a body function" means that term as defined in section 58c of the Michigan vehicle code, 1949 PA 300, MCL 257.58c.

(o) "Telecommunications system" means that term as defined in section 219a.

History: Add. 1998, Act 207, Eff. Oct. 1, 1998 ;--Am. 2001, Act 135, Imd. Eff. Oct. 23, 2001 ;--Am. 2003, Act 256, Eff. Jan. 1, 2004 .

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Michigan Public Law 257 2003 750.200i Unlawful acts; penalties
THE MICHIGAN PENAL CODE (EXCERPT)
Act 328 of 1931
750.200i Unlawful acts; penalties.

Sec. 200i.

(1) A person shall not manufacture, deliver, possess, transport, place, use, or release any of the following for an unlawful purpose:

(d) A harmful electronic or electromagnetic device.

(2) A person who violates subsection (1) is guilty of a crime as follows:

(a) Except as provided in subdivisions (b) to (e), the person is guilty of a felony punishable by imprisonment for not more than 15 years or a fine of not more than \$10,000.00, or both.

(b) If the violation directly or indirectly results in property damage, the person is guilty of a felony punishable by imprisonment for not more than 20 years or a fine of not more than \$15,000.00, or both.

(c) If the violation directly or indirectly results in personal injury to another individual other than serious impairment of a body function or death, the person is guilty of a felony punishable by imprisonment for not more than 25 years or a fine of not more than \$20,000.00, or both.

(d) If the violation directly or indirectly results in serious impairment of a body function to another individual, the person is guilty of a felony punishable by imprisonment for life or any term of years or a fine of not more than \$25,000.00, or both.

(e) If the violation directly or indirectly results in the death of another individual, the person is guilty of a felony and shall be punished by imprisonment for life without eligibility for parole and may be fined not more than \$40,000.00, or both.

History: Add. 1998, Act 207, Eff. Oct. 1, 1998 ;--Am. 2003, Act 257, Eff. Jan. 1, 2004 .

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Michigan Public Law 257 2003 750.2001 Acts causing false belief of exposure; violation; penalty

THE MICHIGAN PENAL CODE (EXCERPT)

Act 328 of 1931

750.2001 Acts causing false belief of exposure; violation; penalty.

Sec. 2001.

(1) A person shall not commit an act with the intent to cause an individual to falsely believe that the individual has been exposed to a harmful biological substance, harmful biological device, harmful chemical substance, harmful chemical device, harmful radioactive material, harmful radioactive device, or harmful electronic or electromagnetic device.

(2) A person who violates subsection (1) is guilty of a felony punishable by imprisonment for not more than 5 years or a fine of not more than \$10,000.00, or both.

History: Add. 2001, Act 135, Imd. Eff. Oct. 23, 2001 ;--Am. 2003, Act 257, Eff. Jan. 1, 2004 .

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Microwave hearing – by Mark Rich

<http://www.newworldwar.org/microwavehearing.htm>

Microwave hearing is a scientific fact. Existing radar units can be modified to transmit a beam of pulsed microwave energy into a person's skull which causes sounds such as ticks, buzzes, hisses, knocks, chirps, and words. The sounds, which originate from within, above, or behind the head, are transmitted to the inner ear via bone conduction.

There is no external noise. It can be applied at a distance of at least hundreds of meters. Man-portable transmitters allegedly exist.

Despite some of the relatively recent announcements that this is possible, according to other mainstream reports, it has been around in some form since at least the early 1960s. Two notable contributors to the early development of microwave hearing include Drs. Allan Frey and Joseph Sharp.

In his 1962 report, *Human Auditory System Response to Modulated Electromagnetic Energy*, which appeared in the *Journal of Applied Psychology*, Dr. Frey described how microwave hearing was demonstrated using a microwave transmitter that projected sound several hundred feet.

The transmitter used pulse-modulated waves at extremely low average power levels. The transmission was immediate. The system was wireless and receiverless, and the sounds were even heard by the deaf. Then in the mid 1970s, Dr. Sharp helped to develop microwave hearing technology for DARPA by conducting research at the Walter Reed Army Institute of Research (WRAIR). In 1973 Dr. Sharp proved that the correct modulation of microwave energy could result in the wireless and receiverless transmission of audible speech.

In 1976 it was reported by the *Los Angeles Herald-Examiner* that the Soviets were also conducting extensive research into microwave hearing that was brought to the attention of the US Defense Intelligence Agency. Words which appeared to be originating within a person's skull, they reported, could be induced by microwaves. The technology was to be used for antipersonnel purposes.

The October 1998 US Patent 4877027—*Hearing System*, mentioned that sound could be induced in the head of an individual using microwaves in the range of about 100 MHz to 10 GHz. The waves consist of frequency modulated bursts lasting from about 500 nanoseconds to 100 microseconds that create a sense of hearing in the individual whose head is targeted. It is effective regardless of a person's hearing ability.

Others patents pertaining to microwave hearing, such as the August 1989, US Patent 4858612—*Hearing Device*, and the July of 2003, US Patent 6587729—*Apparatus for Audibly Communicating Speech Using the Radio Frequency Hearing Effect*, are based on similar scientific principles.

In July of 2008 *New Scientist* announced that Sierra Nevada Corporation planned to build a microwave gun able to project beams of sounds directly into people's heads. The weapon, which is based on the microwave audio effect, will be used by the military. *Wired's* February 2008 story,

Pentagon Report: Nonlethal Weapons Could Target Brain, Mimic Schizophrenia, described how microwave weapons which create voices in people's heads are not only possible, but have already been demonstrated.

Most researchers from the mid 1960s into the early 1990s have concluded that bone conduction (thermal expansion) is the physical mechanism that allows for microwave hearing. The detection of microwave hearing is the same in humans as it is in other mammals. Bone conduction is just a secondary pathway for sound transmission in humans and most other mammals.

Bone conduction works basically in the following way: Upon hitting the skull and interacting with the soft tissue in the head, a microwave signal in the range of about 2.4 MHz to 10 GHz is down-converted to an acoustic frequency of about 5 kHz.¹

This acoustic energy launches a thermal acoustic wave which is sent to the inner-ear by conduits of soft tissue that extend from the skull to the bony portion of the inner ear. Once it reaches the inner ear, it activates the cochlear where the regular process of hearing occurs.

Although the increase in tissue temperature which causes the acoustic wave is rapid, it is small because the pulse only lasts milliseconds. Therefore, there are no known harmful biophysical effects. The sound produced by the transmission is immediate. It is noticed from within, behind, or above the head.

According to some researchers, an individual's ability to hear this type of sound depends on them being able to hear above 5 kHz.² People with hearing loss above 5 kHz may not perceive these types of sounds as well as those with regular hearing up into the 15 kHz range. Also, because these are low-intensity sounds, a quiet environment is required in order for them to be heard.

Microwave hearing is a well-established phenomenon, the basis for which extends back to at least the early 1960s. According to the US military, some uses for microwave hearing include establishing a private message transfer, and disrupting people who are not aware that the technology exists. NATO and the US Army consider microwave hearing to be a NLW.³

Dr. Robert Becker, author of multiple books and a nominee for the Nobel Peace Prize, mentioned that microwave hearing could be used to drive a person insane. "It would be pure terror," agreed Dr. Nick Begich. The use of this technology, says the US Army in its Bioeffects of Selected Nonlethal Weapons document, could be "psychologically devastating."

[Sources Next](#)

Endnotes

¹ An abstract from the 2007 Health Physics, The Radiation Safety Journal article, Hearing of Microwave Pulses by Humans and Animals, written by James C. Lin, says that the frequency range for the microwave transmission can be from hundreds of MHz to tens of GHz. The transmission frequency could be in the range of about 100 MHz to 10 GHz according to the October 1998 US Patent 4877027—Hearing System.

2 According to some sources, people with hearing loss above 5 kHz either can't hear these sounds or have difficulty hearing them. See the 2003 Motorola Florida Research Laboratories article, Auditory Response to Pulsed Radiofrequency Energy, by J.A. Elder and C.K. Chou, as well as the 2001 article Acoustic Weapons Prospective Assessment, by Jurgen Altmann from Volume 9 of Science and Global Security. However, Dr. Frey's tests concluded that the deaf could hear them. Also, the October 1998 US Patent 4877027—Hearing System mentioned that microwave hearing could be perceived by individuals regardless of their hearing ability.

3 For the most part, the DOD is now transmitting microwave hearing attacks from the second I awake until I go to sleep. These computer-generated attacks consist of basically the same phrases. They are synchronized with thought patterns, other DEW attacks, and environmental stimuli. Periodically, new phrases are used, seemingly to promote recent themes. See the Human-Computer Intelligence Network and My Experience chapters in the Appendix for more on this.

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MICROWAVE MIND CONTROL

by Tim [Rifat](#)

[UK INTELLIGENCE FORCES AND MICROWAVE MIND CONTROL](#) [MIND CONTROL](#)

As a scientist researching into microwave weapons used on the general public, evidence that the GM900 microwave network as used by Vodafone and British Telecom, is a major health hazard, has come to my attention. Defence Intelligence Agency (DIA) documents entitled: *Biological Effects Of Electromagnetic Radiation (Radiowaves and Microwaves) Eurasian Communist Countries*, show that microwave frequencies similar to those of the cellular phones can cause health problems in the following areas:

- Blood.
- Cardiovascular System.
- Cells.
- Central Nervous System.
- Digestive System.
- Glands.
- Metabolism.
- Reproduction.
- Visual System.
- Internal Sound Perception.

Equipment to test the frequency and intensity of microwave phones shows that they produce signals similar to microwave ovens. Two Vodafone cellular phones were producing 100mW/cm^2 and 50mW/cm^2 respectively. The danger level for microwave ovens is 5mW/cm^2 and the Russians regularly used 10mW/cm^2 for weapon research. These Vodalphones will therefore cause significant health problems if used. A variety of cell phones can be tested to see how dangerous they are.

The GM1800 system used by Orange uses higher frequency microwaves. Australian scientists found this caused cancer in mice exposed to radiation of this type. The documents in my possession show that microwaves pass deeply into the body and can have a negative effect on the brain and body.

The DIA research dates from 1976 and shows the dangers were known about over twenty years ago. The Soviets used the frequencies and intensities used by mobile phones, 1800 MHz and 900 MHz, as weapons. It is a rule of the intelligence community that you hide things in plain view, getting the public to accept microwave mind control weapons which effect their behaviour under the guise of mobile phones was a stroke of genius. Getting the public to pay for these microwave mind control devices, so their brains and behaviour can be damaged, to make them more docile and easy to control, was pure diabolical genius.

UK INTELLIGENCE FORCES AND MICROWAVE MIND CONTROL

Microwave weapons that turn people into stressed, confused, submissive zombies are being used in Britain's inner cities. Developed by the communists, microwave weapons similar to microwave ovens have since the 1980s, been targeted on inner city council estates. These weapons transmit extremely low frequency (ELF) signals which mimic natural brain waves; at the flick of a switch, all the people around these microwave transmitters are turned into submissive zombies who cannot think clearly, become depressed, apathetic and want to lounge around all day doing nothing: the inner city malaise found on Britain's streets. With the advent of new ELF detectors designed by the author's research teams, the mass mind control of the metropolitan UK population can be proved. ELF signals are officially only found at nuclear submarine communication stations, so the researchers were shocked to find microwave and UHF, mind control signals in city centres, the author's flat, being sent through mobile phones, the BT telephones and from the numerous transmitters that dot the country.

The massive increase in mobile phones has enabled the UK security forces to use this network of transmitters to beam mind control signals into the brains of anyone living near these transmitters. Microwave phones use pulse modulated microwaves of the correct intensity to pass through the skull into the brain and control behaviour. Microwave transmitters are therefore the perfect medium for the transmission of ELF signals to mind control the UK population.

Researchers are of the opinion that the inner city riots of the early eighties forced the Thatcher regime to deploy ELF mind control devices developed in the 1970s to turn the working class housing estates into total policing zones. In these zones, ELF transmitters turned the inhabitants into docile zombies. So successful was this technology that it was expanded to cover all major towns. Mass mind control of the UK public to make them submissive and obey authority was expanded, hand-in-hand with the mobile phone network and military and police microwave transmitters. Now the entire London conurbation is covered by UHF and microwave carrying mind numbing ELF.

Research into the use of microwave weapons and their use for mind control began in 1950s at the Tavistock Institute, one of Britain's leading psychiatric research establishments. The UK institute was researching into ways of mind controlling the British population without them knowing. The monkey submission response, whereby the dominant monkey caused submissive behaviour in the underlings, was the brain state of most interest to the British scientists. Having found this specific brain rhythm for docile submissive, zombie-like behaviour, it was then recorded and used as the template for the ELF signal beamed on UK microwave transmitters. Britain was the first discoverer of microwave technology, used for radar, in the 1940s and therefore had a commanding lead over everyone else in this field.

The 1970s brought a darker side to the story, with the news that the Russians were microwaving the US embassy in Moscow. One third of the staff eventually died of cancer from this microwave irradiation. Australian scientists proved in 1997, that tiny amounts of microwave produced by the very safest mobile phones, cause cancer in mice, when exposed to this radiation. Greenham

Common was the first time that the Ministry of Defence was involved in the offensive microwaving of women protesters, the so called Greenham Common Women. This event showed that the UK security forces were willing to use lethal doses of microwave radiation on large groups of the general public. Equipment showed that the women peace protesters were subject to high levels of microwave radiation, some of them have subsequently died from cancer. Northern Ireland would have been a perfect proving ground for mass mind control technology. Research at the Tavistock institute enabled the Thatcher government to put into large scale use, the frequency which causes submission in humans. Radiating this ELF frequency on microwave transmitters, cellphones, BT phones and by use of other transmitters, the inner city population can be behaviourally controlled. My research group have ELF detectors, which can prove all manner of UK transmitters are being used to mind control the population. Since ELF is not found naturally, and is only used for nuclear submarine communication, its presence proves mind control weapons are being used on the general public. The author also has access to scientific documents showing the devastating effects of ELF broadcast by microwave, UHF and VHF on humans.

It is alleged that Marconi put this microwave technology into full scale production, and around thirty scientists and military personnel on the project who began to ask questions committed 'suicide' under mysterious circumstances.

My research has found that microwave weapons are targeted on middle class troublemakers and researchers who cause problems for the establishment. Russian and American research has found that pulse modulated microwaves (as used for mobile phones) can, when modulated with ELF which mimics specific brain patterns change the behaviour of the victim at the flick of a switch. It has been found that UK security police, such as MI5 use the 450 MHz frequency used for this research (legally allowed to be used by the police) for behavioural control. A vast catalogue of mind control frequencies in the MHz range, FM radio, TV and mobile phone frequencies, have been measured, which are used in the UK for mind control and killing or disabling victims: 147, 153, 197, 199, 447, 453, 456, 466, 853, 883, 884, 887... Symptoms can be depression, befuddled thinking, loss of memory, stress, not being able to cope, manic behaviour, schizophrenia, nervous breakdowns, physical collapse, brain and nervous system damage, heart attacks, cancer..

An example was Brighton police van, parked outside the Brighton Pavilion which was used to beam UHF and microwaves at vagrants to clear them from the area. All Brighton's city centres are bombarded with microwaves when vagrants congregate to make them so ill they have to flee. The Evening Argus newspaper asked the police if the white van which was parked in the Brighton Pavilion grounds for months, was their van, they replied it was one of their 'surveillance' vehicles. On Wednesday, 4th of February the author was passing Brighton Police station with a frequency counter which detects microwave weapons, and I detected a 452 MHz microwave beam being directed at two young offenders sitting on a wall opposite the station. I confronted the police with the reading, Robert Galloway, spokesperson for the police stated, "they

were not interested in microwaves even if they were a danger to health." The author has uncovered widespread use of microwave weapons in Brighton by the police and MI5 as a test programme to clear vagrants from the city centre.

Contacting researchers in this field of enquiry, they all complain of microwave-like symptoms, headache, nausea, giddiness, eye damage, ear problems... Readings I have taken show that the 750-1000 MHz range is used by the intelligence services for inducing nervous and physical collapse. Microwave ovens give off 1000 MHz.

On the Channel 4 programme, *For the Love of...New World Order*, shown on Monday night at 12pm, on April 6th, the author revealed some of these facts on television. The presenter, and researchers of this programme complained of severe headaches in the days preceding filming symptomatic of microwave attack. As the foremost non-military expert microwave weapons, remote viewing (psychic spying) and Psi-warfare, the author became aware of the microwave problem when he was targeted to stop his forthcoming book on remote viewing being released. This book on psychic spying, published by Century Books, is the first book by a scientist on the subject of Psi-warfare and the techniques the superpowers developed.

Subsequent to the filming of the Channel 4 programme, he was arrested by Brighton Police on February 15th outside their building and his frequency counter was confiscated to stop him recording the use of microwave weapons around the police station and in public places around the town. Even though no law was broken. It appears Brighton Police are worried that their use of microwave weapons on Brighton's vagrants is coming to light. The UK government has also bought up all the readily available frequency counters, these being the Watson FC-128 frequency counters, and the Optotronic devices, and the manufacturers now market a 'modified' model, which most probably has a digital filter so that the microwave weapon frequencies given above, cannot be shown. The author's frequency counter has still not been returned. With such high-level manipulation of events it seems that microwave mind control is part of a secret policy which is being practised on the general public in this county. As part of a covert government policy of harassing and disabling critics, this means of attack is not covered by the law and highly deniable, the perfect intelligence device for civilian control. The author's flat is targeted with a 900 MHz beam which seems to be designed to cause massive neurological damage and produce tumours.

The BT phone network has the potential to be used for docilisation of the UK public. A 30-40 MHz signal is carried by the phone. When the earpiece is placed against the head, bone conduction carries the ELF component into the brain of the phone user. A ELF signal which can effect behaviour or health is therefore passed into all BT phone users. It appears from experts I have consulted on the subject that the digital phones have been designed to carry this mind control carrier frequency. Vodafone have supplied a mobile phone to a friend of mine that pumps out an 847 MHz signal at over 100 mW/cm², this is equivalent to 4x100 watt lightbulbs being turned on in the body of the user. This means that mobile phones can potentially be used to kill or so disable a person they no

longer become a problem to the establishment. Another Vodaphone tested pumped out 50 mW/cm². UK safe levels for microwave ovens are 5 mW/cm² - which are not held near the head. There are reports by military researchers that 1 mW/cm² will cause swelling of nerve cells exposed to microwave.

It is obvious that a total policing of the population by means of UHF, VHF, and microwave EM radiation, amongst others, is being used to keep the UK population in a docile and submissive mental state. Mental confusion can also be added to the signal for working class inner city areas to keep them docile and confused. A land of stultified zombies, who are mind controlled to make them docile and unable to think clearly. Subversives are habitually targeted with microwaves to drive them mad or make them fatally ill

On July 4th 1976 seven giant transmitters in the Ukraine, powered by the Chernobyl nuclear facility, pumped a 100 megawatt radio frequency at the West, which contained a 10 Hz ELF mind control frequency. According to a US scientist, Dr. Andrija Puharich, MD, the soviet pulses covered the human brain frequencies. With a Dr. Bob Beck Andrija proved that the Soviet transmissions were a weapon. He found that a 6.66 Hz frequency would cause depression and an 11 Hz signal would cause manic and riotous behaviour. transmissions could indeed entrain the human brain, and thereby induce behavioural modification populations can be mind controlled en masse by ELF transmissions. More importantly he found that an ELF signal could cause cancer at the flick of a switch. It did this by modifying the function of the RNA transferases so that amino acid sequences are scrambled and produce unnatural proteins.

MIND CONTROL

Torture is alive and well in the UK. MI5, the UK's secret police, regularly use Non-Lethal Weapons on any dissidents. Since MI5 have a well documented history of hating the Labour Party, and were instrumental in bringing down the Labour Prime Minister Harold Wilson, they naturally took to spying on, and discrediting, any group or person who did not follow their rabid right wing dogma. When Margaret Thatcher became Prime Minister of a right wing Conservative Government in 1979, she soon saw the power in recruiting MI5 to be her own secret police. During the Miner's strike in the early eighties, Arthur Scargill and his National Union of Miners nearly brought the Conservative Government down, with their year long strike. Margaret Thatcher used MI5 to spy on the Miners and to discredit Arthur Scargill. Leading police officers argued against the use of MI5 on the civilian population, they were ignored or replaced - if they proved too vociferous.

Margaret Thatcher was the first Prime Minister for many a year to sit in on the Joint Intelligence Committee's meetings on a regular basis. Thatcher, as a trained scientist, would have been well aware of the usefulness of microwave weapons. They are impossible to detect unless you have a detector, dissidents have no idea these weapons exist, and best of all, they are totally deniable. It may be that MI5 kept this research secret from Margaret Thatcher, but the resources the UK has put into these fearsome, so-called non-lethal weapons, is extensive. UK intelligence runs a fleet of microwave weapon carrying vans, as

well as portable microwave weapons that can be deployed near the dissident's home. The vast expense can be disguised as communications equipment, for as we all know, microwave telephone communication is all the rage in our modern world. My research shows that the microwave telephone network also has the potential to be used as a major mind control weapon system to control the behaviour of the microwave phone users.

Developed under the Conservative government, which was in power from 1979-97. The UK secret, or 'black' government, has at its disposal a fearsome array of mind control weapons. These abhorrent devices are euphemistically called 'non-lethal weapons' by the UK military. In fact they kill you slowly by causing: nerve damage, cancers, mental collapse leading to suicides, or tissue failure, such as heart attacks due to the cooking effect of microwaves.

Precisely modulated microwave radiation is used to influence brain function. Human behaviour and reactions can be entirely controlled by using pulse modulated microwave EM radiation. Pulse modulated microwaves are useful as the carrier for the mind control signals as they are able to pass through the skull, which is rather resistant to low level EM. The massive number of microwave antennae that dot the country, some of which are used for the microwave phone network, all use pulse modulated microwaves, which makes their use for a strategic mind control device against the civilian population in times of trouble, or rioting, crucial to modifying the behaviour of the general population. In modern democracies it is no longer viable to shoot rioters, or torture dissidents by normal means, as the bad publicity is self defeating. Thus, microwave weapons have been developed by the UK's military intelligence as they leave no marks, or gaping wounds. This pulse modulated microwave carrier beam can then be used to carry signals. These signals are extremely low frequency recordings of brain electrical potentials, which have been recorded by neuro-medical researchers such as Dr Ross Adey.

Dr Ross Adey's research at the Brain Research Institute of the University of California, was funded by the CIA. In their Pandora project a catalogue of different brain signals for specific actions, emotions and pathological states of mind were recorded. It was found that when microwaves were used to fire these signals at victims' brains, they experienced the moods, behaviour, and the pathological states, carried by the signals. This meant that by mimicking natural brain frequencies, the human brain could be controlled remotely by use of extremely low frequency broadcast carried by pulse modulated microwave beams (ELF pulse modulated microwave remote mind control technology).

It is now possible to broadcast mind control commands directly into the brain by use of microwave beams. All that is needed is a catalogue of every specific brain frequency for each: mood, action and thought. These catalogues of excitation potentials are available from Russian neuro-medical research institutes, so any one with enough cash can have the same technology at their disposal, as UK military mind control groups (the psychological-enforcement arm of MI5). The Aum sect bought microwave weaponry via their 50,000 Russian converts.

Particular excitation potential, is then broadcast by pulse modulated microwave transmitter. This pulse modulated microwave beam has the ELF excitation

potential frequency imprinted upon it. It was found that each behavioural set in humans had a distinctive frequency. There was one for: anger, suicide, hysteria, trauma, serial killing, paranoia, lust...etc. Intelligence operatives in the UK regularly park microwave transmitters outside targets' houses and beam specific mood inducing excitation potentials at the victims. To aid them, they have sophisticated millimetre wave scanners to look through the victims' walls, so they can see the targets' in their homes. Pulse modulated microwaves are regularly directed at the victims' brains, while other people in their homes are oblivious of what is going on. A leading conspiracy researcher, who looks into GCHQ at Cheltenham, found one of these vans, with two spheres on its roof parked in his road. When he took the number plate and through contacts checked who owned it, he found it was an MOD van. Hopefully he has found the microwave weapon system before it has done him too much harm.

These microwave weapons were developed allegedly at Marconi. When firing microwave beams through walls at one specific target, every material in the way of the microwave beam attenuates or modifies the intensity and frequency of the beam. Since precise frequencies and intensities are needed for mind control, very sophisticated microwave arrays and computer programmes had to be developed so that the microwave beam could be changed in response to the materials which lay between the target and the weapon, as the victim moved around the house. To do this, the reflectivity and refractivity of the materials between victim and weapon had to be analysed in real-time and fed to a computer which could change the microwave array in concert with the changing environment between victim and weapon, as the target moved around his/her home. Secondly, there had to be an automatic interrupter if another person walked in front of the beam. The victim needed to be driven mad or disabled, without anyone else being aware that he or she was being targeted. The technology for this was very complex but eventually it was perfected. Twenty five or more scientists and military personnel, associated with the Marconi project, then died in mysterious circumstances. Intelligence personnel regularly kill people to keep them quiet. Maybe they killed the entire research team to keep such a diabolical weapon secret. For if it were made public, the scandal would bring down the government. Whatever the real story, by the mid to late eighties, all the problems had been ironed out and these new smart microwave weapons were deployed on the UK's streets. Northern Ireland would have proved the perfect place to test them out. Pulse modulated microwave weapons had now come of age.

By this method, any mood or behavioural set, can be conditioned into the target's brain. Intelligence agents keep a log of the victim's behaviour to see if more intense 'treatment' is needed and as a guide for future mind control projects. It is alleged that by this method, UFO and conspiracy researchers, are routinely driven to commit suicide. Having the excitation potential for suicide beamed into your brain day and night by microwave mind control weapons, soon resets the brain into a cycle of depression that spirals out of control ending in suicide. Many intelligence and technical officers in the UK, who have spilled the beans, or could be a potential leak, are driven to commit suicide by the special mind control teams run by MI5. If you look at the long list of UK military and intelligence experts who inexplicably commit suicide, one can see an

underlying mind control logic that drives them to kill themselves.

Behavioural reinforcement is used in a synergistic way with the mind control. It was found that the effect of the microwave beams could be greatly enhanced by external reinforcement. Intelligence community personnel destroy the target's property, ruin their financial affairs spread vicious rumour, make sexual peccadilloes public knowledge - such as wearing women's underwear, while checking oneself - with an orange in one's mouth. External reinforcement of pulse modulated microwave mind control technology was found to be very effective. Intelligence chiefs are now in seventh heaven; if some one becomes a problem they get the 'suicide mind control team' parked outside their house. Within weeks, the victim kills himself. This is very pleasing to the intelligence mandarins, as suicides are easy to explain away - even if the victim was a highly placed politician or military man.

If the military intelligence agency does not wish you to commit suicide, they can drive you mad. This is done by beaming the excitation potential of a particular pathological mental state at your brain while you are at home. To aid in this, the intelligence operatives can place sounds and speech in the target victim's brain. This inter cerebral hearing is used to drive the victim mad, as no one else can hear the voices transmitted into the brain of the target. Transmission of auditory data directly into the targets' brains using microwave carrier beams is now common practise. Instead of using excitation potentials, one uses a transducer to modify the spoken word into ELF audiograms, that are then superimposed on the pulse modulated microwave beam.

Discrediting well known people who are causing problems for the shadowy elite, by driving them mad, seems to be standard operating procedure for the intelligence community. Victims are subject to pulse modulated microwaves which carry different types of madness and behavioural aberrations, encoded as ELF excitation potentials. This makes the troublesome high profile person, display manic or insane behaviour that discredits them. Examples of this technique are allegedly: David Icke, Fergie, Princess Diana... Outside environmental reinforcement, by use of media agents in league with MI5, makes it assured that the high profile person's mind controlled madness, will be put in the worst possible light to discredit them. In this way, high profile subversives who cannot be wrongly imprisoned (unlike the Carl Bridgewater prisoners, Birmingham Six, Guilford Four...) in the normal way by Britain's police, or killed by assassination squads, such as the Pegasus group, are made to look ridiculous. Public humiliation is the finest weapon the authorities have, to make harmless, a potential well known figure, who is causing trouble.

If the VIP needs to be made temporarily ill, microwave beams containing the signal the brain gives off during a vicious bout of flu can be fired at the victim. This causes the target to display all the symptoms of flu, even though they have not caught the virus. Major Ed Dames, the remote viewing specialist, who has close links with the US secret military, alluded to this device on a US TV programme.

The intelligence agents can also use low level microwaves to cause mental and physical confusion that leads to illness. Beaming microwaves at victims makes

them fatigued, damages their immune system, causes neurological damage that effects their thinking, and ability to carry out tasks, induces premature ageing, cancer and cataracts. Sussex Police regularly use this low level microwave to clear drunks from city centres. While researching this matter, I was subject to high levels of microwave $>10\text{mW/cm}^2$ whenever I approached their headquarters, whilst MI5 irradiated my home continually with microwaves. It seems that I touched a raw nerve while researching mind control weapon usage in the UK.

Organisations that irritate the authorities have their building turned into a 'hot spot' by microwave transmitters, so the staff all suffer sick building syndrome caused by microwave damage. Or the staff of the target organisation have their behaviour changed to cause discord. UFO Reality, a leading UFO and conspiracy magazine have complained of mysterious health problems, while another New Age group complained of eye damage, nausea and headaches brought on whenever they had a meeting, which may have been caused by microwaves.

Heating the victim to death, by microwave cooking is caused by increasing the field intensity of the radiation, to cause local hot spots in the victims' eyes and gall bladder, which have poor circulation, so cannot carry away the heat.

Irradiating the optic nerve of the victim with the same signal that is sent to the brain by this nerve, causes the nerve tissue to overload. In this way, subversives can be blinded by the intelligence community without them knowing what has occurred. An American researcher complained of this problem to me and warned me that this weapon system was being used on my person by MI5.

Neurological research has found that the brain has specific frequencies for each voluntary movement called preparatory sets. When you pick up an object, there is a specific preparatory set for this action. By firing at your chest a microwave beam containing the ELF signals given off by the heart, this organ can be put into a chaotic state, the so called heart attack. In this way, high profile leaders of political parties, who are prone to heart attacks, can be killed off -before they cause any trouble. Neil Kinnock's Labour government was allegedly cheated out of an election victory by postal vote rigging in twenty key marginal seats. When a new even more electable Labour leader was found, it is rumoured that John Smith, the then Labour leader, was prompted to have a fatal heart attack, while walking in the country with his family, by means of a concealed microwave device which operated on the Vagus nerve to bring about a massive heart attack. Since MI5 have a long history of naked hatred toward the Labour Party, there may be some truth in the above, though no hard evidence has yet been found.

Paralysis can be induced in the target by use of this method of broadcasting preparatory sets encoded on microwave beams. A pulse modulated microwave beam, carrying an ELF signal, which is identical to the one in the motor neurone centre of the brain, is used to jam the victim's motor co-ordination. This is analogous to radar jamming, using a more powerful signal at the same frequency to swamp out the enemy's radar. Motor neurone preparatory set

potentials are jammed by a bigger signal carried by a microwave carrier beam, that literally overloads the brain, so it cannot control the body. Pulse modulated microwave weapons which broadcast the ELF preparatory sets of the motor cortex at the victim, will paralyse the victim without killing them. Breathing and heartbeat are involuntary actions controlled by another set of frequencies in another part of the brain.

This technique can be used to abduct people for secret government mind control experiments, under the guise of alien abduction. A microwave beam of this nature will paralyse the victim, so they can be bundled into a black helicopter and airlifted away for experimentation.

Once the procedure is complete, hypnosis can be used to plant false memories of alien abduction. In this way, real alien abductions can be used by the authorities to enable them to obtain a limitless supply of guinea pigs for their mind control experiments.

Real memories of government involvement are erased electronically. This technique clears all short-term memories from the victim's consciousness by broadcasting microwave beams at the target which carry the signals used for memory retention. When you remember something, it is first stored in your short-term memory. After approximately twelve hours, this short-term memory is converted in the brain to long-term memory, after which you remember this information for the rest of your life. If this conversion from short-term memory to long-term memory does not occur, the data is lost. We all see details around us, but try to recall the decor in a restaurant you ate at some weeks ago and you will see how tenuous memory is. Microwave radiation of a specific frequency can interfere with the transfer of memories from short to long-term memory. Microwave radiation of a specific frequency can interfere with the synapses of the brain. By interfering with the connections between brain cells, memory of people can be disrupted. In this way, Seal special forces assassins can be brain wiped after a mission, so they have no idea of the target they killed. Using hypnosis, false memories can then be planted in the brain, so the gap left by the real memory is papered over.

The latest advance in electronic mind control were discussed in my previous articles in Nexus, but for those who missed the ESP of Espionage, this equipment uses special types of microwave beams called MASERs. These are the laser equivalent of microwave beams. These MASER beams have been used to develop something called synthetic telepathy. This is the ability to read peoples' minds from a distance. Electronic scanning of victims' brains by monitoring the electromagnetic (EM) emissions from peoples' brains and using amongst other things, the brain waves (as measured on an EEG), to read the victim's subvocalised thoughts.

Head of US Special Forces Major-General Schaknow, talked about synthetic telepathy during a lecture in July 1992 at Fort Bragg North Carolina. The US military is hard at work perfecting synthetic telepathy. In synthetic telepathy, the weak electromagnetic signals in the brain associated with subvocalised thought, are connected to a computer by use of electrodes, or in more advanced mechanisms by MASER beams. Sophisticated computer systems have learnt to

read the subvocalised thoughts in the brain, by associating a specific brain excitation potential, with a particular word. In this case, only one specific language can be decoded, as each word in a language has a specific set of frequencies that must be discovered. Once the donkey work of finding the specific frequencies for all the words in a language has been programmed into a super computer, which can carry out massive parallel processing, fuzzy logic software is used to match this with real world excitation potential associated with subvocalised thought obtained from thousands of abductees, who are used to calibrate the synthetic telepathy devices. GCHQ Cheltenham, the intelligence gathering arm of MI5, possess the advanced computer systems needed for synthetic telepathy.

Synthetic telepathy detects the 15Hz, 5 milliwatt auditory cortex brain emissions, that are linked with the excitation potentials in the brain associated with subvocalised thought. New technology, involving low frequency microwaves and RF, has enabled devices to be built which can scan through walls and look inside peoples' bodies like X-rays. This enables security personnel to see a target in his own home and to track him throughout the house. Further to this, being able to see inside the victim's head, would allow computer controlled targeting of specific brain centres in the victim's brain, even when he was walking around the house.

A scan of the specific brain emissions given off when the victim subvocalises using an array of pulsed frequency MASERS fired at the specific brain centres of the subversive, while he resides in his own home, enables the victim to be scanned. By firing an array of ELF pulse modulated MASERS, which scan up and down the window of frequency emissions given off by subvocalised thought, interference effects can be measured in the MASER beam. The victim's ELF brain emissions will interact constructively or destructively with the pulsed frequency MASER carrying ELF in the ELF window associated with subvocalised thoughts. If we fire an array of pulsed MASERS, which are out of phase with each other, extraneous noise can be filtered out in the digital domain. Since the converging ELF modulated MASERS are being effected by the low level emissions in the victim's brain, the shifts in the ELF pulsed signal going into the subversive's brain can be detected. A simplistic version of this would be the LASER beam shone at the window of the person that is being bugged. The vibrations in the window cause modulations in the LASER that can be converted into electrical signals and hence into sound. In this way the subvocalised thoughts in the victim's brain can be read. Having already built up a library of excitation potential signatures for differing words and groupings of words, a sophisticated computer can begin to decode the emission signatures into word streams. In this way the subvocalised thoughts of the victim can be stored in the memory of a supercomputer and analysed to give a read out of what the target is thinking..

Using ELF audiograms carried by a single pulse-modulated Maser, subvocalised thoughts can be placed in the victim's brain. This enables UK synthetic telepathy operators the ability to enter into conversations with the subversive to drive him mad or to bring up key words which will get the victim thinking about the information they wish to find. Visual cortex excitation potentials can also be

broadcast into the victim's brain so that illusory images can be projected into their brain to drive them mad, or to programme them to commit suicide.

My research has led me to uncover a truly nation-wide mind control weapon system. Each UK police station is equipped with a vast array of microwave antennae. The Sussex Police headquarters has a two hundred foot antenna. The building is surrounded by a fence and is off limits to the public. This microwave complex sits in the middle of a council housing estate, which means the people in this area are being bathed in low level microwaves. New research has shown that low level microwaves give mice cancer, since the emitters tested by the scientists, were the new ultra safe mobile phones which give off much smaller intensities than the police antennae, the Police microwave system is a serious health hazard. It seems that low level microwave radiation excites the hydrogen bonds in the cell and can interfere with meiosis. This causes cell division to go wrong, which leads to cancerous cells and hence tumours.

Secondly, the police have been granted the exclusive use of the 450 MHz microwave frequency range. This is exactly the frequency used by Dr Ross Adey, the CIA mind control expert, in his experiments on behavioural modification. It seems the police have the exclusive use of this mind control frequency and a vast array of antennae to broadcast this frequency all over the country. Very useful for mass mind control in times of emergency. Adey found that by using 0.75mW/cm^2 intensity of pulse modulated microwave at a frequency of 450 MHz, it was discovered that an ELF modulation could be used to control all aspects of human behaviour. The Sussex police headquarters is connected to CCTV, closed circuit television cameras throughout the town. Some of these cameras have microwave telemetry devices that could easily be used to broadcast this frequency. The large antennae that bracket the town could also be used.

The most insidious aspect of this, is that the entire mobile phone network could easily be used to control the behaviour of the phone users. By use of my microwave detector, I have found that mobile phones of the newer type, give off a pulse modulated microwave signal of around 0.75mW/cm^2 at the earpiece. This may be coincidence, but it is exactly the intensity required for behavioural control as found by Dr Ross Adey, the pioneer of microwave mind control. So in theory, an ELF signal could be added to the microwave network to feed a precise behavioural pattern into every mobile phone user in the UK. If there were widespread riots, the ability to broadcast behavioural stimuli to mollify all the mobile phone users in the country would prove useful. Since mobile phone users are generally middle class, it means authority has a useful method of controlling the behaviour of the key voters. Microwave carrier beams are perfect for transmitting the excitation potential of docility to the phone user to keep them servile in times of trouble. When no ELF signal is broadcast the phone acts in a completely different manner on behaviour in humans. In this case the microwave phones causes the neurones to release calcium ions which makes the user tired irritable and when stresses likely to emotional outbursts such as road rage.

In Brighton, the local MI5 headquarters has a large microwave array on its roof.

Secret bunkers in the area also have large microwave arrays above them. It is child's play to transmit an ELF modulated signal to be broadcast by the entire mobile phone network - if need be. By this means the entire mobile phone users can be behaviourally modified. At the cost of developing cancer from low level microwave exposure from the phones they constantly use, stressing the neural network by constant calcium ion efflux and interference with bioelectric fields.

It seems strange that a few milliCuries of ionising radiation will get the National Radiological Protection Board excited, whilst high intensity cancer inducing non ionising microwave radiation, goes unchecked. So high are levels near transmitters, that litter the countryside, that light bulbs will explode near them. If the intelligence community is using microwaves on a large scale as mass mind control weapons, then the NRPB's silence is easily explainable. To add to this, the numerous microwave detectors that were cheaply available to check leakage from microwave ovens are no longer made by any company in the country. It seems the UK authorities do not want the population to be able to detect when they are being microwaved.

In conclusion, it can be seen that the UK intelligence and police, have a dizzy array of high-tech mind control devices. They regularly target their own populations and thousands of people are made ill by microwave weapons. With the advent of synthetic telepathy, 'CCTV of the mind' becomes a reality.

With the election of a New Labour government unaware of microwave weapons and untainted, as they had no part in their development and deployment, it is certain that Tony Blair's government will outlaw these abhorrent microwave weapons - as they have done land mines. The only problem will be convincing the Labour government that MI5's microwave communication equipment is in fact microwave mind control weaponry. With the total secrecy the MI5 organisation operates under, one can be sure they will be mendacious as to how their £200 million pound budget is used to hone their leading edge microwave mind control torture weapons that are used on the public. Even more disturbing is the use of EMP and microwave weapons by the police on anyone researching into this area.

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[Nexus Vol 4 No 2, The Esp of Espionage, by T Rifat.](#) These three articles cover the theory of RV, RI and ESP in very great detail. recommended for the serious RV/RI student. For more information contact the author.

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Silent Guardian™ employs millimeter wave technology to repel individuals without causing injury. This capability enables users to stop, deter and turn back adversaries without the use of lethal force. The system also disrupts an assailant's ability to effectively use a weapon. Silent Guardian provides extraordinary tactical ability to control outbreaks of violence, minimize collateral damage and ultimately saves lives.

The system's antenna emits a focused beam of millimeter wave energy. The beam travels at the speed of light and penetrates the skin to a depth of 1/64 of an inch, producing an intolerable heating sensation that causes the targeted individuals to instinctively flee or take cover. The sensation ceases immediately when an

individual moves out of the beam or the operator steers the beam away. Silent Guardian does not cause injury because of the shallow penetration depth of the millimeter wave.

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The system can be operated across a broad range of scenarios, including maritime and desert environments. Silent Guardian has been sealed for dust and supports operations in conditions up to 125 degrees Fahrenheit ambient. The antenna is capable of

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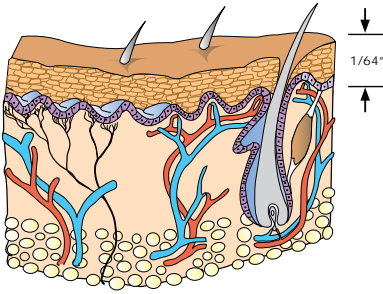
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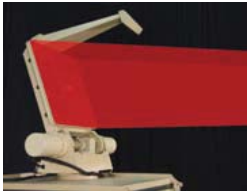
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Various applications for law enforcement, facility protection and homeland security.



The focused collimated beam allows precise targeting of specific individuals.

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	Height	Width	Length	Weight
AC/DC Converter	65 in	45 in	74 in	3,870 lb
Transmitter Unit	95 in	83 in	94 in	6,440 lb
Transmitter with Antenna	136 in (level)			
	147 in (maximum interference)			
Antenna	45 in ²			

System Characteristics

Range:	Greater than 250 meters*
Targeting:	Stationary firing position with 360-degree coverage Integrated sensors with joystick control Single-man operation

System Setup:	Automatic target tracking Modular architecture Secure antenna stabilization platform – able to operate in 40 mph winds
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Mission Profile:	Less than 2-second retargeting capability Shoot-and-scoot capability Less than 2 seconds to switch from standby mode to armed
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Contractor Support:	Complete logistics support package available to include: <ul style="list-style-type: none">• Return and repair maintenance• System training• Web-enabled supply support• Supports Army two-level maintenance system
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Military applications, including checkpoint security, perimeter and point defense, force protection and peacekeeping missions.



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*The Joint Non-Lethal Weapons Directorate has stated that the long-range active denial systems (ADS) are effective beyond small-arms range, typically up to 500 meters. The Raytheon-funded mid-range Silent Guardian ADTS' range is greater than 250 meters.

Targeting the Human with Directed Energy Weapons

Dr. Reinhard Munzert

6. Sept. 2002

New arms threaten and destroy lives in strange ways. Directed energy weapons are among the high-tech arms of the century. They hurt and kill with electromagnetic power. Microwave weapons can be aimed at computers, electronic devices and persons. They have strong physical and psychological effects and can be used for military and terrorist activities. These weapons are a part of crimes (in Europe) that almost nobody knows except the victims and the offenders. Until now they make the perfect crime possible. No doubt, these weapons have a terrible future.

Key Points

- Directed Energy Weapons (DEW)
- DEW and Crime
- Perfect Crime?
- DEW and Terrorism

Topic 1

- Manipulated Microwave Oven
- Magnetrons and Generators
- Intelligent Antenna Systems

Topic 2

- Anti-Electronics Weapon
- Anti-Personnel Weapon
- Psychological Effects

Topic 3

- DEW and Crime
- License to Kill
- Perfect Crime
- Mental Strength & Fighting Back

Topic 4

- DEW as Terrorist Weapon
- Unseen Terror Attack
- Prevention and Protection

Summary

- New Threats and Dangers
- Crime and Terrorism
- Recognizing and Knowing

- Prevention and Elimination
- Future Weapon! -Terrible Future?

MICROWAVE WEAPONS

New Technology in Crime

Activities and Sources

There is a new, effective weapon for criminals and terrorists. Law-breakers often misuse modern technology. Through the illegal usage of innovative high-tech weapons, people are not "shot", rather their living quarters are bathed in (high frequency) electromagnetic waves for a length of time. Directed Energy Weapons (DEW) are mostly intended for military purposes (U.S. Air Force, Russian and Chinese armies). High-tech company Raytheon states about DEW: "We believe it is a critical element of how ultimately wars will be fought. HPM (High power microwaves) is the most mature right now" (in Fulghum & Wall 2002).

The renowned German newspaper "DIE WELT" acknowledges microwave weapons as arms of the 21st century. In another German newspaper, Süddeutsche Zeitung, a weapons expert has recommended the police to procure microwave (MW) weapons for police use. Considering what certain criminals know about MW weapons, they have a significant advantage over the police now. This puts the victims in extreme danger.

A primitive variation of a MW weapon would look like this: A microwave oven from the kitchen with the protective shielding removed from the door and replaced by a metal funnel. And then the waves can get through walls (Pictures 1, 2, 3).

The effects of the MW beam on the victims include extreme weariness, headache, irregular heartbeat, diarrhea, painful testis, damaged nervous system and internal organs, burned skin, eye damage. Later effects include blindness, heart attack, stroke and cancer. In the last month, some victims, cancerous tumors have been diagnosed.

In addition to that, victims (through intrigue and defamation) are seen as psychotic and dangerous; thus, they are completely helpless. At the same time, the new weapons (for certain contractors) are tested under ordinary circumstances and constantly improved.

HPM crimes are a new kind of crime with some very new characteristics. The International Union of Radio Science emphasizes in a resolution of 1999 on Criminal Activities using Electromagnetic Tools: "The fact that criminal activities using electromagnetic tools can be undertaken covertly and anonymously and that physical boundaries such as fences and walls can be penetrated by electromagnetic fields."

Expert Pevler stresses: "The development of high-power microwave (HPM) weaponry, and its proliferation into subversive organizations, offers the means to commit the 'perfect crime'. HPM attacks typically leave no residual evidence and their effects can range from nuisance to catastrophic" (1997).

The HPM-weapons that the high-tech gang uses supply continuous or pulsed waves over long periods of time - especially in the night - from cars or vans or buildings around the target/person. They use magnetrons, microwave-generators, amplifiers, integrated systems. In addition they apply through wall imaging methods. There are already over 40 known victims in Germany, so some of them even have been attacked while in hospital. But the police doesn't understand these new

weapons.

Besides this the criminals use tactics of information warfare: Know all about the victims, let the know nothing about you, information dominance, disrupt the communication systems of the victims.

The criminal network has at its disposal plentiful first class technical know-how and high quality equipment. That assures high efficiency and precision strikes and enables to operate from cars and vans. The MW generators/transmitters can be camouflaged in an attaché case or hidden in a suitcase.

Only through cooperative work between electronic specialists and physicists have we been able to shine a revealing light on this special high-tech criminal activity. For experts: The (pulsed) wave from two or more transmitters [MW generators] interfere in the target zone, and through that, strengthen their effects. There are also parabolic antennas modified to transmitters. Besides this, intelligent (adaptive) antenna systems (numerous small transmitters connected, instead of few large one for example hidden in parked cars) will be used. Sometimes frequency hopping is employed. These methods work over several hundred feet, if everything is well adjusted.

We could find out where (electronic) components for highly potent MW weapons or whole systems (pictures 4, 5, 6) can be bought legally.

The criminals follow a double strategy: One way the victims are weakened, injured, tortured and intimidated. On the other side, the victims experience extreme, unbelievable things; almost no one can believe their reports. Most interpret the information from the victims as chimerical thinking. Some experts who work for the German Army or Nato know very well about MW weapons, but secrecy keeps them from talking too much about it in public.

In several German cities there are complaints of serious physical injury. One attorney represents the interests of many victims. About 40 victims have built a community of interests. We are aware of many cases with amazing similarities that have been reported in the last few months. We have names and addresses of many victims and the circumstances of the cases. We also have the names and addresses of some perpetrators.

In some cases, the lifestyles of the criminals are well known to us. Similar to terrorists, many pretend good citizenship or student lifestyles to cover their crimes. Conventional criminal activities (i.e. burglary) are undertaken by normal gangsters or former members of the Stasi (which was secret service of former GDR). In this network, they have division of labor and a support structure that includes foreigners as well.

Terrorists could use MW as anti-electronics weapons too. With HP microwaves, they can attack electronics of computers, cars, airplanes and so on successfully [see the other papers of the Workshop W8]. They can use microwave weapons (radio frequency weapons) to damage electronic systems in an unseen attack with all those bad consequences.

Additional points to be covered in the workshop: Detection of microwaves and protection against attacks.

All that has nothing to do with MW beam fright, but is criminal high-tech forced on the people, frightening that these weapons are being increasingly used by criminals and terrorists.

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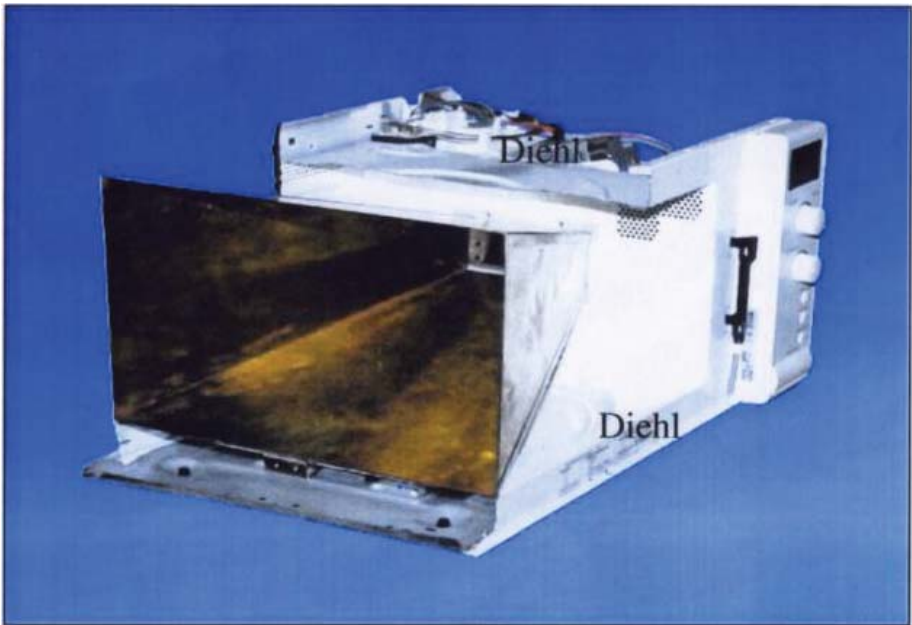
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Pictures



Picture 1: Manipulated Mircowave Oven



Picture 2: Microwaves going through walls

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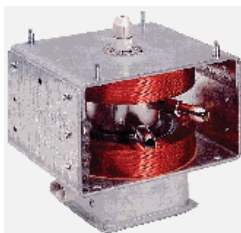
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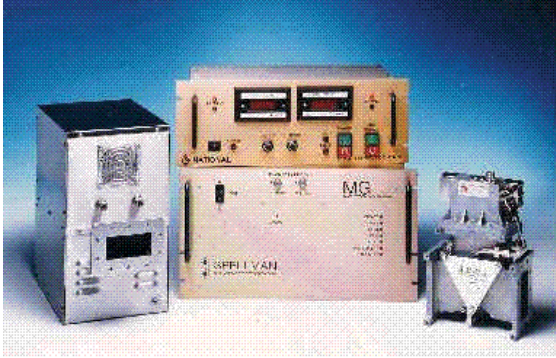
Picture 3: Book that describes the manipulation of a microwave oven to a ray weapon



Picture 4: Magnetron



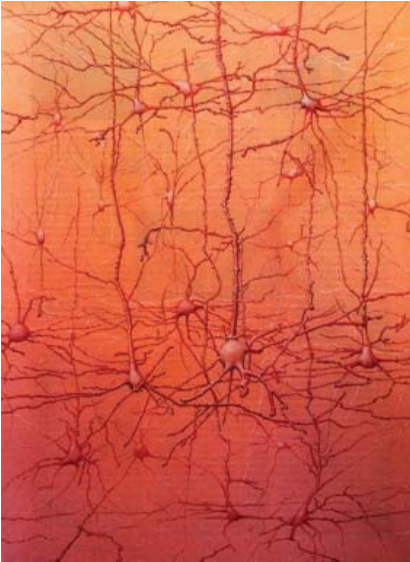
Picture 5: Magnetron



Picture 6: Generator



Picture 7: Active Denial Technology



Picture 8: Neuronal Networks in the Brain

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Writing The Snowden Files: 'The paragraph began to self-delete'

Was it the NSA? GCHQ? A Russian hacker? Who was secretly reading his book on Snowden while he wrote it, wonders Luke Harding

Luke Harding

Thursday 20 February 2014 16.20 GMT

One day last summer - a short while after Edward Snowden revealed himself as the source behind the momentous leak of classified intelligence - the Guardian editor Alan Rusbridger got in touch. Would I write a book on Snowden's story and that of the journalists working with him? The answer, of course, was yes. At this point Snowden was still in Hong Kong. He was in hiding. He had leaked documents that revealed the US National Security Agency (NSA) and its British equivalent GCHQ were surveilling much of the planet.

Our conversation took place not in Alan's office but in an anonymous sideroom at the Guardian's King's Cross HQ. Was Rusbridger's office bugged? Nobody knew. But given the Guardian's ongoing publication of sensitive stories based on Snowden's files this seemed a reasonable assumption. Britain's spy agencies were good at what they did. Thus the project to chronicle Snowden's story began in an atmosphere of furtiveness. And perhaps mild paranoia.

I was part of a small team that examined Snowden's documents in a secure fourth-floor room overlooking Regent's Canal. Security was tight. Only a few trusted reporters were allowed in. Guards were posted outside. None of the laptops were connected to the internet or any other network. Cleaners were banned. Soon the room grew unkempt. Discarded sandwich packets and dirty coffee cups piled up.

Downing Street's response to Snowden's leak was initially slow - then strident. David Cameron sent his cabinet secretary Jeremy Heywood to visit the Guardian. Heywood demanded the return of Snowden's files. And, in passing, suggested the newspaper was now itself under secret observation. "I wonder where our guys are?" he said, gesturing vaguely to the flats opposite. These interactions culminated with the Guardian, under threat of government injunction, smashing up its laptops in an underground carpark as two boffins from GCHQ watched. It was beyond the plot of any thriller.

There were curious moments in New York, too, from where many Snowden stories were reported. Within hours of publication of the first one - which revealed that the NSA was mass-scooping data from the US telecoms company Verizon - diggers arrived outside the Guardian's loft office in Broadway. It was a Wednesday evening. They dug up the pavement and replaced it. The same thing happened outside the Guardian's Washington bureau, four blocks from the White House, and the Brooklyn home of US editor-in-chief Janine Gibson. Coincidence? Perhaps.

In July I flew to Rio de Janeiro to interview Glenn Greenwald, the then Guardian columnist to whom Snowden entrusted his files. The trip was pleasant. My hotel overlooked Copacabana beach; from the rooftop I could watch the surf and Rio's rich walking their dogs. Greenwald suggested we meet along the coast in the Royal Tulip hotel. We sat in the lobby. To our left a man with his back to us played with his iPhone; another individual lurked nearby. We shifted locations, twice. Eventually we hid in the business centre.

Greenwald's response to this apparent stalking - by who exactly? - was good humoured. He seemed unfazed. The CIA's station chief in Rio was known for his aggressive methods, Greenwald told me cheerfully. Weeks earlier an intruder had broken into the Rio home he shared with David Miranda and had stolen his laptop. (Nothing was on it.) I had been leaving my own laptop in the safe of my hotel room each day; returning from meeting Greenwald I found the safe would no longer lock.

I ventured out the next morning. My laptop was in the unlocked safe. (It didn't contain any secrets; merely a work in progress.) A tall American immediately accosted me. He suggested we go sightseeing. He said his name was Chris. "Chris" had a short, military-style haircut, new trainers, neatly pressed khaki shorts, and a sleek steel-grey T-shirt. He clearly spent time in the gym. Tourist or spook? I thought spook.

I decided to go along with Chris's proposal: why didn't we spend a couple of hours visiting Rio's Christ the Redeemer statue? Chris wanted to take my photo, buy me a beer, go for dinner. I declined the beer and dinner, later texting my wife: "The CIA sent someone to check me out. Their techniques as clumsy as Russians." She replied: "Really? WTF?" I added: "God knows where they learn their spycraft." This exchange may have irritated someone. My iPhone flashed and toggled wildly between two screens; the keyboard froze; I couldn't type.

Such moments may, of course, have an innocent explanation. Still, back at my home in Hertfordshire I took a few precautions. I worked offline. I stored each draft chapter in a TrueCrypt folder, a virtual encrypted disk accessible only via a long, complicated password. When I conducted interviews I left my mobile behind. Having seen Snowden's documents, I knew something of the NSA's and GCHQ's extraordinary capabilities. As of April 2013, the US spy agency had 117,675 active surveillance targets. Was I perhaps now one of them?

By September the book was going well - 30,000 words done. A Christmas deadline loomed. I was writing a chapter on the NSA's close, and largely hidden, relationship with Silicon Valley. I wrote that Snowden's revelations had damaged US tech companies and their bottom line. Something odd happened. The paragraph I had just written began to self-delete. The cursor moved rapidly from the left, gobbling text. I watched my words vanish. When I tried to close my OpenOffice file the keyboard began flashing and bleeping.

Over the next few weeks these incidents of remote deletion happened several times. There was no fixed pattern but it tended to occur when I wrote disparagingly of the NSA. All authors expect criticism. But criticism *before publication* by an anonymous, divine third party is something novel. I began to leave notes for my secret reader. I tried to be polite, but irritation crept in. Once I wrote: "Good morning. I don't mind you reading my manuscript - you're doing so already - but I'd be grateful if you don't delete it. Thank

you." There was no reply.

A month later the mysterious reader – him, her, they? – abruptly disappeared. At a literary event in Berlin my Guardian colleague David Leigh told a journalist about my unusual computer experiences; he led with the anecdote in a piece for the leftwing daily Taz. After that, nothing. I finished *The Snowden Files: The Inside Story of the World's Most Wanted Man* in December.

In idle moments I wonder who might have been my surreptitious editor. An aggrieved analyst at the NSA's Fort Meade spy city? GCHQ? A Russian hacker? Someone else intent on mischief? Whoever you are, what did you think of my book? I'd genuinely like to know.

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US Electromagnetic Weapons and Human Rights

By Peter Phillips, Lew Brown and Bridget Thornton

As Study of the History of US Intelligence Community Human Rights Violations and Continuing Research in Electromagnetic Weapons

Completed December 2006

Sonoma State University
Project Censored
Media Freedom Foundation

Table of Contents

	Page
Research Statement	3
American Ruling Class	5
Neo-Conservatism	6
Global Dominance	9
Psychological War	10
Telsa and EMF	13
MK-ULTRA	17
Illegal Experimentation	19
The Scientists	20
Exposure of MKULTRA	22
EMF Weapons Research	24
Project Sheriff	27
Pulsed Energy Projectiles	27
Directed Acoustics	28
Neurological Technology	29
Implants	31
Expert Interviews:	31
Valdimir Lopatin	31
Carol Smith	32
Dean Radin	33
Nick Begich	34
DOD Military Contractors	36
Human Rights and EMF Testing	38
Directed Energy Prof. Society	38
Human Rights and Cognitive Liberty	41
Total Surveillance	42
Conclusion	43
Appendix	45

US Electromagnetic Weapons and Human Rights

By Peter Phillips, Lew Brown and Bridget Thornton

This research explores the current capabilities of the US military to use electromagnetic (EMF) devices to harass, intimidate, and kill individuals and the continuing possibilities of violations of human rights by the testing and deployment of these weapons. To establish historical precedent in the US for such acts, we document long-term human rights and freedom of thought violations by US military/intelligence organizations. Additionally, we explore contemporary evidence of on-going government research in EMF weapons technologies and examine the potentialities of continuing human rights abuses.

In the 1950s and 60s the CIA began work to find means for influencing human cognition, emotion and behavior. Through the use of the psychological understanding of the human being as a social animal and the ability to manipulate a subject's environment through isolation, drugs and hypnosis, US funded scientists have long searched for better means of controlling human behavior. This research has included the use of wireless directed electromagnetic energy under the heading of "Information Warfare" and "Non Lethal Weapons." New technological capabilities have been developed in black budget projects¹ over the last few decades— including the ability to influence human emotion, disrupt thought, and present excruciating pain through the manipulation of magnetic fields. The US military and intelligence agencies have at their disposal frightful new weapons, weapons that have likely already been covertly used and/or tested on humans, both here and abroad, and which could be directed against the public in the event of mass protests or civil disturbance.

Human Rights belong to people collectively. To believe in rights for some and not others is a denial of the humanness of people worldwide. Yet, denial is exactly what Congress and George W. Bush did with the signing of the Military Commission Act of 2006. The new official US policy is that torture and suspension of due process are acceptable for anyone the president deems to be a terrorist or supporter. This act is the overt denial of the inalienable rights of human beings propagated in our Declaration of Independence and the Universal Declaration of Human Rights. More so, US actions declared to the world that the US suspends human rights for those it believes are evil.

The precious words, "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness," did not declare that only some men (and women) possess unalienable rights. Our independence was founded on the understanding that all men and women are recognized by this nation as having innate rights derived by their humanity.

Likewise, the Universal Declaration of Human Rights, created by the United Nations in 1948, signed and ratified by the US Congress, specifies in its preamble that "recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of

¹ Black budgets are government funded projects that are classified/secret to Congress and the American people. For an in-depth analysis on the topic, see Weiner, Tim, *Blank Check: The Pentagon's Black Budget*, Warner: 1990.

freedom, justice and peace in the world.”

The Universal Declaration of Human Rights has been a guide for international law for most of six decades, and as such binds the United States to its general principles. Article 10 states that “everyone is entitled to full equality, to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him,” and Article 5 specifically prohibits torture or cruel, inhuman or degrading treatment or punishment. Both of these basic human rights have been superseded by the passage the of Military Commissions Act of 2006.

Additionally, the Universal Declaration of Human rights declares that everyone has the right to freedom of thought and freedom of expression and opinion. This means that humans have the inalienable right to be able to freely think their own thoughts and discover their own truths. This paper addresses this most fundamental human right and explores the pending threats to individual freedom of thought posed by new EMF weapons technologies.

Freedom of thought or cognitive liberty is the natural human right of each person to be secure in their ability to perceive the world to the best of their ability. To have true cognitive liberty in a world as complex as ours would mean that first we must have access to truthful and unbiased information about the actions of others and the general state of the world. The Center for Cognitive Liberties defines this as “the right of each individual to think independently and autonomously, to use the full spectrum of his or her mind, and to engage in multiple modes of thought.”² Without accurate representations we cannot make independently informed choices. It is imperative that the human body and mind be considered sacrosanct. To invade a person’s body without their consent is an egregious human rights crime.

The circumstance may soon arrive in which anti-war or human rights protesters suddenly feel a burning sensation akin to touching a hot skillet over their entire body. Simultaneously they may hear terrifying nauseating screaming, which while not produced externally, fills their brains with overwhelming disruption. Not only are both phenomena currently possible, but designs for more powerful EMF technologies receive continuous funding from the US Government.

We are in a time of extremism, permanent war, and the unilateral manifestation of ethnocentrism and power by a cabal of people in the US government. These power elites have been in operation for decades and are set on nothing less than the total US military domination of the world. They defy the foundational values of the American people to achieve their ends. This is not a new phenomenon. The repression of human rights has been present within the US Government throughout our history.³

A long thread of sociological research documents the existence of a dominant ruling class in the US that sets policy and determines national political priorities. The American ruling class is complex and inter-competitive, maintaining itself through interacting families of high social standing with

² See the Center for Cognitive Liberty at <http://www.cognitiveliberty.org/>

³ For a full discussion on the Global Dominance Group currently operating in the US see: http://www.projectcensored.org/downloads/Global_Dominance_Group.pdf

similar life styles, corporate affiliations, and memberships in elite social clubs and private schools.⁴

This American ruling class is self-perpetuating,⁵ maintaining its influence through policy-making institutions such as the National Manufacturing Association, National Chamber of Commerce, Business Council, Business Roundtable, Conference Board, American Enterprise Institute, Council on Foreign Relations and other business-centered policy groups.⁶ C. Wright Mills, in his 1956 book *The Power Elite*, documents how World War II solidified a trinity of power in the US, comprised of corporate, military and government elites in a centralized power structure motivated by class interests and working in unison through "higher circles" of contact and agreement. Mills described how the power elite were those "who decide whatever is decided" of major consequence.⁷

With the advent of the military-industrial complex after World War II, President Eisenhower observed that an internal military industrial power faction was consolidating their long-term plans for the domination of America and, eventually, the world. Eisenhower was in no position to fight these men, and history records his feelings on the subject with the text of his short farewell address:

"....But threats, new in kind or degree, constantly arise. Of these, I mention two only...

...This conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence – economic, political, even spiritual – is felt in every city, every Statehouse, every office of the Federal government. We recognize the imperative need for this development. Yet we must not fail to comprehend its grave implications. Our toil, resources and livelihood are all involved; so is the very structure of our society.

In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.

We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and

⁴ G. William Domhoff, *Who Rules America?* (New York: McGraw Hill, 2006 [5th ed.] and Peter Phillips, *A Relative Advantage: Sociology of the San Francisco Bohemian Club*, 1994, (<http://library.sonoma.edu/regional/faculty/phillips/bohemianindex.html>)

⁵ Early studies by Charles Beard in the *Economic Interpretations of the Constitution of the United States* (1929), established that economic elites formulated the US Constitution to serve their own special interests. Henry Klien (1933) in his book *Dynastic America* claimed that wealth in America has power never before known in the world and was centered in the top 2% of the population owning some 60% of the country. Ferdinand Lundberg (1937) wrote *American's Sixty Families* documenting inter-marrying self-perpetuating families where wealth is the "indispensable handmaiden of government. C. Wright Mills determined in 1945 (American Business Elites, *Journal of Economic History*, Dec. 1945) that nine out of ten business elites from 1750 to 1879 came from well to do families.

⁶ See R. Brady, *Business as a System of Power*, (New York: Columbia University Press, 1943) and Val Burris, *Elite Policy Planning Networks in the United State*, American Sociological Association paper 1991.

⁷ C. Wright Mills, *The Power Elite*, (New York: Oxford University Press, 1956).

knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together.

Akin to, and largely responsible for the sweeping changes in our industrial-military posture, has been the technological revolution during recent decades.

In this revolution, research has become central, it also becomes more formalized, complex, and costly. A steadily increasing share is conducted for, by, or at the direction of, the Federal government.”⁸

We now understand that Eisenhower was referring to the conjunction of redirected tax monies to research secret new technology aimed at nothing less than increasing the controlling power of the military industrial elite to a global scale.

One particular faction of ambitious men, the former cold warriors and emerging neo-conservatives, were close followers of philosopher Leo Strauss. This elite group included not just generals and industrialists but philosophers, scientists, academics, and politicians have now become the most powerful public-private war organization ever known.

Strauss espoused an elitist philosophy that fawned over the characteristics of those who inherited wealth and lived lives of leisure to pursue whatever their interests may be. His ideas have been transformed into a cogent ideology in which the media, religion, and government are used to subdue the masses while the real “nobles” follow their own will without regard to the laws designed to control lesser men. Strauss was likewise fond of secrecy, as a necessity for control, because if the lesser men found out what was being done to them they would no doubt be upset.

“The people will not be happy to learn that there is only one natural right – the right of the superior to rule over the inferior, the master over the slave, the husband over the wife, and the wise few over the vulgar many.” In *On Tyranny*, Strauss refers to this natural right as the “tyrannical teaching” of his beloved ancients.⁹

Leo Strauss, Albert Wohlstetter, and others at the University of Chicago’s Committee on Social Thought receive wide credit for promoting the neo-conservative agenda through their students, Paul Wolfowitz, Allan Bloom, and Bloom’s student Richard Perle.

Canadian cultural review magazine *Adbusters*, defines neo-conservatism as, “The belief that Democracy, however flawed, was best defended by an ignorant public pumped on nationalism and religion. Only a militantly nationalist state could deter human aggression . . . such nationalism requires an external threat and if one cannot be found it must be manufactured.”¹⁰

⁸ Public Papers of the Presidents, Dwight D. Eisenhower, 1960, p. 1035- 1040

⁹ Leo Strauss, “On Tyranny”, Edited by Victor Gourevitch and Michael S. Roth, University Of Chicago Press, 2000.

¹⁰ Guy Caron, “Anatomy of a Neo-Conservative White House,” *Canadian Dimension*, May 1, 2005.

The neo-conservative philosophy emerged as a reaction to the 1960s era of social revolutions. Numerous officials and associates in the Reagan and George H.W. Bush presidencies were strongly influenced by the neo-conservative philosophy including: John Ashcroft, Charles Fairbanks, Richard Cheney, Kenneth Adelman, Elliot Abrams, William Kristol and Douglas Feith.¹¹

Within the Ford administration there was a split between Cold War traditionalists seeking to minimize confrontations through diplomacy and detente and neo-conservatives advocating stronger confrontations with the Soviet's "Evil Empire." The latter group became more entrenched when George H.W. Bush became CIA Director. Bush allowed the formation of "Team B" headed by Richard Pipes along with Paul Wolfowitz, Lewis Libby, Paul Nitze and others, who formed the second Committee on the Present Danger to raise awareness of the Soviet threat and the continuing need for a strong aggressive defense policy. Their efforts led to strong anti-Soviet positioning during the Reagan administration.¹²

The Committees on the Present Danger (CPD) extend from the 1950s Russian threat to the present. The current CPD proudly boasts on their website;

"In times of great challenge to the security of the United States, Republicans, Democrats, and Independents have traditionally joined to make an assertive defense of American interests.

Twice before in American history, The Committee on the Present Danger has risen to this challenge. It emerged in 1950 as a bipartisan education and advocacy organization dedicated to building a national consensus for a strong defense against Soviet expansionism. In 1976, the Committee on the Present Danger reemerged, with leadership from the labor movement, bipartisan representatives of the foreign policy community and academia, all of whom were concerned about strategic drift in US security policy. With victory in the Cold War, the mission of the Committee on the Present Danger was considered complete and consequently was deactivated.

Today, the current CPD promotes radical Islamists as the primary threat to the American people and millions of others who prize liberty. They claim that the threat is global. They also claim that they operate from cells in a number of countries. Rogue regimes seek power by making common cause with terrorist groups. The prospect that this deadly collusion may include weapons of mass murder was the justification for the invasion of Iraq."¹³

¹¹ Alain Frachon and Daniel Vernet, "The Strategist and the Philosopher: Leo Strauss and Albert Wihlesteller," *Le Monde*, April 16, 2003, English translation: *Counterpunch* 6/2/03.

¹² Anne Hessing Cahn, Team B; The Trillion-dollar Experiment, *Bulletin of the Atomic Scientists*, April 1993, Volume 49, No. 03

¹³ The Committee on the Present Danger mission statement can be accessed at <http://www.fightingterror.org/whoweare/index.cfm>

Journalist John Pilger recalls his interview with neo-conservative Richard Perle during the Reagan administration: "I interviewed Perle when he was advising Reagan; and when he spoke about 'total war,' I mistakenly dismissed him as mad. He recently used the term again in describing America's 'war on terror', "No stages, This is total war. We are fighting a variety of enemies. There are lots of them out there. All this talk about first we are going to do Afghanistan, then we will do Iraq . . . this is entirely the wrong way to go about it. If we just let our vision of the world go forth, and we embrace it entirely and we don't try to piece together clever diplomacy, but just wage a total war . . . our children will sing great songs about us years from now."¹⁴

There is ample evidence available to show that some individuals within government and industry have little problem with violating the public trust and using their positions to kill, maim, torture and destroy. It is of the utmost importance to our traditional American values of human rights and cognitive liberty that we recognize this threat from within. We must move to identify those who show these proclivities and ensure that their activities have adequate oversight.

Stanley Milgram's famous experiment involving obedience to authority proved that individuals are fairly easily cowed into submitting to anyone who has a claim of authority, and that on average 61 percent of people will administer pain to another person if instructed to do so.¹⁵ Both test groups in these experiments rationalized their behavior by appealing to "the greater good." Because it was for the "advancement of science" they were able to be convinced they should ignore personal judgment and obey the instructions given to them by the experimenters.¹⁶

Martin Orne, who was one of those paid by the CIA to conduct experiments on obedience, showed in 1962 that people would go to tremendous lengths to please a person in authority. Orne conducted research that involved presenting subjects with a stack of 2,000 pages of random numbers and instructing them to add each two adjacent numbers until he returned. Over 90 percent of the test subjects continued in this meaningless task for up to five hours.¹⁷

Today the combination of political climate and technological capability presents a condition in which widespread manipulation of, not only the flow of information through the media, but also the manipulation of the emotional states and cognitive ability in large populations could be achieved. If policy elites are unaccountable to the public for their actions, and the public has been emotionally manipulated to support them, we can assume that they will certainly abuse their positions in the pursuit of their agendas.

¹⁴ John Pilger, "The World Will Know The Truth," *New Statesman* (London) (December 16 2002).

¹⁵ Stanley Milgram "Obedience to Authority: An Experimental View", New York: HarperCollins, 2004.

¹⁶ "Obedience as a determinant of behavior is of particular relevance to our time," Behavioral Study of Obedience, Stanley Milgram, Yale University, *Journal of Abnormal and Social Psychology*, Vol. 67, No. 4, p. 371

¹⁷ See Martin Orne-Orne, Martin T., "On The Social Psychology of the Psychological Experiment: With Particular Reference to Demand Characteristics and Their Implications," *Am. Psychol.* 17 (1962): 776-783, Orne, M.T. The potential uses of hypnosis in interrogation. In A.D. Biderman (Ed.), *The Manipulation of Human Behavior* (pp. 169-215). New York: John Wiley & Sons, 1961

Previous human rights and cognitive liberty violations are evidenced in CIA and FBI records pertaining to the infamous MK-ULTRA project and the grim record of harassment and subversion uncovered in the COINTELPRO program in force through the 1950s and into the 1970s. We also examined some of the cases of illegal experimentation on the public dating back to the 1930s. We consider, in depth, the forms of electromagnetic weapons entering the battlefield today that trace their origins back through the secret projects of the Defense Department in the 1950s and 1960s.

Psychological Warfare, Information War, and mind control may seem to be exotic topics, but the impact of these technologies and techniques is profound. Our minds are being impacted through a longstanding series of programs aimed at manipulating public opinion through intelligence agencies, think tanks, corporate media and a host of non-governmental organizations designed to engender fear, division and uncertainty in the public.¹⁸ Media manipulation involving the artificial framing of our collective reality is often a hit or miss proposition, but psychological operations have been carried out in the past, and are being carried out even today, through the practices of “Information Warfare,” directed at enemies abroad and at the American people.¹⁹

According to Mary C. FitzGerald of the Hudson Institute, New-concept weapons, such as laser, electromagnetic, plasma, climatic, genetic and biotechnological are the central principle driving the modernization of national defense. The potential for these weapons to be used for both good and bad deserves a great deal of attention, but there is little to be found in the media or discussed by our administration.²⁰

The US is a system of many institutions including those whose sole function is to provide government oversight. When problems arise that threaten the stability of the country or the safety of the people, the US government is designed to have checks and balances that allow the people to challenge misconduct either directly or through congressional representatives. Increasingly, oversight is disintegrating. According to a 2006 report in the *Boston Globe*, the intelligence committee does not read most intelligence reports in their entirety.²¹

The media is complicit in omitting information necessary to make democratic decisions.²² A global dominance agenda includes penetration into the boardrooms of the corporate media in the US. A research team at Sonoma State University recently finished conducting a network analysis of the

¹⁸ For an analysis on the interlocking of the corporate media, think tanks and government organizations, see Peter Phillips, Bridget Thornton and Lew Brown “The Global Dominance Group and the US Corporate Media” in *Censored 2007*, Seven Stories Press.

¹⁹ See: Snow, Nancy, *Information War American Propaganda, Free Speech, and Opinion Control Since 9/11*, 2004 Seven Stories Press and Chomsky, Noam *Media Control: The Spectacular Achievements of Propaganda*, 2002 Seven Stories Press

²⁰ In researching this article, there are no instances of remarks by senior White House, Pentagon, or Congressional officials that specifically address the human effects of non-lethal EMF weapons. A search in Lexis Nexis from 2001-2006 returned no results in American mainstream media.

²¹ Classified Intelligence Bills Often Are Unread: Secret Process Can Discourage House Debate, Susan Milligan, *Boston Globe* August 6, 2006.

²² The Global Dominance Group and the US Corporate media, by Peter Phillips, Bridget Thornton and Lew Brown, published in *Censored 2007*, Seven Stories Press, 2006, Chapter 10,

boards of directors of the ten big media organizations in the US. The team determined that only 118 people comprise the membership on the boards of director of the ten big media giants. These 118 individuals in turn sit on the corporate boards of 288 national and international corporations. Four of the top 10 media corporations in the US have DOD contractors on their boards of directors including:

William Kennard: New York Times, Carlyle Group
Douglas Warner III, GE (NBC), Bechtel
John Bryson: Disney (ABC), Boeing
Alwyn Lewis: Disney (ABC), Halliburton
Douglas McCorkindale: Gannett, Lockheed-Martin

Given an interlocked media network, big media in the US effectively represent corporate America's interests. The media elite, a key component of policy elites in the US, are the watchdogs of acceptable ideological messages, the controllers of news and information content, and the decision makers regarding media resources

It is not suggested that everyone in the government believes in global domination, nor that it is the intent of every government official to 'cover up' misconduct.²³ Scientists involved in potentially harmful technology are not 'mad scientists.' In fact, there are many reports in the public sphere addressing government and military misconduct that are put forth by people within these very institutions. The problem is when the government threatens whistleblowers, intimidates officials with job loss, infiltrates activist organizations, and increases surveillance²⁴.

PSYCHOLOGICAL WAR

Modern Psychological Operations (Psy-Ops) were significantly advanced in the Second World War²⁵ and were brought to bear on the American public during the 1950s with the formation of a widespread network of social scientists, journalists, politicians, military specialists and intelligence operatives. Psy-Ops were used to promote a variety of programs in cooperation with the Industrial Military Complex. Their key piece of information warfare was the Communist Red Menace.²⁶

²³ Remarks on Classification, The Hon. Lee Hamilton, Information Security Oversight Office, October 18, 2005. "At a time when the US intelligence community is under intense scrutiny in the aftermath of 9/11 and the failure to find weapons of mass destruction in Iraq, we only increase public skepticism about our government by denying the public information."

²⁴ See: Valerie Plame, the Richard Leiby, Spy Who Got Shoved Out Into the Cold, *Washington Post*, October 29, 2005; Page C01; Amended 2006 surveillance bill by Bush; The FBI and the Engineering of Consent, Noam Chomsky, From *Public Eye Magazine*, Volume One, Number Two; and Demian Bulwa, Oakland: Police spies chosen to lead war protest, *San Francisco Chronicle*, Friday, July 28, 2006.

²⁵ See William E. Daugherty and Morris Janowitz, *A Psychological Warfare Casebook*, Baltimore, MD: Johns Hopkins University Press, 1958. In particular, see Daugherty's article on "US Psychological Warfare Organizations in World War II," pp. 126-136.

²⁶ For a current view of these kinds of operations and how they are outsourced see James Bamford's article in the *Rolling Stone*, The Man Who Sold the War Meet John Rendon, Bush's General In The Propaganda War, November 17, 2005. For more information on CIA control of the media refer to Carl Bernstein, "The CIA and the Media -- How America's

One of the opening salvos in this war of deception was fired by George Kennan, the American ambassador to Moscow, describing the Soviet threat in a “long cable” sent to Washington in 1946. Kennan spent decades studying the Russian political scene. He became convinced that there would be little chance of cooperation with the Soviets and recommended a number of actions, most notably the institution of “political war” through the newly formed CIA - a decision he later regretted, even arguing for the elimination of the CIA in 1997.²⁷

In the late 1950s, a right-wing cadre of men within the new CIA was busy building secret armies, planning assassinations, and generally devising plans for world domination that still play out today. Operation Gladio was one example, well documented and international in scope, in which right-wing members of the US intelligence community created “stay-behind” armies in many of the nations of Europe. Those armies managed to infiltrate the highest levels of politics (most notably in Italy where the term “Gladio” refers to a double edged sword) and have been held responsible for numerous false-flag terrorist acts through the 1980s and 1990s. Terror and propaganda often go hand-in-hand in the extremist elements within our military and intelligence communities.²⁸

To counter the divisions within the intelligence community, a greater voice was given to organizations formal and informal. In the 1950s, one such group, the first Committee on the Present Danger (CPD), promulgated a series of “gap crises.” The Bomber Gap, the Missile Gap, the Space Gap, and the Brainwashing and Psychotronic Gap were used to justify increased military technology spending. Congress was led to believe that the Soviets were a much greater threat than they actually were, and that a terrifying new weapon was being developed that threatened America. They were thus convinced to vote for virtually any black budget proposal that came their way. The CPD ran a series of broadcasts to the public through the Mutual Broadcasting Network that spread fear in the minds of the public.

Under the first civilian CIA Director, Allen Welsh Dulles, the Company began to push forward with its agenda of manufacturing consent from the American people for a new state of perpetual war industrialization. Dulles was a well-connected individual, a successful spy for the OSS in Switzerland during the war, related to three secretaries of state, and the chief advisor to Dewey when he ran for President in 1948. Dulles had access to the highest echelons of policy making and his

Most Powerful News Media Worked Hand in Glove with the Central Intelligence Agency and Why the Church Committee Covered It Up”, *Rolling Stone*, October 20, 1977, p.63.-the title of the original operation was “Mockingbird”

²⁷ George F. Kennan. “Spy and Counterspy.” *The New York Times*, May 18, 1997. For a sympathetic biography see George F. Kennan and *The Making of American Foreign Policy, 1947-1950*, Wilson D. Miscamble, C.S.C., 1993 Princeton University Press. George F. Kennan. “Policy Planning Staff memorandum on the inauguration of organized political warfare”, May 4, 1948. Published in *Foreign Relations of the United States, 1945-1950: Emergence of the Intelligence Establishment*. Discusses the need for political warfare: that is, measures short of war, such as propaganda and covert operations.

²⁸ History News Network, USA 13 June 2005, Terrorism in Western Europe: An Approach to NATO’s Secret Stay-Behind Armies, by Daniele Ganser, *The Whitehead Journal of Diplomacy and International Relations* 1 June 2005, Kennan published his analysis anonymously in *Foreign Affairs*, the official magazine of the Council for Foreign Relations (CFR). [Mr. X (Alias ‘George C. Kennan): “The Sources of Soviet Conduct”, in *Foreign Affairs*, July 1947.] (http://www.isn.ethz.ch/php/documents/collection_gladio/Terrorism_Western_Europe.pdf)

influence was global in scope, counting among his close friends Henry Luce, publisher of *Newsweek*. Relying heavily upon established circles of contacts within the nation's media elites, Dulles recruited key members of the media to work directly for the CIA under Operation Mockingbird. Mockingbird was a psychological information campaign against the American people. In a campaign that would lead to acceptance of blanket secrecy for "national security", "the Red Scare" became the excuse for spending vast sums of money on weapon systems and an increase in covert operations both in foreign countries and within the United States. In the 1950s and 1960s, movies, news articles, books, radio and television programs were carefully laced with anti-communist messages and images designed to produce an acceptance of the policies being promoted by the defense elite's propaganda machine.²⁹

"Among the executives who lent their cooperation to the Agency were William Paley of the Columbia Broadcasting System, Henry Luce of Time Inc., Arthur Hays Sulzberger of the *New York Times*, Barry Bingham Sr. of the *Louisville Courier-Journal* and James Copley of the Copley News Service. Other organizations which cooperated with the CIA include the American Broadcasting Company, the National Broadcasting Company, the Associated Press, United Press International, Reuters, Hearst Newspapers, Scripps-Howard, *Newsweek* magazine, the Mutual Broadcasting System, The *Miami Herald*, and the old *Saturday Evening Post* and *New York Herald-Tribune*. By far the most valuable of these associations, according to CIA officials, have been with *The New York Times*, CBS, and Time Inc."³⁰

One of the engineers of this deception was a former head of the stay-behind network, Edward W. Barrett, director of the Interdepartmental Psychological Strategy Board (IPSB) and, not coincidentally an editor at *Newsweek*. Barrett was seen as being very effective in his efforts to manipulate public opinion. At the same time, CPD was a "non-political group of citizens of the western coast" and launched a media campaign in favor of the urgent reinforcement of the national defense. Among the organizers of the Committee were Frank Altschul (Director of the Council for Foreign Relations), William Donovan (former head of the OSS during WWII) and General Dwight D. Eisenhower.³¹

All of this activity was more than enough to stoke the fears of the public and encourage policy makers to accept the Cold War view of the world. This allowed Truman to convince Congress to approve a tripled military budget that provided funding for secret research and development and turn a blind eye (in the name of National Security) to "black operations" programs authorized under the new Cold War rubric of "containment" and aimed at undermining otherwise peaceful nations and

²⁹ Victor Marchetti and John D. Marks, *The CIA and The Cult of Intelligence*, Dell Books, 1975 (as a matter of general interest this is reportedly the first book the Government went to court to have censored. There are 168 missing pages as a result of the courts ruling but the spaces were retained in the first edition.)

³⁰ "The CIA and the Media", Carl Bernstein *Rolling Stone*, Oct. 20, 1977

³¹ David F. Krugler, Will It Play in Peoria? The 1950 Campaign of Truth and the Reconstruction of Cold War Propaganda, British Association of American Studies Annual Conference April 1997 University of Birmingham, Birmingham, England

fomenting war, torture and assassination in countries as diverse as Iran, Guatemala and Indochina.³²

Post-war developments in Europe, especially the British withdrawal from Greece, led Truman to decide it was necessary to have a permanent American presence in the old continent to counteract the Communist influence.³³ General George C. Marshall, Secretary of State, designed a vast plan that mixed economic assistance and secret actions aimed at establishing democracies and making sure that voters in foreign countries made “the right choice.” National Security Council directive NSC 10/2, essentially written by Kennan, made official the creation of an anti-Communist interference network.³⁴

The US intelligence community had an ace in the hole, Reinhardt Gehlen, a Nazi spymaster with an existing network of agents became the front man in Eastern Europe for American intelligence. General Reinhardt Gehlen proved to be troublesome for the CIA over the years. Communist counter-spies infiltrated his network, his information was often incorrect, and he had downplayed his eagerness to serve the Reich. But Gehlen was only one of thousands of Nazis recruited to assist in the new “Cold War” through Operation Paperclip.³⁵ In fact, the intelligence assets acquired by bringing the Gestapo onto the US public payroll was overshadowed by the acquisition of dozens of brilliant Nazi scientists and researchers.

At this juncture, Truman, through the application of the 1947 National Security Act and the newly formed National Security Council³⁶, authorized a vast number of secret projects involving chemical, biological, nuclear and electromagnetic experiments. Former Nazis were put in charge of many of the most sensitive programs and facilities. The Army Ballistic Missile Agency (ABMA) was entrusted to the former SS officer Wernher von Braun.³⁷ Kurt Debus, another ex-SS officer, directed Cape Canaveral. At this time scientists began working on “black” projects in earnest, including attempts at finally developing the “lost” theories of Nicola Tesla, the Serbian-born American physicist, into military and intelligence applications.³⁸

TESLA AND EMF

³² William Blum, *Killing Hope: US Military and CIA Interventions Since World War II*, Monroe, Maine: Common Courage Press, 1995; Ralph McGehee, *Deadly Deceits: My 25 years in the CIA*, New York: Sheridan Square Publications, 1983. [http://www.sourcewatch.org/index.php?title=CIA Footnote on Ops](http://www.sourcewatch.org/index.php?title=CIA+Footnote+on+Ops)

³³ Daniele Ganser, *NATO's Secret Armies. Operation Gladio and Terrorism in Western Europe*, Frank Cass Publishers, 2004.

³⁴ See the Federation of American Scientists Intelligence resource program, National Security Council [NSC] Truman Administration [1947-1953] at <http://www.fas.org/irp/offdocs/nsc-hst/index.html>.

³⁵ Linda Hunt, *Secret Agenda: The United States Government, Nazi Scientists and Project Paperclip, 1945-1990*, St. Martin's Press, 1991.

³⁶ The National Security Act of 1947 can be accessed at <http://www.state.gov/r/pa/ho/time/cwr/17603.htm>

³⁷ Biography of Werner VonBraun produced by NASA: www.hq.nasa.gov/office/pao/History/sputnik/braun.html and at the Marshall Space Flight Center located at <http://history.msfc.nasa.gov/vonbraun/index.html>

³⁸ Hunt, L. *Secret Agenda. The United States Government, Nazi Scientists, and Project Paperclip, 1945 to 1990*. New York: St. Martin's Press, 1991. Simpson, C. “Blowback. The First Full Account of America's Recruitment of Nazis, and the Disastrous Effect on Our Domestic and Foreign Policy”. New York: Weidenfeld and Nicolson, 1988

Military interest into the weaponization of the electromagnetic spectrum has a long history, based on the theoretical work of Nikola Tesla. Radar, in its early inception, was seen not only as a means of tracking the position and speed of enemy targets, but as a potential weapon in its own right. There are very real problems however with overcoming the normal decrease in effect of an electromagnetic field over distance. This effect is a natural function of the laws of physics and applies to both electrical and magnetic fields³⁹. In short, the strength of a field drops off in inverse proportion to the distance of the target from the source. Without a means of concentrating and directing a beam of energy across long distances, any effect that an EMF weapon may have would be limited to its immediate vicinity. From 1900 until his death in 1943, Nikola Tesla worked to develop just such a weapon.

In a letter to the *New York Times* editor in 1908 Tesla wrote,

"When I spoke of future warfare I meant that it should be conducted by direct application of electrical waves without the use of aerial engines or other implements of destruction...What I said in regard to the greatest achievement of the man of science whose mind is bent upon the mastery of the physical universe, was nothing more than what I stated in one of my unpublished addresses, from which I quote: "According to an adopted theory, every ponderable atom is differentiated from a tenuous fluid, filling all space merely by spinning motion, as a whirl of water in a calm lake. By being set in movement this fluid, the ether, becomes gross matter. Its movement arrested, the primary substance reverts to its normal state. It appears, then, possible for man through harnessed energy of the medium and suitable agencies for starting and stopping ether whirls to cause matter to form and disappear. At his command, almost without effort on his part, old worlds would vanish and new ones would spring into being. He could alter the size of this planet, control its seasons, adjust its distance from the sun, guide it on its eternal journey along any path he might choose, through the depths of the universe. He could make planets collide and produce his suns and stars, his heat and light; he could originate life in all its infinite forms. To cause at will the birth and death of matter would be man's grandest deed, which would give him the mastery of physical creation, make him fulfill his ultimate destiny."⁴⁰

Tesla made several claims during the latter years of his life, published by the *New York Times* in what became an annual event. His theory of the hidden nature of our universe supplants those of many of his contemporaries in that he was able to infer a multidimensional model of the universe that is only now being investigated through the theoretical mathematics of our leading physicists.⁴¹

³⁹ There are two laws of note here: the inverse square law, which relates to forces such as gravity, and the inverse cube law, which relates to electromagnetic forces. Both equations describe the relationship between the power of the force and the decrease in that force's effect over distance. In regards to magnetism we refer to the work of Maxwell. One easily accessible online source for his equations is: <http://www.rialian.com/rnboyd/maxwell.htm> A good place to start for understanding the man and his work is the James Clerk Maxwell Foundation at: <http://www.clerkmaxwellfoundation.org/html/links.html>

⁴⁰ *New York Times*, April 21st, 1908 (p.5 column 6) Tesla Letter to the Editor .:

⁴¹ "The Cosmic Triangle: Revealing the State of the Universe," in the May 28, 1999 issue of the journal *Science*

Tesla also developed means of remotely controlling aircraft as early as 1915, foreshadowing the Unmanned Ariel Vehicles (UAVs) of today's battlefields. In 1934 Tesla offers to build a "Death Ray" that would make the power of an opponents air force obsolete. This was one of the earliest recorded statements regarding directed energy weapons.⁴² Tesla's offer to build this device for the US government for a bargain price, but with many caveats, was refused by officials who, preferred instead to pump money into the new Army Air Corp, which in turn gave rise to the military aviation complex that we have today.⁴³

Before the war the airline industry was not a major part of the economic life of the nation.⁴⁴ With huge wartime contracts, however, corporations such as Hughes, McDonnell Douglas, Lockheed, and Northrop quickly grew in power commensurate with the financial bonanza that was unearthed in the battlefields of Europe and the Pacific.⁴⁵ These companies formed the core of the "military-industrial complex." Their investors and managers began to consolidate their clout in political circles to keep the nation on a wartime economic footing, a simple and vastly powerful weapon that would make aircraft, bombs, missiles and attendant industries irrelevant would certainly be seen as a direct threat to the growing power of military arsenal. Instead, a "black budget" program was put into motion, which exploited the work of Robert Oppenheimer, Albert Einstein and others. The Manhattan Project, developed by the DOD in 1942, generated a vastly destructive weapon that required a well-established and unbelievably expensive aerospace industry, along with unprecedented levels of secrecy and autonomy from Congress and the public.⁴⁶

The US government also ignored Tesla's offer to produce a "city killing machine," which was composed of an electromagnetic shield and a wireless torpedo. Tesla made several proposals during the 1930s, none of which received funding. Among Tesla's claims, published annually on his birthday in the *New York Times*, were methods of harnessing the power of the sun to electrify the earth and provide free electrical power to anybody, anywhere.

Tesla did, however, conceive of at least one device that became a major part of our nation's arsenal -

discusses Dark Energy and Margaret Cheney, *Tesla: A Man Out of Time*, Dell Publishing, 1983.

⁴² Front page *New York Times*, July 11 1934 was entitled, "TESLA, AT 78, BARES NEW 'DEATH BEAM'" and told of the inventor's proposal that would "send concentrated beams of particles through the free air, of such tremendous energy that they will bring down a fleet of 10,000 enemy airplanes at a distance of 250 miles..."

⁴³ To illustrate the control of science for corporate profit, Tesla's practical applications all shared one thing in common, they were devoid of any profitable application. As a result, Tesla's development of wireless electricity has never borne fruit, leaving us still in the 21st century surrounded by a landscape of transmission wires, faulty electrical grids, destructive (though profitable) electrical generation systems, wars for oil, and a suffering environment. See Marc J. Seifer, *The Life and Times of Nikola Tesla*, Citadel Press, 1998.

⁴⁴ John B. Rae, *Climb to Greatness: The American Aircraft Industry, 1920-1960*, Cambridge: MIT Press, 1968. Roger E. Bilstein, *The American Aerospace Industry: From Workshop to Global Enterprise*, New York: Twayne Publishers, 1996.

⁴⁵ Carol L. Cook, *The Aerospace Industry: Its History and How it Affects the US Economy*, Yale-New Haven Teachers Institute, 2005.

⁴⁶ See the National Atomic Museum's archives concerning the Manhattan Project at <http://www.atomicmuseum.com/tour/manhattanproject.cfm> and the Brookings Institute's archives at <http://www.brook.edu/FP/PROJECTS/NUCW/COST/MANHATTN.HTM>

radar. As early as 1917 he published his theory and developed the first prototype in 1934. It is from the basis of this technology that future research into weaponizing the electromagnetic spectrum proceeded. At the same time Tesla was working on methods of transmitting and receiving communication signals through interplanetary space and reading the images on a sleeping person's retina (by extension mind reading). His prediction that future wars would be fought with electromagnetic means foreshadowed the rise of electronic warfare and the non-lethal weapons technology being deployed today.⁴⁷

At first glance, it would seem probable that the military had taken over the management of Tesla's material. In fact, a number of projects related to his life's work were in development. For instance, the building of beam weapons at Wright Patterson Air Force Base under the code name "Project Nick"⁴⁸ headed by Brigadier General L.C. Craigie. This project was however, cancelled due to an apparent lack of understanding of Tesla's means of transmitting high-energy waves without a loss of power over great distances. Defense Advanced Research Projects Agency (DARPA) began another project in 1958 codenamed "Seesaw" at Lawrence Livermore Labs⁴⁹ aimed at combating reported Soviet advances in electromagnetic weapons and defenses, advances that many believe came about after 1952 when the bulk of Tesla's research and personal effects were turned over to his nephew, Sava Kosanovic, who promptly whisked them away to Yugoslavia. Eight years later Soviet Premier Nikita Khrushchev would state that, "A new and fantastic weapon is in the hatching stage,"⁵⁰ horrifying many and prompting calls for more effective means of using EMF, espionage and counter-espionage.

On February 9, 1981, the office of the Undersecretary of Defense Research and Engineering department sent a letter to the FBI that requested the papers of Tesla, stating, "We believe that certain of Tesla's papers may contain basic principles which would be of considerable value to certain ongoing research within the DOD. It would be very helpful to have access to these papers. The letter was signed by Lt. Col. Allan J. McLaren, an R.O.T.C. graduate from M.I.T. in 1960, who later went on to become a project director with Lockheed Martin Space Systems from which he retired in 2003."⁵¹

This section of his memo to the FBI was not declassified until 1993. In response, the FBI issued the same response as to all of the other inquiries with one exception, this time they identified who it was that examined the stored effects; it was the Office of Scientific Research and Development from

⁴⁷ *New York Times*, 1937 "...will send concentrated beams of particles through the free air, of such tremendous energy that they will bring down a fleet of 10,000 enemy airplanes at a distance of 250 miles from the defending nation's border and will cause armies of millions to drop dead in their tracks When put into operation, Dr. Tesla said, this latest invention of his would make war impossible. This death-beam, he asserted, would surround each country like an invisible Chinese wall, only a million times more impenetrable. It would make every nation impregnable against attack by airplanes or by large invading armies." For an interesting article about Tesla's "Death Ray" and the relationship to Tunguska see: <http://www.viewzone.com/tesla.ray.html>

⁴⁸ Tesla: Master of Lightning, archived at PBS: www.pbs.org/tesla/ll/ll_mispapers.html

⁴⁹ Tesla: Life and Legacy, Missing Papers, archived at PBS: http://www.pbs.org/tesla/ll/ll_mispapers.html.

⁵⁰ Max Frankel, "Khrushchev Says Soviets Will Cut Forces a Third; Sees 'Fantastic Weapon', *New York Times*, January 15, 1960.

⁵¹ See Tesla's FBI files at the FBI FOIA site located at <http://foia.fbi.gov/foiaindex/tesla.htm>.

MIT, a breeding ground of CIA. technical types the Office of Naval Intelligence and agents from US Naval Research.⁵² What they may have been looking for had likely already been taken, according to a recent PBS special entitled *Tesla: Life and Legacy*, Tesla's nephew reported that Tesla's most recent journal was missing from the bulk of material stored by the OAP.⁵³ In recent years high profile projects such as the High Altitude Auroral Project ("HAARP"), the Strategic Defense Initiative ("Star Wars"), and many of the devices promoted by proponents of "Non-Lethal Weapons" have Tesla's intellectual fingerprints all over them.⁵⁴

MK-ULTRA

In terms of mind-control and the breaking down of prisoners for military interrogations, the events at Abu-Ghraib, Guantanamo, and in the CIA network of secret prisons dotting the globe, all have their intellectual origin in the work carried out by a network of scientists under the behest of the intelligence community beginning in the World War II period. Mind-control, per se, refers to a well-funded, broad based series of programs designed to explore the furthest reaches of human cognitive ability. The Nazis, as well as the Japanese, had been experimenting on prisoners throughout the war. Recovery of the records of these experiments led the US to proceed with investigations into new means of interrogations and the building of resistance to interrogations of US personnel.⁵⁵

The CIA, in association with various other agencies, undertook a long series of experiments on unsuspecting prisoners, students, military personnel and others recruited into one of the at least 162 subprojects of what became known as MKULTRA.⁵⁶ Interest was certainly piqued by the case of Cardinal Mindszenty and the reports of brainwashing techniques used on American soldiers in prisoner of war camps in Korea.⁵⁷ But even prior to the Korean War the resiliency of the human mind was being tested by researchers on the black budget. These projects reportedly at times violated every conceivable notion of human rights and dignity.⁵⁸

Frank Olson, a mid-level CIA operative, worked on the development of aerosol delivery of drugs and poisons at Ft. Detrick, Maryland. His work, which is still classified, was funded through MKULTRA. Olson took a trip to England where MI6 and the CIA were working together on ways to

⁵² Tesla: Life and Legacy, Missing Papers, archived at PBS: http://www.pbs.org/tesla/II/II_mispapers.html.

⁵³ Tesla: Master of Lightning PBS documentary Dec. 12th, 2000.

⁵⁴ Box#8 of Declassified CIA documents pertaining to MKULTRA contains the following fragment: The Application of Tesla's Technology in Today's World. Obtain, online, through the National Security Archives at <http://www.gwu.edu/~nsarchiv/>

⁵⁵ Harris, S. (1994) *Factories Of Death: Japanese Biological Warfare, 1932-45, And The American Cover-Up*. London: Routledge. Tanaka, Y. 1998. *Hidden Horrors: Japanese War Crimes in World War II*. Boulder, Colorado: Westview Press, Michalczyk, J. J. 1994. *Medicine, ethics, and the Third Reich: Historical and Contemporary Issues* (METR). Kansas City, Missouri: Sheed & Ward

⁵⁶ This site provides a selection of memorandum from within the CIA, in which funding is discussed. <http://cryptome.org/mkultra-0003.htm> Digital MK-Ultra files can be found at: http://www.intellnet.org/mkultra/general_note_about_MK-ULTRA_funding

⁵⁷ Stephen Budiansky, Erica E. Goode and Ted Gest, "The Cold War Experiments", *U.S News and World Report* January 24, 1994.

⁵⁸ Patricia Greenfield, CIA's Behavior Caper, *APA Monitor*, December 1977, pp. 1, 10-11

prevent allied spies and servicemen from yielding to interrogation. Olson also traveled to Frankfurt, where the two agencies conducted fatal experiments on prisoners of war and others considered to be “expendable.” Olson had an ethical dilemma with the research and, after voicing his concerns, returned to the United States. On November 28, 1953, Olson was in room 1018A of the Hotel Statler in New York. At 2 a.m., Olson fell from the 10th floor window of his room to his death on the sidewalk below. The headline reported his death as an accident or suicide. This report was discredited when, in 1975, another official lie was issued to ease his family’s suffering and deflect public scrutiny. This time Olson was called the victim of an LSD experiment.⁵⁹ Media reports cited in the *New York Times* focused on the sensational aspects of LSD use and psychic warfare, but did not dwell on the more egregious violations of human rights and dignity inherent in the programs overseen by the CIA.⁶⁰

The truth was not revealed until 1994 when his son finally had his body exhumed and examined. The autopsy showed that Olson’s left temple had been fractured before he fell. According to the *New York Times Magazine* CIA tradecraft books from 1953, that have since been released teach that “one of the surest methods of killing somebody without a trace involves impairing their reflexes with alcohol (or drugs) and then stepping up behind them and stunning them with a blow to the temple. After that you quickly grab their ankles and in a single motion flip them over a bridge, balcony or out of a window more than 70 feet off of the ground.”⁶¹ What Olson saw, and what cost him his life and his family their peace of mind for 30 years, was the beginning of a long term strategy to develop means of making individual both resistant to “brainwashing” and to control the actions of individuals.⁶² The cover story that was used to justify the beginning of the project was that there was a “brainwashing gap” with the Koreans.⁶³

Experimenters used college students, servicemen, mental patients, the poor and, in several instances, children as young as four years old, in attempts to create untraceable assassins, couriers and other operatives. MKULTRA sub-projects involved the services of many notable universities and used a number of false front corporations such as the Foundation for the Study of Human Ecology and think tanks such as RAND, to shield the source of funding from those with ethical “problems.”⁶⁴ We would still know nothing of these activities had it not been for the release of 16,000 pages of documents in 1977 through the FOIA request filed by the surviving family of Frank Olson. Unfortunately CIA Director Richard Helms ordered the destruction of any MKULTRA records

⁵⁹ Thomas O’Toole, “CIA Infiltrated 17 Area Groups, Gave out LSD Suicide Revealed”, front-page story *Washington Post*, June 11, 1975.

⁶⁰ Carl Bernstein, “The CIA and the Media: How Americas Most Powerful News Media Worked Hand in Glove with the Central Intelligence Agency and Why the Church Committee Covered It Up”, *Rolling Stone*, October 20, 1977.

⁶¹ Michael Ignatieff, “What did the C.I.A. Do to Eric Olson’s Father?” *New York Times Magazine*, April 1, 2001.

⁶² *ibid.* and The Frank Olson Project at

<http://www.frankolsonproject.org/Contents.html><http://www.frankolsonproject.org/Statements/FamilyStatement2002.htm>
 I. Dr. Eric Olson continues to do what he can to bring to light the truth of his father’s death. At the above website there are memorandum written by Dick Cheney to Donald Rumsfeld in regards to the families lawsuit during the Ford administration in 1975

⁶³ Reported in the *New York Times* as “Mind Control Studies had Origin in Trial of Mindszenty”, Aug. 2, 1977, p.16.

⁶⁴ See Athan G. Theoharis, “Researching the Intelligence Agencies: The Problem of Covert Activities”, *The Public Historian*, 1984 National Council on Public History, University of California Press.

shortly before the order came in to his office⁶⁵, leaving an incomplete picture of a concerted effort by various agencies to create new and better means of controlling the thoughts, emotions and thus behavior, of unsuspecting individuals.

ILLEGAL EXPERIMENTATION

MKULTRA was, however, neither the first nor the last project funded by government or industry to experiment on people in the name of some greater good. A quick review of the history of secret experimentation and medical atrocities reveals a pattern of deadly behavior

The Tuskegee Experiments in 1932 cruelly condemned scores of black men to death from syphilis.⁶⁶

The Pellagra Incident, in which millions died over two decades, in spite of the fact that the US Public Health Service knew at the time that these deaths were caused by little more than a niacin deficiency.⁶⁷

In 1940 scientists exposed four-hundred prisoners in Chicago with malaria (a US experiment Nazis cited at the Nuremberg trials to defend their own experimentation).⁶⁸

During WWII, Seventh Day Adventist conscientious objectors were enlisted into Operation Whitecoat by the US Army and the Adventist Church. They were told that they were being tested for defensive research purposes while the government was in fact testing offensive chemical and biological weapons.⁶⁹

After WWII, matters became far worse for those who were caught up in the web of illegal scientific testing. In 1947 Colonel E.E. Kirkpatrick of the US Atomic Energy Commission issued a secret document stating that the agency would begin administering intravenous doses of radioactive substances to human subjects. At the same time atomic tests in which the residents of Utah and Nevada were purposely exposed to radioactive fallout. There were also a series of operations during the 1940s and 1950s in which US cities were attacked secretly by the military through the spread of biological agents in order to track their propagation through a real population.⁷⁰

⁶⁵ Project MKULTRA, The CIA's Program of Research in Behavioral Modification, August 3, 1977, US Senate, Select Committee on Intelligence, and Subcommittee on Health and Scientific Research of the Committee on Human Resources.

⁶⁶ Jean Heller (Associated Press), "Syphilis Victims in the US Study Went Untreated for 40 Years" *New York Times*, July 26, 1972; and VN Gamble, "Under the Shadow of Tuskegee: African Americans and Health Care." *American Journal of Public Health* 7(1997):1773-1778.

⁶⁷ Jon M. Harkness, "Prisoners and Pellagra", *Public Health Reports*, Sep/Oct96, Vol. 111 Issue 5, p 463.

⁶⁸ "They Were Cheap and Available: Prisoners as Research Subjects in Twentieth Century America." *British Medical Journal* 315:1437.

⁶⁹ Krista Thompson Smith, "Adventists and Biological Warfare", *Spectrum Magazine*, Vol 25, no. 3, March 1996 and David R. Franz, DVM, PhD, Cheryl D. Parrott, Ernest T. Takafuji, MD, MPH, "The US Biological Warfare and Biological Defense Programs" in *Medical Aspects of Chemical and Biological Warfare*, Part 1; *The Textbook of Military Medicine, Office of Surgeon General*, Borden Institute 1997; p. 425-436.

⁷⁰ Atomic Energy Commission Secret Memo by Kirkpatrick, E. E. Col. A January 8, 1947, This was a draft memo from

THE SCIENTISTS

Dr. Ewen Cameron⁷¹

Once the details of MKULTRA came to light, the focus in the media and in the Senate, was on the use of drugs, especially LSD. While the researchers within the project did indeed concentrate on developing a variety of hallucinogenic concoctions, they did so with an end in mind. The goal was to devise means and methods of enabling undercover operatives, soldiers, contractors or anyone who was involved in secret projects, to be able to keep those secrets if they were captured or interrogated. Hypnosis, combined with drugs, sensory deprivation and systematic abuse were seen as a means to that end. The leader in this pharmaceutical and psychological research was Dr. Ewen Cameron. Cameron was at the time, one of the most esteemed psychiatrists in the world. As president of the American Psychiatric Association, Canadian Psychiatric Association, and one of the founders of the World Psychiatric Association, Dr. Cameron began experimenting on brainwashing techniques as early as the 1930s with schizophrenic patients. At this time lobotomies were not yet in common use, though the procedure would begin to be implemented in 1936 on a wide scale. Electroshock therapy was some years from being accepted as a primary means of changing behavior.⁷²

Cameron relied on torturous and highly stressful techniques for breaking down the personality of his patients. Schizophrenics would be stripped down naked beneath red lights for eight hours a day, sometimes for up to eight months with repeated messages inundating their senses. In other experiments Cameron would attempt to induce the delirium associated with a high fever by cooking his patients in an electric cage until their body temperature reached 102 degrees.

From January of 1957 until September of 1960 Cameron became one of the promising researchers the CIA turned to in order to develop means and methods of "brainwashing" and programming

Colonel Kirkpatrick, Acting Manager, Field Operations of AEC, to the AEC Berkeley Area Engineer, puts the AEC stamp on termination of human testing, while simultaneously revealing it was going on under the Manhattan Project-at the request of Oppenheimer: "Until the Atomic Energy Commission is able to consider sponsoring this type of experimentation, authorization cannot be given for the use of radioactive materials in human subjects under this contract." A more current report from the National Security Archives that clearly lays out the timeline and the assault by researchers on "subjects" can be found at

http://www.gwu.edu/~nsarchiv/radiation/dir/mstreet/commeet/meet12/brief12/tab_f/br12f1d.txt---- "Personal Statement from Elizabeth Zitrin, Attorney at Law Public Member of the Ad Hoc Committee on Radiation Experiments". For information on biological warfare experiments a good starting place is : *Biological Warfare: A Historical Perspective*, by LTC George W. Christopher, USAF, MC; LTC Theodore J. Cieslak, MC, USA, MAJ Julie A. Pavlin, MC, USA, and LTC (P) Edward M. Eitzen Jr., MC, USA. -- Operational Medicine Division, United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland, as posted at <http://www.fas.org/nuke/guide/usa/cbw/bw.htm>

⁷¹ This section about Dr. Cameron is based on Orlikow Vs. United States, CIA Settlement of Some Complaints. Ewen Cameron and the Allan Memorial Institute - Subproject 68 funded by CIA from March 18, 1957 to June 30, 1960 Without conceding liability, in 1988 the CIA agreed to pay \$750,000 to settle a case brought on behalf of nine plaintiffs who were subjected to federally funded mind control experiments sponsored by the CIA and conducted by prominent psychiatrist Ewen Cameron, M.D. The experiments included heavy doses of LSD, electroshock and psychic driving.

⁷² See "CIA Brainwashing Experiments", *MacLean's*; January 28, 1985, Vol. 98 Issue 6, p46, 1/3p and "A cold-war horror show's last act", *US News & World Report*; October 17, 88, Vol. 105 Issue 15, p13, 1/3p.

human beings to do the will of the agency. Cameron received \$64,242.44⁷³ from the CIA. to develop a combination of techniques that would destroy an individual's memory of an event and enable the programmer to control their behavior through post-hypnotic commands. Cameron used a variety of drug combinations coupled with prolonged sleep deprivation, isolation, hypnosis, and electroconvulsive therapy in order to "wipe" an individual's memory. His techniques worked, to a certain extent, but ethical considerations led the CIA to cut Cameron's funding in the US, prompting Cameron to move to Canada to continue his work with funding channeled through the Canadian Government.

He continued his work, officially, from 1961 until 1964 in Montreal where he received an additional \$57,750.⁷⁴ During this time Cameron combined his techniques (in a "therapy" he called de-patterning) with electroconvulsive therapy in which the voltage introduced into one subjects brain, Linda Macdonald, exceeded the APA's guidelines by 76.5 times. He succeeded in wiping her memory and to this day, she cannot remember anything prior to 1963. In a January 17, 1984 broadcast of the Canadian Broadcasting System, a program called "The Fifth Estate" detailed the experiments of Cameron, prompting a burst of investigative journalism culminating in a class-action suit brought against the CIA by former subjects. In 1988, the case was settled out of court for \$750,000, divided between 8 plaintiffs. Linda Macdonald received \$100,000 and legal fees from the Canadian government, but Cameron himself, faced no punishment.⁷⁵

Dr. Jose Delgado

Whereas Cameron focused on creating traumatized individuals through intense psychological pressure, Dr. Jose Delgado was investigating the direct route to control of "human subjects." Delgado physically invaded the brains of subjects with electrodes in order to create emotions and control actions with the push of a button. As he stated himself,

"We need a program of psychosurgery for political control of our society. The purpose is physical control of the mind. Everyone who deviates from the given norm can be surgically mutilated. The individual may think that the most important reality is his own existence, but this is only his personal point of view. This lacks historical perspective. Man does not have the right to develop his own mind. This kind of liberal orientation has great appeal. We must electrically control the brain. Some day armies and generals will be controlled by electric stimulation of the brain."⁷⁶

In his paper "Intracerebral Radio Stimulation and Recording in Completely Free Patients," Delgado observed that:

"Radio Stimulation on different points in the amygdala and hippocampus in the four

⁷³ CIA MORI ID 17468: www.wanttoknow.info/mindcontrol

⁷⁴ Collins, Anne. *In the Sleep Room. The Story of CIA Brainwashing in Canada*. Ken Porter Books, 1988

⁷⁵ Tyner, Arlene. Mind-Control Part I: Canadian and US Survivors Seek Justice, *PROBE Magazine*, March-April, 2000

⁷⁶ Dr. Jose M.R. Delgado Director of Neuropsychiatry, Yale University Medical School. Congressional Record, No. 26, Vol. 118 February 24, 1974.

patients produced a variety of effect, including pleasant sensations, elation, deep thoughtful concentration, odd feelings, super relaxation (an essential precursor for deep hypnosis) colored visions, and other responses."⁷⁷

Delgado, to his credit, did make great strides toward a better understanding of brain structures and their attendant behavioral and emotional correlates, strides that did not go unnoticed by the intelligence community and the military.

While Delgado worked in an area of specific interest, the direct stimulation of brain structures through implanted electronics, other researchers explored means of creating multiple personalities and programming the alternate personalities that emerged to do a variety of intelligence related work as operatives, still others explored the effects of various drug combinations and other “programming” and interrogation techniques aimed at creating super spies and breaking down enemy agents.

THE EXPOSURE OF WATERGATE/MKULTRA/COINTELPRO

According to testimony by Senator Edward Kennedy in 1977,

"Some 2 years ago, the Senate Health Subcommittee heard chilling testimony about the human experimentation activities of the Central Intelligence Agency. The Deputy Director of the CIA revealed that over 30 universities and institutions were involved in an 'extensive testing and experimentation' program which included covert drug tests on unwitting citizens 'at all social levels, [high and low], native Americans and foreign.' Several of these [tests involved] the administration of LSD to 'unwitting subjects in [social] situations.' ... The Central Intelligence Agency drugged American citizens without their knowledge or consent. It used university facilities and personnel without their knowledge." ⁷⁸

As an example of the hubris wrought by institutions veiled in secrecy, given unlimited funds and staffed with amoral people we can only refer to the statement made by George White in a letter to MKUltra director Sidney Gottlieb: "I toiled wholeheartedly in the vineyards because it was fun, fun, fun! Where else could an *American* boy lie, cheat, rape and pillage with the sanction and blessing of the All Highest?" ⁷⁹

After Watergate, more information hit the papers, COINTELPRO was uncovered by a group of people who have never been apprehended, in spite of a six-year FBI investigation. The COINTELPRO program was secret until 1971, when an FBI field office was burglarized by a group

⁷⁷ "Intracerebral Radio Stimulation and Recording in Completely Free Patients," *The Journal of Nervous and Mental Disease*, Lippincott Williams & Wilkins, October, 1968.

⁷⁸ Testimony of US Senator Edward Kennedy, Joint Hearing before the Select Committee on Intelligence, US Senate, 95th Congress, 1977.

⁷⁹ (letter to Sidney Gottlieb) See also *Sex, drugs and the CIA*, by Douglas Valentine posted at <http://www.counterpunch.org/valentine0621.html>

calling themselves the Citizens' Commission to Investigate the FBI. These people broke into an FBI office in Pennsylvania, rifled through the filing cabinets and leaked to the press documents detailing the abuses suffered by a wide variety of activists, including a long-term plan to destroy Martin Luther King Jr.:

"Agents tapped his phone, bugged his rooms, trumpeted his supposed commie connections, and his sexual proclivities, and sicced the Internal Revenue Service on him. When it was announced in 1964 that King would receive a Nobel Peace Prize, the FBI grew desperate. Hoping to prevent King from accepting the award, the Bureau mailed him a package containing a tape of phone calls documenting King's extramarital affairs and an anonymous, threatening letter (shown here in censored form). In barely concealed language, King was told to commit suicide before the award ceremony or risk seeing his "filthy, abnormal fraudulent self" exposed to the nation. Fortunately, King ignored the FBI's advice. He accepted the award and lived four more years until his assassination."⁸⁰

Some of the largest COINTELPRO campaigns targeted the Socialist Worker's Party, the Ku Klux Klan, the "New Left" (including several anti-war groups such as the Students for a Democratic Society and the Student Nonviolent Coordinating Committee), Black Liberation groups (such as the Black Panthers and the Republic of New Africa), Puerto Rican independence groups, the American Indian Movement, and the Weather Underground. Later, Director Hoover declared that the centralized COINTELPRO was over, and that all future counterintelligence operations would be handled on a case-by-case basis.⁸¹

In addition, the MKULTRA documents hit the press and a number of books were written about the subject, most notable were "The Search for the Manchurian Candidate" by John Marks, "Bluebird" by Colin A. Ross MD, and "A Nation Betrayed" by Carol Rutz. At this point victims began to come forward with claims of being horribly abused in these programs, one of the most famous is a woman named Candy Jones who described in stunning detail a tale of corruption and abuse.⁸²

When Jimmy Carter became President in 1976 he promptly moved to introduce a modicum of control, he instituted the Foreign Intelligence Surveillance Act establishing an 11 member secret court to oversee the surveillance activities of our covert agencies. As an example of the limited reporting requirements for the court we have the first report issued to Vice President

⁸⁰ Martin Luther King, Jr., "Statement on Joseph Alsop and J. Edgar Hoover's charge of alleged Communist infiltration of the Civil Rights Movement," 23 April 1964 and Select Committee to Study Governmental Operations with Respect to Intelligence Activities, United States Senate, *Supplementary Detailed Staff Reports on Intelligence Activities and the Rights of Americans, Book III*, Final Report. 14 April 1976

⁸¹ "Me and My Shadow": A History of the FBI's Covert Operations and COINTELPRO - Part 1. Produced by Adi Gevins, Pacifica Radio. 1976. Rebroadcast by Democracy Now! Wednesday, June 5, 2002. See also Paul Wolf's website for a detailed archive of official COINTELPRO documents and transcripts of the Church Committee hearings:<http://www.icdc.com/~paulwolf/cointelpro/cointel.htm>

⁸² Donald Bain, . The Control of Candy Jones. Chicago, *Playboy Press*, 1976. (Reissued in 2002 by Barricade books as The CIA's Control of Candy Jones with a new introduction by Bain)

Mondale from Attorney General Benjamin R. Civiletti in 1979:

This report is submitted pursuant to Section 107 of the Foreign Intelligence Surveillance Act of 1978, Title 50, United States Code Section 1807.

During calendar year 1979, 199 applications were made for orders and extensions of orders approving electronic surveillance under the Act. The United States Foreign Intelligence Surveillance Court issued 207 orders granting authority for the requested electronic surveillances. No orders were entered which modified or denied the requested authority.⁸³

Pointedly Carter's reform measure did not do anything to insure that the American public would be protected in the future from abuse and testing at the hands of the intelligence arm of the military-industrial complex. Carter's move to reform the CIA was to appoint an outsider as head of the agency, Admiral Stansfield Turner. After Turner took over as Director of the CIA 800 "rogue" agents were let go, though most all of them found work in various false front companies that had been set up in the previous years.⁸⁴

Both the Rockefeller Commission and the Church Committee revealed a long standing pattern of both developing new psychological, pharmaceutical and radiological technologies, to influence individuals and groups and long standing pattern of behavior whereby politically disruptive citizens were systematically targeted, harassed and destroyed. Yet there have, to date, been no provisions instituted which would stop this behavior, nor is there any guarantee that these kinds of covert programs ever actually ceased. The only practical change engendered by the disclosures of the 1970s was to drive these kinds of operations further into the shadows. That such research and experimentation may still be occurring is evidenced by a DOD directive, issued by the Secretary of the Navy on November 6, 2006 that specifically requires prior approval of the Under Secretary of the Navy before conducting "severe or unusual intrusions, either physical or psychological, on human subjects (such as consciousness altering drugs, or mind-control techniques)."⁸⁵

Non-Lethal Weapons Research Today

There is a long history that illustrates US Intelligence operations had tragic results for many involved. There was, however, no public debate surrounding these black operations because they were classified under the guise of national security. MKULTRA, Project PANDORA, plutonium testing, and many more projects conducted by the DOD and the CIA were exposed by committees

⁸³ 1979 FISA report can be obtained at the Federation of American Scientists website:
<http://www.fas.org/irp/agency/doj/fisa/1979rept.html>.

⁸⁴ William Blum, *The CIA: A Forgotten History*, Atlantic Highlands, New Jersey, Zed Books Ltd. 1986; Alan Moore Bill Sienkewitz, *Shadowplay-The Secret Team*, Forestville CA, Eclipse Books, 1987 and Leslie Cockburn, *Out of Control*, New York, Atlantic Monthly Press 1987.

⁸⁵ SECNAV Instruction 3900.39D, Subj: "Human Research Protection Program", November 6, 2006.
www.fas.org/irp/DODdir/navy/secnavinst/3900_39d.pdf

led by Senators Rockefeller and Church in the 1970s.⁸⁶ However, tighter restrictions on human experiment including accountability and transparency did not occur until 1997, when President Clinton instituted revised protocols on human experiments.⁸⁷

Official reports insist that the research involving experiments during the 1950s through the 1970s was destroyed. Yet, the scientists involved went without punishment, free to continue their careers.⁸⁸ Given the levels of ongoing EMF technology research today, and the recent retroactive approval of torture approved by the Military Commissions Act, it may be that human testing is occurring under post-9/11 national security protocols. Can we accept that all the psychological research conducted with government funding up to the 1970s was simply destroyed? At this time, the American public has no way to answer this question. The current administration classifies more information than any previous US administration.⁸⁹ Unclassified documents have even been recalled and re-classified.⁹⁰

In the 1980s nuclear radiation experiments on humans became public knowledge and Russian tests making use of the electromagnetic spectrum were exposed.⁹¹ Countries around the world passed laws and signed treaties in response to the danger of weapons that could adversely effect human behavior or manipulate human cognition. The Russians banned all EMF weapons in 2001. These treaties have roots in the human radiation experiments of the 1950s, 1960s and 1970s. In effect, these treaties declared a basic tenant of human rights and cognitive liberties.⁹²

In the quest for global military superiority, the US stepped up funding for the concept of the “Future Warrior” beginning in the late 1990s with the use of advanced nano-technology.⁹³ The idea was to streamline the military, improve soldier performance, control the fighting in real-time and avoid soldier mortality. Toward this end, the concept was to enhance the ability of soldiers in the field to interface with computer systems by using their own brain waves.⁹⁴ The US began to fund research

⁸⁶ The Church and Rockefeller Committee reports can be accessed through the Assassination Archives and Research Center: <http://www.aarclibrary.org/publib/church/contents.htm>

⁸⁷ Memorandum of March 27, 1997--Strengthened Protections for Human Subjects of Classified Research. [Federal Register: May 13, 1997 (Volume 62, Number 92)] [Page 26367-26372].

⁸⁸ *Scientific American* talks about the work of Jose Delgado and states that Dr. Delgado stopped doing research as late as the 1990's, see: John Horgan, “The Forgotten Era of the Brain”, *Scientific American*, September 26, 2005.

⁸⁹ Declassification in Reverse: The US Intelligence Community's Secret Historical Document Reclassification Program, Matthew M. Aid. Located at the George Washington University National Security Archive, <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB179/#report>.

⁹⁰ Executive Order 12958, originally signed by Clinton after Wen Ho Lee, a Los Alamos scientist was accused of giving the Chinese information, was amended by George W. Bush pm March 25, 2003. The amendment can be accessed at the White House website, <http://www.whitehouse.gov/news/releases/2003/03/20030325-11.html>.

⁹¹ *The United Nations and Disarmament: 1945-1985* by the UN Department for Disarmament Affairs. (1985) New York, UN Publication Sales

⁹² For a comprehensive listing of treaties and international conferences surrounding these concerns, see the Sunshine Project at <http://www.sunshine-project.org/>. See Also: *Human Rights: Beyond the Liberal Vision*, Judith Blau and Alberto Moncada, Rowman and Littlefield Publishers, 2005

⁹³ Amy Kruse, Program Manager at Defense Sciences Office, DARPA “Defense and Biology: Fundamentals for the Future”. MIT also has The Institute for Soldier Nanotechnologies established in 2002 with a five-year, \$50 million contract from the US Army, <http://web.mit.edu/isn/index.html>.

⁹⁴ See DARPA, “Neurotechnology for Intelligence Analysts”, <http://www.darpa.mil/dso/thrust/biosci/nia.htm>.

into decoding the brain as well as other neurological research. President George H.W. Bush declared the 1990s “The Decade of the Brain”.⁹⁵ At the same time, funding for computer to human interface poured into universities and Defense Advanced Research Projects Agency (DARPA) stepped up their research and development. In the universities, the field became “cognitive science” and within DARPA, the term “augmented cognition” was born.⁹⁶ While developments in brain research are touted for their amazing therapeutic advances in the medical field, they primarily serve the purposes of the US military.⁹⁷

Americans have little idea about the research concerning the capabilities of electromagnetism, directed acoustics, or computer-human interfacing. The majority of Americans do not know that we are currently using these new-concept weapons in Iraq and Afghanistan. Indiana University law professor David Fidler stated to the *Economist*, “because these weapons are most likely to be used on civilians, it is not clear that using them is legal under the international rules governing armed conflict...if they are used in conjunction with conventional weapons, they could end up making war more deadly, rather than less.”⁹⁸

A peek into the US arsenal of weapons is like a look into a science fiction film. DARPA and various military research labs provide a view of the current technology available to enhance US soldiers in the field and manipulate the emotions and behaviors of the perceived enemy. As American sentiment toward the Iraq war spirals downward, along with the approval ratings of the US president, domestic civil disobedience is likely to rise, as it has in many countries in response to US foreign policy.

Are new electromagnetic weapons in the possession of the government be used on American citizens? The issue at hand is whether the research and technology currently being developed will benefit or harm us and how much liberty we are willing to sacrifice for a possibly skewed sense of national security and protection.

In September 2006, Air Force Secretary Michael Wynne announced that crowd control weapons should be tested on Americans first. “If we’re not willing to use it here against our fellow citizens, then we should not be willing to use it in a wartime situation,” said Wynne. “(Because) if I hit somebody with a non-lethal weapon and they claim that it injured them in a way that was not intended, I think that I would be vilified in the world press.”⁹⁹

⁹⁵ The proclamation declaring the 1990’s the “Decade of the Brain” was signed by President George H.W. Bush on July 17, 1990, which can be accessed at the Library of Congress, <http://www.loc.gov/loc/brain/proclaim.html>.

⁹⁶ See the Augmented Cognition International Society, <http://www.augmentedcognition.org/history.htm>.

⁹⁷ Fronteirs in Neuroscience- Artificial Intelligence in the Pentagon and Beyond.

<http://www.neuropsychiatryreviews.com/mar06/android.html>

⁹⁸ “Electromagnetic weapons: Come fry with me”, *The Economist*, January 30, 2003.

⁹⁹ Lolita C. Baldor, Associated Press, 9/12/2006. In addition to this comment, the Air Force released a declassified document located at the website of the Federation of American Scientists, (<http://www.fas.org/sgp/eprint/hamilton.pdf>) directing the acquisitions team from the media. The author is the USAF principal deputy assistant secretary for acquisition, management and logistics, Darlene Druyun: “Effective immediately, I do not want anyone within the Air Force acquisition community discussing any of our programs with the media (on or off the record). This includes presenting program briefings in any forums at which the media may be present.”

Non-lethal weapons sound harmless in relation to guns and bombs. However, non-lethal weapons are not just tazers and annoying sounds. Nor are they harmless. In fact, NLWs are such a concern that many countries have treaties demanding transparency. Beginning in the 1990s, groups have formed to provide oversight of NLW research, including international committees, concerned scientists, and citizens' groups including the Federation of American Scientists and the Center for Cognitive Liberty and Ethics.¹⁰⁰ The proliferation of NLWs have raised concern within the EU, Russia, and other countries, as records of Cold War abuses come to light and people come forward with complaints of illegal testing.¹⁰¹

The concern is more than a political issue and stretches beyond civil liberties into human rights as they relate to a person's cognitive liberties. The following section highlights technologies with the capability to control and manipulate individuals or large groups of people.

Crowd Control using the Electromagnetic Spectrum

The electromagnetic spectrum has provided the military with an expanse of weapons, which are operational and in military and private use today in the form of millimeter waves,¹⁰² pulsed energy projectiles, and high power magnetic weapons.

Project Sheriff

The US has deployed the Project Sheriff active denial weapon in Iraq. Raytheon outfitted Humvees with their Silent Guardian Protection System, a device capable of heating the skin to 1/64 of an inch, causing instant pain similar to intense sunburn,¹⁰³ with the goal to facilitate dispersing a crowd. According to a report released by the Air Force on the human effects of this weapon, people with contact lenses and those wearing metal suffered greater effects. An imprint of a coin was discovered on the skin of a test subject and death or severe heart problems may occur.¹⁰⁴

Pulsed Energy Projectiles

¹⁰⁰ For a list of these groups see, Non Lethal Weapons, July 2005, compiled by Terry Kiss, Bibliographer, Air University Library, Maxwell AFB, AL accessed at the Maxwell Internet site, <http://www.au.af.mil/au/aul/bibs/soft/nonlethal.htm> and Appendix A of this paper.

¹⁰¹ For further reading on these treaties, see *The Bulletin of Atomic Scientists*, September/October 1994 pp. 40-45 (vol. 50, no. 05), "The Soft Kill Fallacy" by Steven Aftergood and Barbara Hatch Rosenberg's in the same issue, "Sidebar: A non-lethal laundry list". Rosenberg cites the Conference on Disarmament, *Report of the Ad Hoc Committee on Chemical Weapons to the Conference on Disarmament*, Aug. 26, 1992, Nos. 22, 25, 34 (CD/1170) as well as the treaty, "Convention on Prohibition or Restriction of the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects."

¹⁰² A detailed study conducted by Andrei G. Pakhomov, Yahya Akyel, Olga N. Pakhomova, Bruce E. Stuck, and Michael R. Murphy with the Brooks Air Force Base, Human Effectiveness Directorate, offers a scientific analysis of the effects of millimeter waves, "Current State and Implications of Research on Biological Effects of Millimeter Waves: A Literature Review", McKesson BioServices (A.G.P., Y.A., O.N.P.), U. S. Army Medical Research Detachment of the Walter Reed Army Institute of Research (B.E.S.), and Directed Energy Bioeffects Division, Human Effectiveness Directorate, Air Force Research Laboratory (M.R.M.), Brooks Air Force Base, San Antonio, TX.

¹⁰³ US Non Lethal Weapons for Iraq http://www.oft.osd.mil/library/library_files/article_461_Boston%20Globe.doc

¹⁰⁴ "Rumsfeld's Ray Gun," By Kelly Hearn, *AlterNet*. Posted August 19, 2005, <http://www.alternet.org/story/24044/>

Pulsed Energy Projectiles (PEPs) are another form of weaponry that is used to paralyze a victim with pain. According to *New Scientist* magazine, the expanding plasma effects nerve cells, but the long-term effects remain a public mystery.¹⁰⁵ The Joint Non-Lethal Weapons Program reports that, PEPs create a flash bang effect that startles and distracts.¹⁰⁶ However, the effects are much greater than just startling an individual. A 2001 *Time* magazine article states that the PEP “superheats the surface moisture around a target so rapidly that it literally explodes, producing a bright flash of light and a loud bang. The effect is like a stun grenade, but unlike a grenade the pep travels at nearly the speed of light and can take out a target with pinpoint accuracy...as far away as 2 km.”¹⁰⁷

While the effects of these weapons appear to be short-term and topical in nature, there is evidence that electromagnetic weapons have effects on the brain, including sleep disruption and behavior changes.¹⁰⁸ They can produce anxiety and fear or compliance in humans. It is possible to use these weapons as a means of torture, yet without knowing exactly when, where, and how the weapons are used, we are left to speculate.¹⁰⁹ An article by David Hambling in *New Scientist* magazine, March 2005, was titled, “Maximum pain is aim of new US weapons.” In 2006, Dr. Brian Martin, associate professor in Science, Technology and Society, University of Wollongong, Australia, co-authored a paper entitled “Looming struggles over technology for border control,” which describes the potential catastrophes that would lead to an extreme border protection plan. In the event of a natural disaster, or the rapid reduction of resources, or a major climactic change such as drought, rich countries will have a need to reinforce their borders against a massive influx of refugees. This scenario is often described in the nation-state context but it is possible to imagine such a perceived need in the event of internal civil unrest.

Directed Acoustics

In Maoist China, cities were equipped with megaphones, bombarding the people with on-going propaganda. The megaphones were in full vision of the people, yet there was no way to escape the sound. Today technology exists that fills a similar purpose. Voice to Skull directed acoustic devices are neuro-electromagnetic non-lethal weapons that can produce sounds within the skull of a human.¹¹⁰

A similar technology, known as Hypersonic Sound, is used in a similar fashion. According to its inventor, Elwood Norris of American Technology Corporation (ATC), the handheld speaker can

¹⁰⁵ See government contract M67854-04-C-5074, University of Florida, Division of Sponsored Research, July 1, 2004.

Also located at <http://www.defensetech.org/peoplezapping.pdf>

¹⁰⁶ According to a 2002 Joint Non Lethal Weapons Program document: www.dtic.mil/ndia/2002infantry/swenson.pdf

¹⁰⁷ Lev Grossman, “Beyond the Rubber Bullet”, *Time Magazine*, July 21, 2002.

¹⁰⁸ David S. Walonick, “Effects of 6-10 Hz ELF on Brain Waves, www.borderlands.com/archives/arch/elf.htm

¹⁰⁹ David Hambling, Maximum Pain is Aim Of New US Weapons, *New Scientist*, March 2005.

¹¹⁰ Definition from the Center for Army Lessons Learned, Fort Leavenworth, KS: “Nonlethal weapon which includes (1) a neuro-electromagnetic device which uses microwave transmission of sound into the skull of persons or animals by way of pulse-modulated microwave radiation; and (2) a silent sound device which can transmit sound into the skull of person or animals. NOTE: The sound modulation may be voice or audio subliminal messages. One application of V2K is use as an electronic scarecrow to frighten birds in the vicinity of airports.”<http://call.army.mil/products/thesaur/00016275.htm>

focus sound waves directly at a person without anyone else hearing the sound. The technology is being tested by corporations such as McDonald's and Wal Mart to direct advertisements into a consumer's head.

The Long Range Acoustical Device (LRAD),¹¹¹ is used by the military in situations such as crowd control, mass notification, and perimeter enforcement. For instance, an unruly mob may not hear a warning to disperse with traditional acoustic technology, or border enforcement agents may need to warn an approaching intruder to turn away or face bodily harm. The technology has advantages over lethal force, yet it also has the potential to inflict physical harm, emotional manipulation, and death. According to *Defense Update*, the LRAD can produce a 150-decibel acoustic beam from 300 meters away. The human threshold for pain is between 120 to 140 decibels.¹¹² In a 2003 *New York Times* article Mr. Norris demonstrates his technology to the reporter. At 1% of capacity, the reporter's eyes hurt, and hours later still experienced a headache.¹¹³

This technology can inflict permanent damage and death despite its classification as a non-lethal weapon. While the LRAD may be seen as a way to save lives in times of disaster or to avoid civilian casualties, the LRAD and similar directed acoustics may be cause for concern to those who exercise their right to assemble and conduct peaceful demonstrations and protests. The New York City police used the LRAD at the Republican National Convention and it was also used in Miami at a WTO Free Trade protests.¹¹⁴ Covering one's ears will not protect a person and given, the long-range capabilities, fleeing from the beam may not help either (as evidenced in the use of directed acoustics against Jewish settlers in Gaza). The Associated Press (AP) reported that a device called "the scream" was used in a 2005 protest against Palestinians who "covered their ears and grabbed their heads, overcome by dizziness and nausea, after the vehicle-mounted device began sending out bursts of audible, but not loud, sound at intervals of about 10 seconds. An AP photographer at the scene said that even after he covered his ears, he continued to hear the sound ringing in his head."¹¹⁵

Neurological Technology

Neurobiology has many facets including therapeutic applications with Alzheimer's, epilepsy, depression, and stroke victims using Transcranial Magnetic Stimulation (TMS). Bush's Decade of the Brain produced outstanding advances for those with spinal cord injuries as well, which allows a paralyzed person to control a computer screen or a limb with a brain implant. There is also a new field in neurological research, Augmented Cognition. From universities to private business to the military, advances in neuro-technology can be used for amazing good. However, as we learned from the history of the Cold War, technology that has the capacity to heal also has the capacity to harm. Of great concern is the research being conducted at DARPA, which is trying to revolutionize the way soldiers receive information, respond to orders, adapt to stress, and perform while sleep

¹¹¹ The LRAD is another invention of Elwood Norris of American Technology Corporation.

¹¹² Jurgen Altmann, "Acoustic Weapons: A Prospective Assessment," *Science and Global Security*, Vol. 9, p. 13.

¹¹³ Marshall Sella, "The Sound of Things to Come", *New York Times*, March 23, 2003.

¹¹⁴ Amanda Onion, "RNC to Feature Unusual Forms of Sound", Aug. 25, 2004, ABC News

¹¹⁵ Associated Press, "Israel May Use Sound Weapon On Settlers", 6/10/2005. Available at: http://www.huffingtonpost.com/2005/06/10/israel-may-use-sound-weapon_n_2444.html

deprived.

TMS is being developed for military purposes using electrical impulses at close proximity to the skull to enhance mood, affect sleep patterns, and increase creativity.¹¹⁶ This technology is beginning to replace electro-shock therapy. DARPA granted a contract to the Medical University of South Carolina to research now to improve a soldier's performance. A soldier's reaction to stress may be less intense, or a 40-hour flight will allow for the soldier to remain awake without the side effects of sleep deprivation.¹¹⁷ Few, if any, understand the long-term effects of TMS, given its relative infancy in the overall field of Augmented Cognition. Does TMS produce unknown neurological effects ten, twenty, fifty years down the road? To what extent is TMS being researched? TMS is part of the overall field of Augmented Cognition. In essence, Augmented Cognition allows a human to interact with a computer through brain waves. The idea is to enhance a person's cognitive capabilities in the area of memory, learning, attention, visualization, and decision-making.

One application of augmented cognition allows a user to monitor a person's brain functions and send anticipatory commands to the person being monitored. For instance, a military command unit will be able to monitor a pilot in a cockpit, and based on the sensory output of the soldier, the base command can input messages directly into the pilot's brain to improve performance. DARPA describes this as a human computer symbiosis whereby, "This research will enable development of closed loop human-computer technologies, where the state of the user is measured, analyzed, and automatically adapted to by the computational system."¹¹⁸ The increase in human-computer relations and the ability to manipulate and control a person's senses, memory, and neural output has wide implications.

The basic ability to enter a person's mind is not a futuristic fantasy. This is real and in prototype. DARPA began this research in 1983.¹¹⁹ The Internet has become a focal point in our lives with reliance for information and communication. Our interaction and intimacy with computers is increasingly pervasive, as is our exposure to the field of augmented cognition. DARPA does not address the implications of such symbiosis, or the dilemma of the extent to which a person can or should be manipulated. The use of this technology is used for military purposes but it may not be long until it is used to "improve" the factory worker, prisoners, or the mentally ill.

¹¹⁶ "Transcranial Magnetic Stimulation: An Introduction", Grant Balfour, v1.0 - May 6, 2002 available at: www.cognitiveliberty.org/issues/TMS_index.html

¹¹⁷ MUSC To Develop Brain Stimulation Device For Military, Charleston, SC, May 9, 2002, www.musc.edu/pr/darpa.htm, "The overall goal of the project is to use the unique resources at MUSC's Brain Stimulation Laboratory and Center for Advanced Imaging Research to determine if: 1. non-invasive stimulation of the brain can improve a soldier's performance, 2. and then design, manufacture and test a prototype of a system that would be capable of delivering this technology in the field."

¹¹⁸ Improving Human Performance Through Advanced Cognitive System Technology, Dylan D Schmorrow and Amy A Kruse, LCDR MSC USN, Defense Advanced Research Projects Agency, Arlington, VA, Strategic Analysis Inc., Arlington, VA, Available at: [http://ntsa.metapress.com/\(2pq1a55mfylqgf0n3cvjc45\)/app/home/contribution.asp?referrer=parent&backto=issue,91,167;journal,5,7;linkingpublicationresults,1:113340,1](http://ntsa.metapress.com/(2pq1a55mfylqgf0n3cvjc45)/app/home/contribution.asp?referrer=parent&backto=issue,91,167;journal,5,7;linkingpublicationresults,1:113340,1)

¹¹⁹ New Generation Technology: A strategic plan for its Development and Application to Critical Problems in Defense, DARPA, 1983.

The Implant

Another realm of brain research is the field of neural implants. Until recently, implants were a futuristic fantasy. Current advances in the private and military sectors have produced an implant that can allow a victim of a spinal cord injury to walk again or give an amputee the ability to control her leg with her mind. In the private sector, Cyberkinetics is leading the way to liberating some people from wheelchairs. This technology is a path to a more functional way of life, but it is also possible that the use of implants could be used for malevolence.

John Donohoe, founder, chief scientific officer, and director of Cyberkinetics, addressed the issue of mind control and neural implants. When asked if creating a brain-machine interface will open the door to mind control Donohoe responded, “We do that all the time already. Advertising is mind control. Even pharmaceutical agents are a form of mind control. When people have behaviors that deviate far from the norm, they are given medications that bring their mind back into the realm of behavior that we call normal. If a child were to have a seizure and became unconscious because of the seizure, and we controlled his mind so that he did not have seizures, that would be a wonderful thing. We want to do that.”¹²⁰

The Experts¹²¹

Many scientists, philosophers, psychologists, and military analysts have written on the possibilities of accumulating information directly from the human brain as well as controlling human beings for various governmental and militaristic purposes using the aforementioned technologies. What follows are excerpts from recent interviews conducted by the authors with notable experts focusing on the capabilities of US EMF technologies and concerns about human rights and cognitive liberty. We contacted twenty-two experts in the fields of EMF technologies, many would not comment. The following are quotes from four experts who were willing to publicly address the subject.

Vladimir Nikolaevich Lopatin

Director of The Republican Scientific Research Institute of Intellectual Property, Moscow, former Deputy of the State Duma of the Russian Federation on the Vologda from 1995 to 1999, and Senior Assistant to the General Public Prosecutor of the Russian Federation. During the 1990s Lopatin was active in the Russian Federation’s banning of EMF technologies for military purposes.¹²²

¹²⁰ Neuroscience: John Donoghue By Aaron J. Sender, *Discover* Vol. 25 No. 11, November 2004, Mind & Brain

¹²¹ Gaining interviews with DARPA scientists and officials at the Human Effectiveness Directorate at Brooks proved troublesome. For information about current projects, see DARPA Defense Science Program, specifically COL Geoffrey Ling, M.D., PhD’s program “Human-Assisted Neural Devices” and Amy Kruse’s Improving War fighter Information Intake Under Stress (AugCog) and Neurotechnology for Intelligence Analysts. At the Human Effectiveness Directorate see Andrei G. Pakhomov, Yahya Akyel, Olga N. Pakhomova, Bruce E. Stuck, Michael R. Murphy, “Current state and implications of research on biological effects of millimeter waves: A review of the literature”, in *Bioelectromagnetics*, Volume 19, Issue 7, Pages 393 - 413.

¹²² The following are excerpts of an interview with Lopatin translated by U.C. Davis student, Tatiana Kanare.

The following are quotes from Lopatin:

“At the same time, the necessity of protection from information weapons, information terrorism and information war is being discussed more often during the last years.”

“...according to the Security Department of the Russian Federation, directors of Russian Special Services and the Ministry of Defense of Russia. Based on the data of special services, by the beginning of the 21st century expenses for purchasing means of information war increased within the last 15 years in the USA in four times and are ahead of all armament programs. Information confrontation during the times of a regular war began to change to a new, higher level – information war.”

“According to article 6 of the Federal Law “On weapons,” as of July 30, 2001, on the territory of the Russian Federation it is forbidden to circulate as means of civil and service weapons: ‘weapons and other objects, destructive ability of which is based on the use of electro-magnetic, light, heat, infrasound and ultrasound radiation and which have output parameters that exceed the amounts, set by state standards of the Russian Federation and norms of the federal body of executive power responsible for healthcare, and also mentioned above weapons and objects, manufactured outside of the territory of the Russian Federation’.”

Carol Smith

British psychoanalyst, private practice in London, member of The College of Psychoanalysts and the Institute for Psychotherapy and Social Studies and member of their Ethics Committee.

Asked if there are human rights concerns associated with these particular non-lethal weapons, Smith answered, “Yes – it depends though by what is meant by ‘the wrong hands’. For people who are targeted for experimentation – all such devices need testing – all hands are the wrong hands, be they government, private commercial, or sadistic/commercial. Ionatron, a large company based in Arizona, developed plasma channel directed energy weapons and state in their website: ‘What are LIPC laser-guided directed-energy weapons? Laser-guided directed-energy weapons work like “man-made lightning” to disable people or things. LIPC technology is Ionatron’s proprietary type of laser-guided directed-energy weapon. LIPC stands for laser-induced plasma channel; the plasma channel is how the energy is directed through the air at the target. Extremely fast femto-second lasers cause light to break into filaments, which form a plasma channel that conducts the energy like a virtual wire. This technology can be adjusted for non-lethal or lethal use’.”

Discussing neurotechnology, Smith adds, “Brain mapping indicated to us the pleasure centers of the brain. TMS is the accessing these with rapidly changing magnetic fields to produce electrical fields.

If the right hand rule is operative, the effect of inducing electrical fields by changing magnetic fields improves mood.

(Lenz’s law, however, gives the direction of the induced electromotive force (EMF) resulting from electromagnetic induction, thus: The EMF induced in an electric circuit always acts in such a

direction that the current it drives around a closed circuit produces a magnetic field which opposes the change in magnetic flux.) In other words, it would be possible to create depression and a feeling of overwhelming hopelessness by the induction of a current into the electrical circuit of the brain, which opposed the change in magnetic flux.¹²³

“In 2004, The US Air Force Directorate: Controlled Effects gives a clear picture of objectives: “The Controlled Effects long-term challenge focuses technology developments in three primary areas. Measured Global Force Projection looks at the exploitation of electromagnetic and other non-conventional force capabilities against facilities and equipment to achieve strategic, tactical, and lethal and non lethal force projection around the world. Controlled Personnel Effects investigates technologies to make selected adversaries think and act according to our needs. Dominant Remote Control seeks to control, at a distance, an enemy's vehicles, sensors, communications, and information systems and manipulate them for military purposes. The S&T Planning Review panel looked first at extending the applications of advanced military technologies currently under development and then at new, revolutionary technologies for their military significance.”

“For the Controlled Personnel Effects capability, the S&T panel explored the potential for targeting individuals with non lethal force, from a militarily useful range, to make selected adversaries think or act according to our needs. Through the application of non-lethal force, it is possible to physically influence or incapacitate personnel. Advanced technologies could enable the war fighter to remotely create physical sensations such as pressure or temperature changes. A current example of this technology is Active Denial, a non-lethal counter-personnel millimeter wave system that creates a skin heating sensation to repel an individual or group of people without harm. By studying and modeling the human brain and nervous system, the ability to mentally influence or confuse personnel is also possible. Through sensory deception, it may be possible to create synthetic images, or holograms, to confuse an individual's visual sense or, in a similar manner, confuse his senses of sound, taste, touch, or smell. Through cognitive engineering, scientists can develop a better understanding of how an individual's cognitive processes (pattern recognition, visual conditioning, and difference detection) affect his decision-making processes. Once understood, scientists could use these cognitive models to predict a person's behavior under a variety of conditions with the potential to affect an adversary's mission accomplishment via a wide range of personnel effects.”¹²⁴

Dr. Dean Radin

Former positions at AT&T Bell Labs and GTE Labs on advanced telecommunications R&D, appointments at Princeton University, University of Edinburgh, University of Nevada, SRI International and Interval Research Corporation, co-founder of the Boundary Institute, Senior Scientist at the Institute of Noetic Sciences, Adjunct appointment at Sonoma State University, Distinguished Consulting Faculty for Saybrook Graduate School.

“I have spoken with experts in this area (extremely low frequency) about health effects in general

¹²³ To access Lenz's Law online, go to: <http://www.launc.tased.edu.au/online/sciences/physics/Lenz's.html>

¹²⁴ For the complete briefing see the Air Force Research Lab website at <http://www.afrlhorizons.com/Briefs/Jun04/DE0401.html>.

and the consensus seems to be that non-ionizing EM radiation definitely does have effects on living systems, from individual cells to human behavior. The principle health concern is childhood leukemia associated with proximity to high-tension lines. There the epidemiological evidence is fairly clear. On other sources of EM, like cell phones and microwaves, the jury still seems to be out, although I strongly suspect that directed microwaves at non-ionizing strength can induce all sorts of behavioral changes through direct influence of the nervous system. This comes from my contacts in the non-lethal weapons arena, which is often lumped in with the hysteria over supposed psychic mind-control. All things being equal, I'd rather see development of non-lethal weapons than lethal ones. How such weapons are actually used is another matter, of course."

"The question is, were there ever elements of the intel/military world engaged in experiments on human behavior (not mind) control? Yes, many decades ago, during the cold war. But is such work still taking place? I don't know, because if it is it would be a black project and then by definition only those involved would know of it. I hope no such projects are underway, because I do believe that EMF, used in nefarious ways, can destabilize the brain, and potentially generate feelings of violence or apathy. But I very strongly doubt that specific thoughts or intentions or actions can be induced"

Dr. Nick Begich

He is the editor of Earthpulse Flashpoints, a new-science book series and published articles in science, politics and education and is a well known lecturer, having presented throughout the United States and in nineteen countries. Begich has served as an expert witness and speaker before the European Parliament and has spoken on various issues for groups representing citizen concerns, statesmen and elected officials, scientists and others. He is the publisher and co-owner of Earthpulse Press and Executive Director of The Lay Institute of Technology, Inc. a Texas non-profit corporation.

"There are several ways that microwaves can affect humans. For instance, the Sheriff and weapons that can heat the skin for crowd control do what the military states but they are capable of much more. The thermal heating weapons act like a car radio; you can change the frequencies to get different effects. The electromagnetic weapons send an impulse through the nervous system. They can transfer sounds, like Woody Norris' directed acoustic weapons, which is contracted to the US government. It modulates a signal that is a radio frequency, which can be changed to affect certain organs. It can override an organ like the heart or the liver. So changing the perimeter is like changing the broadcast on the radio. These extremely low frequencies also have the capability to send messages directly into the head when only the receiver can hear it. (see the 1985 Radiofrequency Radiation Dosimetry Handbook)."

"The handbook talks about electromagnetics and about the rapid healing of bones. The frequencies can also be used to manipulate the brain and create a disequilibrium. These frequencies can also imbed signals on radio broadcasts to create a feeling of fear or anxiety. The US military would embed these signals on the Muslim prayer broadcasts during the first Gulf War. This was called Project Solo."

“During the 1990’s, in both presidential administrations, non-lethal weapons such as these and others received priority funding. The Secretary of Energy under Clinton, O’Leary, warned that over a 40 year period, 500,000 had been unwitting test subjects for military research on non-lethal weapons, including MKULTRA who claims among many victims, Ted Kaczinsky, the Unabomber. There is no way to know who these people are or how to help them because there is paranoia in the military and no oversight in Congress. These black projects probably don’t even make it to the President.”

“The problem is that the military’s role is to be paranoid and think up scenarios where the worst can happen then prepare for this in order to protect the people from a hypothetical future event. But there is little to no oversight. The Senate Intelligence Committee is made up of people like Ted Stephens who thinks the internet is made up of pipes and tubes. These people do not have the required background knowledge to ask the right questions. According to the defense budget report, 40% of the budget is dedicated to black projects. There is no oversight and no public knowledge. In the European Union, things are much different.”

“In February 1998, I testified before the European Union parliament for an hour and a half and convinced them of the detrimental effects of non lethal weapons on humans, their behavior and their minds. The EU was convinced and passed a resolution banning the use of weapons that can manipulate a person (see Parliament Resolution A4-005/99 entitled “Resolution on the Environment, Security, and Foreign Policy” passed on January 29, 1999). During the hearings, the US representative and NATO representatives sat in the back and declined to participate when asked. In the US, there is no such resolution or anything remotely close to being considered by any member of Congress. There is no concern for it in the US because no one knows about them.”

“During the 1980’s and 1990’s, there were a lot of papers that came out of the Naval War College and from top military officials that advocated using weapons that would cut down on the carnage seen by the American public in order to maintain public support. There was another paper that discusses how people will give up their liberties if they lived in a climate of fear by an outside enemy. If the US public knew about these weapons and what they could potentially asked to give up, their minds, the public would resist. So now, these weapons are being developed by the companies that comprise the industrial military complex who are immune from FOIA requests.”

“Without oversight, these weapons will a government to have absolute control. These weapons are most certainly in the hands of most industrialized countries. China certainly has them as intelligence reports released by the CIA reveal claims about these new concept weapons. There needs to be a debate in the public sphere because while these weapons appear frightening, they have amazing therapeutic potentials. There is the possibility of quicker healing and curing disease and what is just as important about government transparency concerning weapons is the transparency of life saving science being kept from the public. If we have the ability to cure and the government or military hides this, we have just as big a problem.”

Summary Analysis of Expert Interviews

From the four interviews we were able to complete, there is a clear consensus of concern for the potentiality of human rights abuses with EMF weapons testing and use. They collectively agree that the US is the leading global researcher in this area and spends increasingly more money building this technology. It is also clear that we know very little about the actual levels of experimentation, research, and capabilities of EMF weapons technologies due to high levels of US government security.

Department of Defense Military Contractors

Military contractors run our wars in concert with power elites. The corporation also has the power to determine which studies will reach the public.¹²⁵ To be certain, the military, in the interest of budgets, will allow negative or alarming studies to remain unreported or lost in a sea of classified documents.

The power of the military and DOD contractors is staggering. In the interest of national security and lessons learned from an open democracy during the 1970s and the 1990s, operations have become more black. In essence, no one can know with certainty what our military, government, or corporations have in store for the world, though, we have some clues.

Michael Vickers, senior adviser to the Secretary of Defense for the 2005 Quadrennial Defense Review and principal strategist for the largest covert action program in the CIA's history, recently testified on the importance of black operations:

“US Special Operations Command’s (SOCOM) emphasis after 9/11 has been to make white Special Operations Forces (SOF) more gray and black SOF more black. It is imperative, however, that white and black SOF be integrated fully from a strategic perspective.”¹²⁶

The money involved in the non-lethal weapons industry is growing and military contractors are reaping the profits. According to *Defense Industry Daily*, Aardvark Tactical, Inc. in Azusa, CA won a \$50 million contract to develop non-lethal weapons, anti-terrorism capabilities, and riot gear.¹²⁷ Ionatron was awarded a \$12 million contract to develop the Laser Induced Plasma Channel technology which produces man-made lightening bolts.¹²⁸ SAIC received a \$49 million in November 2004 to develop High Power Microwave and other directed energy systems while Fiore Industries received a \$16.35 million contract for similar technology and ITT received a \$7.85 million contract

¹²⁵ From *Microwave News*, July 2006, “Radiation Research and The Cult of Negative Results:” “When we investigated who sponsored the microwave-DNA papers published in Radiation Research, we discovered that four out of five were paid for by the wireless industry—notably Motorola—and/or the US Air Force, both of which have a long history of trying to control or suppress EMF research. Indeed, industry and the USAF paid for more than 75% of all the negative genotox studies, that is those published in all the various journals.”

¹²⁶ According to Michael Vickers biography at the Center for Strategic Defense Budget Studies’ website, “The paramilitary operation that drove the Soviet army out of Afghanistan and played a major role in ending the Cold War.” http://www.csbaonline.org/6About_Us/2Staff_Directory/Michael_Vickers.htm

¹²⁷ “\$50M for USMC Riot Gear, Protection Items, and Non-Lethal Weapons”, *Defense Industry Daily*, July 27, 2005.

¹²⁸ “Ionatron Facing Scrutiny Over Laser Projects”, *Defense Industry Daily*, May 24, 2006.

for the same in 2000.¹²⁹ Fiore Industries received a \$7.1 million for High Power Microwave Research and Experiment Program as early as 1994 and the same year Hughes Missile Systems Company received a \$6.6 million contract for *High Power Microwave Suppression of Enemy Air Defense Technology*.¹³⁰ Lockheed Martin secured a deal with DARPA in 2005 to continue the development of the Space Based Radar Antenna Technology in a \$19.5 million contract.¹³¹ According to the Lockheed press release, the technology, “could significantly increase global persistent surveillance coverage”.

In May of 2006, the Air Force issued \$24 million in contracts for “Electro Magnetic Effects Research and Development” to Northrup Gruman, Voss Scientific, Lockheed Martin, Electro Magnetic Applications, and SAIC among others.¹³² The DOD viewed electromagnetic research and development as a key component in future wars as early as the 1990s. Emmett Paige Jr., Assistant Secretary of Defense for Command, Control, Communications and Intelligence declared in 1996 that, “Well over a decade ago, a Soviet general reportedly said something like ‘to prevail in the next conflict, one must control the electromagnetic spectrum.’ That statement proved true in the Bacca Valley and on deserts in Iraq. The Department of Defense is committed to ensuring that “in the next conflict it is we who will control the spectrum. We know its value’.”¹³³ Increasingly, the value of non lethal weapons continues to rise as they produce fewer images of death in the media than traditional weapons.”

In addition to DOD contractors, the realm of non-lethal weapons extends into the universities with millions of dollars in scholarships and research fellowships. Pennsylvania State University, sponsors the Institute for Non-Lethal Defense Technologies (INLDT), the University of Medicine and Dentistry of New Jersey has the Stress and Motivated Behavior Institute, University of New Hampshire houses the Non-lethal Technology Innovation Center, and many US military schools have classes directly related to non-lethal weapons technology.¹³⁴ There are also numerous conferences each year hosted by the Department of Defense, contractors and universities.¹³⁵ The business of non-lethal weapons is expanding and will continue to grow. In 2006, the Joint Non-Lethal Weapons Directorate received \$43.9 million compared to \$25.8 million in 2000.¹³⁶

Ionatron’s website states that, “...the market for new directed-energy applications (will increase to \$12.7 billion over the next ten years for the defense market alone.”¹³⁷

¹²⁹ “USAF Detachment 8 Continues US Research Into EMP-Microwave Weapons”, *Defense Industry Daily*, March 7, 2006.

¹³⁰ *ibid.*

¹³¹ Lockheed Martin news release, May 23, 2005, “Lockheed Martin Selected for Continued Development of the Innovative Space Based Radar Antenna Technology (ISAT)”.

¹³² US Department of Defense Office of the Assistant Secretary of Defense (Public Affairs), No. 169-06 March 01, 2006.

¹³³ United States Department of Defense Speech, Volume 11, Number 83, “Electromagnetic Spectrum: Key to Success in Future Conflicts”, <http://www.defenselink.mil/speeches/index.html>.

¹³⁴ See Industrial College of the Armed Forces, Naval War College, and the US Army War College course offerings on their websites.

¹³⁵ Bunker, Robert J., “Non-Lethal Weapons Conferences”, *Military Review*, vol. 80, no. 2, Mar./Apr. 2000, pp. 103-109.

¹³⁶ Pappalardo, Joe, “Homeland Defense Plan Favors Non-Lethal Technology”, *National Defense Magazine*, June 2005.

¹³⁷ Direct quote from the Ionatron website: <http://www.ionatron.com/default.aspx?id=4>, accessed August 2006.

Despite Clinton's reforms on human testing, the government, military and the corporation will undoubtedly want to test these weapons on humans whenever possible. Easiest to test would be prisoners in undisclosed CIA detention centers, civilians in war torn regions, and even US citizens in protest crowds or civilian jails. In addition to the rubber bullets and pepper spray, which are common in many police forces, new concept weapons are also in use. Perhaps soon Americans will learn first-hand, the effects of the new human control technologies.

However, hundreds of people continue to assert that a person or persons, whom they do not know, have been targeting them with electromagnetic weapons in a widespread campaign of either illegal experimentation or outright persecution.

These experiences involved a number of discrete phenomena:

Hearing voices when no one was present.

Feeling sensations of burning, itching, tickling, or pressure with no apparent physical cause.

Sleeplessness and anxiety as a result of "humming" or "buzzing".

Loss of bodily control, such as twitching or jerking of an arm or leg suddenly and without control.

Unexpected emotional states, such as a sudden overwhelming feeling of dread, rage, lust or sorrow that passes as quickly as it arises.¹³⁸

The levels of research on directed energy is now large enough to support a Directed Energy (DE) Professional Society made up of private contractors and Department of Defense officials with security clearances. They have been holding high security symposiums since spring 2001 including a planned meeting set for March 2007. The following is from the Directed Energy Professional Society's website.

"The Directed Energy (DE) Systems Symposium (March 2007) will focus on systems aspects of DE in a limited-attendance environment. The Systems Symposium consists of co-located technical sessions organized by five separate conferences, with joint technical and plenary sessions to encourage discussion outside narrow technical limits. Attendance at all sessions is limited to US citizens with classified visit requests on file.

¹³⁸ This list of symptoms was compiled from material available on the website of Californians Against Human Rights Abuses (CAHRA) and can be found at www.mindjustice.org. In addition the authors conducted interviews with seven individuals who wish to have their identities protected and who presented anecdotal and physical evidence to support their assertions. There is, however, little in the public domain that conclusively states the existence of direct human manipulation by governments, militaries or private companies/researchers in the current day, MKULTRA and other historic programs notwithstanding. However, there are many organizations that seek to help these people including concerned scientists, Russian Duma members and EU parliamentarians, psychologists and academics. A list of organizations follows in Appendix A.

Symposium Highlights

Beam Control Conference
Directed Energy Modeling and Simulation Conference
Employment of Directed Energy Weapons Conference
High Energy Laser Lethality Conference
High Power Microwave Systems and Effects Conference”¹³⁹

The following are three course descriptions from the October Directed Energy Conference:

Course 9.†Military Utility Analysis for DE (Direct Energy) Systems

Classification: Secret

Course Description: This course will provide an overview of military worth analysis for DE weapon systems. The course will include a description of four areas of systems engineering assessment that are brought together to form military worth analysis. These are: 1) weapon system concept performance trade studies, 2) target vulnerability assessment, 3) engagement-level system operational effectiveness assessment, and 4) war gaming and mission/campaign level analysis. Each of these areas will be covered during the short course, with emphasis on the elements that are drawn from each of these areas to support military worth analysis. The course will particularly emphasize methods for assessing system level effectiveness in the context of traditional weapon effectiveness tools such as the Joint Munitions Effectiveness Manuals (JMEMs) and for providing data on DE weapons effectiveness to mission and campaign level analysis tools and to models and simulations used to support war gaming.

Topics to be covered include:

Definition of military worth analysis
Elements of DE weapon system performance trade studies and how they feed military worth analysis
Target vulnerability assessment and its use to support weapon effectiveness
Adapting standard weapon "kill" criteria to measure benefit of DE effects
Joint Munitions Effectiveness Manuals (JMEMs) weapon effectiveness models
Military utility studies
Modeling and simulation to support war games and war fighter exercises
Mission and campaign level modeling

Course 10. Laser Lethality

Classification: Secret

¹³⁹ Directed Energy Professional Society, Monterey, CA, 19-23 March 2007, Directed Energy Modeling and Simulation Conference 2007, <http://www.deps.org/DEPSpages/DEMSconf07.html>

Course Description: This course reviews laser material interactions over parameter ranges of interest for weapons applications. Fundamental considerations of the optical coupling of the laser energy into the material will be presented. This will be followed by physics-based treatments of the response of metals, organic-based materials, and ceramics to the laser irradiation.

Metals: Simple cw, one-dimensional treatments will be utilized to illustrate the general principles of the response of metals to laser radiation, but two-dimensional cases, phase changes, and pulsed effects will be discussed as well.

Organic Based Materials: The effects of high-energy laser (HEL) radiation on organic based materials, including fiber reinforced composites, plastics and coatings will be reviewed. Materials will range from char formers and charring ablators to clean ablators. The relationship between the pyrolysis processes taking place in various materials during HEL radiation will be reviewed as a function of material composition, form and structure.

Ceramic Materials: Considerations of the response of ceramic shapes when laser loading is added to in-service stresses will be presented. An understanding of these responses from models, which are based on a combination of the thermo-mechanical stress calculations and statistically based fracture initiation, will be presented.

Course 11.†Directed Energy Bioeffects

Classification: Secret

Course Description and Topics: This course will introduce the basics of the biological effects of Directed Energy on cells, tissues, organisms, and humans, with particular emphasis on the influence of such effects on the development of use of Directed-Energy-Emitting technologies.

The student will learn about the mechanisms, resulting damage, and mission impact of laser-tissue interaction. The student will learn what tissues are most susceptible to laser damage based on wavelength, exposure duration, and irradiance. The potential mission-impact of sub-threshold, threshold, and suprathreshold exposures will be discussed.

Student will understand the nature of RF bioeffects research, including human/animal studies, modeling and simulation, and biotechnology approaches. Students will become familiar with current state of knowledge on potential health effects RF, such as cancer, memory loss, and birth defects. Students will become familiar with basis and structure of current RF safety standards, comparison between competing standards, and how RF safety standards are applied. Students will be instructed on common RF measurement equipment and important factors for investigating potential RF overexposures.

Topics to be covered include:

Laser damage of the eye (retina and cornea)

Laser damage to the skin

Laser safety standards

Laser damage as a function of energy, pulse duration, wavelength, and spot size

RF bioeffects research and the current scientific consensus on RF hazards

RF safety standards

RF measurement basics

Investigating RF overexposures”¹⁴⁰

The US Joint Non-Lethal Weapons Directorate released a paper in 2004 which presents “Crowd Control Modeling and Simulation.” This report discusses behavioral changes human populations.¹⁴¹ That the Department of Defense calls for new weapons systems designed to work on the psychological underpinnings of a population should give human rights activists great cause for alarm. The use of electromagnetic weapons to alter the emotional state, hamper the ability of an enemy or US citizens, to think clearly, and result in chaos and pain are morally problematic for a number of reasons:

1. Creating fear, anxiety confusion and irrational behavior within an individual or a population is counterproductive to the operations of a free society and to the execution of warfare. Chaos only breeds the need for greater and greater means of physical repression; irrational behavior is by definition unpredictable and as such provides significant difficulty when the task is to secure an area.
2. These weapons leave no tell tale clues. There are no bullet holes or gross damage (with the exception of those designed to maim, burn or explode targets).
3. They are operated from a great distance, meaning that the operator has no feedback as to the effects of his or her actions. This provides us with a very dangerous circumstance very similar to Millgram's experiment where we can predict with certainty gross abuses of power.
4. Any device that invades a persons mind, either through induction of “evoked potentials” through electromagnetic means or through the various “crazy-making” tactics employed in both information warfare and psychological operations is a violation of human rights and cognitive liberty.

In terms of authorizing and administering tests of radioactive substances and other tests on unsuspecting members of the public, history shows that people without ethical standards can rise to positions of great responsibility and once ensconced in such positions of trust, produce the most horrifying abuses without fear of reprisal. When layers of secrecy overlay the activities of otherwise rational and intelligent men, the failings of their hearts more readily show. In the case of actually attempting to control human behavior through both overt and covert means our departments of defense and intelligence agencies, both subordinate to the executive branch of government have historically proven incapable of protecting the public and undeserving of the trust given them to

¹⁴⁰ Directed Energy Professional Society, *2006 Directed Energy Symposium Short Courses*, 30 October 2006 Albuquerque, New Mexico: <http://www.deps.org/DEPSpages/DEsymp06ShortCourse.html>

¹⁴¹ Louis Slesin, “Radiation Research and The Cult of Negative Results”, *Microwave News*, July 31, 2006.

perform their functions for the public good.

Total Surveillance: Cognitive Liberties vs. National Security

Today the US and the U.K. are becoming total surveillance societies in the name of national security. London, like cities across the US, is equipped with cameras citywide. Daily human actions are recorded with video and voice recognition device, while our email and computer usage is monitored. Increased demand for resources, the erosion of middle classes, war, poverty, and environmental disasters are historically factors leading to social uprisings and infiltration of political borders. As governments reinforce the threat of terror, people increasingly turn to their governments for protection.

The US has a long history of human rights violations through harassment, telephone tapping, video surveillance, behavior manipulation, torture, drug-induced states of conscience and psychological control. Congress's passage of the Military Commission Act of 2006 put universal human rights outside the scope of US policy. Today, the US government is using the most technologically advanced forms of surveillance and control, along with the propaganda of fear and intimidation against its citizens. The US engages in covert torture, covert imprisonment, increased censorship and the massive secret classification of government documents.¹⁴²

A prominent neuroscientist, Francis Crick stated in 1994, that "your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules."¹⁴³

Is it possible that today's scientists in the employ of the US neo-conservative global-dominance policy elites believe the same? According to Steven Rose, there are, "bad hats" in neuroscience: "There are always opportunists. The current affairs of our country have produced many."¹⁴⁴ The abundance of neuro-research has led to the development of several products by private business in the name of national security, including brain fingerprinting.¹⁴⁵

John Norseen, a neuroscientist interested in Biofusion, the relationship between humans and

¹⁴² For verification of US torturing people to death see, "US Operatives Torture Detainees to Death in Afghanistan and Iraq", Project Censored Top 10 Uncensored Stories of 2006: http://www.projectcensored.org/censored_2007/index.htm#7

¹⁴³ Michael Shermer, "Astonishing Mind: Francis Crick 1916–2004 recollections on the life of a scientist".

¹⁴⁴ Steven Rose, *The 21st Century Brain: Explaining, Mending and Manipulating the Mind*, Jonathan Cape Publishing, March 31, 2005.

¹⁴⁵ The official explanation of Brain Fingerprinting from Dr. Lawrence Farwell: "Brain Fingerprinting testing is a scientific technique to determine whether or not specific information is stored in an individual's brain. We do this by measuring brain-wave responses to words, phrases, sounds or pictures presented by a computer. We present details about a crime, training or other types of specific knowledge, mixed in a sequence with other, irrelevant items. We use details that the person being tested would have encountered in the course of committing a crime, but that an innocent person would have no way of knowing. We can tell by the brainwave response if a person recognizes the stimulus or not. If the suspect recognizes the details of the crime, this indicates that he has a record of the crime stored in his brain." For more research, see the Brain Wave Science site, the official internet identity of Brain Fingerprinting Laboratories at <http://www.brainwavescience.com/Publications.php>.

computers, says, "If this research pans out you can begin to manipulate what someone is thinking even before they know it." Norseen says he is agnostic on the moral ramifications of this research. He feels that he is not a "mad" scientist - just a dedicated one. "The ethics don't concern me," he says, "but they should concern someone else."¹⁴⁶

We, the authors of this report, contend that human ethics should concern every person who believes in human rights and desires control over their own mind and body. Our brains control our bodies, actions, and thought processes. If the government and the scientists they employ perceive that the human mind as simply a collection of neurons, it then becomes possible to justify the surveillance of the human mind and body for national security purposes.

The control and manipulation of a human brain is a terrifying possibility. Lieutenant Colonel Timothy L. Thomas, US Army (ret), published an article in the military journal *Parameters* which likens the mind as a new battlefield. He quotes a Russian army major in relation to mind wars, "It is completely clear that the state which is first to create such weapons will achieve incomparable superiority." Thomas expresses concern about "information dominance" though he stops short on the moral implications.¹⁴⁷

Under the cover of secrecy provided by claims of national security, researchers in service to higher circle policy elites have implanted electrodes into human subjects to control minds and tortured prisoners and the mentally ill in efforts to find better "brainwashing" techniques. They have poisoned thousands with atomic testing, experimented on young children using drugs, trauma and hypnosis, sprayed major cities with biological agents to prepare for a future attack, overthrown governments, instituted mass killings, and engaged in every form of information distortion.

The current "War on Terror" has revealed to the public some of the tools that the military has been developing for decades. High profile weapons systems flash across the nightly reports of the major news networks, including highflying Stealth bombers on grainy green tinted video from the noses of "smart" bombs. On occasion glimpses are given through the media of what one article dubbed "Wonder Weapons."¹⁴⁸ Weapons that fall under the military category of "Non-Lethal Weapons." In fact the general position of the agencies who do comment on weapons that exploit the lower end of the electromagnetic spectrum is that they have no biological effect at all, except for what are dubbed "thermal effects," in essence heating of human cells.¹⁴⁹

Research into this subject has shown that this position is inaccurate, and that the effects of electromagnetic radiation weapons on human beings are in fact both chilling and dramatic. As reported in 2001, the statement of Dr. Eldon Byrd should be considered with great weight:

¹⁴⁶ Douglas Pasternak, "John Norseen Reading your mind - and injecting smart thoughts", *US News and World Report*, January 3-10, 2000.

¹⁴⁷ Timothy L. Thomas, The Mind Has No Firewall, *Parameters*, Spring 1998, pp. 84-92.

¹⁴⁸ Douglas Pasternak, "Wonder Weapons", *Newsweek* August 22, 1994 p. 57.

¹⁴⁹ H. Pollack, "Epidemiologic data on American personnel in the Moscow embassy", *Bull N Y Acad Med.*, 1979 Dec;55(11):1182-6.

“A medical engineer, Eldon Byrd, reported a case that illustrates this point. After working on the Polaris submarine, which carried long-range nuclear weapons, Byrd developed non-lethal weapons with reversible effects. He regarded this as a humanitarian alternative to ‘punching holes in people and having their blood leak out’ in battle. His inventions used magnetic fields at biologically active wave frequencies to affect brain function. Byrd could put animals to sleep at a distance and influence their movements. When the success of his research became evident, suddenly he was pulled off the project and it went “black.” His believes the electromagnetic resonance weapons he developed have been used for psychological control of civilians rather than for exigencies in battle. That is, to ensure his participation, he was uninformed about the true nature of the project. Byrd’s case also illustrates how morally tolerable operations may transition to morally intolerable operations, or at least rise above the atrocity line”¹⁵⁰

Power elites who fund and support efforts at supplanting the will of the people do so from on high. Their ability to redirect public attention to ward external threats and away from their own motivations in effect silences opposition to their programs. By controlling the flow of information in society, the power elites provide the public with a limited choice in all matters that pertain to machinations of government and corporate control. Given more advanced technologies for the control of information unscrupulous individuals who ascribe to a “might makes right” philosophy may will find the ways and means of employing these technologies against those who would oppose their plans. The dangers here are great, in that the individual who would direct the torture and killing of innocents is usually removed from the actual fact. It is left up to lesser authorities to administer the beatings, bullets, and mind/body bending technologies.

For the US Government to unilaterally declare that our country will not comply with international human rights laws, nor uphold the core values of our nation’s foundation is an indication of extremism that supersedes the values and beliefs of the American people. When such extremism exists we need to take seriously the founders’ declaration that, “ to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, — That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness.” (Declaration of Independence 1776)

Peter Phillips is a Professor of Sociology at Sonoma State University and Director of Project Censored. Principle researchers on this report were Lew Brown and Bridget Thornton. Lew Brown holds a degree in Psychology and was the main writer and researcher on the historical sections of

¹⁵⁰ Military and Civilian Perspectives on the Ethics of Intelligence— Report on a Workshop at the Department of Philosophy Claremont Graduate University, September 29, 2000, Jean Maria Arrigo, Ph.D. Virginia Foundation for the Humanities and Public Policy Paper presented to The Joint Services Conference on Professional Ethics Springfield, Virginia January 25-26, 2001

this paper. Bridget Thornton is a senior level History major at Sonoma State University and the primary researcher and writer for the new EMF technologies portion. Final editing was completed by Trish Boreta with Project Censored. Special thanks to Andy Roth Ph.D. for his editorial review.

Appendix A

ORGANIZATIONS CONCERNED WITH ILLEGAL EXPERIMENTATION AND INDIVIDUAL VICTIMS

Angelic Harp Foundation

2219 Lexford LN.
Houston, Texas 77080-5216
713-461-0623
Fax: 713-461-0091
<http://angelicharpfoundation.org>

Center for Cognitive Liberty and Ethics

P.O. Box 73481
Davis, CA 95617-3481 USA
Fax: 205. 449. 3119

COPUS

Committee on the Public Understanding of Science
The Royal Society
6-9 Carlton House Terrace
London
SW1Y 5AG
United Kingdom
Fax +44 (0)20 7839 5561
<http://www.copus.org.uk>

Federation of American Scientists

1717 K St., NW Suite 209
Washington, DC 20036
Voice: (202)546-3300
Fax: (202)675-1010
<http://www.fas.org>

The Lay Institute

Nick Begich, Executive Director
Dallas, Texas
info@layinstitute.org

Mind Justice

Cheryl Welsh, Executive Director
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The Stockholm International Peace Research Institute

Signalistgatan
9 SE-169 70
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Sunshine Project Germany

The Sunshine Project
Scheplerstrasse 78
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Sunshine Project USA

PO Box 41987
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USA
Phone/Fax: +1 512 494 0545
<http://www.sunshine-project.org>

World Transhumanist Association

PO Box 128
Willington CT 06279 USA
<http://www.transhumanism.org>

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Journal of Cognitive Liberties
Center for Cognitive Liberties and Ethics

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Military Academy West Point, NY, Dept. of System Engineering
by Robert J. Bunker

Suggests Ex-President Should Stay in Peking

Nixon's Remarks in China Violated Law—Goldwater

WASHINGTON (AP)—Sen. Barry M. Goldwater accused former President Richard M. Nixon yesterday of breaking an American law in China and suggested Nixon could do the United States a favor by staying in Peking.

Goldwater, a leader of GOP conservatives and longtime Nixon ally, leveled the allegations when asked if Nixon's current trip to China had an impact on President Ford's showing in the New Hampshire primary.

"I don't think Mr. Nixon's visit to China did anything, and if he wants to do this country a favor he might stay over there. He is violating the law," the Arizona Republican said in an interview on ABC-TV's "Good Morning America."

"The Logan Act prohibits any American—and that's all he is, he's an ex-president and a private citizen—the Logan Act says no one but the president and the secretary of state can discuss foreign policy, and he made a tremendous mistake in doing what he did at the time he did it."

"I don't think it (the trip) hurt Mr. Ford," Goldwater said. "I don't think the average American has enough respect for Mr. Nixon anymore to really believe that what he's doing is in anybody's interest but Mr. Nixon's."

Goldwater, who once criticized attempts to impeach Nixon and paid a personal visit to the former president



SEN. BARRY M. GOLDWATER

after he resigned, did not cite any specific Nixon statement in alleging a violation of the Logan Act.

However, a controversy has arisen over Nixon's toast Sunday at a Peking banquet, where he said:

"There are, of course, some who believe that the mere act of signing a statement of principles or a diplomatic conference will bring instant and lasting peace. This is naive. There cannot and will not be lasting and secure peace until every nation in the world respects

the security and independence of every other nation large or small."

The statement was regarded by some as criticism of Ford and Secretary of State Henry A. Kissinger for joining the Soviet Union in the Helsinki agreement on European security and cooperation.

Nixon denied that his statements were intended as criticism.

"My God," he said to an aide in Peking when asked about the controversy over the toast. "I've used that statement a dozen times before and I used it in a general context. It could apply to the United Nations charter or the Shanghai Communiqué or any international document."

Several State Department officials were angered by Nixon's comment, but both Kissinger and White House aides said that after reading the full text of the toast they did not interpret it as criticism.

The Logan Act prohibits citizens from trying "to influence the measures or conduct of any foreign government or any officer or agent thereof" without authority from the government. The law, which carries a maximum penalty of a \$5,000 fine and three years in prison, also bars a citizen from defeating "the measures of the United States" in any correspondence or talks with a foreign government or its agents.

Russians Admit Microwaves Shot At U.S. Embassy

New York Times News Service

WASHINGTON — Soviet officials privately have admitted that microwaves have been beamed at the American embassy in Moscow, but they justified the possible harmful activity as necessary to jam American listening devices on the roof of the building.

Congressional and Administration sources said yesterday that after denying for some 15 years that such microwave emissions had taken place, Soviet officials recently have coded their existence. Soviet diplomats here have discussed the purpose of the microwaves with American reporters and Administration officials.

The American officials said they accepted the Soviet contention that the microwaves were aimed at the embassy to disable the sophisticated monitoring equipment and not to "bug" the embassy or to harm American personnel.

Earlier news reports from Moscow had speculated that the microwave emissions, which produce low-level electromagnetic radiation, were either for recharging listening devices or for picking up conversations from within the embassy.

According to Administration and congressional sources, the Soviet Union has been beaming the microwave emissions into the Moscow embassy for some 15 years.

2 Kidnaped Americans Released in Lebanon

BEIRUT, Lebanon (AP) — Two American Embassy officials kidnaped four months ago during the Lebanese civil war were released in good health last night and arrangements were under way to fly them home, the embassy announced.

A spokesman said Charles Gallagher, 44, of Roanoke, Va., and William Dykes Jr., 50, of San Jose, Calif., were rumpled clothes and had long hair when they were freed but neither was injured or tortured during the ordeal.

Gallagher and Dykes were abducted Oct. 22 on their way to work at a regional U.S. Information Agency printing plant.

Their release was arranged by the Popular Front for the Liberation of Palestine, a radical guerrilla group, and the Lebanese Progressive Socialist party, a leading participant on the Moslem side in the 10-month civil strife.

"As far as the embassy knows, there were no conditions and no ransom," said the embassy spokesman.

He declined to say who held the pair. Leaders of all known Palestinian and Lebanese leftist groups denied connection to the abduction during the men's captivity, but there were periodic third-party reports that they were alive.

Embassy officials picked up Gallagher and Dykes at 7 p.m. yesterday at

the palatial Beirut home of Socialist party chieftain Kamal Junblatt, the spokesman said. Junblatt's party said it acted only as a conduit for the release.

The freed men were whisked to a house "somewhere in Beirut," where they were to spend the night before flying out of the Lebanese capital for a reunion with their wives and children and a return to their American homes, the spokesman said.

"They're in good health and good spirits," he added.

The families of both men were evacuated along with other American Embassy families during fierce street fighting here late last year. The embassy refuses to say where, but most embassy families went to Athens.

Gallagher and Dykes were immediately cloistered with embassy officials, who refused to allow newsmen to talk with them or take photographs.

A spokesman said they would fly out of Beirut today. The plane was expected to pick up the Gallagher and Dykes families, then continue to the United States.

The spokesman said U.S. diplomats still did not know why the release was held up so long, nor why the captors finally decided to let the two go without ransom or other conditions.

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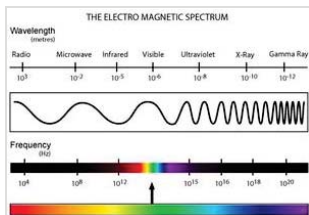
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CANR Nonconsensual (/)

(<http://www.giveforward.com>)

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[A. Waxman Ltr Sent \(/a-waxman-ltr-sent.html\)](/a-waxman-ltr-sent.html) [Wyden Letter 2/11/13 \(/wyden-letter-21113.html\)](/wyden-letter-21113.html) more...



Citizens Against Nonconsensual Research
CANR

Nationwide Organization

Our issues:

non-consensual experimentation, legal compliance

"list" placement and DEW development transparency

To continue this very important, vital work, we need your help.

Please donate to:

<https://www.giveforward.com/fundraiser/sbm2/canr-s-mkultra-survivor-fund> (<https://www.giveforward.com/fundraiser/sbm2/canr-s-mkultra-survivor-fund>)

February 11, 2013

Sent via U.S. postal mail and email

Senator Ron Wyden of Oregon
Washington, D.C. Office
221 Dirksen Senate Office Bldg.
Washington, D.C., 20510
tel (202) 224-5244
fax (202) 228-2717

Re: "Citizen Kill Lists" and Human Rights Activists

CANR supports: "... to address the Intelligence Community's reliance on secret interpretations of surveillance law, arguing that while **"intelligence agencies need to be able to conduct operations in secret, even secret operations need to be conducted within the bounds of established, publicly understood law..."** 1.

Dear Senator Wyden:

Our organization, CANR, Citizens Against Nonconsensual Research, supports your position on this very important national issue. We ask that you look into a closely related matter, the issue of non-consensual experimentation. As a member of the Select Committee on Intelligence, and as one who defies, "the national security community's abuse of secrecy", 2. we seek your counsel, with these problems. We feel you are uniquely qualified to speak with us, give us direction and work towards a solution. We ask that you or your staff member respond to us, at your earliest possible convenience.

Our primary issue is non-consensual experimentation, including directed energy weapon testing, on unwitting citizens. A secondary issue is the "citizen kill list". By the very nature of our issues and claims, many members believe they may have been placed on a FISA, Patriot, and/or, in the future, a secret "citizen kill" list.

We are presenting here, expert signal evidence reports, witnessing unauthorized human experimentation, using directed energy transmitters. We include specific testimony, and clear infrared photography. This problem is nationwide. We believe it involves at least 2,000 citizens. This group is composed of everyday citizens, professional people, whistleblowers, and earlier experimentation survivors.

There is apparent involvement of the intelligence/military, in a covert capacity, directing these actions. We believe this may involve activities of known mil/intel existing, contracting agencies, such as Blackwater (now Ze), Halliburton and others. The wrongdoings – illegal and harmful acts, include this experimentation, harassment, as well as attempts to discredit the complaining victim or whistle blowing parties.

The nature of this experimentation and the parties involved, lead many members to believe they may have been, without cause, placed on a surveillance list: FISA, Patriot, or a Citizen Kill list. We believe that this list placement, acts as color of law, to do this experimentation.

We find your position on the "kill" list to be humane, democratic, and lawful. When any governmental branch steps beyond lawful boundaries, or isn't forthcoming with "secret" laws, senate investigation and oversight is vital. America is not and by democratic intention, never will be -- totalitarian. Your intervention on this matter, ensures

this. We believe your statement: "Every American has the right to know when their government believes it is allowed to kill them" is central to this issue.

We are asking for your advice, guidance and support. No CANR member has any affiliation with any terrorist groups. Our members are everyday American citizens. We are presenting our issues and beliefs, in our letter to you and again, seek your advice, guidance and help.

Directed Energy Weapons/Devices

We will provide a brief referenced overview of directed energy weapons and the problems these unsought "tests" present. EM energy is defined as the frequencies on the electromagnetic spectrum, microwaves, the infrared frequencies, radio waves, extremely low frequency (elf) and others. All EM energies are radiation.

Many everyday devices use EM transmissions to work. Our ipads, ipods, and cell phones use this technology, along with EM frequencies, microwaves, to transmit voices across the continent. WiFi's and other computers transmit via EM and radio frequencies. The space shuttle speaks to workers in the control room, via EM transmissions, from miles above the earth.

As electromagnetic device development occurred, in the scientific and medical communities, unfortunately many ethical and human rights violations also occurred. The early years of development, were also the years of the Manhattan Project. The U.S. radiation experiments (1950 - 86) are one telling example of the how the rush to scientific development, in this field, resulted in unethical human experimentation.

In her book, *The Plutonium Files*, Eileen Welsom chronicles the unlawful experimentation many Americans experienced at the hands of doctors and scientists they trusted. It was only years later, that the true nature of these harmful experiments were exposed.

These were years of mushrooming experimentation, (1932 - 1986 ?) which seemed to encourage noncompliance with informed consent. Consequences of overlooking these inherent human rights, became the plight of victims of these non-consensual experiments. Victims endure physical and psychological harms as well as difficulties getting these problems appropriately addressed. We need to move forward, as a nation that honors ethics, and Constitutional guarantees, for all of its citizens. Admitting past (and possibly present) noncompliance, helps us do this.

The Church Senate Subcommittee hearings in 1974, helped to reveal that the U.S. was conducting nonconsensual experimentation: the MKUltra experiments, on American children and unwitting Americans. Some of the defined goals of this experimentation were:

- a. To research techniques to impose control over the will of an individual, including neuron surgery, electric shock and drugs and hypnosis;
- b. To design and test septal electrodes that would enable Defendants directly to control human behavior; 1.

Descriptions of the MKUltra/DuPlessis Orphanage experiments in Canada, were more explicit, concerning this testing:

"Catholic psychiatric hospitals carried out tests including electric shocks, injections of such drugs as chlorpromazine and LSD, chemical sterilization, and lobotomies. The top secret mind-control Project MKULTRA, pioneered by CIA head Allen Welsh Dulles, was carried out at Montreal's Allan Memorial Hospital on the orphans.

Many children died from the experimentation. Sylvio Albert Day, who was orphaned at birth and sent to work at hard labor outdoors as a teenager, was conscripted to do the ghastliest work inside St. Jean de Dieu hospital—transporting the bodies of the dead experimentation victims. Decades later, he testified about the surreal life in the Catholic psychiatric hospitals. He described one three-month period when he transported the bodies of 67 dead orphans—boys and girls, young men and women, some as young as five—from operating and electric shock rooms to the basement. He washed the bodies in preparation for sale to the University of Montreal and McGill University, where body parts were removed. (From: http://keepkelb.files.wordpress.com/2011/03/ami011_canada1-11.pdf (http://keepkelb.files.wordpress.com/2011/03/ami011_canada1-11.pdf))

During the Church Senate Subcommittee Hearings these experiments were found to be unethical and illegal. The CIA and the military were directed to find unwitting citizens who had been experimented on and notify them of these tests in 1976. To date, it would seem that this has not happened. 2

Our group is formed to specifically deal with current and past abuses, and nonconsensual testing, of directed energy weapons, and other testing, by the military/intelligence community and third party contractors, engaged. We also address the issue of "surveillance lists". Many members may be on one, due to their activism on this very issue.

Concerning the non-consensual experimentation: the transmission of EM energy from one point to another is silent and unseen. Using miniaturized portable devices, it is possible to test and harass a human subject in one apartment from another, in one room from another, in one building from another. Even though it is illegal, it is very hard to prove that a transmission of microwaves or EM signals, is occurring.

Some EM devices can cause human muscles to spasm, and vibrate, and it can cause nerve pain. This targeting, with bioelectric weapons, can occur in the individual's home, workplace or on the street. These weapons, such as one that "tentinizes muscles" 3. as one might be walking into a store to shop, transmit silent unseen, electromagnetic energy, for a specific purpose (often some sort of targeted experimentation or harassment).

As you can well imagine, those of us subjected to this testing/harassment are suffering and experience pain and medical reactions. Many medical symptoms can be directly linked to overexposure to EM activity. Many require medical help due to the long-term effects of exposures to non-ionizing radiation. Intervention is imperative.

High levels of microwave transmitted to the head can cause a ringing or buzzing sound to occur. Long term exposures, to these devices can cause very painful migraine headaches,

kidney problems, cancer, changes at the cellular level (DNA "breaks" and problems with RNA performance), and other pathologies.

Military intelligence development of these devices, as weapons, has produced the taser, acoustic heterodyne, active denial system and other EM based weaponry. These weapons and devices, continue in their development. Our ipads, ipods and Blackberries combine the capabilities of computer databases and cellular telephones. These devices/weapons are losing their mystery. In 2012, many understand how their ipad operates by EM frequencies (no wires, no electrical connection necessary, as the DEWs we speak of. These complaints have merit and are understandable.

The U.S. military spoke of "shock and awe" in its Iraqi military action. They refer to a device called the "Voice of God" to frighten Iraqi ground troops. This is a microwave audio (form of EM) transmission device. These are the types of directed energy (EM, MW) weapons our group complains of being exposed to, in seemingly mil/intel non-consensual experimentation.

We are enclosing and attaching infrared photographs of DEW transmissions from Judith Stringfield, a member in Hamburg, New York. (Judi has recently moved to New York from Tennessee.) She suffers from, and is victimized daily by these exposures. Judi served her country for over eleven years, as a member of the Air Force and has since worked in the private sector. Her resume is attached. (Please see Attachment 1: Photo's and Resume, Judith Stringfield).

We also enclose and attach letters from William Bradford Taylor, (CT) private detective, hired by James Walbert, a victim, living in Kansas. This correspondence speaks of the detection and tracing of harmful microwave frequencies, James was experiencing, directed at him and his body. The letter finds the source of these harmful

frequencies coming from a nearby apartment. This seems to be mostly the case in these instances, and the party involved, often when regarded, can be found to have ties (often indirectly) to either the intelligence agencies, the military, or a third party contractor through some conduit.

James is also in contact with Missouri Representative James O. Guest, who makes a strong appeal for all victims of these abuses. (Please see Attachment 2: James Walbert, Letters from James O. Guest, Letters from William B. Taylor and Restraining Order.)

The City Sun Newspaper in Brooklyn, New York published an article concerning victim Brian Wronge's experiences. It details his unconsented chip implantation, describing this as "medical experimentation." (Please see Attachment 3: Brian Wronge, New York unconsented implant victim.)

Nonconsensual Human Subject Testing, Unethical, Violates American Law

The nonconsensual testing, many citizens are experiencing is wrong. It is morally wrong. It is also a violation of national and international law. Our very strong intentions are to get this stopped. Citizens must be notified of involvement in earlier, secret, CIA tests. Later human subjects, must also be notified by testing agencies of the military/intelligence. Our FOIA's concerning list placement must be answered.

We seek effective action towards these goals.

We are working to get this stopped. We ask that you support our goals and speak with us to help our concentrated efforts to stop these violations of the human being, spirit and body. If the development of these devices does not proceed along ethical lines, and in accord with international law (developed upon exposure of outrageous abuses in Nazi Germany), human rights, as we now understand and enjoy them, are severely jeopardized.

The ethical consideration, "what kind of a world are we making and leaving for our children?" presents a very vital, real question in this situation. The very sustainability of civilization itself, is threatened by this continued unauthorized human subject testing and EM weapon development, in this manner. Current national and international laws need to be observed. Left unchecked, this problem may certainly involve our children, grandchildren and other innocent, unwitting and possibly, vulnerable populations. This needs to be stopped, now.

The Wilson Directive, the Nuremberg Code, 45 C.F.R. 46 (the Common Rule) and other laws, (including Executive Orders) and accepted norms of practice need to be adhered to. These activities need to be stopped, in accord with these rules, laws and international laws. We also would like full disclosure as to any "list" placement concerning our members and the methods necessary to be taken "off" these lists.

We ask that you speak with us, concerning this situation and read the literature, we provide and take our complaints and concerns, very seriously. Thank you for your kind attention to our concerns.

Sincerely,

Lynn Bowne Weed,

Paralegal, Co-Director, CANR

lynnandmarie@live.com (mailto:lynnandmarie@live.com)

(347) 478 9582

Judith Stringfield, Co-Director, CANR

Jstringfield125@gmail.com (mailto:jstringfield125@gmail.com)

(716) 390 3651

Website:

<http://www.CANRnonconsensual.weebly.com> (<http://www.CANRnonconsensual.weebly.com>)

Please see Signatory Page.

Signatures, by "e" signature, verbal agreement and proxy.

Representing 43 Nationwide and by association, 200

Note: 1. From: <http://www.wyden.senate.gov/priorities/secret-law> (<http://www.wyden.senate.gov/priorities/secret-law>)

2. From: <http://www.wyden.senate.gov/meet-ron/biography> (<http://www.wyden.senate.gov/meet-ron/biography>)

cc: Quaker Peace Mission, United Nations

Benjamin Chaney, President, James Earl Chaney, Jr. Organization, Inc.

Attachments

Reference 1:

Photo's and Resume, Judith Stringfield, Hamburg, New York (Recently moved from Tennessee. Photo's are of Judi when she was living in her home in TN, 2009.)

She continues to experience these Directed Energy Weapon/Device exposures. Ms. Stringfield's photographs of these abuses are available on the hard copy of this document which we mailed with the original of this letter and which was received by your Washington D.C. office on September 15, 2012. She prefers that they not be transmitted via email transmission.

A brief description of one photo : Ms. Stringfield is standing outside of her house in Tennessee and the beam of light with a large ball of light is penetrating her head. These are silent unseen transmissions. They can be captured using an expensive infrared camera, which will pick up this "light".

Reference 2:

James Walbert, Kansas: Letters from Representative James O. Guest, Letters from P.I. William Bradford Taylor and Restraining Order granted by a Kansas Judge on Behalf of James Walbert Letters.

08DM864 COPY

The Great Seal of the State of Missouri

JAMES O. GUEST

STATE REPRESENTATIVE

DISTRICT ADDRESS

P.O. Box 412

King City, MO 64463

Tele: 660-535-6664

To Whom It May Concern:

I have worked for 3 years with Microwave and Electronic Harassment victims throughout the U.S. and overseas. It is hard for others to understand the technology that is being used to destroy people's lives. I know James because he contacted me for help. James has worked to find proof of what has happened to him.

Many victims try hard to get help from professional doctors to help find devices such as Veri-Chip. I would request that you and those that can make a difference would help James and others to find answers.

/s/

Jim Guest

5th District State Representative

cc: re-entered text from original.

The William J. Taylor Agency Investigations
CT State License
FL State License
Investigations
Security Counseling

November 21, 2008

To whom it may concern,

The undersigned is a licensed Private Investigator, licensed in the state of Florida and the state of Connecticut. The undersigned is not an expert in electronics nor an electrical engineer certified to conduct these issues. The undersigned has however been successfully locating and identifying electronic devices that are designed to eavesdrop in individuals and harass for numerous known and unknown reasons for over forty years. References are available on request.

On or about 1500 on January 6, 2008, the undersigned met with and interviewed Mr. James Walbert of Wichita, Kansas. Mr. Walbert related to the undersigned that he believed he had been subjected to various forms of electronic surveillance and electronic harassment by persons known or unknown to him, for reasons known or unknown to him. (I shall not violate Mr. Walbert's confidence by memorializing his suspicions in this report as Mr. Walbert is involved in a legal matter relating to this harassment.)

During the course of the afternoon of the 6th of January 2008, the undersigned tested Mr. Walbert's person for radiation using a JM-20PRO, 1MHz – 3GHz. Portable R.F. Detector and a JM-20F RF Finder Bar Graph Display RF Frequency Detector.

The undersigned found that the JM-20PRO detected a low signal coming from Mr. Walbert's right upper back area of his person. Upon scanning Mr. Walbert with the JM-20F the undersigned found a low bandwidth signal of a fairly steady 288MHz. (A background signal of the area was 800 to 900 MHz.)

It is also worthy of mention that while viewing Mr. Walbert through a Bushnell 26 4202G Night Vision Infrared Viewer there was a very definite visual distortion of light on Mr. Walbert's back area.

These tests and results were witnessed by a credible third party with the permission of Mr. Walbert.

Respectfully,

William Johnstone Taylor, LPI
Post Office Box 878
DeLand, FL 43721-0878
Phone (386) 738-2233
Fax (386) 822-9876

James' Walbert's Restraining Order

IN THE DISTRICT COURT OF SEDGWICK COUNTY, Kansas
Filed Dec. 30, 2008
Clerk of District Court 18th Judicial District

Sedgewick County
COPY
05 DM 8647
FINAL ORDER - PROTECTION FROM STALKING

James Walbert, Plaintiff, v. Jeremiah Redford, Defendant
...

THIS FINAL ORDER SHALL EXPIRE AT MIDNIGHT ON
Wednesday, December 30, 2009
UNLESS EXTENDED OR MODIFIED BY THIS COURT

On this date, Tuesday, December 30, 2008, plaintiff's petition for protective orders comes for consideration under the provisions of K.S.A. 60-31a01, et seq.
...

WHEREAS, the plaintiff filed a verified petition for issuance of protective orders, and the cause has been heard after duly serving and notifying the defendant and the plaintiff has proved the allegations of the abuse by the preponderance of the evidence;. . . **WHEREUPON** the Court adopts the agreement of the parties as to the order of Court as set forth below:

IT IS THEREFORE BY THE COURT ORDERED:

1. This final order of protection supersedes any temporary order previously entered by the Court and serves as notice of termination thereof.
2. The defendant shall not follow, harass, telephone, contact or otherwise communicate with victim.
3. The defendant shall not abuse, molest, or interfere with the privacy rights of the victim, wherever the victim might be.
4. The defendant shall not enter upon or in the victim's residence or the immediate vicinity thereof.
5. Defendant shall pay costs.

(End of Document)

To the courts of Sedgewick County Kansas:

I, James Walbert am filing with the courts of Sedgewick County of Kansas.

For a protection from Stalking under these request's.

That any and all parties that related Jeremiah Redford of 2614 N. Wedgewood be restrained from using these listed devices for stalking harassment and or bodily harm, eavesdropping, electronic forms of harassment and stalking. As I have retained an attorney for this matter and an investigator that has provided reading that are indicative to these weapons and or devices that are currently being used to perform the above achievements as they are intended to propagate the said things to the human body and the human nervous system of electromagnetic or said forms of as listed in the attached document that are provided to the courts. That these devices be withheld from being used upon my person or other persons that are related to myself and my family. The documentation that is attached to this protection from stalking clearly provides the courts the means and the ways for this type of harassment and stalking.

This request is per James Walbert

Of this said address of Withita KS
3607 west 13th st apt B-0
Wichita ks 67209

Respectfully James Walbert

Reference 3:

Brian Wronge, New York Unconsented Implant Victim.)

The City Sun

Dec. 15 – Dec. 21, 1993Vol. 11, No. 49
New York City Metropolitan Weekly
(Brooklyn, NY)

**CHARGE OF HOLOCAUST
MEDICAL EXPERIMENT ON BLACK INMATE**
SEE PAGE 4

HORRIFIC EXPERIMENT OR ROUTINE IMPLANTATION?

Brooklyn resident Brian Wronge claims and X-rays verify, that paramagnetic computers were implanted in his head and body – without his knowledge or consent – while he was imprisoned in August of 1987. Despite the inhumane violation, this technology which made him a victim; he's fearless and outraged. In Maitefa Angaza's City Sun exclusive, the government secret is exposed, proving that this time they messed with the Wronge guy.

The article was printed in the Dec. 15 to Dec. 21, 1993 issue.

Sci-Fact – Not fiction: High-Tech Slavery Is Here

By Maitefa Angaza

It reads like a futuristic horror story: "Invasion of the brain snatchers", "Blackman vs. mad scientist is battle for the last frontier – own inner space.

The reality is a present day horror story in which some medical professionals feel sub-human violation is acceptable and basic human rights are negligible.

Brian Wronge, a 33 year –old black Brooklyn resident, originally from Guyana claims that surgeons at Bailey Seaton Hospital on Staten Island, New York, illegally, and without his knowledge, implanted paramagnetic computer chips in his head and body in October.

He has filed a suit in the Eastern District Federal Court, charging the U.S. government with conspiracy to commit murder and invasion of privacy for including him in what is considered to be an experimental surveillance and behavioral study program victimizing inmates and possibly, other members of the population.

"A few days later, I heard the police were looking for me, so I went down to the Precinct on my own to find out what they wanted." He was put into a lineup, arrested and agreed to a plea-bargain for 1 1/3 to 3 1/3 years and convicted. "Being that I had nothing to with the crime, I refused. And at the time I was 2 1/2 years into a five-year probation for another robbery which I admitted I had done when I was 18 years old."

It was at Elmira that his scientific aptitude was noticed. "In my first semester I wrote a paper for Professor Aronson's Psych 101 class illustrating how the human senses can be imitated using computer analog devices," Wronge recalled. "I received the highest grade on my paper. I let a few correction officers read it. The next thing you know, I'm having problems at the facility." I was already transferred to Arthur Kill Correctional Facility when I had let an officer read my paper. I stayed at this facility for three years.

But, Wrong claims, Dr. Vincent Tarantola of the pulmonary clinic at Bailey Seaton Hospital convinced him of the need for a bronchoscopy, a diagnostic procedure used to detect problems in the lungs . . .

Wronge said he began to suspect that whatever had been done to him was for the purpose of experimentation and observation. . . .

... He went to see Dr. Albert O. Duncan, a physician acquainted with his brother, who wrote him a prescription for MRI – a type of X-ray.

(Emphasis, CANR Editors)

The resulting report from MRI-

(Entire article is in the hard copy mailed to the Senator's Washington, D.C. office.)

26 July 1963 Memorandum For: Director of Central Intelligence. Subject: Report of Inspection of MKUltra

¹⁰ Scope of the MKUltra Charter

... Many additional avenues to the control of human behavior have been designated by the TSD management as appropriate to investigation under the MKUltra Charter including radiation, electro-shock, various fields of psychology, psychiatry, sociology and anthropology, graphology, harassment substance and paramilitary devices and materials."

Reference 5:

Vietnam Veterans of America et al. v. CIA et al. CV 09-0037-CW, U.S.D.C. (N.D. Cal 2009), Second Amended Order for Injunctive and Declaratory Relief Under U.S. Constitution and Federal Statutes (Class Action), pp. 8, 9 # 13, 14, 15, 16. To wit:

#15. DEFENDANTS' promise in the 1970s to locate the victims of their human experimentation program, and to provide compensation and health care, proved to be hollow. DEFENDANTS never made a sincere effort to locate the survivors, . . .

Reference 6:

U.S. Patent 5675103
Inventors: Herr; Jan Eric (San Diego, CA)
Filed: February 8, 1996
Abstract:

A Weapon for temporarily immobilizing a target subject by means of muscular tetanization in which the tetanization is produced by conducting a precisely-

modulated electrical current through the target. Because the electrical current is a close replication of the physiological neuroelectric impulses which control striated muscle tissue, it tenses the subject's skeletal muscles without causing any perceptible sensation. One source: <http://patft.uspto.gov/netaol/nph-Pacer> (<http://patft.uspto.gov/netaol/nph-Pacer>)

Reference 7:

U.S. Patent No. 4877027
<http://patft.uspto.gov/netaqi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&r=1&G&l=50&s1=4877027.PN.&OS=PN4877027&RS=PN4877027> (<http://patft.uspto.gov/netaqi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2Fsrchnum.htm&OS=PN4877027&RS=PN4877027>)

U.S. Patent No. 3773049 (The Lida)

U.S. Patent No. 6011991 Mardirossian

U.S. Patent No. 5159703 (Silent Sound)

1995, US Department of Defense's contract, "Communicating via the Microwave Auditory Effect; Awarding Agency: Department of Deafens; SBIR Contract Number: F41624-95-C-9007".

[<http://www.nexusmagazine.com/articles/BraveNewWorld.html>]

Disclaimer: Our advocacy is directly for issues and events stated, defined and described, on our website and individual web pages. Those are our sole advocacy. Claims concerning other events, beliefs, stated offenses and events, and parties responsible, concerning our claims are not those of Kelb and we do not advocate for, nor support them. We advocate solely and exclusively for what we state on our site and webpages. Internet connections to our site do not represent our organizational work, concerns and issues.

Judith Stringfield, Co-Director, CANR
Social Worker, New York
Beverly Schweitzer, RN, AZ
David Beauchamp, V. Pres. CANR,
Public Television Producer (Ch. 13),
Media Production, NYC
Ken Rhoades, Former Small Business Executive, Michigan
James Walbert, Inventor, Kansas Rights Activist, (NGO's, U.N.) Phila, PA
Harlan Girard, Director, ICAOM, Phila, PA
Human Rights Writer, Activist
Nancy Miller, NC, RN Human Rights Activist
Steven De Leno, NY, NY
Georgia Stewart, TX, CA
Joan Salinger, Digital Photography Prof.
Orange County, California
Gail Whittaker (deceased) Former Fox, Newswriter Cin, IL, CA
Brian Wronge, Brooklyn, New York
Rosemary Johnson, Lancaster, PA
Michael A. Shaneyfelt, Ind. Mgr., Alabama
Beth Donohue, Computer Engineer, FL
Janis Lanham, Soc. Worker, Women and Human Rights, NC
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Ernest Taylor, Pharmaceutical Sales., NJ
Tom McClellan, Music Therapist, NYC
Mark Oppenheim, Real Estate, NYC
Ron Hawke, NJ, Human Rights Activist
Kathy Platter, GA
Eldon Byrd, (deceased) IL
Charles Schultz (deceased 2010), IL
Cindy Goldman (deceased, 12) Washington State
Small Business Owner
Siegfried Bailey, NY
Erica Gilmore, CA
Jeffrey Murray, IL
Lynn Troxel, SW, TX
Lucy Geraets, Data Base Spec., CA
Jennifer Berkenmeir

Anti-Loitering Devices



Head Office

CSS Ltd,
10 Criccieth Grove,
Merthyr Tydfil,
South Wales,
CF48 1JY

After Sales

Contact us via online form
01685 350418
Delivery Information
Returns Information

Sitemap

- > [Products & Services](#)
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So, you're having problems with kids and teens?

Every day we receive calls from people wanting to buy a **Mosquito Anti-loitering Device** like you who are fed up with groups of kids damaging their property, hanging around in groups, smoking and drinking, playing music and generally preventing you from enjoying your property or business.

You have tried talking to them. You have tried talking to their parents if you know them. You have even wasted your time getting the police involved. Now you need to take matters into your own hands in a way that does not involve any confrontation.

You as an individual have a legal right to peaceful enjoyment of your property or business. The Mosquito Anti-Loitering Device is the most effective and benign way of getting rid of the problem.

The Mosquito device is the only product on the market that has the teeth to bite back at the kids. The Mosquito alarm works not by being loud and painful, but by being UNBELIEVABLY annoying at the point where the kids CANNOT stay in the area being covered by the mosquito sound.

The Mosquito device is 100% legal to own and use and requires no planning permissions. It's simple to install (just bolt to a wall or post) and simply plugs in to a standard 13A wall socket. If you want to know more about the Mosquito before purchasing, see our **Mosquito information** page.

If you want to reclaim your right to a peaceful existence, buy your Mosquito Anti-Loitering Device now!

"The impact it has made to our lives has been unbelievable"

Kris Perkins, private home-owner, UK





Mosquito MK4 (Anti-Loitering device)
Customise your own kit

The most effective tool for dispersing groups of misbehaving teenagers. Safe & legal. No licenses or permissions required

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Mosquito Kit 1 - MK4 + PSU EU (Anti-Loitering device)

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The most effective tool for dispersing groups of misbehaving teenagers. Safe & legal. No licenses or permissions required

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Mosquito Kit 2 - MK4 + Cage + PSU (Anti-Loitering device)

The most effective tool for dispersing misbehaving teenagers. Safe & legal. or permissions required

£646.80

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Mosquito Kit 1 - MK4 + PSU UK (Anti-Loitering device)

The most effective tool for dispersing groups of misbehaving teenagers. Safe & legal. No licenses or permissions required

£598.80

[Enquire for trade pricing](#)



How to Build a Speech-Jamming Gun

Japanese researchers build a gun capable of stopping speakers in mid-sentence.



figure 1. Overview of SpeechJammer

The drone of speakers who won't stop is an inevitable experience at conferences, meetings, cinemas, and public libraries.

Today, Kazutaka Kurihara at the National Institute of Advanced Industrial Science and Technology in Tsukuba and Koji Tsukada at Ochanomizu University, both in Japan, present a radical solution: a speech-jamming device that forces recalcitrant speakers into submission.

The idea is simple. Psychologists have known for some years that it is almost impossible to speak when your words are replayed to you with a delay of a fraction of a second.

Kurihara and Tsukada have simply built a handheld device consisting of a microphone and a speaker that does just that: it records a person's voice and replays it to them with a delay of about 0.2 seconds. The microphone and speaker are directional, so the device can be aimed at a speaker from a distance, like a gun.

In tests, Kurihara and Tsukada say their speech-jamming gun works well: "The system can disturb remote people's speech without any physical discomfort."

Their tests also identify some curious phenomena. They say the gun is more effective when the delay varies in time and more effective against speech that involves reading aloud than against spontaneous

monologue. Sadly, they report that it has no effect on meaningless sound sequences such as “aaaaarghhh.”

Kurihara and Tsukada make no claims about the commercial potential of their device but list various applications. They say it could be used to maintain silence in public libraries and to “facilitate discussion” in group meetings. “We have to establish and obey rules for proper turn-taking when speaking,” they say.

That has important implications. “There are still many cases in which the negative aspects of speech become a barrier to the peaceful resolution of conflicts,” they point out.

Clearly, speech jamming has a significant future role in contributing to world peace and should obviously be installed at the United Nations with immediate effect.

Ref: arxiv.org/abs/1202.6106: SpeechJammer: A System Utilizing Artificial Speech Disturbance with Delayed Auditory Feedback

Tagged: Communications

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Secret Surveillance and Electromagnetic Torture by the Secret Services

Translation by Cyborg Nicholson on Peacepink

LINK TO ORIGINAL ARTICLE FROM THE GERMAN PRESS:

<http://media.de.indymedia.org/media/2010/04//278517.pdf>

The story told by Carl Clark will partially take your breath away. The Englishman describes how he targeted people and then became a target himself after he'd opted out. He also took part in the deployment of microwave weapons in order to torture others, after which they were later turned on him. "These criminal shenanigans need to be exposed in public so that they can be stopped." He describes below why he blew the whistle.

Interview with Carl Clark, Norfolk, England.

Armin Gross: Matters related to the secret services are usually not disclosed. You want to bring them out in the open though. Who did you work for?

Carl Clark: I worked freelance from 1980 to 2003 for various secret services. I worked for the American Central Intelligence Agency (CIA) up to 1997. I then worked for the Israeli Secret Services, Mossad and for the Anti-Defamation League (ADL), a US organisation against discrimination and defamation of Jews. I was also employed by MI 5, a subgroup of the British Secret Services. I later moved to the Police Secret Services as well as to the secret services of an investigation laboratory. I was deployed in European operations in Paris, Zurich, Berlin, Dusseldorf, Munich, Madrid, Lyon, Bilbao and Moscow.

Armin Gross: What were your main assignments?

Carl Clark: An important assignment was to infiltrate certain groups to obtain inside information about them. I would join certain groups, make friends with some of the members and then proceed to ruin their lives.

Armin Gross: What kind of groups were they?

Carl Clark: First and foremost criminal gangs and drug cartels. I provided information about the National Front, Nazis or skinheads to Israeli Secret Services. What they were interested in

were names, addresses, meeting places, projects and objectives. I tracked individual targets for the CIA.

Armin Gross: What exactly did you do?

Carl Clark: I spied on people for long periods, eavesdropped on their conversations. I also had orders to confuse or deceive them. I would therefore secretly force my way into their homes, remove some things and just move others around. I would then delete data from their computer. Or I would just drive them crazy, by following them and turning up close by either in the railway station or the bus station, etc. Otherwise, I would stage a fight in the street right in full view of the target's eyes, and many other ploys. If our orders were to put somebody under more pressure or even arrest them, I would install certain material on their computers such as child pornography, instructions to manufacture a bomb, etc.

Armin Gross: What type of individuals were you instructed to target?

Carl Clark: People who were politically relevant. Likewise, people who opposed or acted against the interests of large companies such as the pharmaceuticals. Some belonged to criminal gangs, but there were two or three targets that had nothing on them at all as far as I could make out.

Armin Gross: How many individuals did you have under surveillance in total?

Carl Clark: In the 80s it was five or six, in the 90s seven, and from 2000 to 2003, there were three. You can appreciate from the low number of targets how intensive the targeting was. One requires at least six months right at the outset to accumulate as much information as possible about prospective targets' past lives.

Armin Gross: How did you acquire this information?

Carl Clark: From the garbage can, the telephone, mail, the Internet. That sort of thing has got much easier with recent advances in technology. Bugs are no longer necessary as you can eavesdrop on mobile phones, ISDN phones or small parabolic receiving dishes nowadays. Unfortunately, the deployment of microwave weapons has, in addition, become very practicable.

MICROWAVE WEAPONS

Armin Gross: Did you also use such weapons?

Carl Clark: No. I was responsible for surveillance. Colleagues from special departments did this. However, I was at times on site when these weapons were deployed.

Armin Gross: Can you describe in more detail how the deployment of weapons took place?

Carl Clark: It's a bit like what takes place in a science fiction movie. People can be tracked anywhere by radar, satellite, a base station and complimentary computer programs. For example, three radar devices would sometimes be positioned in the vicinity of the target. The radar emits electromagnetic waves, some of which pick up the target and the result is then evaluated. My friends who work in the special department could then follow the target all day on their computers. This form of localising the target made it easy to deploy the weapons accurately. My colleagues could see exactly where to aim and also observe how the target reacted.

Armin Gross: What effect did the weapons have on the targets?

Carl Clark: They create heat, inner burns, pain, nausea, fear. Sometimes traces are left on the skin, but mostly not. If the targets go to the doctor, they get told everything is OK. Take into account, this was the situation ten years ago. This technology has advanced considerably since then.

Armin Gross: What is the objective of such attacks?

Carl Clark: The aim is to intimidate certain people, for example people who make a lot of noise. I myself was under attack for three years after opting out. I'm virtually sure that weapons were used against me in 2003/2004 which provoked strong aggression. I almost killed somebody on two occasions, once a neighbour who was a pleasant elderly lady.

ATTEMPTS TO DRIVE PEOPLE TO INSANITY

Armin Gross: Do you think it's possible to directly influence feelings by weaponising electromagnetic rays?

Carl Clark: Without doubt. We know that living organism is sensitive to electromagnetic radiation. Elementary life processes within cells function by biogenic electromagnetic oscillation. Frequencies from the exterior can damage or change these processes. There have already been far-reaching attempts at influencing body, mind and soul through frequencies within the framework of military research. It's possible to provoke fear, aggression, nervousness or forgetfulness in this way. In combination with other interventions, a target can be driven insane. For example, radiofrequency can be manipulated so that the target hears his own name on the radio or his computer shows his name time and again. Voices are also specifically transmitted to a target commenting on his activities. For example, I heard a voice in the morning after getting up which said "Get up and injure somebody."

Armin Gross: People are actually being driven to psychic extremes then?

Carl Clark: Yes, the undoubted goal is to have select people end up in psychiatric institutions. If a target seeks help by going to the police or to the doctor, they don't get taken seriously. Some doctors and hospitals actually work together with the Secret Services. Diagnostic directives permit a patient who feels persecuted or hears voices to be classified as schizophrenic.

Armin Gross: Hospitals cooperate with the Secret Services?

Carl Clark: Yes, certainly. Large companies too. That's why one lives dangerously if one carries out investigations on large companies. The American State protects large companies like MacDonald's, Coca-Cola and certain pharmaceutical enterprises. These companies also have FBI agents at their disposal for matters related to industrial espionage. The Freemasons who are widespread within the CIA also play a major role

ENORMOUS SURVEILLANCE NET

Armin Gross: Do you know in which countries individuals are under surveillance and are being assaulted by energy weapons?

Carl Clark: The USA, Germany, China, North Korea, Russia, France and England, normally without the official knowledge of the particular government. But unofficially, I believe that government personnel must be involved in some way or know something about the goings-on.

Armin Gross: Do you know how many people are under surveillance?

Carl Clark: There are about 5,000 in England under surveillance and about 15,000 overseeing the operation. Apart from the large Secret Service agencies, there are 300 or 400 minor Secret Service agencies which were formed by former policemen or former Secret Service agents. They have permission from the Home Office to spy, take photographs and procure information. Their employees are well paid.

Armin Gross: Was it a problem for you to switch from one Secret Service agency to another?

Carl Clark: No. It was always a positive move from my new employer's viewpoint as I could always provide information to him about my previous Secret Service agency. The large Secret Service agencies mistrust each other totally. I earned more money as a result.

OPTING OUT

Armin Gross: Why did you opt out?

Carl Clark: I saw that what I was doing was wrong. The last two targets that were allocated to me had done nothing. They were not political, quite normal, nice people, not criminal or economically dangerous. The only reason I could come up with for them having been selected as targets was their DNA or their blood. There has recently been a lot of research done in this area. The DNA is associated with the finest details of our character. The Human Genomes Project

between 1993 and 2004 analyzed all chemical base pairs which make up human DNA, also collecting the genetic data of people from isolated communities in danger of extinction (Human Genomes Diversity Project). The results were then all compared and correlated. Our employers were always very keen on DNA analyses of the people under surveillance. It was always one of our most important tasks in the initial period of surveillance to organize DNA or blood analyses of these individuals.

Armin Gross: You've already mentioned that opting out in 2003 caused you problems. Can you give a few examples?

Carl Clark: I was once followed by a helicopter through the night as I drove a truck 3,000 miles to deliver packages. As I walked along an alley, I was attacked by a man who struck me a blow. Then on another occasion, somebody removed three connections from my engine on the motorway causing the engine to get dislodged and fall out of its casing. On another occasion as I drove a truck with a three-ton load, two of my tyres suddenly exploded. When the police arrived, they stated they'd never witnessed anything like it. Then there was the time when I was followed over a great distance whilst driving. It made me so angry that I brought my car to an abrupt halt, grabbed my baseball bat and got out of the car. Three cars which were tailing me suddenly took off in reverse gear at great speed. In normal circumstances, they would have reported my behaviour to the police, but these did not. On another occasion, I was sent three people who were supposed to strike up a friendship with me in order to spy on me. As I knew they were listening in on my telephone conversations, I stated loudly on the telephone to somebody that I planned to kill the people who had wormed their way into my life. The three individuals disappeared from the scene altogether after that.

Armin Gross: And what's the current situation? Do you think you are still being targeted?

Carl Clark: Of course. I have also found out that the secret services wish to know why I flew to Germany.

Armin Gross: Are you not then living dangerously at present?

Carl Clark: I am prepared to stand up to them. They also know that I know a lot about them, and that I intend to do something about their violations or breaches. I have friends in special units, people in Afghanistan and in Iraq that support me.

Tips for Victims of Surveillance.

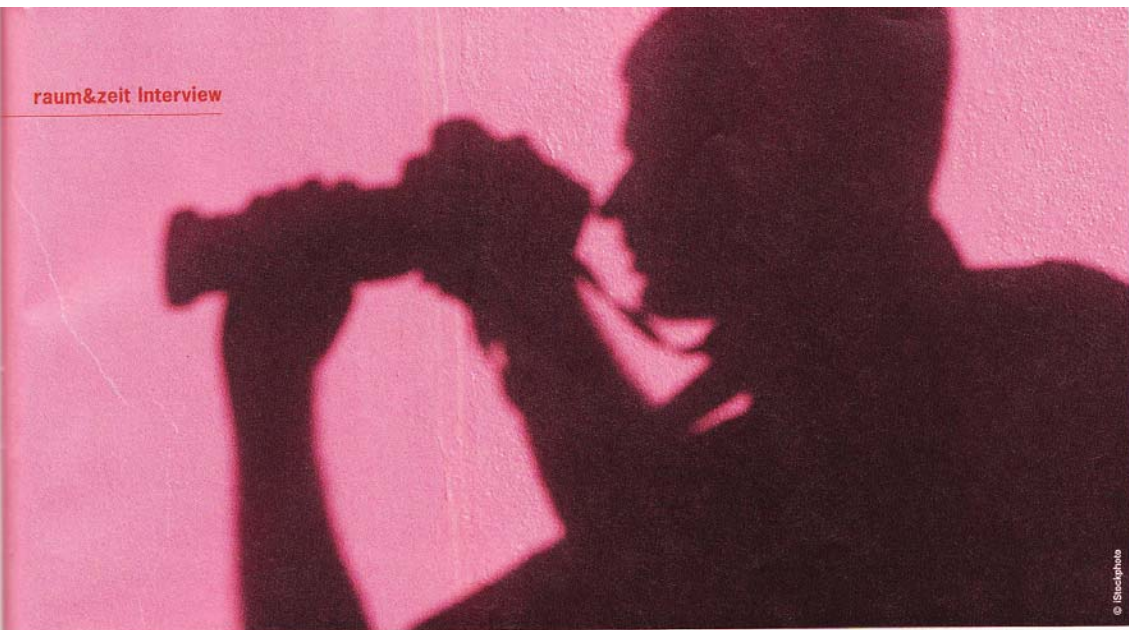
Armin Gross: Have you any tips for people who feel they are under surveillance?

Carl Clark: It's a good idea to avoid the use of certain terminology in emails such as "government" or "mind control," etc., because digital surveillance seeks out key, sought-after vocabulary. It's also an idea to check out whether anyone's forced their way into your home. Intruders often deploy anaesthetic gases sprayed through the letter box on a door for example

before they break in during the night. You'd just wake up in the morning with a metallic taste in your mouth. If cars behave in a strange way, you should take note of the registration numbers. If you receive letters you don't recognise or expect, they should be wrapped in aluminium foil. There are special measuring devices to detect high frequency rays in the home.

Armin Gross: Do you know of any other whistleblowers who have related stories similar to yours?

Carl Clark: Up to now, no. But I hope that there will be more who are prepared to go public in the future.



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Heimliche Überwachung und Strahlenfolter durch **Geheimdienste**

Whistleblower outet sich als ehemaliger Täter

Bei der Geschichte, die Carl Clark erzählt, bleibt einem teilweise die Luft weg. Der Engländer beschreibt, wie er für verschiedene Geheimdienste Menschen überwacht und verfolgt hat und dann nach seinem Austritt aus diesen Diensten selbst zum Opfer wurde. Auch den Einsatz von Mikrowellenwaffen hat er erst begleitet, dann selbst zu spüren bekommen. „Diese kriminellen Machenschaften müssen an die Öffentlichkeit, damit sie gestoppt werden können“, beschreibt er seine Motivation, sich zu „outen“.

Interview mit Carel Clark, Norfolk, England,
von Armin Groß, Berlin (Name v. d. Red. geändert).

Armin Groß: Geheimdienst-Angelegenheiten sind gewöhnlich Verschlussache. Sie aber wollen Licht in das Dunkel bringen. Für wen haben Sie gearbeitet?

Carl Clark: Ich habe als freier Mitarbeiter von 1980 bis 2003 für verschiedene Geheimdienste gearbeitet. Zuerst war ich bis 1997 für den amerikanischen Geheimdienst, die Central Intelligence Agency (CIA), tätig. Dann arbeitete ich für den israelischen Geheimdienst, den Mossad und für die Anti-Defamation League (ADL), eine US-amerikanische Organisation gegen Diskriminierung und Diffamierung von Juden. Ich stand auch im Dienst des MI 5, eine Untergruppierung des britischen Geheimdienstes. Später wechselte ich zu einem polizeilichen Geheimdienst und auch zu dem Geheimdienst eines Forschungslabors. Mein Einsatzgebiet war Europa: Paris, Zürich, Berlin, Düsseldorf, München, Bilbao, Madrid, Lyon und Moskau.

Umfassender Informationsdienst

A. G.: Was waren Ihre Hauptaufgaben?

C. C.: Eine Hauptaufgabe war es, Gruppen zu infiltrieren, um so Informationen über sie zu erhalten. Ich schloss

mich also bestimmten Gruppen an, baute Freundschaften mit Mitgliedern auf und half mit, ihr Leben zu ruinieren.

A. G.: Was waren das für Gruppen?

C. C.: In erster Linie kriminelle Banden oder Drogenkartelle. Für den israelischen Geheimdienst beschaffte ich Informationen über die „National Front“, eine rechtsextreme Partei, über Nazis, Skinheads oder Juden. Interessant für sie waren Namen, Adressen, Treffpunkte und Vorhaben. Für die CIA überwachte ich Einzelpersonen.

A. G.: Was machten Sie da genau?

C. C.: Ich beobachtete Menschen über einen langen Zeitraum, belauschte ihre Gespräche. Ich hatte auch den Auftrag, diese Leute zu verwirren. So drang ich heimlich in ihre Häuser ein, nahm dort Dinge weg oder verstellte das eine oder andere. Ich löschte Daten auf ihrem Computer. Oder ich verunsicherte diese Personen, indem ich sie verfolgte, immer wieder in ihrer Nähe auftauchte, an der Bushaltestelle, im Bahnhof, etc. Oder wir fädelten einen Kampf auf offener Straße ein, der sich dann vor den Augen dieser Person abspielte und vieles andere. Wenn jemand noch mehr unter Druck gesetzt oder verhaftet werden sollte, zog ich auch bestimmte Inhalte auf seinen Computer wie zum Beispiel kinderpornografische Inhalte, eine Anleitung zur Herstellung einer Bombe, etc.

A. G.: Was waren das für Einzelpersonen, auf die Sie angesetzt wurden?

C. C.: Leute, die politisch relevant waren, Oppositionelle, Leute, die gegen große Firmen agierten, zum Beispiel gegen Pharmafirmen. Manche gehörten zu kriminellen Banden. Aber bei zwei, dreien konnte ich nicht erkennen, warum sie auch auf dieser Liste standen.

A. G.: Wie viele Einzelpersonen haben Sie insgesamt überwacht?

C. C.: In den 80ern waren es fünf bis sechs, in den 90ern sieben und von 2000 bis 2003 drei. Man sieht an der geringen Anzahl, wie intensiv der Überwacher mit einer Person beschäftigt ist. Zuerst braucht man allein schon sechs Monate, um möglichst viele Informationen über den Lebensablauf zu erhalten.

A. G.: Wie sind Sie an diese Informationen gekommen?

C. C.: Über den Abfall, das Telefon, die Post, das Internet. Mit zuneh-

Carl Clark



Geb. 1962, wohnhaft in Norfolk, U.K., arbeitete über 20 Jahre für verschiedene Geheimdienste.

mender Technisierung ist es immer einfacher geworden. Heute brauchen Sie auch keine Wanzen mehr, um abzuhören. Man belauscht über Handys, ISDN-Telefone oder kleine Parabolantennen. Auch der Einsatz von Mikrowellenwaffen ist leider sehr leicht umsetzbar geworden.

Mikrowellen-Waffen

A. G.: Haben Sie diese Waffen auch eingesetzt?

C. C.: Nein, ich war für die Überwachung zuständig. Es waren Mitarbeiter von Spezialabteilungen, die dies taten. Manchmal war ich aber vor Ort, wenn diese arbeiteten.

A. G.: Können Sie genauer beschreiben, wie der Waffeneinsatz geschah?

C. C.: Es ist ein bisschen wie in einem Science Fiction Film. Personen können überallhin verfolgt werden über Radar, Satellit, eine Basisstation und ergänzende Computerprogramme. Häufig wurden zum Beispiel drei Radargeräte im größeren Umkreis der Person positioniert. Der Radar sendet elektromagnetische Wellen aus, fängt einige wieder auf, die an der Person auftrafen und zurückkehrten, und wertet das Ergebnis aus. Meine Freunde, die in den Spezialabteilungen gearbeitet haben, konnten dann die Person auf ihrem Computer den ganzen Tag verfolgen. Diese Lokalisierung machte es dann auch leicht, die Waffen gezielt einzusetzen. Die Kollegen konnten genau sehen, wohin sie zielen mussten und auch wie die Person darauf reagierte.

A. G.: Welche Wirkungen hatten die Waffen auf die Personen?

C. C.: Sie konnten Hitze verursachen, inneres Brennen, Schmerzen, Brechreiz, Ängste. Manchmal blieben auf der Haut Spuren zurück, meist aber nicht. Wenn diese Leute zum Arzt gehen, sagt er, es ist alles O. K. mit ihnen. Was ich hier erzähle, ist allerdings der Stand von vor zehn Jahren. Mittlerweile ist die Technik noch weiter fortgeschritten.

A. G.: Welches Ziel wurde mit dem Beschuss verfolgt?

C. C.: Man versucht, die Leute einzuschüchtern, zum Beispiel Leute, die großen Lärm machen, die über die Medien Alarm schlagen wollen. Ich selbst wurde auch drei Jahre lang beschossen, als ich ausgestiegen bin. Ich bin so gut wie sicher, dass bei mir in den Jahren 2003/2004 Waffen zum Einsatz kamen, die starke Aggressionen provozieren. Ich hätte damals zweimal beinahe jemanden umgebracht, einmal meine Nachbarin, eine nette alte Dame.



Ständige Überwachung und Verfolgung kann Leben zerstören.

© Don Bayley, iStockphoto



5000 Personen werden alleine in England überwacht, so der ehemalige Geheimdienst-Mitarbeiter Carl Clark.

© Dan Brandenburg, iStockphoto

Versuche, Personen in den Wahnsinn zu treiben

A. G.: Sie denken, es ist heute durch elektromagnetische Strahlen möglich, die Gefühle gezielt zu beeinflussen?

C. C.: Eindeutig. Wir wissen, dass der Organismus sehr sensibel auf elektromagnetische Strahlung reagiert. Elementare Lebensvorgänge an den Zellen gehen nämlich mit biogenen elektromagnetischen Schwingungen einher. Frequenzen von außen können diese Prozesse stören oder verändern. Es gab im Rahmen militärischer Forschung schon weitreichende Versuche, Körper, Seele und Geist über Frequenzen zu beeinflussen.

Es ist möglich, Ängste, Aggressionen, Nervosität oder Vergesslichkeit auf diese Weise zu fördern. In Kombination mit noch anderen Interventionen kann man eine Person so wahnsinnig machen. Zum Beispiel werden Radiofrequenzen manipuliert, sodass der Betroffene seinen eigenen Namen im Radio hört oder sein Computer zeigt seinen Namen immer wieder an. Auch werden einer Person gezielt Stimmen gesendet, die ihr Gedanken eingeben oder ihr Tun kommentieren. Ich hörte beispielsweise am Morgen nach dem Aufstehen eine Stimme, die sagte: „Steh auf und verletze!“

A. G.: Personen werden also gezielt in psychische Extreme getrieben?

C. C.: Ja, manche Personen will man regelrecht in die Psychiatrie bringen. Wenn eine betroffene Person nach Hilfe sucht und zur Polizei oder zum Arzt geht, nimmt man sie nicht ernst. Einige der Ärzte und auch einige Krankenhäuser arbeiten mit den Geheimdiensten zusammen. Die diagnostischen Richtlinien erlauben es, jemanden als schizophren einzustufen, wenn er sich verfolgt fühlt und Stimmen hört.

A. G.: Krankenhäuser kooperieren mit Geheimdiensten?

C. C.: Ja, auf jeden Fall. Auch große Firmen, weshalb man gefährlich lebt, wenn man etwas gegen große Firmen anzettelt. Der amerikanische Staat schützt große Unternehmen wie McDonalds, Coca Cola, oder bestimmte Pharmakonzerne. Er stellt ihnen auch FBI-Agenten zur Verfügung für Industriespionage-Angelegenheiten. Eine große Rolle in diesem Netz spielen auch die Freimaurer, von denen es bei der CIA sehr viele gibt.

Es gab im Rahmen militärischer Forschung schon weitreichende Versuche, Körper, Seele und Geist über Frequenzen zu beeinflussen. In Kombination mit noch anderen Interventionen kann man eine Person wahnsinnig machen.

Riesiges Überwachungsnetz

A. G.: Wissen Sie, in welchen Ländern Geheimdienste Einzelpersonen überwachen und Energie-Waffen bei ihnen einsetzen?

C. C.: In den USA, Deutschland, China, Nordkorea, Russland, Frankreich und England, gewöhnlich ohne das offizielle Wissen der dortigen Regierungen. Aber inoffiziell denke ich, muss es immer Regierungspersonen geben, die in irgendeiner Weise involviert sind beziehungsweise darüber etwas wissen.

A. G.: Wissen Sie, wie viele Leute überwacht werden?

C. C.: In England sind es circa 5000 Leute, die überwacht werden und circa 15000 Überwacher. Neben den großen Geheimdiensten gibt es dort noch 300 bis 400 kleine Geheimdienstfirmen, die von ehemaligen Polizisten oder Geheimdienstlern gegründet wurden. Sie haben vom Innenministerium selbst die Erlaubnis, zu überwachen, Fotos zu machen, Informationen zu beschaffen. Sie bezahlen ihre Mitarbeiter sehr gut.

A. G.: War es für Sie ein Problem, zwischen den Geheimdiensten zu wechseln?

C. C.: Nein, für die neuen Auftraggeber war es immer positiv, weil sie auf diese Weise auch noch Informationen über die anderen Geheimdienste von mir erhalten konnten. Denn die großen Geheimdienste misstrauen sich gegenseitig. Ich verdiente dadurch mehr.

Ausstieg

A. G.: Warum sind Sie ausgestiegen?

C. C.: Ich sah, dass es falsch war, was ich gemacht habe. Die letzten zwei Leute, auf die ich angesetzt war, hatten nichts getan. Sie waren ganz normale, nette Menschen, nicht kriminell, nicht politisch oder wirtschaftlich gefährlich. Die einzige Vermutung, die ich diesbezüglich hatte, war, dass es irgendwie mit der DNA oder dem Blut dieser Leute zusammenhing. In neuerer Zeit wird hier ja sehr viel geforscht. Die DNA wird mit den letzten Details unseres Charakters in Verbindung gebracht. Das Human Genome Project analysierte von 1993 bis 2004 alle Basenpaare des Menschen, sammelte auch die genetischen Daten bedrohter Völker (Human Genome Diversity Project) und verglich die Ergebnisse. Unsere Auftraggeber waren auch immer sehr scharf auf DNA-Analysen der Leute, die wir überwachten. Es gehörte immer zu unseren Hauptaufgaben in den ersten Tagen der Überwachung, DNA- bzw. Blutanalysen dieser Leute zu organisieren.

A. G.: Sie erwähnten bereits, dass Sie Probleme bekamen, als Sie 2003 ausstiegen. Können Sie hierfür noch ein paar Beispiele anführen?

C. C.: Als ich mit einem Lastwagen in der Nacht 3000 Meilen fuhr, um Pakete auszufahren, verfolgte mich immer ein Helikopter. Als ich auf einer Allee entlanging, griff mich ein Mann an und versetzte mir einen Schlag. Einmal hatte jemand drei Befestigungen von meinem Motor entfernt, auf der Autobahn fiel der Motor plötzlich runter. Ein anderes Mal, als ich einen Lastwagen mit drei Tonnen Gewicht fuhr, explodierten plötzlich gleichzeitig zwei Reifen. Die Polizei, die hinzu kam, sagte, so etwas hätten sie noch nie gesehen. Einmal wurde ich beim Autofahren sehr lange verfolgt. Dies machte mich so wütend, dass ich abrupt das Auto anhalt, meinen Baseballschläger nahm und ausstieg. Da zogen drei Autos, die hinter mir waren, mit hoher Geschwindigkeit rückwärts ab. Wenn es normale Leute gewesen wären, hätten sie dies der Polizei gemeldet, haben sie aber nicht. Dann schickte man mir drei Mal Leute, die freundschaftlichen Kontakt zu mir herstellen sollten, um mich auszuspiionieren. Da ich wusste, dass ich am Telefon abgehört

werde, habe ich dann einmal in einem Gespräch verlaunten lassen, dass ich diese Person, die sich da gerade so in mein Leben schleicht, umbringen werde. Daraufhin ist sie nie mehr erschienen.

A. G.: Und wie ist es jetzt? Denken Sie, Sie sind immer noch im Visier?

C. C.: Ja, natürlich. Ich habe auch erfahren, dass der Geheimdienst wissen will, warum ich jetzt nach Deutschland geflogen bin.

A. G.: Leben Sie dann im Moment nicht gefährlich?

C. C.: Ich bin bereit, den Kampf gegen sie zu führen. Sie wissen auch, dass ich viel über sie weiß und dass ich versuche, etwas gegen ihre Übergriffe zu tun. Ich habe Freunde in den speziellen Einheiten, Leute in Afghanistan und im Irak, die mich unterstützen.

Tipps für Überwachungsoffer

A. G.: Haben Sie Tipps für Menschen, die sich überwacht fühlen?

C. C.: Es ist gut, in e-mails bestimmte Begriffe zu vermeiden wie „Regierung“, „Mind Control“, etc. Denn die digitale Überwachung erfolgt nach bestimmten Suchwörtern. Es wäre gut, darauf zu achten, ob jemand in der Wohnung war. Bevor Überwacher nachts in die Wohnung eindringen, setzen sie oft anästhetisierende Gase ein, die sie zum Beispiel durch den Briefkastenschlitz in das Innere dringen lassen. Man wacht dann mit einem metallischen Geschmack im Mund auf. Wenn Autos sich verdächtig verhalten, ist es ratsam, sich die Autonummern zu merken. Briefe, die nicht eingesehen werden sollen, kann man mit Aluminiumfolie umwickeln.

Man kann mit speziellen Messgeräten hochfrequente Strahlung in der Wohnung überprüfen.

A. G.: Kennen Sie andere Whistleblower, die ähnliche Geschichten wie Sie erzählen?

C. C.: Bisher nicht. Aber ich hoffe, es werden noch mehr an die Öffentlichkeit treten. ■

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Table of Contents

[On the Need for New Criteria of Diagnosis of Psychosis in the Light of Mind Invasive Technology – by Carole Smith.....2](#)
[Redefining Mental Illness – by T. M. Luhrmann.....2](#)
[European Symposium on Non-Lethal Weapons.....2](#)
[Bioeffects of Selected Nonlethal Weapons.....2](#)
[City of Richmond support of the Space Preservation Act and Treaty.....2](#)
[MICROWAVE BIOEFFECT CONGRUENCE WITH SCHIZOPHRENIA – by John J. McMurtrey M. S.....2](#)
[ElectromagneticWeapons.info.....2](#)
[The Communications Industry is in the position where it is spiralling out of any person's ability to control it – by Barrie Trower.....2](#)
[MICROWAVE HARASSMENT AND MIND-CONTROL EXPERIMENTATION – by Julianne McKinney.....2](#)
[THE LIDA MACHINE.....3](#)
[RADIOFREQUENCYIMICROWAVE RADIATION BIOLOGICAL EFFECTS AND SAFETY STANDARDS: A REVIEW – by Scfit M. Bolon.....3](#)
[Infrared Laser Pointer – Invisible beam.....3](#)

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On the Need for New Criteria of Diagnosis of Psychosis in the Light of Mind Invasive Technology

By [Carole Smith](#)

Global Research, October 18, 2007

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"We have failed to comprehend that the result of the technology that originated in the years of the arms race between the Soviet Union and the West, has resulted in using satellite technology not only for surveillance and communication systems but also to lock on to human beings, manipulating brain frequencies by directing laser beams, neural-particle beams, electro-magnetic radiation, sonar waves, radiofrequency radiation (RFR), soliton waves, torsion fields and by use of these or other energy fields which form the areas of study for astro-physics. Since the operations are characterised by secrecy, it seems inevitable that the methods that we do know about, that is, the exploitation of the ionosphere, our natural shield, are already outdated as we begin to grasp the implications of their use." [Excerpt]

For those of us who were trained in a psychoanalytical approach to the patient which was characterised as patient centred, and which acknowledged that the effort to understand the world of the other person entailed an awareness that the treatment was essentially one of mutuality and trust, the American Psychiatry Association's Diagnostic Criteria for Schizotypal personality was always a cause for alarm. The Third Edition (1987) of *Diagnostic and Statistical Manual of Mental Disorders* (DSM) required that there be at least four of the characteristics set out for a diagnosis of schizophrenia, and an approved selection of four could be: magical thinking, telepathy or sixth sense; limited social contact; odd speech; and over-sensitivity to criticism. By 1994, the required number of qualifying characteristics were reduced to two or more, including, say, hallucinations and 'negative' symptoms such as affective flattening, or disorganised or incoherent speech – or only one if the delusions were bizarre or the hallucination consisted of a voice keeping up a running commentary on the person's behaviour or thoughts. The next edition of the DSM is not due until the year 2010.

In place of a process of a labelling which brought alienation and often detention, sectioning, and mind altering anti-psychotic medication, many psychoanalysts and psychotherapists felt that even in severe cases of schizoid withdrawal we were not necessarily wasting our time in attempting to restore health by the difficult work of unravelling experiences in order to make sense of an illness. In this way, psychoanalysis has been, in its most radical form, a critic of a society, which failed to exercise imaginative empathy when passing judgement on people. The work of Harry Stack Sullivan, Frieda Fromm-Reichmann, Harold Searles or R.D. Laing – all trained as psychiatrists and all of them rebels against the standard procedures – provided a way of working with people very different from the psychiatric model, which seemed to encourage a society to repress its sickness by making a clearly split off group the carriers of it. A psychiatrist in a mental hospital once joked to me, with some truth, when I commented on the number of carrier bags carried by many of the medicated patients around the hospital grounds, that they assessed the progress of the patient in terms of the reduction of the number of carrier bags. It is too often difficult to believe, however, when hearing the history of a life, that the "schizophrenic" was not suffering the effects of having been made, consciously and unconsciously, the carefully concealed carrier of the ills of the family.

For someone who felt his mind was going to pieces, to be put into the stressful situation of the psychiatric examination, even when the psychiatrist acquitted himself with kindness, the situation of the assessment procedure itself, can be 'an effective way to drive someone crazy, or more crazy.' (Laing, 1985, p 17). But if the accounting of bizarre experiences more or less guaranteed you a new label or a trip to the psychiatric ward, there is even more reason for a new group of people to be outraged about how their symptoms are being diagnosed. A doubly cruel sentence is being imposed on people who are the victims of the most appalling abuse by scientific-military experiments, and a totally uncomprehending society is indifferent to their evidence. For the development of a new class of weaponry now has the capability of entering the brain and mind and body of another person by technological means.

Harnessing neuroscience to military capability, this technology is the result of decades of research and experimentation, most particularly in the Soviet Union and the United States. (Welsh, 1997, 2000) We have failed to comprehend that the result of the technology that originated in the years of the arms race between the Soviet Union and the West, has resulted in using satellite technology not only for surveillance and communication systems but also to lock on to human beings, manipulating brain frequencies by directing laser beams, neural-particle beams, electro-magnetic radiation, sonar waves, radiofrequency radiation (RFR), soliton waves, torsion fields and by use of these or other energy fields which form the areas of study for astro-physics. Since the operations are characterised by secrecy, it seems inevitable that the methods that we do know about, that is, the exploitation of the ionosphere, our natural shield, are already outdated as we begin to grasp the implications of their use. The patents deriving from Bernard J. Eastlund's work provide the ability to put unprecedented amounts of power in the Earth's atmosphere at strategic locations and to maintain the power injection level, particularly if random pulsing is employed, in a manner far more precise and better controlled than accomplished by the prior art, the detonation of nuclear devices at various yields and various altitudes. (ref High Frequency Active Auroral Research Project, HAARP).

Some patents, now owned by Raytheon, describe how to make "nuclear sized explosions without radiation" and describe power beam systems, electromagnetic pulses and over-the-horizon detection systems. A more disturbing use is the system developed for manipulating and disturbing the human mental process using pulsed radio frequency radiation (RFR), and their use as a device for causing negative effects on human health and thinking. The victim, the innocent civilian target is locked on to, and unable to evade the menace by moving around. The beam is administered from space. The Haarp facility as military technology could be used to broadcast global mind-control, as a system for manipulating and disturbing the human mental process using pulsed radio frequency (RFR). The super-powerful radio waves are beamed to the ionosphere, heating those areas, thereby lifting them. The electromagnetic waves bounce back to the earth and penetrate human tissue.

Dr Igor Smirnov, of the Institute of Psycho-Correction in Moscow, says: "It is easily conceivable that some Russian 'Satan', or let's say Iranian – or any other 'Satan', as long as he owns the appropriate means and finances, can inject himself into every conceivable computer network, into every conceivable radio or television broadcast, with relative technological ease, even without disconnecting cables...and intercept the radio waves in the ether and modulate every conceivable suggestion into it. This is why such technology is rightfully feared." (German TV documentary, 1998).

If we were concerned before about diagnostic criteria being imposed according to the classification of *recognizable symptoms*, we have reason now to submit them to even harsher scrutiny. The development over the last decades since the Cold War arms race has included as a major strategic category, psycho-electronic weaponry, the ultimate aim of which is to enter the brain and mind. Unannounced, undebated and largely unacknowledged by scientists or by the governments who employ them – technology to *enter and control minds from a distance* has been unleashed upon us. The only witnesses who are speaking about this terrible technology with its appalling

implications for the future, are the victims themselves and those who are given the task of diagnosing mental illness are attempting to silence them by classifying their evidence and accounts as the symptoms of schizophrenia, while the dispensers of psychic mutilation and programmed pain continue with their work, aided and unopposed.

If it was always crucial, under the threat of psychiatric sectioning, to carefully screen out any sign of confused speech, negativity, coldness, suspicion, bizarre thoughts, sixth sense, telepathy, premonitions, but above all the sense that "others can feel my feelings, and that *someone seemed to be keeping up a running commentary on your thoughts and behaviour*," then reporting these to a psychiatrist, or anyone else for that matter who was not of a mind to believe that such things as mind-control could exist, would be the end of your claim to sanity and probably your freedom. For one of the salient characteristics of mind-control is the running commentary, which replicates so exactly, and surely not without design, the symptoms of schizophrenia. Part of the effort is to remind the victim that they are constantly under control or surveillance. Programmes vary, but common forms of reminders are electronic prods and nudges, body noises, twinges and cramps to all parts of the body, increasing heart beats, applying pressures to internal organs – all with a personally codified system of comments on thoughts and events, designed to create stress, panic and desperation. This is mind control at its most benign. There is reason to fear the use of beamed energy to deliver lethal assaults on humans, including cardiac arrest, and bleeding in the brain.

It is the government system of secrecy, which has facilitated this appalling prospect. There have been warning voices. "...the government secrecy system as a whole is among the most poisonous legacies of the Cold War ...the Cold War secrecy (which) also mandate(s) Active Deception...a security manual for special access programs authorizing contractors to employ 'cover stories to disguise their activities. The only condition is that cover stories must be believable.'" (Aftergood & Rosenberg, 1994; Bulletin of Atomic Scientist). Paranoia has been aided and abetted by government intelligence agencies.

In the United Kingdom the fortifications against any disturbing glimmer of awareness of such actual or potential outrages against human rights and social and political abuses seem to be cast in concrete. Complete with crenellations, ramparts and parapets, the stronghold of nescience reigns supreme. To borrow Her Majesty the Queen's recent observation: "There are forces at work of which we are not aware." One cannot say that there is no British Intelligence on the matter, as it is quite unfeasible that the existence of the technology is not classified information. Indeed it is a widely held belief that the women protesting against the presence of cruise missiles at Greenham Common were victims of electro-magnetic radiation at gigahertz frequency by directed energy weapons, and that their symptoms, including cancer, were consistent with such radiation effects as reported by Dr Robert Becker who has been a constantly warning voice against the perils of electro-magnetic radiation. The work of Allen Frey suggests that we should consider radiation effects as a grave hazard producing increased permeability of the blood-brain barrier, and weakening crucial defenses of the central nervous system against toxins. (Becker, 1985, p. 286). Dr Becker has written about nuclear magnetic resonance as a familiar tool in medicine known as magnetic resonance imaging or MRI. Calcium efflux is the result of cyclotronic resonance which latter can be explained thus: If a charged particle or ion is exposed to a steady magnetic field in space, it will begin to go into a circular or orbital, motion at right angles to the applied magnetic field. The speed with which it orbits will be determined by the ratio between the charge and the mass of the particle and by the strength of the magnetic field. (Becker, 1990,p.235) The implications of this for wide scale aggression by using a combination of radar based energy and the use of nuclear resonating are beyond the scope of the writer, but appear to be worth the very serious consideration of physicists in assessing how they might be used against human beings.

Amongst medical circles, however, it has so far not been possible for the writer to find a neuroscientist, neurologist or a psychiatrist, nor for that matter, a general medical practitioner, who acknowledges *even the potential* for technological manipulation of the nervous system as a problem requiring their professional interest. There has been exactly this response from some of England's most eminent practitioners of the legal profession, not surprisingly, because the information about such technology is not made available to them. They would refer anyone attempting to communicate mind- harassment as a psychiatric problem, ignoring the crime that is being committed.

The aim here is not to attempt a comprehensive history and development of the technology of mind control. These very considerable tasks – which have to be done under circumstances of the most extreme difficulty – have been addressed with clarity and courage by others, who live with constant harm and threats, not least of all contemptuous labelling. Their work can be readily accessed on the internet references given at the end of this paper. For a well-researched outline of the historical development of electro-magnetic technology the reader should refer to the timeline of dates and electromagnetic weapon development by Cheryl Welsh, president of Citizens against Human Rights Abuse. (Welsh 1997; 2001). There are at least one and a half thousand people worldwide who state they are being targeted. Mojmir Babacek, now domiciled in his native Czech Republic, after eight years of residence in the United States in the eighties, has made a painstakingly meticulous review of the technology, and continues his research. (Babacek 1998, 2002)

We are concerned here with reinforcing in the strongest possible terms:

- i) The need for such abuses to human rights and the threats to democracy to be called to consciousness, and without further delay.
- ii) To analyse the reasons why people might defend themselves from becoming conscious of the existence of such threats.
- iii) To address the urgent need for intelligence, imagination, and information – not to mention compassion – in dealing with the victims of persecution from this technology, and
- iv) To alert a sleeping society, to the imminent threats to their freedom from the threat from fascist and covert operations who have in all probability gained control of potentially lethal weaponry of the type we are describing.

It is necessary to emphasise that at present there is not even the means for victims to gain medical attention for the effects of radiation from this targeting. Denied the respect of credulity of being used as human guinea pigs, driven to suicide by the breakdown of their lives, they are treated as insane – at best regarded as 'sad cases'. Since the presence of a permanent 'other' in one's mind and body is by definition an act of the most intolerable cruelty, people who are forced to bear it but who refuse to be broken by it, have no other option than to turn themselves into activists, their lives consumed by the battle against such atrocities, their energies directed to alerting and informing the public of things they don't want to hear or understand about evil forces at work in their society.

It is necessary, at this point, to briefly outline a few – one might say the precious few – attempts by public servants to verify the existence and dangers inherent in this field:

- In January 1998, an annual public meeting of the French National Bioethics Committee was held in Paris. Its chairman, Jean-Pierre Changeux, a neuroscientist at the Institut Pasteur in Paris, told the meeting that "advances in cerebral imaging make the scope for invasion of privacy immense. Although the equipment needed is still highly specialized, it will become commonplace and capable of being used at a distance. That will open the way for abuses such as invasion of personal liberty, control of behaviour and

brainwashing. These are far from being science-fiction concerns...and constitute "a serious risk to society." ("Nature." Vol 391, 1998.

- In January 1999, the European Parliament passed a resolution where it calls "for an international convention introducing a global ban on all development and deployment of weapons which might enable any form of manipulation of human beings. It is our conviction that this ban can not be implemented without the global pressure of the informed general public on the governments. Our major objective is to get across to the general public the *real threat which these weapons represent for human rights and democracy and to apply pressure on the governments and parliaments around the world to enact legislation which would prohibit the use of these devices to both government and private organisations as well as individuals.*" (Plenary sessions/Europarlament, 1999)
- In October 2001, Congressman Dennis J. Kucinich introduced a bill to the House of Representatives which, it was hoped would be extremely important in the fight to expose and stop psycho-electronic mind control experimentation on involuntary, non-consensual citizens. The Bill was referred to the Committee on Science, and in addition to the Committee on Armed Services and International Relations. In the original bill a ban was sought on 'exotic weapons' including electronic, psychotronic or information weapons, chemtrails, particle beams, plasmas, electromagnetic radiation, extremely low frequency (ELF) or ultra low frequency (ULF) energy radiation, or mind control technologies. Despite the inclusion of a prohibition of the basing of weapons in space, and the use of weapons to destroy objects or damage objects in space, there is no mention in the revised bill of any of the aforementioned mind-invasive weaponry, nor of the use of satellite or radar or other energy based technology for deploying or developing technology designed for deployment against the minds of human beings. (Space Preservation Act, 2002)

In reviewing the development of the art of mind-invasive technology—there are a few outstanding achievements to note:

In 1969 Dr Jose Delgado, a Yale psychologist, published a book: "Physical Control of the Mind: Towards a Psychocivilized Society". In essence, he displayed in practical demonstrations how, by means of electrical stimulation of the brain which had been mapped out in its relations between different points and activities, functions and sensations, — by means of electrical stimulation, how **the rhythm of breathing and heartbeat could be changed**, as well as the function of most of the viscera, and gall bladder secretion. Frowning, opening and closing of eyes and mouth, chewing, yawning, sleep, dizziness, epileptic seizures in healthy persons were induced. The intensity of feelings could be controlled by turning the knob, which controlled the intensity of the electric current. He states at the end of his book the hope that the new power will remain limited to scientists or some charitable elite for the benefit of a "psychocivilized society."

In the 1980's the **neuromagnetometer** was developed which functions as an antenna and could monitor the patterns emerging from the brain. (In the seventies the scientists had discovered that electromagnetic pulses enabled the brain to be stimulated through the skull and other tissues, so there was no more need to implant electrodes in the brain). The antenna, combined with the computer, could localize the points in the brain where the brain events occur. The whole product is called the **magnetoencephalograph**.

In January 2000 the Lockheed Martin neuroengineer Dr John D. Norseen, was quoted (US News and World Report, 2000) as hoping to turn the **electrohypnoticalophone**, a mind reading machine, into science fact. Dr Norseen, a former Navy pilot, claims his interest in the brain stemmed from reading a Soviet book in the 1980's claiming that research on the mind would revolutionize the military and society at large. By a process of deciphering the brain's electrical activity, electromagnetic pulsations would trigger the release of the brain's own transmitters to fight off disease, enhance learning, or alter the mind's visual images, creating a 'synthetic reality'. By this process of **BioFusion**, (Lockheed Martin, 2000) information is placed in a database, and a **composite model of the brain** is created. By viewing a brain scan recorded by (functional) magnetic resonance imaging (fMRI) machine, scientists can tell what the person was doing at the time of recording — say reading or writing, or recognise emotions from love to hate. "If this research pans out", says Norseen, "you can begin to manipulate what someone is thinking even before they know it." But Norseen says he is 'agnostic' on the moral ramifications, that he's not a mad scientist — just a dedicated one. "The ethics don't concern me," he says, "but they should concern someone else."

The next big thing looks like being something which we might refer to as a **neurocomputer** but it need not resemble a laptop — it may be reducible to whatever size is convenient for use, such as a small mobile phone. Arising from a break-through and exploitation of PSI-phenomena, it may be modelled on the nervous-psyche activity of the brain — that is, as an unbalanced, unstable system of neurotransmitters and interacting neurones, the work having been derived from the creation of a copy of a living brain — accessed by chance, and ESP and worked on by design.

On receiving a communication from the writer on the feasibility of a machine being on the horizon which, based on the project of collecting electromagnetic waves emanating from the brain and transmitting them into another brain that would read a person's thoughts, or using the same procedure in order to impose somebody else's thoughts on another brain and in this way direct his actions — there was an unequivocal answer from IBM at executive level that there was no existing technology to create such a computer in the foreseeable future. This is at some variance with the locating of a patent numbered 03951134 on the Internet pages of IBM Intellectual Property Network for a device, described in the patent, as capable of picking up at a distance the brain waves of a person, process them by computer and emit correcting waves which will change the original brain waves. Similar letters addressed to each of the four top executives of Apple Inc., in four individual letters marked for their personal attention, produced absolutely no response. This included the ex- Vice President of the United States, Mr Al Gore, newly elected to the Board of Directors of Apple.

Enough people have been sufficiently concerned by the reports of victims of mind control abuse to organise The Geneva Forum, in 2002, held as a joint initiative of the Quaker United Nations Office, Geneva; the United Nations Institute for Disarmament Research; the International Committee of the Red cross, and the Human Rights Watch (USA), and Citizens against Human Rights Abuses (CAHRA); and the Programme for Strategic and International Security Studies, which was represented by the Professor and Senior Lecturer from the Department of Peace Studies at the University of Bradford.

In England, on May 25, 1995, the Guardian newspaper in the U.K. carried an article based on a report by Nic Lewer, the peace researcher from Bradford University, which listed "more than 30 different lines of research into 'new age weapons'..." "some of the research sounds even less rational. There are, according to Lewer, plans for 'pulsed microwave beams' to 'destroy enemy electronics, and separate plans for very-low-frequency sound beams to induce vomiting, bowel spasm, epileptic seizures and also crumble masonry." Further, the article states, "There are plans for 'mind control' with the use of 'psycho-correction messages' transmitted by subliminal audio and visual stimuli. There is also a plan for 'psychotronic weapons' — apparently the projection of consciousness to other locations — and another to use holographic projection to disseminate propaganda and misinformation." (Welsh, *Timeline*). Apart from this notable exception it is difficult to locate any public statement of the problem in the United Kingdom.

Unfortunately, the problem of credulity does not necessarily cease with frequent mention, as in the United States, in spite of the number of reported cases, there is still not sufficient public will to make strenuous protest against what is not only already happening, but against what will develop if left unchecked. It appears that the administration believes that it is necessary and justifiable, in the interests of national

security, to make experimental human sacrifices, to have regrettable casualties, for there to be collateral damage, to suffer losses in place of strife or war. This is, of course, totally incompatible with any claims to be a democratic nation which respects the values of human life and democracy, and such an administration which tutors its servants in the ways of such barbaric tortures must be completely condemned as uncivilised and hypocritical.

Disbelief as a Defence Mechanism

In the face of the widespread disbelief about mind-control, it seems worth analysing the basis of the mechanisms employed to maintain disbelief:

i) In the sixties, Soviet dissidents received a significant measure of sympathy and indignant protest from western democracies on account of their treatment, most notably the abuse of psychiatric methods of torture to which they were subjected. It is noteworthy that we seem to be able to access credulity, express feelings of indignant support when we can identify with victims, who share and support our own value system, and who, in this particular historical case, reinforced our own values, since they were protesting against a political system which also threatened us at that time. Psychologically, it is equally important to observe that support from a safe distance, and the benefits to the psyche of attacking a split-off 'bad father', the soviet authorities in this case, presents no threat to one's internal system; indeed it relieves internal pressures. On the other hand, recognizing and denouncing a similar offence makes very much greater psychic demands of us when it brings us into conflict with our own environment, our own security, our own reality. The defence against disillusion serves to suppress paranoia that our father figure, the president, the prime minister, our governments – might not be what they would like to be seen to be.

ii) The need to deposit destructive envy and bad feelings *elsewhere*, on account of the inability of the ego to acknowledge ownership of them – reinforces the usefulness of persons or groups, which will serve to contain those, disowned, projected feelings which arouse paranoid anxieties. The concepts of mind-invasion strike at the very heart of paranoid anxiety, causing considerable efforts to dislodge them from the psyche. The unconscious identification of madness with dirt or excrement is an important aspect of anal aggression, triggering projective identification as a defence.

iii) To lay oneself open to believing that a person is undergoing the experience of being invaded mentally and physically by an unseen manipulator requires very great efforts in the self to manage dread.

iv) The defence against the unknown finds expression in the split between theory and practice; between the scientist as innovator and the society who can make the moral decisions about his inventions; between fact and science fiction, the latter of which can present preposterous challenges to the imagination without undue threat, because it serves to reinforce a separation from the real.

v) Identification with the aggressor. Sadistic fantasies, unconscious and conscious, being transferred on to the aggressor and identified with, aid the repression of fear of passivity, or a dread of punishment. This mechanism acts to deny credulity to the victim who represents weakness. This is a common feature of satanic sects.

vi) The liberal humanist tradition which denies the worst destructive capacities of man in the effort to sustain the belief in the great continuity of cultural and scientific tradition; the fear, in one's own past development, of not being 'ongoing', can produce the psychic effect of reversal into the opposite to shield against aggressive feelings. This becomes then the exaggerated celebration of the 'new' as the affirmation of human genius which will ultimately be for the good of mankind, and which opposes warning voices about scientific advances as being pessimistic, unenlightened, unprogressive and Luddite. Strict adherence to this liberal position can act as overcompensation for a fear of envious spoiling of good possessions, i.e. cultural and intellectual goods.

vii) Denial by displacement is also employed to ignore the harmful aspects of technology. What may be harmful for the freedom and good of society can be masked and concealed by the distribution of new and entertaining novelties. The technology, which puts a camera down your gut for medical purposes, is also used to limit your freedom by surveillance. The purveyors of innovative technology come up with all sorts of new gadgets, which divert, entertain and feed the acquisitive needs of insatiable shoppers, and bolster the economy. The theme of 'Everything's up to date in Kansas City' only takes on a downside when individual experience – exploding breast implants, say – takes the gilt off the gingerbread. Out of every innovation for evil (i.e. designed for harming and destroying) some 'good' (i.e. public diversion or entertainment) can be promoted for profit or crowd-pleasing.

viii) Nasa is sending a spacecraft to Mars, or so we are told. They plan to trundle across the Martian surface searching for signs of water and life. We do not hear dissenting voices about its feasibility.

Why is it that, when a person accounts that their mind is being disrupted and they are being persecuted by an unseen method of invasive technology, that we cannot bring ourselves to believe them? Could it be that the horror involved in the empathic identification required brings the shutters down? Conversely, the shared experience of the blasting of objects into space brings with it the possibilities of shared potency or the relief that resonates in the unconscious of a massive projection or evacuation – a shared experience which is blessed in the name of man's scientific genius.

ix) The desire 'not to be taken in', not to be taken for a fool, provides one of the most powerful and common defence mechanism against credulity.

Power, Paranoia and Unhealthy Governments

The ability to be the bearer and container of great power without succumbing to the pressures of latent narcissistic psychoses is an important matter too little considered. The effect of holding power and the expectation and the need to be seen as capable of sustaining it, if not exercising it, encourages omnipotence of thought. In the wake of this, a narcissistic overvaluation of the subject's own mental processes may set in. In the effort to hold himself together as the possessor, container and executor of power, he (or indeed, she) may also, undergo a process of splitting which allows him, along with others, to bear enthralled witness of himself in this illustrious role. This may mean that the seat of authority is vacated, at least at times. The splitting process between the experiencing ego and the perceiving ego allows the powerful leader to alternate his perception of himself inside and outside, sometimes beside, himself. With the reinforcement of himself from others as his own narcissistic object, reality testing is constrained. In this last respect, he has much in common with the other powerful figure of the age, the movie star. or by those, in Freud's words, who are 'ruined by success.'

In a world, which is facing increasing disillusion about the gulf between the public platforms on which governments are elected, and the contingencies and pragmatics of retaining defence strategies and economic investments, the role of military and intelligence departments, with their respective tools of domination and covert infiltration, is increasingly alarming. Unaccountable to the public, protected from exposure and prosecution by their immunity, licensed to lie as well as to kill, it is in the hands of these agents that very grave threats to human rights and freedom lies. Empowered to carry out aggression through classified weapon experimentation which is undetectable, these men and women are also open to corruption from lucrative offers of financial reward from powerful and sinister groups who can utilize their skills, privileged knowledge and expertise for frankly criminal and fascist purposes.

Our information about the psychological profiles of those who are employed to practice surveillance on others is limited, but it is not difficult to imagine the effects on the personality that would ensue with the persistent practice of such an occupation, so constantly exposed to the perversions. One gains little snatches of insight here and there. In his book on CIA mind control research (Marks, 1988), John Marks quotes a CIA colleague's joke (always revealing for personality characteristics): "If you could find the natural radio frequency of a person's sphincter, you could make him run out of the room real fast." (One wonders if the same amusement is derived from the ability to apply, say infra-sound above 130 decibels, which is said to cause stoppage of the heart, according to one victim/activist from his readings of a report for the Russian Parliament.)

Left to themselves, these servants of the state may well feel exempt from the process of moral self-scrutiny, but the work must be dehumanising for the predator as well as the prey. It is probably true that the need to control their agents in the field was an incentive to develop the methods in use today. It is also an effectively brutalising training for persecuting others. Meanwhile the object, the prey, in a bid for not only for survival but also in a desperate effort to warn his or her fellows about what is going on, attempts to turn himself into a quantum physicist, a political researcher, a legal sleuth, an activist, a neurologist, a psychologist, a physiologist – his own doctor, since he cannot know what effects this freakish treatment might have on his body, let alone his mind. There are always new methods to try out which might prove useful in the search to find ways of disabling and destroying opponents – air injected into brains and lungs, lasers to strike down or blind, particle beams, sonar waves, or whatever combination of energies to direct, or destabilise or control.

Science and Scepticism

Scientists can be bought, not just by governments, but also by sinister and secret societies. Universities can be funded by governments to develop technology for unacceptably inhumane uses. The same people who deliver the weapons – perhaps respected scientists and academics – may cite the acceptable side of scientific discoveries, which have been developed by experimenting on unacknowledged, unfortunate people. In a cleaned up form, they are then possibly celebrated as a break-through in the understanding of the natural laws of the universe. It is not implausible that having delivered the technical means for destruction, the innovator and thinker goes on, wearing a different hat, to receive his (or her) Nobel Prize. There are scientists who have refused to continue to do work when they were approached by CIA and Soviet representatives. These are the real heroes of science.

In the power struggle, much lies at stake in being the first to gain control of ultimate mind-reading and mind-controlling technology. Like the nuclear bomb, common ownership would seem by any sane calculations to cancel out the advantage of possession, but there is always a race to be the first to possess the latest ultimate means of mass destruction. The most desirable form is one that can be directed at others without contaminating oneself in the process – one that can be undetected and neatly, economically and strategically delivered. We should be foolish to rule out secret organisations, seeing threat only from undemocratic countries and known terrorist groups.

As consumers in a world which is increasingly one in which shopping is the main leisure activity, we should concern ourselves to becoming alert to the ways in which human welfare may have been sacrificed to produce an awesome new gadget. It may be the cause for celebration for the 'innovator', but brought about as the result of plugging in or dialling up the living neuronal processes of an enforced experimentee. If we are concerned not to eat boiled eggs laid by battery hens, we might not regard it morally irrelevant to scrutinise the large corporations producing electronically innovative 'software.' We might also be wary about the origins of the sort of bland enticements of dating agencies who propose finding your ideal partner by matching up brain frequencies and 'bio-rhythms'.

We do not know enough about the background of such technology, nor how to evaluate it ethically. We do not know about its effects on the future, because we are not properly informed. If governments persist in concealing the extent of their weapon capability in the interests of defence, they are also leaving their citizens disempowered of the right to protest against their deployment. *More alarmingly, they are leaving their citizens exposed to their deployment by ruthless organisations whose concerns are exactly the opposite of democracy and human rights.*

Back in the United Kingdom

Meanwhile, back in England, the Director of the Oxford Centre for Cognitive Neuroscience, Professor Colin Blakemore, also the elective Chief Executive of the Medical Research Council writes to the author that he "... knows of no technology (not even in the wildest speculations of neuroscientists) for scanning and collecting 'neuronal data' at a distance." (Blakemore, 2003,) This certitude is at distinct variance with the fears of other scientists in Russia and the United States, and not least of all with the fears of the French neuroscientist, Jean-Pierre Changeux of the French National Bioethics Committee already quoted (see page 5). It is also very much at odds with the writing of Dr Michael Persinger from the Behavioural Neuroscience Laboratory at Laurentian University in Sudbury, Ontario, Canada. His article "On the Possibility of Directly Accessing Every Human Brain by Electromagnetic Induction of Algorithms" (1995), he describes the ways that individual differences among human brains can be overcome and comes to a conclusion about the technological possibilities of influencing a major part of the approximately six billion people on this planet without mediation through classical sensory modalities but by generating electromagnetic induction of fundamental algorithms in the atmosphere. Dr Persinger's work is referred to by Captain John Tyler whose work for the American Air Force and Aerospace programmes likens the human nervous system to a radio receiver. (1990)

Very recently the leading weekly cultural BBC radio review had as one of its guests, the eminent astro-physicist and astronomer royal, Sir Martin Rees, who has recently published a book, "Our Final Century", in which he makes a sober and reasoned case for the fifty-fifty chance that millions of people, probably in a 'third-world country' could be wiped out in the near future through biotechnology and bio-terrorism – "by error or malign release." He spoke of this devastation as possibly coming from small groups or cults, based in the United States. "...few individuals with the right technology to cause absolute mayhem." He also said that in this century, human nature is no longer a fixed commodity, that perhaps we should contemplate the possibility that humans would even have implants in the brain.

The other guests on this programme were both concerned with Shakespeare, one a theatre producer and the other a writer on Shakespeare, while his remaining guest was a young woman who had a website called "Spiked", the current theme of which was Panic Attack, that is to say, Attack on Panic. This guest vigorously opposed what she felt was the pessimism of Sir Martin, regarding his ideas as essentially eroding trust, and inducing panic. This reaction seems to typify one way of dealing with threat and anxiety, and demonstrates

the difficulty that a warning voice, even from a man of the academic distinction of Martin Rees, has in alerting people to that which they do not want to hear. This flight reaction was reinforced by the presenter who summed up the morning's discussion at the end of the programme with the words: "We have a moral! Less panic, more Shakespeare!"

The New Barbarism

Since access to a mind-reading machine will enable the operator to access the ideas of another person, we should prepare ourselves for a new world order in which ideas will be, as it were, up for grabs. We need not doubt that the contents of another's mind will be scooped up, scooped out, sorted through as if the event was a jumble sale. The legal profession would therefore be well advised to consider the laws on Intellectual Property very judiciously in order to acquit themselves with any degree of authenticity. We should accustom ourselves to the prospect of recognizing our work coming out of the mouth of another. The prospect of wide-scale fraud, and someone posturing in your stolen clothes will not be a pretty sight. The term "personal mind enhancement" is slipping in through the back door, to borrow a term used by the Co-Director of the Center for Cognitive Liberty and Ethics, and it is being done through technologically-induced mental co-ercion – mind raping and looting. In place of, or in addition to, cocaine, we may expect to see 'mind-enhanced' performances on 'live' television.

The brave new science of neuropsychiatry and brain mapping hopes to find very soon, with the fMRI scanner – this "brand new toy that scientists have got their hands on" – "the blob for love" and "the blob for guilt", (BBC Radio 4: All in the Mind, 5 March, 2003). Soon we will be able to order a brain scan for anyone whose behaviour strikes us as odd or bizarre, and the vicissitudes of a life need no longer trouble us in our diagnostic assessments. In his recent Reith Lectures for the BBC (2003), Professor Ramachandran, the celebrated neuroscientist from the La Jolla Institute in San Diego, California, has demonstrated for us many fascinating things that the brain can do. He has talked to us about personality disorders and shown that some patients, who have suffered brain damage from head injury, do not have the capacity to recognise their mothers. Others feel that they are dead. And indeed he has found brain lesions in these people. In what seems to be an enormous but effortless leap, the self-styled "kid in a candy store" is now hoping to prove that all schizophrenics, have damage to the right hemisphere of the brain, which results in the inability to distinguish between fantasy (sic) and reality. Since Professor Ramachandran speaks of schizophrenia in the same breath as denial of illness, or *agnosia*, it is not clear, and it would be interesting to know, whether the person with the head injury has been aware or unaware of the head injury. Also does the patient derive comfort and a better chance at reality testing when he is told of the lesion? Does he feel better when he has received the diagnosis? And what should the psychoanalysts – and the psychiatrists, – feel about all those years of treating people of whose head injuries they were absolutely unaware? Was this gross negligence? Were we absolutely deluded in perceiving recovery in a sizeable number of them?

It is, however, lamentable that a neuroscientist with a professed interest in understanding schizophrenia should seek to provide light relief to his audience by making jokes about schizophrenics being people who are "convinced that the CIA has implanted devices in their brain to control their thoughts and actions, or that aliens are controlling them." (Reith Lecture, No 5, 2003).

There is a new desire for **concretisation**. The search for meaning has been replaced by the need for hard proof. If it doesn't light up or add up it doesn't have validity. The physician of the mind has become a surgeon. "He found a lump as big as a grapefruit!"

Facing up to the Dread and Fear of the Uncanny

Freud believed that an exploration of the uncanny would be a major direction of exploration of the mind in this century. The fear of the uncanny has been with us for a very long time. The evil eye, or the terrifying double, or intruder, is a familiar theme in literature, notably of Joseph Conrad in *The Secret Sharer*, and Maupassant's short story, *Le Horla*. Freud's analysis of the uncanny led him back to the old animistic conception of the universe: "...it seems as if each one of us has been through a phase of individual development corresponding to the animistic phase in primitive men, that none of us has passed through it without preserving certain residues and traces of it which are still capable of manifesting themselves, and that everything which now strikes us as 'uncanny' fulfils the condition of touching those residues of animistic mental activity within us and bringing them to expression." (Freud: 1919. p.362)

The separation of birth, and the childhood fear of 'spooks in the night', also leave their traces in each and every one of us. The individual experience of being alone in one's mind – the solitary fate of man which has never been questioned before, and upon which the whole history of civilised nurture is based – is now assaulted head-on. Since growing up is largely synonymous with acceptance of one's aloneness, the effort to assuage it is the basis for compassion and protection of others; it is the matrix for the greatest good, that of ordinary human kindness, and is at the heart of the communicating power of great art. Even if we must all live and die alone, we can at least share this knowledge in acts of tenderness which atone for our lonely state. In times of loss and mental breakdown, the starkness of this aloneness is all too clear. The best of social and group constructiveness is an effort to allay the psychotic anxieties that lie at the base of every one of us, and which may be provoked under extreme enough conditions.

The calculated and technological entry into another person's mind is an act of monumental barbarism which obliterates– perhaps with the twiddling of a dial – the history and civilisation of man's mental development. It is more than an abuse of human rights, it is the destruction of meaning. For any one who is forced into the hell of living with an unseen mental rapist, the effort to stay sane is beyond the scope of tolerable endurance. The imaginative capacity of the ordinary mind cannot encompass the horror of it. We have attempted to come to terms with the experiments of the Nazis in concentration camps. We now have the prospect of systematic control authorised by men who issue instructions through satellite communications for the destruction of societies while they are driving new Jaguars and Mercedes, and going to the opera.

This is essentially about humiliation, and disempowerment. It is a manifestation of rage acted out by those who fear impotence with such dread, that their whole effort is directed into the emasculation and destruction of the terrifying rival of their unconscious fantasies. In this apocalypse of the mind the punitive figure wells up as if out of the bowels of the opera stage, and this phantasmagoria is acted out on a global scale. These men may be mad enough to believe they are creating a 'psychocivilised world order'. For anyone who has studied damaged children, it is more resonant of the re-enactment from the unconscious, reinforced by a life devoid of the capacity for empathic identification, of the obscenities of the abused and abusing child in the savage nursery. Other people – which were to them like Action Man toys to be dismembered, or Barbie Dolls to be obscenely defiled – become as meaningless in their humanity as pixillated dots on a screen.

Although forced entry into a mind is by definition obscene, an abbreviated assessment of the effects that mind-invaded people describe testifies to the perverted nature of the experiments. Bizarre noises are emitted from the body, a body known well enough by its owner to recognise the noises as extrinsic; air is pumped in and out of orifices as if by a bicycle pump. Gradually the repertoire is augmented – twinges and spasms to the eyes, nose, lips, strange tics, pains in the head, ringing in the ears, obstructions in the throat, pressure on the bowel and bladder causing incontinence; tingling in the fingers, feet, pressures on the heart, on breathing, dizziness, eye problems leading to cataracts; running eyes, running nose; speeding up of heart beats and the raising of pressure in the heart and chest; breathing and chest complaints leading to bronchitis and deterioration of the lungs; agonizing migraines; being woken up at night, sometimes with

terrifying jolts ; insomnia; intolerable levels of stress from the loss of one's privacy. This collection of assorted symptoms is a challenge to any medical practitioner to diagnose.

There are, more seriously, if the afore-going is characterised as non-lethal, the potential lethal effects since the capability of ultrasound and infra-sound to cause cardiac arrest, and brain lesions, paralysis and blindness, as well as blinding by laser beam, or inducing asphyxia by altering the frequencies which control breathing in the brain, epileptic seizure – all these and others may be at the fingertips of those who are developing them. And those who do choose to use them may be sitting with the weapon, which resembles, say, a compact mobile telephone, on the restaurant table next to the bottle of wine, or beside them at the swimming pool.

Finally – if the victims at this point in the new history of this mind-control, cannot yet prove their abuse, it must be asserted that, faced with the available information about technological development – it is certainly not possible for those seeking to evade such claims – to *disprove* them. To wait until the effects become widespread will be too late.

- For these and other reasons which this paper has attempted to address, we would call for an acknowledgement of such technology at a national and international level. Politicians, scientists and neurologists, neuroscientists, physicists and the legal profession should, without further delay, demand public debate on the existence and deployment of psychotronic technology; and for the declassification of information about such devices which abuse helpless people, and threaten democratic freedom.
- Victims' accounts of abuse should be admitted to public account, and the use of psycho-electronic weapons should be made illegal and criminal,
- The medical profession should be helped to recognise the symptoms of mind-control and psychotronic abuse, and intelligence about their deployment should be declassified so that this abuse can be seen to be what it is, and not interpreted automatically as an indication of mental illness.

If, in the present confusion and insecurity about the search for evidence of weapons of mass destruction, we conclude that failure to locate them – whatever the truth of the matter – encourages us to be generally complacent, then we shall be colluding with very dark forces at work if we conclude that a course of extreme vigilance signifies paranoia. For there may well be other weapons of mass destruction being developed and not so far from home; weapons which, being even more difficult to locate, are developed invisibly, unobstructed, unheeded in our midst, using human beings as test-beds. Like ESP, the methods being used on humans have not been detectable using conventional detection equipment. It is likely that the signals being used are part of a physics not known to scientists without the highest level of security clearance. To ignore the evidence of victims is to deny, perhaps with catastrophic results, the only evidence which might otherwise lead the defenders of freedom to becoming alert to the development of a fearful new methods of destruction. Manipulating terrorist groups and governments alike, these sinister and covert forces may well be very thankful for the professional derision of the victims, and for public ignorance.

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Redefining Mental Illness

JAN. 17, 2015

T. M. Luhrmann

TWO months ago, the British Psychological Society released a remarkable document entitled “Understanding Psychosis and Schizophrenia.” Its authors say that hearing voices and feeling paranoid are common experiences, and are often a reaction to trauma, abuse or deprivation: “Calling them symptoms of mental illness, psychosis or schizophrenia is only one way of thinking about them, with advantages and disadvantages.”

The report says that there is no strict dividing line between psychosis and normal experience: “Some people find it useful to think of themselves as having an illness. Others prefer to think of their problems as, for example, an aspect of their personality which sometimes gets them into trouble but which they would not want to be without.”

The report adds that antipsychotic medications are sometimes helpful, but that “there is no evidence that it corrects an underlying biological abnormality.” It then warns about the risk of taking these drugs for years.

And the report says that it is “vital” that those who suffer with distressing symptoms be given an opportunity to “talk in detail about their experiences and to make sense of what has happened to them” — and points out that mental health services rarely make such opportunities available.

This is a radically different vision of severe mental illness from the one held by most Americans, and indeed many American psychiatrists. Americans think of schizophrenia as a brain disorder that can be treated only with medication. Yet there is plenty of scientific evidence for the report’s claims.

Moreover, the perspective is surprisingly consonant — in some ways — with the new approach by our own National Institute of Mental Health, which funds much of the research on mental illness in this country. For decades, American psychiatric science took diagnosis to be fundamental. These categories — depression, schizophrenia, post-traumatic stress disorder — were assumed to represent biologically distinct diseases, and the goal of the research was to figure out the biology of the disease.

That didn’t pan out. In 2013, the institute’s director, Thomas R. Insel, announced that psychiatric science had failed to find unique biological mechanisms associated with specific diagnoses. What genetic underpinnings or neural circuits they had identified were mostly common across diagnostic groups. Diagnoses were neither particularly useful nor accurate for understanding the brain, and would no longer be used to guide research.

And so the institute has begun one of the most interesting and radical experiments in scientific research in years. It jettisoned a decades-long tradition of diagnosis-driven research, in which a scientist became, for example, a schizophrenia researcher. Under a program called Research Domain Criteria, all research must begin from a matrix of neuroscientific structures (genes, cells, circuits) that cut across behavioral, cognitive and social domains (acute fear, loss, arousal). To use an example from the program’s website, psychiatric researchers will no longer study people with anxiety; they will study fear circuitry.

Our current diagnostic system — the main achievement of the biomedical revolution in psychiatry — drew a sharp, clear line between those who were sick and those who were well, and that line was determined by science. The system started with the behavior of persons, and sorted them into types. That approach sank deep roots into our culture, possibly because sorting ourselves into different kinds of people comes naturally to us.

The institute is rejecting this system because it does not lead to useful research. It is starting afresh, with a focus on how the brain and its trillions of synaptic connections work. The British Psychological Society rejects the centrality of diagnosis for seemingly quite different reasons — among them, because defining people by a devastating label may not help them.

Both approaches recognize that mental illnesses are complex individual responses — less like hypothyroidism, in which you fall ill because your body does not secrete enough thyroid hormone, and more like metabolic syndrome, in

which a collection of unrelated risk factors (high blood pressure, body fat around the waist) increases your chance of heart disease.

The implications are that social experience plays a significant role in who becomes mentally ill, when they fall ill and how their illness unfolds. We should view illness as caused not only by brain deficits but also by abuse, deprivation and inequality, which alter the way brains behave. Illness thus requires social interventions, not just pharmacological ones.

ONE outcome of this rethinking could be that talk therapy will regain some of the importance it lost when the new diagnostic system was young. And we know how to do talk therapy. That doesn't rule out medication: while there may be problems with the long-term use of antipsychotics, many people find them useful when their symptoms are severe.

The rethinking comes at a time of disconcerting awareness that mental health problems are far more pervasive than we might have imagined. The World Health Organization estimates that one in four people will have an episode of mental illness in their lifetime. Mental and behavioral problems are the biggest single cause of disability on the planet. But in low- and middle-income countries, about four of five of those disabled by the illnesses do not receive treatment for them.

When the United Nations sets its new Sustainable Development Goals this spring, it should include mental illness, along with diseases like AIDS and malaria, as scourges to be combated. There is much we still do not know about mental illness, and much we can do to improve its care. But we know enough to do something, and to accept that knowing more and doing more should be a fundamental commitment.

Correction: January 25, 2015

An opinion article about mental illness last Sunday incorrectly referred to a group that recently issued a report on schizophrenia. It is the British Psychological Society, not the British Psychological Association.

T. M. Luhrmann is a contributing opinion writer and a professor of anthropology at Stanford.

A version of this op-ed appears in print on January 18, 2015, on page SR5 of the New York edition with the headline: Redefining Mental Illness.

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DEPARTMENT OF THE ARMY
UNITED STATES ARMY INTELLIGENCE AND SECURITY COMMAND
FREEDOM OF INFORMATION/PRIVACY OFFICE
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REPLY TO
ATTENTION OF:

DEC 13 2006

Freedom of Information/
Privacy Office

Mr. Donald Friedman
Confidential Legal Correspondence
1125 Third Street
Napa, California 94559-3015

Dear Mr. Friedman:

References:

a. Your Freedom of Information Act (FOIA) request dated May 25, 2006, to the Department of the Army, Freedom of Information/Privacy Act Division (DA FOIA/PA DIV), for all documents pertaining to the microwave auditory effect, microwave hearing effect, Frey effect, artificial telepathy, and/or any device/weapon which uses and/or causes such effect; and any covert or undisclosed use of hypnosis. On September 5, 2006, the DA FOIA/PA DIV referred a copy of your request to this office. Your request was received on September 11, 2006.

b. Our letter of September 13, 2006, informing you of the search for records at another element of our command and were unable to comply with the 20-day statutory time limit in processing your request.

As noted in our letter, the search has been completed with another element of this command and the record has been returned to this office for our review and direct response to you.

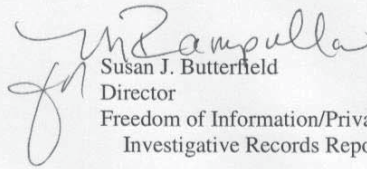
We have completed a mandatory declassification review in accordance with Executive Order (EO) 12958, as amended. As a result of this review, it has been determined that the Army information no longer warrants security classification protection and is releasable to you. A copy of the record is enclosed for your use.

Fees for processing your request are waived.

-2-

If you have any questions concerning this action, please feel free to contact this office at (301) 677-2308. Refer to case #614F-06.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. Butterfield".

Susan J. Butterfield
Director
Freedom of Information/Privacy Office
Investigative Records Repository

Enclosure

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Bioeffects of Selected Nonlethal Weapons(fn 1)

This addendum to the Nonlethal Technologies--Worldwide (NGIC-1147-101-98) study addresses in summary, some of the most often asked questions of nonlethal weapons technology, the physiological responses observed in clinical settings of the biophysical coupling and susceptibility of personnel to nonlethal effects weapons. These results identify and validate some aspects of maturing nonlethal technologies that may likely be encountered or used as nonlethal effectors in the future including:

- Laser and other light phenomena.
- Radiofrequency directed energy.
- Aural bioeffects.

The study of electromagnetic fields and their influence on biological systems is increasing rapidly. Much of this work is taking place because of health concerns. For example, increased concern has arisen regarding the effects of operator exposure to the electromagnetic fields associated with short-wave diathermy devices, high power microwave ovens, radar systems, magnetic resonance imaging units, etc. In addition, much concern has arisen about extremely low frequency (60 Hz power frequency) electric and magnetic fields that originate from high-voltage transmission lines, industrial equipment, and residential appliances. Both occupational and residential long-term exposure have been the focus of epidemiological studies. The studies have suggested possible adverse effects on human health (e.g., cancer, reproduction, etc.). Laboratory research is still being pursued to identify possible mechanisms of interaction. However, other than thermal heating for microwave frequencies, there is no yet agreed-upon mechanism of action. As a consequence, our knowledge base is developed entirely with phenomenological observations. Because of this fact, it is not possible to predict how nonthermal biological effects may differ from one exposure modality to another. It is especially difficult, because of the small data base for fast pulses, to predict biological effects that might be associated with high-power pulses of extremely short duration.

There is, however, a growing perception that microwave irradiation and exposure to low frequency fields can be involved in a wide range of biological interactions. Some investigators are even beginning to describe similarities between microwave irradiation and drugs regarding their effects on biological systems. For example, some suggest that power density and specific absorption rate of microwave irradiation may be thought of as analogous to the concentration of the injection solution and the dosage of drug

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administration, respectively. Clearly, the effects of microwaves on brain tissue, chemistry, and functions are complex and selective. Observations of body weight and behavior revealed that rats, exposed under certain conditions to microwaves, eat and drink less, have smaller body weight as a result of nonspecific stress mediated through the central nervous system and have decreased motor activity. It has been found that exposure of the animals to one modality of radiofrequency electromagnetic energy substantially decreases aggressive behavior during exposure. However, the opposite effects of microwaves, in increasing the mobility and aggression of animals, has also been shown for a different exposure modality. Recent published data implicates microwaves as a factor related to a deficit in spatial memory function. A similar type of effect was observed with exposure to a "resonance tuned" extremely low frequency magnetic field. Thus, the data base is replete with phenomenological observations of biological systems "affected" by exposure to electromagnetic energy. (The fact that a biological system responds to an external influence does not automatically nor easily translate to the suggestion of adverse influence on health.) The objective of the present study was to identify information from this developing understanding of electromagnetic effects on animal systems that could be coupled with human biological susceptibilities. Situations where the intersection of these two domains coexist provide possibilities for use in nonlethal applications.

Incapacitating Effect: Microwave Heating

Body heating to mimic a fever is the nature of the RF incapacitation. The objective is to provide heating in a very controlled way so that the body receives nearly uniform heating and no organs are damaged. Core temperatures approximately 41° C are considered to be adequate. At such temperature a considerably changed demeanor will take place with the individual. Most people, under fever conditions, become much less aggressive; some people may become more irritable. The subjective sensations produced by this buildup of heat are far more unpleasant than those accompanying fever. In hyperthermia all the effector processes are strained to the utmost, whereas in fever they are not. It is also possible that microwave hyperthermia (even with only a 1° C increase in brain temperature) may disrupt working memory, thus resulting in disorientation.

Biological Target/Normal Functions/Disease State

The temperature of warm-blooded (homeothermic) animals like the human remains practically unchanged although the surrounding temperature may vary considerably. The normal human body temperature recorded from the mouth is usually given as 37° C, with the rectal temperature one degree higher. Variation between individuals is typically between 35.8° C and 37.8° C orally. Variations also occur in any one individual throughout the day--a difference of 1.0° C or even 2.0° C occurring between the maximum in the late afternoon or early evening, and the minimum between 3 and 5 o'clock in the morning. Strenuous muscular exercise causes a temporary rise in body temperature that is proportional to the severity of the exercise; the level may go as high as 40.0° C.

Extreme heat stress, such that the body's capacity for heat loss is exceeded, causes a pathological increase in the temperature of the body. The subjective sensations produced by this buildup of heat are far more unpleasant than those accompanying fever. In hyperthermia all the effector processes are strained to the utmost, whereas in fevers they are not. The limiting temperature for survival, however, is the same in both cases--a body temperature of 42° C. For brief periods, people have been known to survive temperatures as high as 43 ° C.

In prolonged hyperthermia, with temperatures over 40° C to 41° C, the brain suffers severe damage that usually leads to death. Periods of hyperthermia are accompanied by cerebral edema that damage neurons, and the victim exhibits disorientation, delirium, and convulsions. This syndrome is popularly referred to as sunstroke, or heatstroke, depending on the circumstances. When the hyperthermia is prolonged, brain damage interferes with the central thermoregulatory mechanisms. In particular, sweat secretion ceases, so that the condition is further exacerbated.

Mechanism to Produce the Desired Effects

This concept builds on about 40 years of experience with the heating effects of microwaves. Numerous studies have been performed on animals to identify characteristics of importance to the understanding of energy deposition in animals. As a result of the physics, the relationship between the size of the animal and the wavelength of the radiofrequency energy is most important. In fact, the human exposure guidelines to radiofrequency radiation are designed around knowledge of the differential absorption as a function of frequency and body size. The challenge is to minimize the time to effect while causing no permanent injury to any organ or the total body and to optimize the equipment function. The orientation of the incident energy with respect to the orientation of the animal is also important.

In a study of the effect of RF radiation on body temperature in the Rhesus monkey, a frequency (225 MHz) is purposely chosen that deposits energy deep within the body of the animal. A dose rate of 10 W/kg caused the body temperature to increase to 42° C in a short time (10-15 min). To avoid irreversible adverse effects, the exposure was terminated when a temperature of 42° C was reached. A lower dose rate of 5 W/kg caused the temperature to increase to 41.5° C in less than 2 hours. The reversible nature of this response was demonstrated by the rapid drop in body temperature when RF exposure was terminated before a critical temperature of 42° C was reached. It is estimated for rats that the absorbed threshold convulsive dose lies between 22 and 35 J/g for exposure durations from less than a second to 15 minutes. For 30-minute exposure, the absorbed threshold dose for decrease in endurance is near 20 J/g, the threshold for work stoppage approximately 9 J/g, and the threshold for work perturbation ranges from 5 to 7 J/g. All of the above measures, except convulsions, are types of nonlethal incapacitation.

A rough estimate of the power required to heat a human for this technology is on the order of 10 W/kg given about 15 to 30 minutes of target activation. Actual power levels

depend on climatic factors, clothing, and other considerations that affect the heat loss from the individual concerned. A method for expressing dose rate in terms of body surface area (i.e., watts per square meter) rather than body mass (i.e., watts per kilogram) would permit a more reliable prediction of thermal effects across species. However, there are large uncertainties in the ability to extrapolate thermoregulatory effects in laboratory animals to those in human beings.

This technology is an adaptation of technology which has been around for many years. It is well known that microwaves can be used to heat objects. Not only is microwave technology used to cook foods, but it is also used as a directed source of heating in many industrial applications. It was even the subject of the "Pound Proposal" a few years ago in which the idea was to provide residential heating to people, not living space. Because of the apparently safe nature of body heating using microwave techniques, a variety of innovative uses of EM energy for human applications are being explored. The nonlethal application would embody a highly sophisticated microwave assembly that can be used to project microwaves in order to provide a controlled heating of persons. This controlled heating will raise the core temperature of the individuals to a predetermined level to mimic a high fever with the intent of gaining a psychological/capability edge on the enemy, while not inflicting deadly force. The concept of heating is straightforward; the challenge is to identify and produce the correct mix of frequencies and power levels needed to do the remote heating while not injuring specific organs in the individuals illuminated by the beam.

A variety of factors contribute to the attractiveness of this nonlethal technology. First, it is based on a well-known effect, heating. Every human is subject to the effects of heating; therefore, it would have a predictability rating of 100%. The time to onset can probably be engineered to between 15 and 30 minutes; however, timing is the subject of additional research to maximize heating while minimizing adverse effects of localized heating. The onset can be slow enough and/or of such frequency to be unrecognized by the person(s) being irradiated. Safety to innocents could be enhanced by the application and additional development of advanced sensor technologies. Incapacitation time could be extended to almost any desired period consistent with safety. (Given suitable R&D, temperature or other vital signs could be monitored remotely, and temperature could be maintained at a minimum effective point).

Time to Onset

The time to onset is a function of the power level being used. Carefully monitored uniform heating could probably take place in between 15 and 30 minutes. Time to onset could be reduced but with increased risk of adverse effects. Minimum time is dependent on the power level of the equipment and the efficiency of the aiming device.

Duration of Effect

Assuming that the heating is done carefully, reversal of elevated body temperature would begin as soon as the source of heat is removed.

Tunability

This concept is tunable in that any rate of heating, up to the maximum capacity of the source, may be obtained. Thus it is suitable for use in a gradual force or "rheostatic" approach. If the situation allows, and the source is sufficiently powerful, there is the possibility to use this technology in a lethal mode as well. Prolonged body temperature above 43° C is almost certain to result in permanent damage to the brain and death.

Distribution of Human Sensitivities to Desired Effects

No reason has been identified to suggest that anyone would be immune to this technology. Individuals with compromised thermoregulatory mechanisms would be susceptible with a lower incident energy density. This would include people with organic damage to the hypothalamus, the part of the brain that integrates the autonomic mechanisms which control heat loss as well as people with compromised somatic features of heat loss (e.g., respiration, water balance, etc.).

The technologies needed for the thermal technology concept are relatively well developed because of the known biophysical mechanism, the universal susceptibility of humans to the mechanism of heating, and because of a well developed technology base for the production of radiofrequency radiation. Because the human body is inhomogeneous, certain organs are, by virtue of their size and geometry, more easily coupled with one radiofrequency wavelength than another. Therefore, to avoid permanent damage to the suspect or to innocent bystanders, it may be necessary to vary the frequency to avoid localized heating and consequent damage to any organ. Additionally, it will be necessary to avoid the conditions thought to be associated with the induction of cataracts. Thus, while the technology of microwave heating in general is mature, adaptation as a nonlethal technology will require sophisticated biophysical calculations to identify the proper regimen of microwave frequencies and intensities; it will also be necessary to optimize existing hardware to meet the biophysical requirements.

Possible Influence on Subject(s)

If the technology functions approximately as envisioned, the targeted individual could be incapacitated within 15 to 30 minutes. Because this technology is focused on a relatively slow onset, it should only be used in situations where speed is not important. The very uncomfortable nature of a high body temperature may be useful in negotiations or possibly for controlling crowds. It would be equally useful on single persons or crowds. Evidence also indicates a disruption of working memory, thus disorientation may occur because of an inability to consolidate memory of the recent (minutes) past.

Technological Status of Generator/Aiming Device

Equipment needed to explore this concept in the laboratory is available today. Design and construction of the RF/microwave generator will depend on the constraints posed by the calculations, potential generation devices, and energy-directing structures. A variety of

options exist for both of these equipment needs. The use of advanced frequency and modulation-agile RF generation and amplification circuitry will be required to assess fully the frequency/power/time envelope of RF heating profiles required. Although much equipment is commercially available, it is likely that custom hardware and software will be necessary because available equipment has not been designed with the need for frequency/intensity variability, which will probably be needed for safety purposes. In addition, the design of antennas and other energy-directing structures will almost certainly involve unique configurations. Since this technology utilizes radiofrequency energy, it can be defeated by the use of shielding provided by conductive barriers like metal or metal screen.

Incapacitating Effect: Microwave Hearing

Microwave hearing is a phenomenon, described by human observers, as, the sensations of buzzing, ticking, hissing, or knocking sounds that originate within or immediately behind the head. There is no sound propagating through the air like normal sound. This technology in its crudest form could be used to distract individuals; if refined, it could also be used to communicate with hostages or hostage takers directly by Morse code or other message systems, possibly even by voice communication.

Biological Target/Normal Functions/Disease State

This technology makes use of a phenomenon first described in the literature over 30 years ago. Different types of sounds were heard depending on the particulars of the pulse characteristics. Various experiments were performed on humans and laboratory animals exploring the origin of this phenomenon. At this time, virtually all investigators who have studied the phenomenon now accept thermoelastic expansion of the brain, the pressure wave of which is received and processed by the cochlear microphonic system, to be the mechanism of acoustic perception of short pulses of RF energy. One study (in 1975) using human volunteers, identified the threshold energy of microwave-auditory responses in humans as a function of pulse width for 2450 MHz radiofrequency energy. It is also found that about 40 J/cm^2 incident energy density per pulse was required.

Mechanism to Produce the Desired Effects

After the phenomenon was discovered, several mechanisms were suggested to explain the hearing of pulsed RF fields. Thermoelastic expansion within the brain in response to RF pulses was first studied and demonstrated in inert materials and was proposed as the mechanism of hearing of pulsed RF fields. A pressure wave is generated in most solid and liquid materials by a pulse of RF energy--a pressure wave that is several orders of magnitude larger in amplitude than that resulting from radiation pressure or from electrostrictive forces. The characteristics of the field-induced cochlear microphonic in guinea pigs and cats, the relationship of pulse duration and threshold, physical measurements in water and in tissue-simulating materials, as well as numerous theoretical calculations--all point to thermoelastic expansion as the mechanism of the hearing phenomenon.

Scientists have determined the threshold energy level for human observers exposed to pulsed 2450-MHz fields (0.5-to 32 micron pulse widths). They found that, regardless of the peak of the power density and the pulse width, the per-pulse threshold for a normal subject is near 20 mJ/kg. The average elevation of brain temperature associated with a just-perceptible pulse was estimated to be about $5 \times 10^{-6}^{\circ}\text{C}$.

Time to Onset

The physical nature of this thermoelastic expansion dictates that the sounds are heard as the individual pulses are absorbed. Thus, the effect is immediate (within milliseconds). Humans have been exposed to RF energy that resulted in the production of sounds.

Duration of Effect

Microwave hearing lasts only as long as the exposure. There is no residual effect after cessation of RF energy.

Tunability

The phenomenon is tunable in that the characteristic sounds and intensities of those sounds depend on the characteristics of the RF energy as delivered. Because the frequency of the sound heard is dependent on the pulse characteristics of the RF energy, it seems possible that this technology could be developed to the point where words could be transmitted to be heard like the spoken word, except that it could only be heard within a person's head. In one experiment, communication of the words from one to ten using "speech modulated" microwave energy was successfully demonstrated. Microphones next to the person experiencing the voice could not pick up the sound. Additional development of this would open up a wide range of possibilities.

Distribution of Human Sensitivities to Desired Effects

Because the phenomenon acts directly on cochlear processes, the thermoelastic pressure waves produce sounds of varying frequency. Many of the tests run to evaluate the phenomenon produced sounds in the 5 kHz range and higher. Because humans are known to experience a wide range of hearing loss due to cochlear damage, it is possible that some people can hear RF induced sounds that others with high frequency hearing loss cannot. Thus, there is a likely range of sensitivity, primarily based on the type of pulse and the condition of the cochlea. Bilateral destruction of the cochlea has been demonstrated to abolish all RF-induced auditory stimuli.

Recovery/Safety

Humans have been subjected to this phenomenon for many years. The energy deposition required to produce this effect is so small that it is not considered hazardous experimentation when investigating responses at the just-perceptible levels.

Possible Influence on Subject(s)

Application of the microwave hearing technology could facilitate a private message transmission. It may be useful to provide a disruptive condition to a person not aware of the technology. Not only might it be disruptive to the sense of hearing, it could be psychologically devastating if one suddenly heard "voices within one's head."

Technological Status of Generator/Aiming Device

This technology requires no extrapolation to estimate its usefulness. Microwave energy can be applied at a distance, and the appropriate technology can be adapted from existing radar units. Aiming devices likewise are available but for special circumstances which require extreme specificity, there may be a need for additional development. Extreme directional specificity would be required to transmit a message to a single hostage surrounded by his captors. Signals can be transmitted long distances (hundreds of meters) using current technology. Longer distances and more sophisticated signal types will require more bulky equipment, but it seems possible to transmit some type of signals at closer ranges using man-portable equipment.

Range

The effective range could be hundreds of meters.

Incapacitating Effect: Disruption of Neural Control

The nature of the incapacitation is a rhythmic-activity synchronization of brain neurons that disrupts normal cortical control of the corticospinal and corticobulbar pathways; this disrupts normal functioning of the spinal motor neurons which control muscle contraction and body movements. Persons suffering from this condition lose voluntary control of their body. This synchronization may be accompanied by a sudden loss of consciousness and intense muscle spasms.

Biological Target/Normal Functions/Disease State

The normal function of the brain is to control all forms of behavior, voluntary control of body, and the homeostatic parameters of the organism. In normal conditions, all the brain structures, neuron populations, networks, and single units function with specific rhythmic activity depending on the incoming sensory information, information from mnemonic structures, and signals from visceral organs. Each single neuron provides specific processing of information it receives and forms a specific pattern of impulse firing as outgoing information. Synchronization of neuron activity is a natural mechanism of the brain function that uses such controlling processes as motivation, attention and memory (experience) in order to organize behavior. For example, motivational processes are considered as activating ascending signals that synchronize the neuron activity of specific brain structures and neuron networks; this activation/synchronization in turn activates specific forms of behavior such as sexual, aggressive, ingestive activities.

In normal functioning the degree of neuronal synchronization is highly controlled. From experiments that record the neuronal activity in different brain areas simultaneously in animals, it is known that correlation of spike activity between neurons (measured by the correlation level of synchronization) changes depending on the stage of behavior, motivation, attention, or activation of the memory processes. However, under some conditions, such as physical stress, heat shock, or strong emotional stress, the level of synchronization may become higher, involving nonspecific large populations of brain neurons and the synchronization may become uncontrollable.

Depending on at which frequency the synchronization rhythm occurs and how many neurons are involved, it may produce different physical effects; muscle weakness, involuntary muscle contractions, loss of consciousness, or intense (tonic) muscle spasms. The higher level of synchronization takes place in persons affected with epilepsy when they experience periodic seizures since they have a pathologic source (e.g., from injury to the brain) of rhythmic synchronization. Because the neurophysiological mechanisms of epileptiform synchronization are better documented, this incapacitating technology is described in terms of epileptogenesis.

The neurophysiological mechanisms active in epileptogenesis involve changes in membrane conductances and neurotransmitter alterations as they affect neuronal interaction. In the process of epileptogenesis, either some neurons are discharging too easily because of alterations in membrane conductances or there is a failure of inhibitory neurotransmission. The actual discharges have been recognized to result from a neuronal depolarization shift with electrical synchrony in cell populations related in part to changes in membrane conductances. The ionic basis and biochemical substrate of this activation have been areas of considerable study but still leave many questions unanswered. What are the basic cellular properties, present in normal cells and tissue, that could contribute to the generation of abnormal activity? What parts of the systems are low threshold and function as trigger elements?

One of the current hypotheses is involved with microcircuitry, particularly local synaptic interactions in neocortical and limbic system structures. In the hippocampus, the role of the trigger element has been long attributed to the CA3 pyramidal cells—a hypothesis based on the fact that spontaneous synchronous burst discharge can be established in CA3 neurons. Some studies describe an intrinsically bursting cell type in the neocortex that plays a role similar to that of CA3 cells in the hippocampus and that of deep cells in the pyriform cortex. The intrinsic nature of these cells appears to be an important contributor to the establishment of synchronized bursting in these regions. Another apparent requirement in such a population is for a certain degree of synaptic interaction among neurons, such that discharge of even one cell enlists the activity of its neighbors. Given the presence of these bursting cells and the occurrence of excitatory interactions among them in normal tissue, it may actually be the morphologic substrate for epileptiform discharges.

Another hypothesis has focused particularly on the role of N-methyl-D-aspartate (NMDA) receptors. Various factors regulate the efficacy of NMDA receptors: their

voltage-dependent blockade by magnesium and modulation by glycine and polyamines. For example, in the low magnesium model, spontaneous synchronous burst discharge in hippocampal pyramidal cell populations is sensitive to NMDA antagonists. That finding suggests that it is the opening of NMDA channels, by relieving the magnesium blockade, that facilitates epileptiform activity.

Significant attention in the literature is also being given to gamma-amino butyric acid (GABA) receptors for the potential role in control of excitability. Changes in GABA inhibitory efficacy can lead to important effects on the excitability of the system. GABAergic inhibitory post-synaptic potentials (IPSPs) have been shown to be quite labile in response to repetitive activation of cortical cell populations, as may occur during epileptiform discharge. Scientists have shown that even a small percentage change in GABA inhibition can have profound effects on neocortical epileptogenesis. These changes in GABAergic inhibition may be the key to an explanation of how repetitive discharge patterns give rise to ictal discharge. Further, there appears to be a significant increase in excitatory postsynaptic potential (EPSP) frequency prior to seizure initiation an observation that is consistent with loss of IPSP efficacy prior to ictal onset.

The above hypotheses describe different mechanisms of epileptogenesis, but it is quite possible that all of these mechanisms take place, and they reflect large variety of types of epileptic seizures. The common principle of the mechanisms proposed is the change of membrane properties (i.e., conductance, permeability etc.) of certain neurons which results in depolarization and burst discharging. Some factors (e.g., trauma) can affect these specific neurons and initiate synchrony for neurons that control internal communication and communication with various muscle systems not associated with vital functions (i.e., heart beating, breathing). High strength pulsed electric fields could also be such a factor.

Mechanism to Reproduce the Desired Effects

Application of electromagnetic pulses is also a conceptual nonlethal technology that uses electromagnetic energy to induce neural synchrony and disruption of voluntary muscle control. The effectiveness of this concept has not been demonstrated. However, from past work in evaluating the potential for electromagnetic pulse generators to affect humans, it is estimated that sufficiently strong internal fields can be generated within the brain to trigger neurons. Estimates are that 50 to 100 kV/m free field of very sharp pulses (~ 1 nS) are required to produce a cell membranous potential of approximately 2 V; this would probably be sufficient to trigger neurons or make them more susceptible to firing.

The electromagnetic pulse concept is one in which a very fast (nanosecond timeframe) high voltage (approximately 100 kV/m or greater) electromagnetic pulse is repeated at the alpha brain wave frequency (about 15 Hz). It is known that a similar frequency of pulsing light can trigger sensitive individuals (those with some degree of light-sensitivity epilepsy) into a seizure and it is thought that by using a method that could actually trigger nerve synapses directly with an electrical field, essentially 100% of individuals would be susceptible to seizure induction. The photic-induced seizure phenomenon was borne out

demonstrably on December 16, 1997 on Japanese television when hundreds of viewers of a popular cartoon show were treated, inadvertently, to photic seizure induction (figure 31). The photic-induced seizure is indirect in that the eye must receive and transmit the impulses which initially activate a portion of the brain associated with the optic nerve. From that point the excitability spreads to other portions of the brain. With the electromagnetic concept, excitation is directly on the brain, and all regions are excited concurrently. The onset of synchrony and disruption of muscular control is anticipated to be nearly instantaneous. Recovery times are expected to be consistent with, or more rapid than, that which is observed in epileptic seizures.

Time to Onset

No experimental evidence is available for this concept. However, light-induced seizures latency onset in photosensitive epileptics varies from 0.1 to about 10 seconds. Because of the fact that the electrical impulses triggered by light must spread to other parts of the brain, photic-induced seizures are expected to have a generally slower onset than neural synchrony induced by high-strength pulsed electric fields.

Duration of Effect

For epileptic individuals, the typical duration of a petit mal event or a psychomotor event is 1 minute or 2, possibly longer, while the duration of a grand mal seizure is 1 to 5 minutes. In a non-epileptic individual who is induced by electromagnetic means, the durations of the different events are expected to be roughly the same as the epileptic individual's events after the external excitation is removed.

Tunability

There are many degrees of epileptic seizure in diseased persons, and it seems reasonable that electromagnetic stimulation of neural synchrony might be tunable with regard to type and degree of bodily influence, depending on the parameters associated with the chosen stimulus. Because there are no actual data to build on, these statements must be considered tentative. It is known that in the study of photic-induced seizures, parameters can be varied so that the individual under study does not actually undergo a grand mal seizure. This knowledge gives confidence that the proposed technology would be tunable.

Distribution of Human Sensitivities to Desired Effects

It is anticipated that 100% of the population would be susceptible. The mechanism is one that could act on many individual neuronal cells concurrently and hence does not depend on spreading regions of electrical activity as in the disease state.

Possible Influence on Subjects(s)

If the technology functions approximately as envisioned, the targeted individual could be incapacitated very quickly. Because there have been no reported studies using the

conditions specified, experimental work is required to characterize onset time. Different types of technologies could be employed to influence wide areas or single individuals. Because this technology is considered to be tunable, the influence on subjects could vary from mild disruption of concentration to muscle spasms and loss of consciousness. The subject(s) would have varying degrees of voluntary control depending on the chosen degree of incapacitation.

Technological Status of Generator/Aiming Device

An electric field strength of roughly 100 Kv/m over a time period of 1 nanosecond is approximately the condition thought to be necessary to produce the desired effect when provided to an overall repetition rate of 15 Hz. Such a field may be developed using a radar-like, high-peak-power, pulsed source or an electromagnetic pulse generator operated at 15 Hz. These technologies exist today sufficient to evaluate the disabling concept. Power requirements are not high because the duty factor is so low. Aiming devices are currently available, but a high degree of directionality at long distances will require development. It may be necessary to provide bursts of these nanosecond pulses in order to stimulate the desired effect. As the duty time increases so does the average power requirement for power source. Because there were no open literature reports from which to make inferences, there is some uncertainty about the power levels required.

Range

The effective range could be hundreds of meters.

Defeat Capabilities/Limitations

Shielding can be provided by conductive barriers like metal or metal screen. There are a number of drugs that are capable of inducing convulsive seizures and others, like phenobarbital, diphenylhydantoin, trimethadione, 2-4 dinitrophenol, and acetazolamide, which are anticonvulsive. Anticonvulsive drugs are known to be helpful in reducing the effect of seizures in epileptic patients, but their ability to reduce the effect of the proposed technology is unknown (possibly no effect) but expected to be less than for photic-induced seizures.

Incapacitating Effect; Acoustic Energy

The nature of the incapacitation consists of severe pressure sensations, nystagmus (a spasmodic, involuntary motion of the eyes), and nausea caused by high intensities of 9140-155 dB). Nystagmus occurs when convection currents are produced (cupula movement) in the lateral ear canal. This cupula movement causes the eyes to move involuntarily; hence, the external world is interpreted as moving. The subject "sees" his surroundings turning round him and at the same time experiences a sensation of turning. Persons exposed to these levels of sound experience nausea.

Biological Target/Normal Functions/Disease State

The two lateral semicircular canals, one located in each inner ear, alert a person to the fact that his upright head is experiencing angular acceleration. Within the ampulla of the canal are several so called hair cells. The cilia of these cells protrude into the lumen of the ampulla where they are encased in a mass of jelly-like material (the cupula) which is attached to the opposite wall of the canal. As the head accelerates, the cilia are bent by an inertial force of the cupula and the viscous liquid in the canal lumen. The bending of the cilia excites hair cells which in turn excite afferent neurons; these then alert the brain that a change of position of the head has occurred. Similar events occur when the head stops moving. The result of a strong hair cell stimulus to the brain is a rapid eye movement, call nystagmus, a feeling of dizziness and disorientation, and a possibility of nausea and vomiting.

Normal hearing is in the range between the frequencies of 20,000 to 16,000 Hz with the optimal sensitivity for most people between the frequencies of 500 to 6000 Hz.

Mechanism to Produce the Desired Effects

Because the end organs for acoustic and vestibular perception are so closely related, intense acoustic stimulation can result in vestibular effects. The hypothesis is that the sound of normal intensity produces oscillations of the endolymph and perilymph, compensated for by oscillations of the round window. High intensity sound produces eddy currents, which are localized rotational fluid displacements. High intensity sound can also produce nonlinear displacement of the stapes, causing a volume displacement, the result of which can be a fluid void in the labyrinth. To fill the void, fluid may be displaced along the endolymphatic duct and/or block capillary pathways, which, in turn, could stimulate vestibular receptors. Stimulation of the vestibular receptors may lead to nausea and vomiting if the sound pressure level is high enough. Conclude that both eddy currents and volume displacement serve to stimulate vestibular receptors in humans, when exposed to high levels of noise.

One study found nystagmus in guinea pigs exposed to high levels of infrasound via stimulation of the vestibular receptors. However, the same lab was unable to produce nystagmus in human subjects at 5- and 10-second exposures to a pure tone at 135 dB, broadband engine noise, or a 100 Hz tone at 120 dB, pulsed three times/s or 2 minutes. The same research was unable to elicit nystagmus at levels up to 155 dB, and also equally unable to produce nystagmus using infrasound levels of 112-150 dB in guinea pigs, monkeys, and humans. However, research with audible components in the sound spectrum with guinea pigs and monkeys produced nystagmus. Other researchers report other vestibular effects in addition to nystagmus at the following thresholds: 125 dB from 200-500 Hz, 140 dB at 1000 Hz, and 155 dB at 200 Hz. Decrements in vestibular function occur consistently for broadband noise levels of 140 dB (with hearing protection).

Human subjects listened to very high levels of low-frequency noise and infrasound in the protected or unprotected modes. Two-minute duration as high as 140 to 155 dB produced a range of effects from mild discomfort to severe pressure sensations, nausea, gagging,

and giddiness. Effects also included blurred vision and visual field distortions in some exposure conditions. The nature and degree of all effects was dependent on both sound level and frequency with the most severe effects occurring in the audible frequency range (as opposed to infrasound), at levels above about 145 dB. The investigators found no temporary threshold shift (TTS) among their subjects, and the use of hearing protectors greatly alleviated the adverse effects.

Since the early days of jet-engine testing and maintenance, anecdotal evidence has appeared linking exposure to intense noise, with such complaints as dizziness, vertigo, nausea, and vomiting. As a result of siren noise at 140 dB, subjects consistently reported a feeling of being pushed sideways, usually away from the exposed ear, and one subject reported difficulty standing on one foot.

These effects were not as dramatic as from the jet-engine (broadband) noise at 140 dB. This research concludes that the threshold of labyrinthine dysfunction is about 135 to 140 dB and that these effects occur during, but not after, exposure.

Time to Onset

No times to onset of nausea or nystagmus were identified in the literature but is presumed to be relatively immediate based on effects to the labyrinth system occurring during, but not after, exposure to sound pressure levels of 135 to 140 dB.

Duration of Effect

The incapacitation lasts only as long as the incapacitating sound is present.

Tunability

Based on the data presented above, it is unclear whether the degree of nausea or nystagmus is tunable, but similar symptoms caused by other stimuli are variable in degree.

Distribution of Human Sensitivities to Desired Effects

It is most probable that all individuals will be susceptible to this stimulus with the exception of those with a disease or defect (i.e., deaf mutes) of some part or parts of the vestibular system. Data showed no consistent decrease in vestibulo-ocular reflexes with increased age.

Recovery/Safety

Normal subjects are likely to recover immediately and experience no or unmeasurable changes in hearing unless well known frequency-intensity-time factors are exceeded. This is based on studies which found no temporary threshold shift in hearing of subjects tested at low frequency. Occupational safety personnel generally recognize that 115

dB(A) is to be avoided and that 70 dB(A) is assumed safe. It is believed that the noise energy with predominating frequencies above 500 Hz have a greater potential for hearing loss than noise energy at lower frequencies. Occupational standards for noise state that a person may be exposed continuously for 8 hours to 90 dB(A) or 15 minutes to 115 dB(A).

Possible Influence on Subject(s)

Induction of nystagmus and nausea will have variable effects on individuals. Effects may be sufficiently incapacitation to allow offensive advantage; the perception of sickness may make a subject susceptible to persuasion. It would be difficult to target single individuals at the present level of sound directing technology. This technology may be better suited for groups of people.

Technological Status of Generator/Aiming Device

Sound generating technology is well developed but not highly portable. Aiming devices are poorly developed.

Range

Under normal circumstances the sound pressure level decreases 6 dB(A) when the distance from the source is doubled. For example if the sound is 100 dB(A) at 100 ft, at 200 ft the sound would be 94 dB(A). At very high sound levels, certain conditions may lead to nonlinear effects in propagation and greatly increase range accuracy.

Defeat Capabilities/Limitations

Negative effects of audible sound are greatly decreased if hearing protection is worn. High frequency sound is more easily blocked than low frequency sound due to wavelength effects.

Laser-Induced Biological Effects

There are three basic damage mechanisms associated with exposure to laser radiation: chemical, thermal, and mechanical or acoustic-mechanical.

The laser-induced, chemical alterations in irradiated tissue are referred to as photochemical damage. The likelihood of laser radiation in the blue-light portion of the electromagnetic spectrum (.380 to .550 microns) inducing photochemical reactions progressively decreases with increasing wavelength. Photochemical effects are not observed upon exposure to radiation with wavelengths exceeding .550 to .650 microns because the kinetic energy associated with these photons is insufficient to initiate a photochemical change.

On the other hand, the thermal effect is a primary mechanism for laser-induced injury. The extent of the injuries induced depends upon the wavelength and energy of the incident radiation, duration of exposure, and the nature of the exposed tissue and its absorption characteristics. Generally, this mechanism predominates in the visible and the near-infrared (.760 to 1.4 microns) portions of the electromagnetic spectrum and for almost all CW and pulsed exposures between 0.1 milliseconds and 1 to 5 seconds.

The third injury mechanism associated with exposure to laser radiation is the mechanical or acoustical-mechanical effect. The radiant energy is absorbed into the tissue and, as a result of rapid thermal expansion following a short (1 nanosecond to 0.1 millisecond) laser radiation pulse, a pressure wave is generated that may result in explosive tissue injury.

Generally, all three mechanisms operate concurrently in an irradiated animal. Thermal effects currently predominate for continuous wave (CW) lasers, while mechanical effects are of increased significance for pulsed-mode lasers. With even higher power, one must also consider nonlinear phenomena such as multiphoton absorption and electromagnetic field effects.

The organs most susceptible to external laser radiation are the skin and eyes. The severity of injury is affected by the nature of the target, the energy density delivered to the target, the frequency and power of the laser, atmospheric attenuation of the beam, and the use of filtering or amplifying optics by the target, etc.

The primary effect on the skin is thermal damage (burns). The severity varies from slight erythema or reddening to severe blistering or charring, depending on such factors as total energy deposition, skin pigmentation, and the tissue's ability to dissipate heat.

The eye is particularly susceptible to intense pulse of laser radiation because of its unique sensitivity to light. The focusing effect is similar to that of a magnifying lens, which focuses the energy on a particular spot. Since the cornea and lens of the eye amplify the intensity of the light incident upon the retina, the retina is extremely sensitive to visible and near-infrared light, and damage to the retina may result in temporary or permanent loss of visual acuity. Laser eye injuries vary according to incident power, spot size, beam angle, temporal mode (CW or pulsed), and pulse repetition frequency. Reported effects include corneal lesions, burns, cataracts, and retinal lesions.

Some high-power lasers can cause antipersonnel effects by the deposition of thermal energy. These lasers must operate at a wavelength that is readily absorbed by the skin or the cornea. These generally include the far- and mid-IR regions (10 to 12 microns and 3 to 5 microns) as well as the ultraviolet region (<0.4 microns). However, ultraviolet wavelengths generally do not propagate well in the atmosphere, so the primary threat wavelengths to be considered are between 3 and 12 microns. Although relatively modest amounts of far-IR laser power are required to produce superficial burns on the skin at short ranges, and efforts to design rheostatically lethal laser weapons are on going.

Nonlethal blinding laser weapons generally use collimated beams with very low beam divergence, and the energy contained in the beam diminishes relatively slowly over great distances. Imaging systems such as eyes and EO vision systems have focusing optics that bring the incident plane wave of light to focus at the sensor plane. This results in a high optical gain (greater than 100,000 for eyes), which makes the associated sensor vulnerable to relatively low fluences of laser energy.

The effects of lasers on eyes are threefold:

- Dazzling or induced glare.
- Flashblinding or loss of night adaptation.
- Permanent or semipermanent blinding.

The severity of laser eye injuries varies according to the incident power, spot size, beam angle, pupil diameter (ambient light conditions), temporal mode (CW or pulsed), and PRF of the laser. Reported effects include corneal burns, cataracts (a permanent cloudiness of the lens), and retinal burns and perforations. Low-energy laser weapons are capable of causing the latter.

Exposure to relatively low laser energies can produce temporary changes in the ability to see without producing permanent injury. Exposure to laser light can produce an effect called glare or dazzle, which is similar to the temporary loss of vision experience when viewing the headlights of an oncoming car. The visual effects last only as long as the light is present in the field of view (FOV). At slightly higher energy exposures, the same laser radiation can saturate or flashblind the photoreceptor cells, resulting in after images that fade with time after exposure. Only visible radiation will induce veiling glare or after images; near-IR radiation will not produce these effects even though the radiant energy reaches the photoreceptor cells. Flashblindness and dazzle, while not permanent injuries, can cause discomfort and temporary loss of vision. Some studies have shown that dazzle and flashblindness can seriously impact mission performance, especially in highly visual tasks such as piloting an aircraft or aiming.

Blinding is the permanent or semipermanent loss of visual acuity. The effect can last from several hours onward and generally is evidenced by a dark spot in the field of vision. This spot is called a scotoma. The impact of the scotoma on visual acuity will vary with the size and position of the injury. Human vision is greatly affected when the laser damage is to the central vision area of the retina called the fovea. Nonfoveal laser damage may be less severe or even go unnoticed because it affects only the peripheral vision. The most serious retinal injuries occur when the incident light is so intense that a perforation in the retina is formed, resulting in a hemorrhage into either the subretinal layer or, in the most severe cases, the vitreous humor of the eye. Less severe exposures result in lesions on the retina.

Footnote:

1-(U) This appendix is classified FOR OFFICIAL USE ONLY in its entirety.

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RESOLUTION NO. 51-15

**RESOLUTION OF THE COUNCIL OF THE CITY OF RICHMOND, CALIFORNIA IN
SUPPORT OF THE SPACE PRESERVATION ACT AND THE SPACE
PRESERVATION TREATY TO PERMANENTLY BAN SPACE-BASED WEAPONS**

WHEREAS, the Space Preservation Act and the companion Space Preservation Treaty has established a permanent ban on all space-based weapons, on the use of weapons to destroy or damage objects or persons from or that are in orbit; and the permanent termination of research and development, testing, manufacturing, production and deployment of all space-based weapons; and

WHEREAS, the Space Preservation Act, companion to the Space Preservation Treaty, introduced by U.S. Congressmen Dennis Kucinich (D-Ohio), requires the U.S. President to continue enforcement of banning space-based weapons and the use of weapons to destroy or damage persons or objects that are in or from orbit; and

WHEREAS, the Space Preservation Treaty has established an outer space peacekeeping agency to monitor outer space and enforce the permanent ban of space-based weapons. In addition, this legislation serves as a safeguard for targeted individuals who claim to be under assault from weaponry that should be outlawed by the Space Preservation Act.

WHEREAS, the well-being of all residents is of the utmost importance to the City of Richmond.

NOW THEREFORE BE IT RESOLVED that the City Council of the City of Richmond hereby supports the Space Preservation Act and companion Space Preservation Treaty, to ensure that individuals will not be targets of space-based weapons

I CERTIFY that the foregoing resolution was adopted at a regular meeting of the City Council on May 19, 2015 by the following vote:

AYES: Councilmembers Bates, Beckles, Martinez, McLaughlin, and Vice Mayor Myrick.

NOES: Councilmember Pimplé and Mayor Butt.

ABSTENTIONS: None.

ABSENT: None.

PAMELA CHRISTIAN
CLERK OF THE CITY OF RICHMOND
(SEAL)

Approved:

TOM BUTT
Mayor

Approved as to form:

BRUCE GOODMILLER
City Attorney

State of California }
County of Contra Costa } : ss.
City of Richmond }

I certify that the foregoing is a true copy of **Resolution No. 51-15**, finally passed and adopted by the City Council of the City of Richmond at a regular meeting held on May 19, 2015.


Pamela Christian, City Clerk of the City of Richmond

MICROWAVE BIOEFFECT CONGRUENCE WITH SCHIZOPHRENIA

John J. McMurtrey M. S.,^[a] Copyright 2002, 10 Apr. 2005

Co-authorship is negotiable towards professional publication in an NLM indexed journal, Email- Johnmcmurt@aol.com

Donations toward future research are gratefully appreciated at <http://www.slavery.org.uk/FutureResearch.htm>

ABSTRACT

The substantiation for microwave voice transmission development, which can be isolated to an individual, prompts review of the correlation between microwave bioeffects and schizophrenia. These correlations are extensive. Studies of both conditions report short-term and spatial memory deficit, time estimation changes, deficits in sequencing, coordination deficit, numerous electrophysiologic changes, startle decrease, neurotransmitter changes, hormone alterations, immune alterations, mitochondria deficits, lipid phosphorylation decrease, lipid peroxidation, deleterious histologic change in disease reduced brain areas, activation of hallucination involved brain areas, and ocular disease. Schizophrenia findings correlate with microwave bioeffects so extensively as to indicate a congruence, and appear to implicate a microwave involvement with enough patients to be remarkable in study results. The development of methods to exclude microwave means in psychosis is imperative, and research is proposed.

INTRODUCTION

Remote microwave induced sound ^[1] ^[2] ^[3] and internal voice technology has long been discovered, ^[4] developed, ^[5] ^[6] detailed in patents, ^[7] ^[8] ^[9] ^[10] with weapons applications described. ^[11] ^[12] ^[13] ^[14] That such technology can be applied remotely and coupled to target tracking technology ^[15] has implications for patients who, by virtue of voice transmission complaint and other symptoms, are diagnosed with various mental disorders. ^[16] Auditory hallucination is most prevalent in schizophrenia, which features in 60% of cases. ^[17] ^[18] A frequent patient understanding of the origin of voices is by remote transmission, though the very concept is considered delusional, ^[19] and often the diagnosis is psychosis of varying severity depending on functional ability, ^[20] without any investigation of described internal voice capabilities.

The substantiation of microwave voice transmission development suggests examination of any microwave bioeffect correlation with schizophrenia findings. The hypothesis tested was that perhaps some discrepant schizophrenia study results could differentiate patients subjected to technological assault. Unfortunately, little differentiation was evident, because the correlations appear too extensive, as presented in overview Table I. Unless otherwise noted, the microwave exposure effects examined are at low intensity, and are expressed in text parenthesis in terms of existing exposure standards. ^[21] ^[b] Since most of the observed correlations are close to microwave exposure standards, the possibility of an environmental microwave association with schizophrenia is considered.

Cognitive Function

Schizophrenics are particularly impaired in memory. ^[22], ^[23] Pulsed radar exposed Latvian children are deficient in short term memory compared to unexposed children. ^[24] Rats exposed to microwaves during gestation exhibit conditioned avoidance acquisition deficit as adults (at 1.61 X US occup. std.). ^[25] Adult rat microwave exposure yields avoidance conditioning deficits (at 31% of US occup. std. & 1.75 X ICNIRP ^[c] pop. std.), ^[26] ^[27] and there is some mention of 'retrograde amnesia' with such conditioning (at 63% of US pop. std.). ^[28] ^[29] Schizophrenic 'working memory' is considered central to many schizophrenic symptoms. ^[30] Schizophrenia deficits are in multiple areas of working memory, and the disorder exhibits deficits specifically in spatial working memory. ^[31] ^[32] ^[33] ^[34] Rat spatial 'working memory' on microwave exposure is deficient for performance in a water maze, (1.2 X US pop. std.) ^[35] ^[36] and in the 12 arm radial maze (60% of US pop. std.), ^[37] ^[38] but apparently not when distal cues are present for radial mazes, ^[39] ^[40] which are preferred in rodents. ^[41] ^[42]

Schizophrenia time estimation is altered with overestimation of short time intervals. ^[43] ^[44] ^[45] ^[46] Microwave exposed rats, when trained on inter-response time reinforcements reflect the same direction of deficit by increased total lever presses (at 31% of US occup. std. & 1.75 X ICNIRP pop. std.), ²⁵ ²⁶ shorter inter-response times (62% of US occup. std.), ^[47] which are even greater for pulsed microwaves (1.1 X US occup. std.). ^[48] A rat time estimation task on microwave pulsation indicated change in discriminating stimulus duration, increased time to complete tasks, and increased the amount of non-response (at 90% of ICNIRP pop. std.). ^[49] The authors suggest an effect on the animal's internal clock.

Schizophrenia patients exhibit deficits in memory for temporal order. ^[50] ^[51] ^[52] ^[53] Microwave exposed rats with simple response sequence conditioning (½ to 1.6 X US occup. std.) ^[54] ^[55] ^[56] ^[57] ^[58] exhibit analogous sequencing deficits. In humans, the order threshold of discriminating the ear of first tone presentation as succeeded by a tone separated by

decreasing intervals to the other ear, increases after 50 minutes cell phone exposure, while the threshold decreases with no exposure rest. [\[59\]](#)

The hippocampus has general importance to memory, [\[60\]](#) while sub serving spatial, temporal, and sequence memory. [\[61\]](#) In rodents the hippocampus is one of the most responsive brain regions to microwave exposure (at US pop. std. to ½ US occup. std.), [\[62\]](#) [\[63\]](#) and microwave induced histologic damage is observed (at ¼ ICNIRP pop. std. to 1.8 X US occup. std.). [\[64\]](#) [\[65\]](#) [\[66\]](#) Some schizophrenics have anti-hippocampal antibodies, [\[67\]](#) and

Table I

SCHIZOPHRENIA SIGN/SYMPTOM CORRELATION WITH MICROWAVE BIOEFFECTS

Cognitive/Physiologic Parameter	Schizophrenia Sign/Symptom	Microwave Bioeffect
Cognitive Function		
Memory Deficit	Deficits in Memory and Working Memory	Child Short Term Memory Deficit, Rat Conditioned Avoidance and Spatial Memory Deficits
Time Estimation	Overestimation of Short Intervals	Rat Shortened Inter-Response Times and Increased Responses in Time Estimation Tasks
Temporal Order	Temporal Order Memory Deficits	Human Decrease in Temporal Order Discrimination, Rat Response Sequencing Deficits
Startle Response	Decreased in Some Patients	Decreased in Animals
Coordination/Balance	Decreased Coordination and Balance	Decreased Child Coordination, Rat Decrease in Coordination and/or Balance
Electrophysiology		
Contingent Negative Variation	Decreased in Patients	Decreased on Human Cell Phone Exposure
Event Related Auditory Response	Decreased in Patients	Decreased in Animals, Component Decrease in Human Cell Phone Exposure
EEG Delta Waves	Increased in Patients	Increased in Humans and Animals
EEG Beta Waves	Increased in Patients	Increased in Humans and Rats

TABLE I, continued

SCHIZOPHRENIA SIGN/SYMPTOM CORRELATION WITH MICROWAVE BIOEFFECTS

Physiologic Parameter	Schizophrenia Sign/Symptom	Microwave Bioeffect
Neurotransmitters		

Dopamine	Indicated Decreased in Negative Symptom Schizophrenia	Indicated Decreased Based on Extensive Evidence
Serotonin	Indicated Decreased in Patients Based on Numerous Studies	Found Decreased in Rats
γ -Aminobutyric Acid	Decreased Uptake & Release in Schizophrenia Synaptosomes	Decreased Receptor Specific Binding
Acetylcholine	α 7-nicotinic Receptor Decrease in Some Brain Areas Consistent with Acetylcholine Decrease	Decreased Rat Acetylcholine Release, and Precursor Uptake in Same Brain Areas
Hormones		
Corticosteroids	ACTH, Cortisol, and Corticosterone Reported Increased	Adrenal Depletion with ACTH, Cortisol, and Corticosterone Increase Reported
Melatonin	Decrease Reported in Some Patients	Decreased on Human Cell Phone and EMF Exposure
Mitochondria	Decreased Number in Schizophrenia Brain	Deleterious Changes with Decreased ATP, Creatine Phosphate, and Marker Enzymes
Immunology		
Autoimmunity	Suggested from Autoantibody Levels and Autoimmune Disease Incidence	Reported Induced and Stimulated
Tumor Necrosis Factor	Reported Increased	Numerous Reports of Increase in Animals
B Lymphocytes	Balance of Evidence Shows Increase in Some Patients	Increased in Mouse Spleen with Genetic Control

Table I, continued.

SCHIZOPHRENIA SIGN/SYMPTOM CORRELATION WITH MICROWAVE BIOEFFECTS

Physiologic Parameter	Schizophrenia Sign/Symptom	Microwave Bioeffect
Lipids		
Phosphorylation	Decreased on Magnetic Resonance Spectroscopy	Decreased P ³² Lipid Incorporation
Peroxidation	Increase in Patients	Increased <u>in vitro</u> and in Rats
Blood-Brain Barrier	Suggested Impaired in Patients	Reported Decreased in Numerous Studies
Anatomy & Histology		
Hippocampus	Hippocampal-amagdala Complex Volume Reduced in Most Studies	Degenerative Hippocampus Histology Reported

Thalamus	Volume Reduction Observed in Many Studies	Degenerative Histology Reported
Cerebellum	Changes Observed in Many Studies	Degenerative Histology Reported
Cortex	Volume Reductions Observed in Frontal and Parietal Cortex by Many Studies	Several Reports of Degenerative Unspecified Cortex Histology
Metabolic Activation	Hallucination Activates Temporal Lobe, and Thalamus with Collicular Activation Found in Some Studies	Animal Activation of Temporal Lobe, Thalamus, and Inferior Colliculus on Hearing Effect Pulsed Microwaves
Ocular Disease		
Cataract	Subcapsular Cataract Reported Without Association to Medication	Known Cause of Subcapsular Cataract
Retinopathy	Associated with Widely Prescribed Anti-Psychotics	Associated with Occupational Exposure and Experimentally Produced
Voice Transmission	Hallucination Most Common Symptom	Voice Transmission Affirmed

the same hippocampus CA1 region that is volume decreased in schizophrenia, [68] on microwave exposure shows altered neuronal activity in *in vitro* slices from rats, [69] as well as decreased acetylcholine release in *in vivo* rats (1/2 US occup. std.). [70] Mouse hippocampus mitochondrial activity is indicated decreased on microwave exposure (1/4 US pop. std.). [71] Although not actually affecting performance, cell phones are reported to affect a magnetoencephalographic (MEG) component of verbal memory encoding, suggesting interference. [72] Multiple human case reports of memory difficulty, with other neurasthenic complaints exist on excess microwave exposure. [73] [74] [75] Microwave exposed rats with avoidance conditioning, exhibit changes in emotion and integrative function [76] from which parallels to schizophrenia can be drawn. Accidental and/or occupational 1-10 GHz excess radar exposure exhibits frontal lobe neuropsychiatric symptoms. [77]

Startle Response

Some schizophrenics have little or no startle response. [78] Microwave exposed rats exhibit decreased startle under both continuous wave [79] and pulsed [80] [81] conditions (1.2 X US occup. std.) with the latter decreasing startle in mice. [82] Pre-natal rat exposure decreases startle in females (1.2 X US occup. std.). [83] Some schizophrenics are hypo- or non-responders to orienting responses [84] and normally evoked electrodermal activity. [85] Microwave occupational exposure inhibits galvanic skin response. [86] Rats also fight less on microwave exposure (6% & 23% of US pop. std.), [87] [88] will avoid hearing effect pulsed microwaves, [89] and mice decrease exposure by their orientation in a field. [90]

Coordination, Balance, and Exercise Tolerance

Schizophrenics have decreased ability in coordination tasks, and more instability in balance. [91] [92] [93] [94] Latvian children exposed to pulsed radar have less motor competence than unexposed children. ²⁴ Microwave exposed rats show degradation of motor coordination and/or balance (at 21% of US pop. std.). [95]

High peak power pulsed microwave 25 minute exposures decreased rat treadmill running by about one-third. [96] A German abstract states schizophrenics could only achieve one-third of the aerobic-anaerobic threshold for untrained controls. [97] Schizophrenics have shown abnormal thermoregulation on exercise with greater increases in core temperature. [98] [99]

Electrophysiology

An electrophysiologic indicator of 'working memory', contingent negative variation (CNV) [100] is decreased in schizophrenia, [101] [102] [103] which is reported to correlate to ratings for negative symptoms of affective flattening and avolition-apathy. [104] Cell phone radiation also decreases human CNV. [105] [106] The test involves a warning stimulus and an imperative stimulus with the intervening evoked waveform representative of sensory and motor adjustment prior to expected action.

Electrophysiologic auditory event related P300 and antecedents are reduced in some schizophrenics, [107] [108] with increased latency indicated. [109] [110] Decreased auditory event response is observed during hallucination in magnetoencephalographic (MEG) [111] and functional magnetic resonance imaging [112] studies, which resembles the interfering sound response. [113] Like hallucination or outside sound, microwave hearing exposure decreases cortical auditory evoked potential amplitudes with increased latency in rats, rabbits, (less than US occup. std.) [114] and cats. [115] Schizophrenia auditory P300 reduction is related to deleterious signs and poor prognosis. [116] The human N100 amplitude is decreased on GSM cell phone exposure, [117] [118] which is also decreased in schizophrenia [119] [120] [121] with the reduction correlating to withdrawal-retardation scores, [122] and paranoid diagnosis. [123]

Hearing effect pulsed microwaves evoke brain responses similar to auditory stimuli. [124] [125] [126] Radio frequency exposure increases human hearing threshold for auditory tones. [127] Sound also decreases the brain stem microwave hearing response. [128]

Auditory brain stem responses (ABR) in schizophrenics having hallucination, [129] [130] [131] never medicated hospitalization, [132] marked personality deterioration, [133] and negative symptoms [134] involve abnormalities of increased peak latency and missing peaks. Since microwave hearing produces an ABR, [135] [136] interference is expected, which would complicate ABR topographic appearance. Increased ABR latency is reported from a cell phone study, [137] though this is not replicated by all cell phone studies. [138] [139]

Soviet and American microwave exposure of humans report EEG increases in delta or "slow" waves, abnormal to adult alertness in quantity. Acute human exposure to continuous or pulsed microwaves, exhibit increased electroencephalogram (EEG) delta waves (less than US pop. std.). [140] Soviet and East European microwave occupational exposure review observes increased EEG delta waves. [141] Cell phones also increase human delta waves in adults [142] and children. [143]

Rabbit and rat microwave irradiation yield delta waves as well. Daily 3 hour rabbit exposures produces delta wave increases at 1 month to pulsed microwaves and at 2 months to continuous wave exposure (1/2 US occup. std.). [144] Daily 7

hours of microwave exposure produced delta waves after 10-15 days in rabbits at 1/3rd the US population exposure standard, but took 1 month for delta wave increase at 1/30th this standard. [145] Rat microwave irradiation induces delta waves in the left hemisphere by continuous wave, but in the right hemisphere when modulated. [146] Delta waves are also produced by extra low frequency radiation in rabbits [147] or magnetic fields in humans. [148]

Microwave delta wave increases correspond to delta wave increases widely noted in untreated, [149] [150] [151] [152] [153] [154] [155] [156] [157] [158] [159] [160] [161] and medicated [162] [163] [164] [165] [166] [167] [168] [169] schizophrenia EEGs. [170] Delta waves particularly correspond to psychotic episodes, [171] [172] and occur immediately prior to auditory hallucination. [173] Higher delta power correlates with negative schizophrenia symptoms, [174] [175] and 'psychomotor poverty', [176] [177] while higher left temporal delta wave dipole density correlates to ratings for hallucination and paranoia. [178]

Intermittent long-term occupational exposure to microwaves increases EEG beta frequencies. [179] A therapeutic microwave instrument immediately increased beta wave power in humans, and cell phones increase these frequencies after a 15 minute delay. [180] Cell phones also increase human beta waves during tasks. [180] Microwave exposure increases beta frequencies in the rat (at 1/2 pop. std. to 1.2 X occup. std.). [181] [182] [183]

Though some anti-psychotic drugs decrease beta frequencies, schizophrenia EEG studies exhibit increased beta frequencies. [150] [151] [152] [153] [154] [155] [156] [157] [158] [159] [160] [161] [162] [167] [175] [184] [185] [186] [187] [188] [189] [190] MEG frequencies in the beta band are observed on auditory hallucination. [191] Treatment-resistant patients have greater increases in beta frequencies above 18 Hz, [192] [193] with dipole location sources of beta frequencies varying on auditory stimulation according to symptom severity. [194] Greater increase in beta frequencies is associated with decreased mismatch negativity amplitudes, [195] and 'psychomotor poverty'. [174] [176] [177] The sources of increased schizophrenia beta frequencies are also more anterior and superficial than controls. [196] [197] Superficial tissue absorbs more microwave energy than deep tissues. [198]

Electromagnetic field EEG entrainment occurs especially within physiologic brain frequencies (1-40 Hz.), either with a so modulated carrier wave or at these extra low frequencies. Microwave EEG entrainment (or change to exposure frequency) is demonstrated in cats, [199] and rats. [200] Lower frequency radiation or magnetic EEG entrainment is observed in rabbits, [201] monkeys, [202] and humans. [203] In addition to the capacity of entrainment to produce delta or beta waves, the effect forms a basis for schizophrenic thought interference complaints, and is of non-lethal weapon concern. [204]

Neurotransmitters

Both schizophrenia and microwave exposure involve brain dopamine alterations. Many have long attributed positive schizophrenic symptoms to dopamine increases based on differential drug effects. [205] However, findings in schizophrenics with negative symptoms for dopamine metabolites, dopamine receptors, and drug studies indicate decreased dopamine. [206] Based on behavioral changes, drug study results, and enzyme alterations, microwave exposure also indicates decreased dopamine. [207] [208] [209]

Other neurotransmitter alterations correspond in both microwave bioeffects and schizophrenia. Brain postmortem tissue analysis, cerebrospinal fluid, and drug studies find decreased schizophrenia serotonin. [210] Although rat serotonin metabolite ratios indicate increased serotonin turnover rates on acute microwave exposure (3.1 X US pop. std.), [211] brain serotonin decrease occurs on prolonged exposure (near US occup. std.). [216] Rat microwave exposure from birth to 15 days decreased serotonin in adults (near 1/2 US occup. std.). [212]

Cortical synaptosome γ -aminobutyric acid (GABA) uptake and release is reported decreased in schizophrenics, who have decreased GABA neurons, [213] and synthetic enzymes. [214] GABA receptor binding (by ³H-muscimol) decreases in rat neocortex on microwave irradiation (2.6 X US occup. std.). [215] Immunohistochemistry also indicates decreases in rat cellular GABA content in Purkinje cells of the cerebellum (10 X ICNIRP occup. std.). [216]

There is evidence for a cholinergic decrease in Lewy Body Syndrome, which is a psychosis that can have schizophrenia diagnosis, [217] and there is consistent evidence for a decrease in the α 7-nicotinic acetylcholine receptor in schizophrenia hippocampal and frontal areas, [218] which indicates decreased acetylcholine levels. [219] Acetylcholine release is found decreased on *in vivo* rat microwave exposure for the hippocampus (1/2 US occup. std.). [70] Acute rat microwave exposure also decreases sodium dependent choline uptake, the rate limiting step in acetylcholine synthesis, especially in frontal cortex followed by the striatum on either pulsed or continuous wave, but only pulsation decreased hippocampal choline uptake (60 % of US pop. std.). [37] [220] [221] The hippocampus and striatum are limbic structures-- a brain system prominent in schizophrenia pathogenesis, which is implicated in microwave bioeffects, [222] and rats differently responsive to the vocalizations of other shocked rats, differ in behavior and neurotransmitter levels on very low microwave exposure (1/2 % of US pop. std.). [223]

Hormones

Corticotrophin is indicated to mediate microwave stress, [224] [225] and microwaves influence adrenal steroids. Satellite station operator microwave exposures produce a stress reaction of urinary increases in 11-oxy corticosteroids and stress hormone diurnal pattern shift (1/10th of US pop. std.). [226] Cell phone exposure transiently increases blood cortisol levels. [227] Rat

microwave exposure yields adrenal activation resulting in adrenal medulla epinephrine and corticosteroid depletion (1.8 X US occup. std.). [228] Female rat microwave exposure increased blood corticosterone and ACTH, with decreased estradiol independent of pregnancy (1.2 X US pop. std. to 1.2 X US occup. std.). [229] [230] [231] Schizophrenic patients have increased cortisol [232] with less dexamethasone cortisol suppression than controls, [233] [234] and corticosterone increase is reported. [235] Schizophrenics have such hypothalamic-pituitary-adrenal axis over activity with ACTH increase as to feature the metabolic syndrome. [236] Patient cortisol lacks sleep inhibition, and correlates with paranoia and hallucination.

Decreased melatonin is consistently reported in schizophrenia, [237] [238] [239] [240] [241] with such a finding in paranoid patients. [242] [243] Electromagnetic fields diminish melatonin in animals. 207 [244] Human melatonin decrease is both at lower frequency exposure, [245] [246] [247] [248] and on cell phone use. [249] The pineal gland synthesizes melatonin from serotonin, [250] also decreased as above. Abnormal EEG and decreased melatonin are associated with pineal calcification, [251] which has lower incidence in undeveloped societies [252] who also show better schizophrenic prognosis. [253]

Mitochondria Changes

Mitochondria are altered in both schizophrenia and microwave exposure. Mitochondria deformation, size reduction, and decrease in number from 20-33% in schizophrenia brain are observed. [254] Cytochrome c oxidase, of the mitochondria oxidative phosphorylation system, is reduced from 30-63% in the schizophrenic brain. [255] Schizophrenic mitochondria gene expression is decreased in five pathways. [256] Acute microwave exposure evidences mitochondria matrix density decrease, and cristae degeneration *in vitro* for liver cells (1.2 X US occup. std.), [257] with pulsation experiments inducing normal cristae pattern loss, lamellar body formation, and mitochondrial membrane breaks in neuroblastoma cells. [258] Adenosine triphosphate (ATP) and creatine phosphate (CP) levels depend on oxidative phosphorylation, which requires electron transport components of mitochondria cristae. Very brief (5 min) whole body microwave exposure significantly decreased rat brain ATP and CP levels (2.5 X occup. std.). [259] [260] Mitochondrial marker enzymes of succinate dehydrogenase and monoamine oxidase are decreased in mouse hippocampus and hypothalamus on 3 hour microwave exposure (1/4 of US pop. std.). 71

Immune Alterations

Elevated schizophrenia autoimmune activity is indicated by several immune alterations, including abnormally high autoantibodies against brain and somatic antigens. [261] [262] Increases of anti-brain antibodies and reaction to brain antigens is also reported with microwave exposure. [263] Higher autoimmune disease prevalence in schizophrenic patients is reported. [264] [265] Foreign abstracts indicate microwaves cause more general autoimmune stimulation. [266] [267] [268]

Cytokine interleukin-6 (IL-6) increase features in autoimmune disease. 262 Ten reports of IL-6 increase for schizophrenia are versus six normal reports, while four IL-1 β increase reports for the disease are versus six normal reports. [269] Electromagnetic field exposure of human monocytes, the most important producer of these cytokines, dramatically increased IL-6 and IL-1 β production. [270]

High Tumor Necrosis Factor (TNF) levels are reported in schizophrenia. 261 Very low intensity microwave whole body exposure increases TNF production in peritoneal macrophages and spleen T cells (2 X 10⁻⁴ of US pop. std.). [271] [272] TNF increase on microwave exposure has several other reports. [273] [274] [275]

The balance of evidence shows B lymphocyte increase in schizophrenia (5 reports of increase versus 3 of normal levels). 269 Whole body microwave exposure increases the proportion of mouse spleen B lymphocytes (4.9 X US occup. std.). [276] [277] This increase is not caused by proliferation, but from stimulation of already existing precursor B cell maturation, [278] and is under genetic control, [279] [280] with apparent humoral mediation. [281] Microwaves also induce human lymphocyte lymphoblastoid transformation *in vitro*. [282]

Lipid Phosphorylation and Peroxidation

Schizophrenic brain magnetic resonance spectroscopy shows decreased phosphomonoesters, and increased phosphodiester. [283] This represents reduced lipid membrane building blocks, and increased lipid degradation products. 283 Microwave exposed rabbits decrease P³² incorporation into brain lipids (1.8 X US pop. std.). [284]

Lipid peroxidation is found increased in schizophrenia, [285] [286] accompanied by alteration in antioxidant enzymes with superoxide dismutase (SOD) consistently found elevated. [287] Parameters of antioxidant status in schizophrenia are associated with positive, [288] negative, [289] or severe symptoms [290] and there is report of improved patient function on appropriate supplementation. [291] Lipid peroxidation results from increased free radicals, which react with mono- and polyunsaturated fatty acids that are required for maintaining membrane fluidity and permeability characteristics. [292] [293]

Microwave exposure membrane fluidity changes, [294] receptor shedding, [295] and readily increased reactive oxygen species [296] implicate lipid peroxidation. Peroxidation is detected in liposome, [297] and living rat microwave exposure, [298] even at mobile phone exposure levels (~3 X ICNIRP pop. std. [d]). 65 Foreign abstracts indicate microwave exposure

increases an indicator of lipid peroxidation, and SOD activity in platelets, [299] and pig retinal ganglion cultures. [300] A mechanism for such effects is by magnetic field stabilization of electron triplet states that results in an increase in the rate of free radical formation. [301] [302] [303]

Many favor a neurodevelopment hypothesis for schizophrenia, but there is evidence for a neurodegenerative process in a sub-population. [304] [305] Neurodegenerative diseases such as Parkinsonism, Alzheimer's, and amyotrophic lateral sclerosis (ALS) are linked to electromagnetic field exposure. [306] Though Parkinsonism association has only exposure linkage with little evaluative data, the association data is greater for Alzheimer's disease, while a considerable number of studies have strongly associated ALS with electromagnetic field exposure. [307] [308] [309] Oxidative stress is believed to play a role in these neurodegenerative diseases [310] in which psychosis is frequently a component. [311]

Schizophrenia is consistently coexistent in patients developing ALS, [312] with both these syndromes linked to chromosome 21q22. [313] The locus for cytoplasmic Zn/Cu superoxide dismutase is at chromosome 21q22, and familial ALS has confirmed mutations for this enzyme, [314] though mutated protein is not yet confirmed in schizophrenia. A normal variant Mn superoxide dismutase believed to mis-target the enzyme's mitochondrial location also has ALS association [315] with this enzyme mapping to chromosome 6q25, [316] which is a schizophrenia linked locus. [317] [318] Mn superoxide dismutase is found decreased in schizophrenia hippocampus. [319] Though this ALS linked variant enzyme is associated with schizophrenia [320] or tardive dyskinesia development, [321] this is not consistent for populations from less developed countries. [322] Both superoxide dismutase enzymes are important in anti-oxidant defense. A third common chromosome linkage is 9q25, which is linked to familial ALS, frontotemporal dementia, [323] and schizophrenia. [324] [325]

Blood Brain Barrier Permeability

Molecular and cellular evidence suggests blood-brain barrier (BBB) impairment in 18-29% of Schizophrenics. [326] Non-thermal microwave alteration of the BBB permeability is consistently observed (1.3 X US occup. std.), 88 [327] [328] [329] and is attributed to pinocytosis. [330] [331] The alteration is proposed induced by heat shock protein phosphorylation, [332] and heat shock protein antibodies are among the evidence for schizophrenia BBB impairment. 269 Studies not showing a microwave BBB effect have utilized short exposures, thermal microwave levels, and are criticized for procedure or publication behavior. [333] Thermal microwave BBB studies are complicated by decreased BBB permeability at about 40° brain temperature, [334] but at 2° higher the permeability greatly increases. [335] [336]

Anatomy and Histology

Schizophrenia reduction of medial temporal lobe structures, particularly the hippocampal-amygdala complex, 107 [337] is observed in 74 % of magnetic resonance imaging studies. [338] Chinese hamster 15 day microwave exposure produces pyknotic neurons in the hippocampus, hypothalamus, and unspecified cortex areas (1.8 X US occup. std.). 66 Rat GSM cell phone exposures produce scattered groups of shrunken neurons having loss of microstructures in the hippocampus, basal ganglia, and cortex, 65 which is replicated by another study having additional findings of some microvacuole formation and blood-brain barrier albumin leakage. 64 Rat pre- thru post-natal ultra-wideband microwave exposure increased hippocampus lateral length. [339] Such enlargement may indicate edema, reflecting pathology resulting in eventual size reduction.

The thalamus is volume decreased in 42 % of schizophrenia studies, 338 with lower neuron number in the anteroventral nucleus observed. [340] Light and electron microscopy of hamster 22 day microwave exposure reveals cytoplasm vacuolization and chromatolysis with a pale frothy cytoplasm in ventral thalamic neurons, and little rough endoplasmic reticulum, with very few polyribosomes (3 X occup. std.). [341] Dendrites had vacuoles, myelin figures, and few microtubules.

Schizophrenia cerebellum changes are evident in numerous studies of neurological signs, postmortem specimens, [342] and in 31 % of neuroimaging studies. 338 Atrophy is the main anatomic observation, but several studies show Purkinje cell loss. [343] Rat and quail pre-natal prolonged microwave exposure produces Purkinje cell loss and histologic change respectively (1.2 X US occup. std. & 3.1 X US pop. std.). [344] [345] Rat post-natal microwave exposure also produces Purkinje cell decrease and cellular changes (1.2 X US occup. std.). [346] Pulsed microwave rat balancing ability deficit suggests cerebellum motor influence (23 % of US pop. std.). 95

Prefrontal and parietal lobe volume reduction is reported by 60 % of studies for each area. 338 Several microwave reports are of cortex or unspecified brain area change. Prolonged microwave rat exposure produces neuronal cytoplasm vacuolation, swelling, and beading of axons, with dendrite spine decrease (less than US occup. std.). [347] Extended microwave exposure produces myelin degeneration in guinea pig and rabbit cortex (1.75 & 2.5 X US pop. std.). [348] Studies cited above also noted degenerative cortex histology. 64 65 66 Histologic study of microwave exposed rats that exhibited discriminative conditioning deficits, 58 revealed cortical dendrite myelin figures at 6 weeks post exposure (1/2 ICNIRP occup. std.). [349] None of the above microwave histologic studies noted gliosis.

A neurodevelopment schizophrenia hypothesis is favored, since autopsied brain has no inflammation or gliosis resulting in scarring. Yet, brain atrophy by apoptosis lacks gross change. Several microwave studies report apoptosis: in vitro via the

Fas pathway in human Jarkat T cells (3.1 X US pop. std.), [350] *in vivo* in mice thymocytes, [351] from exposed rat cranium cell phone irradiation, [352] and in rat hippocampus on high power exposure. [353]

Brain Metabolic Activity

Glucose uptake and blood flow during hallucination shows temporal lobe activation over baseline or control in 85 % of studies, and thalamic activity is apparent in some studies. [354] Rat blood flow increases significantly in the temporal cortex, as well as in both the lateral and medial geniculate bodies with acute microwave exposure pulsed for the hearing effect (1.6 X US occup. std.). [355] Both geniculate bodies indicated active during microwave hearing exposure are part of the thalamus. [356] Acute hearing effect pulsed microwave exposure increased rat brain glucose metabolism by [¹⁴C] 2-deoxy-D-glucose with particular prominence in auditory related structures of the inferior colliculus, and medial geniculate body, as well as the cochlear nucleus and the superior olivary complex (30% of & 1.2 X US occup. std.). [357] These latter two structures are within the brain stem or associated structures, where large blood vessel pulsation obscures resolution on functional imaging. Though inferior colliculus activation has been infrequently noted during hallucination, one study noted activity in the region of the colliculi while stipulating problematic brain stem localization. [358] and another study detected activity within the inferior colliculus while ascribing detection to imaging without scanner noise. [359] At least four studies during hallucination detect activity in the thalamus. [360] [361] [362] Therefore microwave hearing studies particularly correspond to a number of observations during hallucination in temporal and thalamus regions, while a couple of studies have indicated activation of initial sensory pathways for hearing by sound or microwaves. Considering all the methodological limitations, such a mechanism in some patients cannot be excluded. A study of unmedicated schizophrenia without hallucination assessment locates increased patient glucose metabolism for the pulvinar in which the geniculate bodies are located. [363] Possible geniculate contribution to the observation lacks discussion in this PET image co-registration with MRI study. [e]

Brief human cell phone [364] and rat microwave exposures increase brain blood flow (1.2 X US occup. std.), [182] but longer exposure of pregnant rats exhibited decreased uteroplacental circulation (1.2 X US pop. std. & 1.2 X US occup. std.). [230] Acute psychosis studies have shown increased global brain blood flow, [365] [366] with psychosis and delusion correlation, yet the chronic patients most studied show hypoperfusion. Microwave exposures inducing thermal effects initially increases, but eventually decreases brain blood flow, though associated with cellular injury. [367] Specific cerebral blood flow regions are increased while hallucinating, but sensory stimuli and endogenous verbal imagery activates hallucinator brain regions less than non-hallucinators. [368] [369]

Schizophrenia brain perfusion during tasks includes globally increased blood flow, or less dominant hemisphere activity and more non-dominant increases than controls. [369] The shift of brain activity to other brain areas could have mechanism in a technologic etiology. Although perceptual processing is usually lateralized to the left hemisphere, the right hemisphere is normally activated for pitch discrimination, non-verbal, and degenerate sounds. [370] Microwave activation may be akin to degenerate or non-verbal sound, particularly since continuous waves without hearing effect activate auditory brain structures and elevate hearing threshold. [371]

Schizophrenia brain activation changes are particularly in the frontal lobes. [371] At rest, schizophrenics exhibit lower glucose utilization in the frontal lobes relative to either occipital or whole brain. [372] The schizophrenia prefrontal blood flow is especially deficient while performing tasks specific to this region. [369] Consistent with a prefrontal deficit are microwave deficits above noted in frontal choline uptake, memory, contingent negative variation, and frontal neuropsychiatric symptoms. Schizophrenia decreased brain activity also has basis in decreased brain area volume, mitochondria, and neurotransmitters corresponding to microwave bioeffects.

A microwave mechanism for EEG delta wave increase is proposed by corpus callosum tract fatigue, making unavailable this interhemispheric connection, with inherent corticospinal and spinocortical tract delta rhythm predominant. [145] Schizophrenia corpus callosum dysfunction [373] and decreased brain activity may enlist abnormal brain area activation. A gamma wave distribution model relates normal development delta wave amplitude and cortical metabolic rate to transient neuronal organization. [374] A re-organization may apply in technologic assault.

Positive Symptoms

Although microwave bioeffects are consistent with negative schizophrenic symptoms, [f] internal voice transmission effects provide basis for several prominent positive schizophrenic symptoms. [g] Psychiatric prejudice presently considers casual discussion of this presentation delusional without detailing extensive references. Because internal voice is similar to thought, and may be directive, these technologies are capable of altering thought itself and ongoing behavior. Positive symptoms of attention deficit and thought disorder have some explanation in hallucination. Exacerbating both these symptoms are microwave altered cognitive function, and EEG entrainment capability. Microwave manipulation, then could account for the major positive schizophrenia symptoms of hallucination, delusion, attention deficit, and thought disorder.

Though some first admission studies suggest a decline in schizophrenia, true incidence change is questioned by changing demographic and diagnostic patterns [375] with diagnoses of borderline states, [376] and paranoid psychosis [377] matching some apparent declines. A recent literature review concludes that schizophrenia incidence has increased. [378] Paranoid schizophrenics are most likely to believe in technologic assault. More studies of this diagnosis show less genetic association, a

later onset, [379] [380] and reported increase of the paranoid subtype within the past century. [381] [382] Paranoid schizophrenia is apparently preponderantly sporadic, [383] [384] with EEG abnormalities reported as more frequent, for this diagnosis. [385]

Ocular Disease

Microwave exposures produce eye disease. Microwaves particularly produce subcapsular cataracts. [386] [387] Anterior subcapsular cataracts were significantly more prevalent in schizophrenics than a visually impaired population, without medication association, except that phenothiazines actually had less cataract prevalence. [388] As expected for a group of little occupational exposure, schizophrenics have less cataract incidence of all types than the general population, [389] but schizophrenia cataracts have been associated with high doses of chlorpromazine (a phenothiazine). [390]

Schizophrenia retinopathy is associated with thioridazine, [391] and generally with phenothiazines. [392] Photoreceptor cell Electroretinogram (ERG) changes are reported in schizophrenia. [393] Microwave exposures are occupationally associated with retinopathy, [394] [395] and have shown retinal damage experimentally at higher [396] and low intensity exposure. [397] [398] [399] However one monkey low intensity radiation study observed abnormalities in the ERG and glycogen storage that can be associated with more serious retinal changes, [400] but did not observe the frank degeneration previously observed, [397 398 399] although the study did not replicate pulse width, degenerative time course, and 16 Hz pulsation conditions. Several groups have reported that radio frequency modulation at 16 Hz produces calcium ion effects, [401] [402] [403] [404] [405] [406] [407] [408] [409] [410] for which ion parametric (or cyclotron resonance) has been proposed for such a modulation specific mechanism. [411] [412] [413] Chinese abstracts of retinal ganglion culture microwave exposure indicate lipid peroxide production, [414] actual damage, [415] and production of apoptosis related genes. [416]

All the schizophrenia ocular disease associated drugs are older, and may have prescriptive preferences for public medical assistance generic availability or particular patient symptom profiles. Phenothiazines were so broadly utilized that direct association with schizophrenia cannot be excluded. Visual care is a neglected area of schizophrenia physical health, [417] and visual field testing is non-routine.

Standards and Environmental Considerations

East European and Russian occupational microwave standards of 10 $\mu\text{W}/\text{cm}^2$ are based on a neurasthenia syndrome. [418] Reported symptoms are headache, dizziness, increased irritability, loss of appetite, sleepiness, increased fatigability, sweating, difficulties in concentration or memory, depression, emotional instability, dermatographism, thyroid enlargement, and tremor of the extended fingers. [41] Discomfort, gait difficulty, and sleep disturbance are also reported with the syndrome. [419] The American microwave study of increased human EEG delta waves noted short-term memory impairment, concentration inhibition, irritability, apprehension, frontal headache, and work interfering sluggishness the next day. [40] Neurasthenia is consistent with many schizophrenic symptoms. Though the syndrome is dismissed on subjective grounds by many but not all Western investigators, [420] complaints of such symptoms are reported in a dose response relationship near a cell phone base station. [419]

The Russian standard contrasts with a 1000 times greater US standard of 10 mW/cm^2 , which was too weakly written to sustain lawsuit. [418] The original US standard was set at one-tenth the level known to increase body temperature. Present US standards (ANSI/IEEE C95.1) lowered the occupational standards within certain frequencies, and finally set population standards, though at ~ 100 times the Russian. [21] The main microwave research sponsor, the Defense Department has vigorously defended the thermal rationale with suppression of non-thermodynamic effect investigations. [421] Standard setting for optimal equipment performance on national security grounds is suggested. [422] There are many reported effects at, or near these standards, which are incongruous with a 'precautionary principle.'

A 1975 Environmental Protection Agency survey indicated that less than 1% of the population had routine exposure to more than 1 $\mu\text{W}/\text{cm}^2$, and that high exposure areas (building tops with radio frequency transmitter clusters) could run as high as 100-200 $\mu\text{W}/\text{cm}^2$. [418] [423] Cell phones can reach 200 mW power output with the exposure standard set above that for whole body, by allowing head and trunk exposure of 2 W/kg. [424] Not well studied is chronic exposure, and exposure change since 1975 is considerable.

Unproven is an environmental microwave schizophrenia causation, however microwaves are a hypothesized as a mechanism for hallucination production by spread spectrum communications, [425] and for a reported sunspot activity association with schizophrenia. [426] Even though a manufactured system may meet the standards, sources are proliferating, and standards may be exceeded in some situations, particularly with increasing cell phone use. Recognized excessive exposure occurs with heat sealing appliances, [418] cell phone base stations increase exposure, and there are observations that can only be regarded as toxic in cell phone reports, or at exposures near these levels. Dysesthesia symptoms of some patients have correlated with clinical tests, [427] and patients report a dermatologic electromagnetic hypersensitivity syndrome, as well as a type resembling neurasthenia recognized by the Russians. [428] Though many Western investigators are skeptical of such syndromes, reported yeast cell effects are some seven orders of magnitude below the Russian standard. [429]

Discussion

Remote microwave voice transmission has had development.^{4 6 7 8 9 10 15} Microwave internal voice weapons are considered^{5 11 [430] [431]} and weapons have been indicated.^{13 14} Continuous symptoms can be maintained by available tracking technology.¹⁵ Since similar means are a frequent patient complaint, it is compulsory that methods be developed to rule out involvement of these technologies in delusional disorder and psychosis. To further ignore the evidence, and disdain the right for appropriate complaint is unethical.

Microwave bioeffects have a high level of congruence with major lines of schizophrenia investigation. In both schizophrenia and low intensity microwave exposure, there are deficits in memory, time estimation, sequencing, and motor ability, as well as numerous electrophysiologic signs including decreased contingent negative variation, abnormal or decreased auditory evoked response, with increased EEG delta and beta waves. Startle response and galvanic skin response are found decreased in both conditions. For neurotransmitter levels of both conditions serotonin is found decreased, with dopamine and GABA indicated as decreased, while acetylcholine is indicated decreased in some brain areas. Hormone changes of melatonin decrease, and adrenal activation are common to both conditions. Immune function, mitochondria, and the blood-brain barrier are indicated similarly altered in both situations. Microwaves induce deleterious histology in several brain structures observed reduced in schizophrenia. Microwave exposure activates brain structures corresponding to those noted on hallucination, and a few studies indicate activation of primary sensory pathways, which is consistent with voice transmission. Subcapsular cataracts have been associated with both conditions. Retinopathy is associated with both widely prescribed anti-psychotic medication, and microwave exposure. Microwave voice transmission, bioeffects, and EEG entrainment provide some basis for positive symptoms. The correlations between microwave bioeffects and schizophrenia may not apply to all patients, but is most consistent with the negative symptom group that hears voices and is likely paranoid. The potential for voice transmittal to mimic positive schizophrenia symptoms, and the congruence of other symptoms with microwave bioeffects indicates that a technologic etiology may involve more than a few patients.

The medical community has been remiss in refusing investigation of such an etiology. Psychiatrists have actively ignored longstanding patient complaints of being affected by technologies that have literature basis for such influence.¹⁵ Microwave bioeffects, including sound and voice perception have long been described.

More than presumption and prejudice must rule out such an etiology. Though direct substantiation of this hypothesis is limited to sight publication of field strength around victims and anecdotal reports of such measurement,¹⁵ formal investigation must begin. The evidence for a technologic etiology regarding microwaves practically comprehensively correlates with schizophrenic symptoms to such congruence that this word's mathematical sense cannot be excluded. This hypothesis is more circumstantially defined than any other environmental pathogenic mechanism, and should mandate investigation to develop methods for ruling out such an etiology.

The congruence of microwave bioeffects with schizophrenia symptoms does not have to involve voice transmittal in a technologic etiology. Potentially toxic effects to functioning exist near, and below exposure standards. Hypersensitivity and neuroathenic syndromes are reported with radio frequency fields, though these symptom complexes have particular dispute. Neurodegenerative diseases are also associated with lower frequency exposure especially in ALS, which also has linkage to schizophrenia.

The late adolescent onset typical of most schizophrenia cases and other factors has led many to favor a neurodevelopmental hypothesis, and some peri-natal microwave exposure studies show abnormalities.^{25 83 212 339 344 345 346}

There is considerable evidence that a significant portion of schizophrenia patients have genetic susceptibility linkage.^[432] Microwave exposure B lymphocyte response is indicated to have genetic determinants,^{279 280} and differences in reaction to exposure are reported according to rat temperament.²²³ The indicated increase in free radicals by microwaves^{65 297 298 299 300} or electromagnetic fields implicates genetic susceptibility for ALS-schizophrenia linkage, which would also have developmental interplay. However, no developmental or genetic relation is evident for most of the schizophrenia correlations to microwave exposure. The extensiveness of these correlations leads to a variant hypothesis of a technologic etiology without assault. A review indicating an approximate doubling of schizophrenia incidence in the recent past would support either technologic variant hypothesis,³⁷⁸ and is difficult to explain by previous theory. Of course these hypotheses may not involve all cases, as reference is often made to "the schizophrenias," and multifactor etiologies are common in pathology.

Patients subject to internal voice assault would have hallucination, and likely paranoia with belief that voices are transmitted to them. It would be most probable among sporadic cases with non-adolescent onset, having some or all of the correlations here noted. Probably the most common present clinical measurement that could be useful is the auditory brain stem response.^[433] Observation of auditory brain stem responses on 'hallucination' that indicate primary sensory pathway activation would strongly support technologic assault. Clinical investigation would include radio frequency measurement. Attention should be given to likely cranial directional localization within the spectrum indicated for voice transmission.¹⁵ Establishing radiation characteristics with the Brunkan or Leyser patent burst and pulse pattern, or modulation characteristic of the O'Laughlin et al. patents would be highly pertinent, but less important. There are inconclusive, largely anecdotal reports of victim ability to record harassment effects, however condenser microphones are responsive to the same thermoacoustic mechanism that produces microwave hearing, and other microphone designs contain elements similar to those productive of thermoacoustic sound.^[434] Since microwave-induced thermoacoustic tomography is utilized to generate ultrasound from tissues^[435] and ultrasound components could be expected from some microwave voice transmission patents, there is some prospect that such a signal could affect transducers for ultrasound or normal acoustics as applied to the head.⁴³⁴

Investigation of patient responses within and outside of rooms shielded from electromagnetic radiation is relevant. Practical considerations are that shielded facilities already exist for MRI and magnetoencephalography. Observations of hallucination, event related auditory response, contingent negative variation, or EEG delta and beta wave index in selected patients would likely be parameters more immediately responsive to microwave cessation. Although existing facilities may be

adequately shielded, [436] the shielding must be radar effective, with serious determination of adequacy.

Subcapsular cataract and retinopathy epidemiologic study in schizophrenia would also have relevance. The specific cataract type is known to be microwave induced, and is reported without medication association. Patient signs relating to other microwave bioeffect correlations would have bearing on any coincidence of these symptoms in patient subtypes.

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U. S. Patents are printable free from the U. S. Patent Office website.

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- [b] Standards: pop. std. = population standard, occup. std. = occupational standard. All numbers are calculated in terms of the US standard, unless designated as ICNIRP, which stands for the International Commission on Non-Ionizing Radiation Protection.
- [c] International Commission on Non-Ionizing Radiation Protection
- [d] Though the ICNIRP standard is 0.08 W/kg for whole body exposure, standards for head and trunk exposure allow 2 W/kg, at which the experiment was conducted. Calculation is in terms of whole body exposure limits.
- [e] Indeed the image presented shows two discrete areas of activation, and must be a quite distal section considering the size indicated of the other nuclei imaged, which would approach, if not include, geniculate body location.
- [f] Alogia, affective blunting, anhedonia/asociality, avolition/apathy, and attention impairment.
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What our governments do not tell us

Weapons based on radio waves - electromagnetic weapons

In 2009, the president of the United States of America, Barack Obama, [announced](#) that he was going to work hard towards a world without nuclear weapons. Of course he would say that, the United States has developed a whole new generation of weapons that are much more effective in torture and killing. Countries with these new weapons can only be threatened by nuclear weapons.

Nuclear weapons are of course terrible weapons; however, they cannot be used without leaving evidence. That is why their use is restricted. There is another, unknown to public domain, category of weapons that leaves no evidence. These are weapons based on radio waves. Attacks with these weapons are invisible and can go through walls. We are talking about electromagnetic weapons, also called electronic weapons. Examples include: microwave weapons, laser weapons, sound weapons, as well as equipment to read and influence the human mind. These weapons are widely used by secret services and the military. This happens all over the world, and due to their high-tech character, more commonly in our 'democratic West'. These weapons are rarely mentioned by popular media, never have been acknowledged by any government, but have covertly been used against people like: whistleblowers, activists, politicians - to steal, to eliminate - for several decades. And in order to develop and perfect these weapons, random ordinary men, women and children are non consensually used as guinea pigs to test them. These are often horrible crimes against humanity, and our governments aren't telling us anything about this.

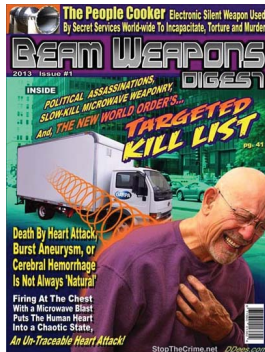
One of the most terrible implications of these weapons is that it is no longer possible to protect yourself, your children, your loved ones. You can no longer say: 'stay in this room, then you will be safe'. The attackers look through the walls of your house, cook, burn, control your body, and read and manipulate your thoughts. Police are not equipped to do anything and can't help you, no one can help you.

The rest of this page is split into two main topics:

- General information about electromagnetic weapons
- Victims of experiments and crimes with these weapons

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Weapons-1. Suppression of information



It is unprecedented that information about electromagnetic weapons has been suppressed from the public in all possible ways and that governments of all countries go along with this secret in the fear of paybacks by the powerful. Instead governments choose to deny rather than recognize and expose the existence of these deadly weapons, thus failing to inform their

citizens. This actually shows that we are not ruled by politicians but by a self-proclaimed world's elite. The ultimate goal is the suppression of the population by this elite.

(Illustration [David Dees](#))

Weapons-2. History

The development of weapons based on radio waves started after the Second World War. The Nazis were already developing them and the Russians and the Americans followed. One of the first notable results was the LIDA machine (1950). By focusing radio waves on the brain you can almost instantly send someone to sleep. The same device can be used to keep people from their sleep as well. In the 1970s, the Americans discovered that their Moscow Embassy was irradiated with microwaves. This was not made public but

Victims-1. Experiments with these weapons



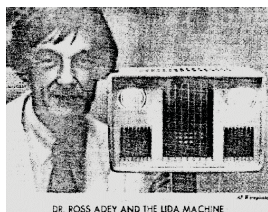
There is a group of people on whom these weapons are tested in order to further develop their capabilities and effectiveness.

They are often random, innocent civilians, and come from all over the world.

They call themselves **Targeted Individuals** and despite usually being kept totally isolated by their attackers, in recent years, they found each other via the internet. They are looking for recognition of the crimes committed against them. The experiments that are performed on them are illegal and often horrific, many are suffering and many die. One could argue that these are war crimes against citizens. **These are inhumane and degrading crimes against mankind, a disgrace to the human race!**

Victims-2. Wrong diagnosis

People who are attacked with such weapons initially end up in a kind of shock. They know that there are all kinds of things that don't add up but do not know what, as it's not something they have learned about or something that is in the newspapers. Family and friends will say they have to go to a family doctor, psychologist or psychiatrist. The symptoms that they show are similar to known physical symptoms and mental illness. That's no coincidence: this is intentionally done so that the victims will not be able to find anybody that



was the beginning of the arms race of weapons based on radio waves. Everyone knows the laser pen or laser pointer. Not only pilots were shone with it, also footballer Wesley Sneijder complained about he was being

blinded when taking a free kick. A kitchen microwave cooks meat with radio waves, you can easily imagine what a weapon based on it can do to the human body. A kidney stone pulverizer can from a distance crush a stone in the human body. All this is done with invisible radio waves. More recent there have been developments in which brain signals are used to control prostheses, for example, a hand.

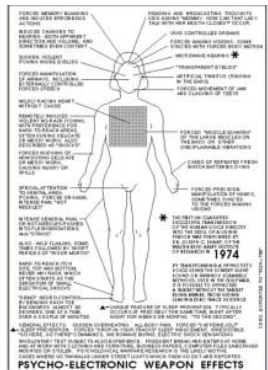
Weapons-3. Arms must be tested



The arms industry, the military, in combination with the secret services, develop weapons and torture methodology, which need to be tested on. No one however, wants to be a guinea pig of this kind of experiments as they

are very dangerous. Think of a microwave weapon, with which you cook the human body, knowing for certain that body functions will eventually fail. Imagine a weapon with which you can stop someone's heart. In the course of history, these organizations took it for granted that they could do this to unaware people. But that is all illegal of course, and so it is done secretly.

Weapons-4. Developed for the body



The development of weapons based on radio waves turned out to be a great challenge. The radar, after some adjustments was able to send focused energy, and shortly after the microwave was invented. The first weapons were primitive but already very effective. New developments lead to laser weapons, and later this was all grouped under the heading of 'Directed

Energy Weapons'. Many of these are classified as non-lethal weapons but in most cases, this is pure nonsense. Pointing a powerful laser weapon at the human body will have a similar result as a bullet being fired at it. Both can be very damaging, both can be deadly. Read also: [Bioeffects of](#)

DSM IV

Diagnostic and
Statistical Manual
of Mental Disorders

will listen to them when they claim that they are being attacked with these weapons. To get rid of this torture, victims commit suicide or accept the diagnosis of a psychiatrist, often paranoid schizophrenia. They end up in Psychiatric care where there are further experiments

made on them. A small group is able to understand what is happening and to offer resistance, and although they are often called crazy by those around them, they keep insisting they are being preyed upon.

Victims-3. Human rights, but not for everyone



The victims of these crimes go to the police, write letters to their government or, or the Mayor of their city, they contact established human rights organizations such as: Amnesty International, Human Rights Watch, United Nations or the International Criminal

Court. Comments are invariably negative. They are knocking on doors everywhere but nobody is really listening. They often leave their stories behind in the hope that something will happen. But they never hear anything back. The crimes that are committed against them are among the most serious in the human history. And, while all their human rights are being violated, the organizations where you would expect help from give no assistance.

Victims-4. Attack of the body



How do you call it, when you suddenly feel a strange pain in your arm, and then, quite suddenly, it seems to go away? You come back home, and it starts again. If you go and sit somewhere else, it disappears, but very soon, it comes back and burns you, again. It may take sometime before you realize the fact that you are being attacked with radiation that passes through a wall. And, from that moment on, it is called torture. The pain depends on the intensity and duration. In many cases, the torture follows you wherever you go. Some victims describe the feeling of being cooked alive, or burned alive. Another form of torture is making people hearing voices. The first successful experiments with this started in 1974! (Voice-

[Selected Non-Lethal Weapons declassified US Army Intelligence document, 1998.](#)

Weapons-5. Developed for the mind



The human body is extremely sensitive to electromagnetic radiation (radio waves). In addition, human body also sends out radiation. In other words, man is both: a bio-electromagnetic transmitter and a bio-electromagnetic receiver. For many years, research has been undertaken into the collection of signals from the brain

(mind-reading), as well as, effective ways to send signals to the brain (mind-influencing). In the beginning, electrodes and implants were needed/might have been required, but new developments in science and technology made this unnecessary. Now, it is not only possible to read minds from a distance, but it is also possible to force thoughts into minds, which appear as if they were their own (this is different from hearing voices). There are projects that explore how you can make large groups of people think of the same thing, and, also, how to prevent groups of people thinking of certain things. Another project is to take over a human as a person (see also the movie Avatar).

Weapons-6. Examples of use



Some examples of possible use of these weapons:

- On 21 July 2009 NATO boss De Hoop Scheffer suddenly got a heart attack while visiting Belgium during the Belgian national holiday.

- On July 26, 2009 the president of France fell to the ground while he was out running. We were told that his heart had beaten irregularly for a short period.
- On September 3, 2009, Dutch Minister Verburg collapsed whilst speaking on a subject in the House of Representatives.
- On September 14, 2010 Dutch swimming celebrity Erica Terpstra drove into a tree because of a huge coughing fit.
- In 2010 Gerard Kemkers sent Dutch champion ice skater Sven Kramer to the wrong lane at the Olympic 10 km.
- In recent years there have been several posts about groups of birds that have fallen from the sky, about groups of whales that were totally off course, and groups of cows that suddenly died.

Of course, it cannot be proven that all this was caused by electromagnetic weapons, but no one can say that this can not be done with these weapons.

And that is the reason why these weapons must be banned. A knife leaves a stab wound, a gun leaves a bullet hole, in both cases there is perceptible damage to the body. This is no longer the case with electromagnetic weapons. We can make

to-skull, V2K, microwave hearing). Often, these voices constantly belittle someone, aiming to drive them insane.

Victims-5. Attack of the mind

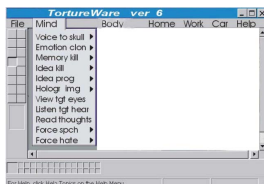


A device to read someone's mind is a weapon. After all, you attack this person; you attack not his body, but his mind. The same can be said of a device that forces thoughts into a brain without the victim knowing it. This not only is possible today, it is actually being done. A number of victims claim to be

robbed of ideas, others claim to be blackmailed with their, now no longer secret, thoughts, or have obsessive thoughts that keep repeating, or strange dreams. Mind reading is used to torment you through feedback on your thoughts.

Passers-by say things about you which only you can know about. The last thing you would expect to be private, your thoughts, is available to those that attack you, an incredibly terrible feeling. And those who do not realise and are guided by their thoughts, are actually no more than robots. As just can imagine, many victims have their thoughts about the 'bizarre' shooting incidents in which a disturbed person just carelessly kills people.

Victims-6. Examples of attacks



There are a number of physical effects that can occur; scratching, abdominal pain, need to urinate, urge to relief, diarrhoea, coughing, belching, farting, heart complaints, erectile dysfunction, sexual

stimulation, headache, sudden confusion, sudden memory loss.

Ways in which these weapons can be used to attack our brain are: mind reading, hearing voices, tinnitus symptoms, planting thoughts in your head with an inability to distinguish them from your own thoughts unless you are aware of this, dream manipulation.

Below the link to an article from 2003 by Carole Smith, psychoanalyst: [On the Need for New Criteria of Diagnosis of Psychosis in the Light of Mind Invasive Technology](#). She writes among other things: 'A doubly cruel sentence is being imposed on people who are the victims of the most appalling abuse by scientific-military experiments, and a totally uncomprehending society is indifferent to their evidence. For the development of a new class of weaponry now has the capability of entering the brain and mind and body of another person by technological means.'

Electronic torture is attacking someone 24/7 with these weapons. At home and outdoors: the environment is the torture chamber.

no distinction anymore between reality and what has been done.

Weapons-7. There's even more



Above is only very limited information. Weapons based on radio waves are now installed in airplanes and on warships. Smaller versions are being tested in prisons in the United States. Minds can be

controlled from nearby equipment or cell towers. Sound weapons are used to move people away from certain areas. In addition, there are the antenna-fields, also called HAARP installations. They use the atmosphere around the Earth to send energy across to other points. It is said that these installations are used to influence the weather and cause earthquakes.

Below is the link to the press release by Institute of Science in Society published on 29 May 2007: [Bio-electromagnetic Weapons: The ultimate weapon](#) At the beginning of the article Harlan Girard says: "A weapon system that operates at the speed of light, that can kill, torture, enslave and escape detection."

Finally

Thank you for reading and I hope this page supplements your knowledge. I also hope that you understand that this must be made public. If we don't, then humanity-as-we-know-it will come to an end, the world as we know it today will no longer exist. Everyone except the elite and some technicians, will be tied to the electronic chain. George Orwell wrote in his book 1984 about this thought policy. That's not science fiction anymore - we are already in this situation!

I also hope that you have gained some insight in the practices of secret services and the military. Snowden's revelations already showed that there are many cases where they act outside the law. But what you didn't know is that they perform gruesome experiments, war crimes, against ordinary innocent civilians. This should stop immediately, be further investigated, the guilty brought to justice, and the victims compensated.

Finally, I hope that I am contributing to a better understanding of the victims of these crimes. They can't go anywhere. I ask you therefore to have compassion for their often unimaginable stories. The extent of their suffering is hard to explain if you are not a victim.

More questions? Read more on the Internet ([directed energy weapons](#), [active denial system](#), [electronic harassment](#), [microwave hearing](#), [remote neural monitoring](#), [synthetic telepathy](#), [electronic torture](#), [voice-to-skull](#), i.e.) or contact me.

Peter Mooring

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M: +31 6 4124 3030.

Would you like to comment or be kept informed?

Leave your comment below and/or your email address.

Email address:

Comment:

Send

Victims-7. Organizations for victims

In addition to the countless websites and Web pages of victims there are now a number of organizations who are committed to disclosing these crimes and trying to support victims.

- STOPEG - STOP Electronic weapons and Gang stalking
Website: <http://www.stopeg.nl>
- Freedom From Covert Harassment and Surveillance (FFCHS)
Website: <http://www.freedomfchs.com>
- European Coalition Against Covert Harassment (EUCACH)
Website: <http://www.eucach.org>
- Christians Against Mental Slavery
Website: <http://www.slavery.org.uk>
- Verein gegen den Missbrauch psychophysischer Waffen e.V.
Website: <http://www.psychophysical-torture.de.tl>
- Initiative gegen elektromagnetische Folter
Website: <http://www.e-waffen.de>
- International Center Against Abuse of Covert Technologies (ICAACT)
Website: <http://www.icaact.org>

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This website does not use Google Analytics or other tracking software that can follow you on the internet.

Some of the data collected from spies using microwave weapons
The Communications Industry is in the position ①
where it is spiralling out of any person's ability to control it

An open letter Open Letter from Barrie Trower:

To whom it may concern...

The Communications Industry, because of its usefulness to Government, Finance, Intelligence gathering and Warfare, is really in the position where it is spiralling out of any person's ability to control it, with regard to advancing technology.

Initially, all systems "pulsed". However, when it was realised that stealth microwave warfare relies on entrainment of a brain from such pulses, now being used as a domestic instrument, the pulses had to be re-named as "modulations". The difference between them is infinitesimally small, but the effect is just the same. Only the name has changed.

I believe that this explains the **dramatic changes in behaviour** we are now witnessing - **group suicides, disruption in schools, aggression** and so on.

Over the years, I have compiled a list of known entrainment responses (followed by long-term potentiation) from these microwaves. It should be appreciated that each person will respond slightly differently, although the same area of brain/temporal/amygdaloid temporal/parotid/etc., will remain the same.

Pulses/Modulations
Per second/
Possible Result

- 1 Heartbeat Rhythm
- 1-3 Sleep Pattern
- 3-5 Paranoia/Hallucinations/Amnesia/Illusions/Drowsiness 'Absent' Feeling
- 6-7 Depression/Suicidal Feelings/Visual Distortion/Confusion
- 8-11 Cannot Relax/Feeling Unwell/Unhappy
- 11-13 Anger/Manic Behaviour/Problems with Movement/Flashes/Loss of Appetite
- 14-18 Small Seizures/Disturbed Orientation/Auditory/Visual Hallucinations
- 18+ Inability to make decisions/Sensory problems (sight/touch/sound)

*all of these pulse -
frequencies are added to
varying communication
devices.*

- 24+** Confusion/Flickering/flashing lights/Dizziness
- 35+ Mania/Hyperactivity
- 40+ Anxiety/Sleep disturbance/Reaction time slowed/Unable to make decisions

** It is worth mentioning that a mobile phone with a pulse/modulation frequency of 25 could act directly on visual sight (if being held at head), or heartbeat (if in a chest pocket). A frequency of 25 can disrupt both visual and heart neurotransmitters.

Clearly a susceptible person may have any combination of these. Electrosensitive persons may recognise many of their own symptoms. My work on electrosensitivity and the brain can be found on <http://www.mastsanity.org>.

I think the problem is that young Governments and young communications engineers have no knowledge of Cold War warfare and don't know who to ask; even if they did, the Government would probably be in denial. The situation is a mess, made worse by greed.

If anyone would like clarification of any of the foregoing, or I can help in any way, please let me know.

Barrie Trower
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Extracts from U.S. Defence Intelligence Agency Documents from 1972-1983.

Note: Comments in *bold italics* are mine.

(3)

1. Ref: DST-1810S-076-76 March 1976. "If the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavourable effects on industrial output and military functions".
2. Ref: DST-1810S-074-76 March 1976 "Personnel exposed to microwave radiation below thermal levels experience more neurological, cardiovascular, and haemodynamic disturbances than do their unexposed counterparts. Some of the effects attributed to exposure include bradycardia, hypotension, and changes in EKG indices." "Subjects exposed to microwave exhibited a variety of neurasthenic disorders against a background of angiodystonia (abnormal changes in tonicity of blood vessels). The most common subjective complaints were headache, fatigue, perspiring, dizziness, menstrual disorders, irritability, agitation, tension, drowsiness, sleeplessness, depression, anxiety, forgetfulness, and lack of concentration." *The very things that some mobile phone users report (Mild et al 1998)*
3. Ref: ST-CS-01-169-72 July 1972. "Low frequency electromagnetic fields have been found to generate sonic and ultrasonic oscillations in living organisms. These oscillations produce elastic deformations in the organism. If the frequency of the outside field corresponds to the oscillation frequency of the cells, the latter deteriorate" "Since almost all of the Soviet data on electromagnetic radiation (below visible) applies to physiological response, one can only imply that they have substantial knowledge of the psychological effects". "The UCLA Brain Information Service in Los Angeles has compiled an extensive bibliographic list on the biological effects of electromagnetic fields (below visible frequencies) especially on the central nervous system". *Numerous studies have since confirmed this including Wever(1974), Konig (1974), Beale et al.(1997), Lilienfeld et al. (1978), Robinette et al.(1980).*
4. Ref: DST-1810S-074-76 March 1976 "Soviet research has produced guidelines which were used to establish a value of 10 uW/cm² per working day *UK standard 110* uW/cm²..... Should subsequent research result in adoption of the Soviet standard..... industries could be required to make costly modifications to protect workers. Recognition of the standard could also limit the application of new electronic technology by making the commercial exploitation of some products unattractive because of increased costs imposed by the need for additional safeguards. Another possibility is the alteration of the permeability of the blood-brain barrier. This could allow neurotoxins in the blood to cross. As a result, an individual could develop severe neuropathological symptoms and either die or become seriously impaired neurologically" *Proven by Salford et al.(1993)(1994)(1999). Parkinsons, Alzheimers, and vCJD are such possibilities.*
5. Ref: ST-CS-01-169-72 July 1972 "Low frequency emfs have been found to generate oscillations in living organisms. If the frequency of the outside field corresponds to the oscillation frequency of the cells, the latter deteriorate as a result of the mechanical resonance" *The human brain & heart function at frequencies within the spectra of cellphones, computers etc.*
6. DST-1810S-074-76 March 1976 "personnel exposed to microwave radiation below thermal levels experience more neurological, cardiovascular and hemodynamic disturbances than do their unexposed counterparts (*microwaves*)

Donald Stevens. Nov. 2000

(1) used in all cell phones, Wi-Fi, tablets etc. with pulse frequency added.

(2) Most common symptoms

(3) Now proven by experiment

(a 500 word essay for a magazine)

4

Are you being targeted?

The answer may surprise you.

Several individuals contact me on a weekly basis from all over the World, claiming that they, or specific areas of their bodies, are deliberately being microwaved. The initial questions are:

Is it possible? Is there evidence? Has it been done? Is there proof? Is it happening today? The simple answer is "Yes" to all of those questions!

The PANDORA project, funded by the CIA in the 60's was only one of very many experiments carried out on unknowing humans, to test how low-level microwaves cause physical and neurological harm. Dr Ross Adey claimed that: "...all aspects of human behaviour can be affected - even controlled...." (1) - Most secret experiments had the prefix MK before the codeword.

Even today, TETRA (Airwave) is an epidemiological study, until 2018, where neurological effects from calcium efflux is known to occur and the Government Scientists admit that they cannot exclude harm from the TETRA pulse system or cancer. TETRA is, of course, transmitted over approximately 150 countries. (2)

Synthetic telepathy (induced auditory influence) or, put more simply - hearing voices/suddenly having an impulse to do or act in some way - is legally transmitted to people in shops, supermarkets - in fact, anywhere. 'Patents' were taken out on such transmitters to:

- (i) communicate with the deaf - i.e. microwave pulses, etc., direct into the brain
- (ii) prevent people in shops from shoplifting, using a similar frequency (3)

It does not take a great leap of the imagination to realise that other experimental pulses/frequencies - known, from previous studies, to cause both neurological/physiological changes - could be used to the advantage of the transmitting body for a) research and b) profit.

NB: One US East Coast Store Chain has reported a \$600,000 profit in nine months from this technology. (3)

Should the reader care to look at the list of both physical and neurological effects from my list of microwave pulses, it will become clear that these patented devices (of which there are many) can be open to abuse. (4)

Notwithstanding all of the above, 'Agencies' can always know exactly where you are (with or without you carrying a cellphone), watch your movements on one of the types of 'human radar' (5), and listen to anything you say (even if your phone is turned off). (6) Put simply, everything you do and say can be monitored 24 hours a day, wherever you are, should an Agency wish it to be.

Therefore, if you can be monitored, you can be targeted (let's be honest - Agencies are not going to ask for volunteers!).

In 1991, Hamline Universities Public Administration report on **MK ULTRA (1988)** found that victims had to settle out of court, as the US and Canadian Governments cited 'National Security'. The UK Government's 'Porton Down' does not walk with clean hands on human experimentation, either.

So, what can you do if you are being targeted?

- i) Recognise the symptoms. (7)
- ii) Do not carry a cellphone. If you have to, carry it in a wire mesh shield or metal tin (child's school pen/pencil box). Few people realize that some phones can be activated (even if off) and act as a relay antennae for another person's call.
- iii) If you do not carry a phone, avoid being tracked by 'radar' – which eliminates static objects near you – by mingling for a few minutes in a crowd. The computer will confuse your 'signal' with that of others.
- iv) Wear shielding (specialized clothing) to reduce your absorption – hence symptoms.
- v) Shield your home (ES-UK produces company lists and articles on this, if you are a new reader).

In summary, microwave stealth weapons have been used from the '50's to the present day. They are a perfect Governmental asset; hence the Government's complicity to protect the Communications Industry – they need each other to continue.

With more powerful computers, these weapons grow accordingly and have to be tested – which is where you come in....

Will you stop them? In 1999 the EU Parliament called for a World Convention to ban all human experimentation/manipulation (28th January – A4-0005/99 EP1159)....

You have somewhere to go....

Finally, little used these days, but not obsolete, if you have an implant (chip) have it detected with a reader (microwave detector or reader like Vets use to identify stray pets), then have it x-rayed and removed.

In conclusion, several years ago in the West Country I approached a Knighted, top-Government Scientist and informed him that he could be causing brain damage, neurological damage and cancer to those being experimented upon in his 'trial'. He looked me straight in the eye and said "What's wrong with that?"

This is the mind-set of the decision-makers....

Barrie Trower

February 2012

(6)

(1) *Satellite Surveillance and Human Experimentation – Illegal experimentation on Humans P7*
Paul Bird. Feb 2009.

(2) *Most Confidential Report on the TETRA (Airwave) Communications System (Strictly for the Public & Commercial Services Union)*
B Trower June 2009

(3) *Advanced Electronics Security*
Microwave Detection: Remote Mind Control Technology P3
Patents: 6587729 USA 5123844 USA 5289438 USA
Anna Keeler May 2010

(4) *"The Communications Industry is in the position where it is spiralling out of any person's ability to control it"...*
B Trower – Open letter (Internet).

(5) *"Smart Antennae – they know where you are" Scientific American P48*
Martin Cooper July 2003
"Cellular" Electronic News
Steve Bush Dec 2002

(6) *"Your mobile phone is a wiretap – even if it is turned off".*
www.next-up.org 27.11.09

(7) *ES and EHS – ISBN 978-1-872072-20-3 P6*
ES-UK (See address in magazine)
Michael Bevington Feb 2010

By Julianne McKinney, Director

Electronic Surveillance Project

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The prospect of domination of the nation's scholars by federal employment, project allocations, and the power of money is ever present—and is gravely to be regarded. Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.

[President Dwight D. Eisenhower, January 17, 1961]

Covert actions are counterproductive and damaging to the national interest of the United States. They are inimical to the operation of an effective national intelligence system, and corruptive of civil liberties, including the functioning of the judiciary and a free press. Most importantly, they contradict the principles of democracy, national self-determination and international law to which the United States is publicly committed.

[Credo of the Association of National Security Alumni]

MICROWAVE HARASSMENT

AND

MIND-CONTROL EXPERIMENTATION

by Julianne McKinney

Director, Electronic Surveillance Project

Association of National Security Alumni

December 1992

Whither the KGB?

In February 1974, Georgetown University's Center for Strategic and International Studies (CSIS) hosted discussions on the plight of dissenters in the Soviet Union, and on the means by which the U.S. Government might most effectively intervene. Highlights of these discussions are reported in *Understanding the Solzhenitzyn Affair: Dissent and its Control in the USSR* (CSIS, 1974).

KGB strategies were addressed in some detail during these discussions. It was noted that the KGB's success depended on the extensive use of informant networks and *agents provocateurs*; and, following Brezhnev's rise to power, on the use of drugs and psychiatrists for further purposes of manipulation and control. Shadowing, bugging, slandering, blacklisting and other related tactics were also cited as serving KGB purposes. Participants in the conference agreed that the KGB's obvious intent was to divide and isolate the populace, to spread fear, and to silence dissenters.

Agencies of our own government are on record as having employed precisely these same tactics on a recurrent basis. The Church and Rockefeller Committee Hearings in the mid-1970's purportedly put an end to these practices. Based on recent developments, it would appear that the CIA's and FBI's Operations MKULTRA, MHCHAOS and COINTELPRO (the focus of these Senate Committee and Vice-Presidential-level Hearings) were instead merely driven underground. We are now in contact with a total of 25⁺ individuals, scattered throughout the United States, who firmly believe they are being harassed by agencies of the U.S. Government. Others have been brought to our attention whom we will be contacting in the future. The

majority of these individuals claim that their harassment and surveillance began in 1989.

The methods reportedly employed in these harassment campaigns bear a striking resemblance to those attributed to the CIA and FBI during Operations MKULTRA, MHCHAOS and COINTELPRO. The only difference now is that electronic harassment and experimentation also appear to be (more blatantly) involved.

The Berlin Wall is down, Communism is in the midst of a death rattle, and the KGB no longer poses the threat which purportedly served to justify the U.S. Government's resort to such operations as MKULTRA, MHCHAOS and COINTELPRO. The KGB, since 1989, has been reduced to an increasingly distant memory.

Reactivation of surveillance/harassment/mind-control operations in this country suggests that the KGB, as an institution, was never the real threat. A KGB "mentality," with its underlying pragmatic contempt for civil liberties, appears, instead, to have been the driving force behind MKULTRA, MHCHAOS and COINTELPRO, and the operations now being reported to us.

The KGB "mentality" is a matter of personal predilection, not ideology. Its objective is power and control, regardless of human cost. It is a corrupting, cancerous influence, which feeds on fear, conformity and government funding.

Four months ago, when this Project commenced, we approached these complaints of government harassment and experimentation with an admitted "high degree of caution." We are no longer skeptical. The growing numbers of independent complaints and the similarities between those complaints cannot be ignored. Under the circumstances, the KGB should be proud of itself. As a "mentality," the KGB appears to be accomplishing more in "burying this country" from within, than it could ever have hoped to have achieved as an institution. It would appear that this country has a serious problem on its hands which needs to be resolved.

Part I of this report, which is reprinted from the June-July 1992 edition of the Association's publication, *Unclassified*, preliminarily addresses the complaints brought to our attention as of July 1992. Our objective, as noted, was to weigh the legitimacy of those complaints in terms of the directed-energy technologies reportedly involved. Part II discusses the overt and covert patterns of harassment identified as a result of our investigations, to date. A part of our objective, here, is to limit the success of such operations in the future, by according them widespread publicity.

In Part II, we do not identify individuals by name, both to honor their privacy and because our investigations have not been completed. Part II, like Part I, is a preliminary finding. Our focus is on the similarities of the complaints being received—similarities which Federal and State legislators, the courts, the FBI, local law enforcement agencies, the medical and psychiatric professions, and organizations such as the ACLU and Amnesty International have so far chosen to ignore.

We frankly find it curious that more attention and credibility is being accorded purported victims of UFO experiences and spectral visitations, than to persons who complain of systematic harassment and experimentation by the U.S. Government, involving technologies which the U.S. Government is only now grudgingly admitting to possess. These complaints require investigation. In due course (and provided financial support is obtained), we hope to be able to acquire the technology and supportive medical expertise to substantiate the claims being made. We also hope to alter the institutional mindset that U.S. Intelligence can be trusted. History, repeatedly, has proven otherwise.

PART I - THE PROBLEM SURFACES

[Reprinted from the June-July 1992 edition of *UNCLASSIFIED* (Vol. IV, No. 3),

published by *The Association of National Security Alumni*, Washington, D.C.]

The August-September 1991 issue of *UNCLASSIFIED* reviewed Hamline University's *Public Administration* report on the resolution of MKULTRA cases in 1988. Although the shocking details of medical ethics abuses by the U.S. and Canadian governments were amply detailed, Washington and Ottawa—citing national security and government privilege—stalled for so long that the cases never came to trial. The surviving victims settled for a pittance in an out-of-court settlement.

Since no individuals or agencies were held legally accountable, the door was left open for possible resumption of similar “mind-control” activities.

In the context of that article, we mentioned briefly that some half-dozen people had contacted us with appeals for assistance in ending what they believe to be electronic harassment and mind-control experimentation, possibly involving the CIA. We decided to take a closer look at this situation.

We are now in touch with approximately a dozen individuals located throughout the United States who appear to be targets of harassment and mind-control experimentation involving directed-energy technologies. [By mid-November 1992, that number had increased to 25.]

Typically, persons who complain of being “zapped by radio waves” and of “hearing voices” are stigmatized as psychotic, delusional or schizophrenic. Being mindful of this, as well as aware of the treatment accorded UFO and psychic phenomena “freaks,” we approach this subject with a high degree of caution. Based on our preliminary investigation, including interviews with the affected individuals, we conclude that the matter is serious and should be pursued further.

The Existing Directed-Energy Arsenal

Our first step was to determine what, if any technology exists which might be used for electronic harassment. That information was found in a “white paper” published in 1991 by the U.S. Global Strategy Council—a Washington-based organization, under the chairmanship of Ray Cline, former Deputy Director of the CIA, who maintains very close ties with the U.S. Intelligence community. The “white paper” describes the foreign and domestic uses foreseen for laser weapons, isotropic radiators, infrasound, non-nuclear electromagnetic pulse generators, and high-power microwave emitters.

The term, “non-lethal,” used to describe this technology is misleading. The energy emitted from all of these weapons can kill when appropriately amplified. At lower levels of amplification, they can cause extreme forms of physical discomfort and debilitation.

The Department of Army (DA) identifies these same weapons as “non-conventional.” They were so identified in an exhibit at a DA-sponsored symposium on “The Soldier As A System,” in Crystal City, VA, on June 30, 1992. Beta wave incapacitators were separately mentioned during the symposium as being of particular interest to the U.S. Marine Corps.

We discussed these “non-conventional” directed-energy weapons with Mr. Vernon Shisler,

manager of the exhibit and the Army's delegate to NATO in matters pertaining to "The Soldier As A System." Mr. Shisler acknowledged not only that directed-energy weapons are in DoD's arsenal, but also that the American soldier will remain vulnerable to their effects, should they be employed in the battlefield.

The U.S. Global Strategy Council recognizes the issue of vulnerability, as well, and urges ongoing research into effective countermeasures.

Interested readers may want to send for the U.S. Global Strategy Council's complete project proposal on this subject: (Title: *Nonlethality: Development of a National Policy and Employing Nonlethal Means in a New Strategic Era*, prepared by Janet Morris). A number of references in this Proposal to unidentified, elusive "enemies" of the U.S. Government and to the potential domestic applications of this "non-lethal" technology invite serious consideration by the public at large.

The Council's address is 1800 K Street, N.W., Washington, D.C. 20006, (202) 466-6029.

Bioeffects of Microwave Radiation

Research into the biological and psychological effects of exposure to microwave radiation is voluminous. The U.S. public has been led to believe that the former Soviet Union leads in this research. The fact is, the CIA and DoD [Department of Defense] have jointly pursued precisely the same research since commencement of Project Pandora in the 1950's. The current primary users of this research appear to be the CIA, DoD, the National Security Agency (NSA) and the Department of Energy (DoE).

The Walter Reed Army Institute of Research (WRAIR) has participated in this research since Project Pandora. In 1973, WRAIR discovered that externally-induced auditory input could be achieved by means of pulsed microwave audiograms, or analogs of spoken words' sounds. The effect on the receiving end is the (schizophrenic) sensation of "hearing voices" which are not part of the recipients' own thought processes.

The experiment prompted the following comment in *The Body Electric: Electromagnetism and the Foundation of Life*, by Robert O. Becker, M.D., and Gary Selden (Wm. Morrow & Company, NY, 1985): "Such a device has obvious applications in covert operations designed to drive a target crazy with 'voices' or deliver undetectable instructions to a programmed assassin."

This research has continued, and the results are published in various publicly available scientific and technical journals. Interested readers might consult, for example: Lin, James C., *Electromagnetic Interaction With Biological Systems* (Plenum Press, NY, 1989). Professor Lin, then with the Department of Bioengineering, University of Illinois, Chicago, has published a number of books and articles on this subject. [He has more recently informed us that he had designed the experiment referenced above in Dr. Becker's book.]

WRAIR has more recently been studying the biological effects of exposure to high-power microwave radiation. WRAIR presented a paper on this subject to a DoD-sponsored symposium on "MW [microwave] Weapons" at the Naval Postgraduate School in Monterey, CA, in mid-1989.

A matter of interest to us is why WRAIR should be experimenting with auditory effects of pulsed microwave audiograms. Also, recent statements by an Army psychiatrist assigned to the Walter Reed Army Medical Center (WRAMC) suggest that WRAIR may be experimenting upon

select psychiatric inpatients with microwaves. This, too, is a matter of interest to us.

Congressional Oversight

The Government's past record of abuses in the area of civil rights is well documented. Within the past 30 years alone, we have witnessed the effects of Operations MKULTRA, MHCHAOS and COINTELPRO.

Primarily because of MKULTRA, MHCHAOS and COINTELPRO, Executive Orders and implementing regulations were published which prohibited military and CIA domestic covert intelligence operations. Experiments on involuntary human subjects, and the surveillance of/collection of personal information on U.S. citizens, except under strictly regulated conditions were also prohibited.

Congressional committees were created to oversee compliance with these (quasi-) legal prohibitions. We have evidence that this is not being done. Moreover, where there are laws and, in this case, no laws enacted, there are loopholes, as well as individual and institutions who deliberately capitalize upon the existence of loopholes. Iran-Contra is one of the more blatant recent examples. Loopholes are also found in government resort to "black" intelligence and weapons programs, in the use of contractors, and in the absence of clear definitions of such terms as "national security" and "national security risk."

Executive Orders and regulations which currently limit official U.S. Intelligence activities do not extend to non-intelligence government agencies or to their contractors. In fact, Executive Order 12333 specifies that government contractors do not need to know that their services support U.S. Intelligence objectives.

In its report of July 8, 1992, the Senate Subcommittee on Oversight of Government Management addresses the problem of tracking funds granted to government-contracted research and development (R&D) centers. The report notes that the problem is compounded by DoD's penchant for creating hard-to-monitor "shell" contractors as disbursement centers for funding programs.

Neither shell contractors nor their subcontractors are directly accountable to Congress. Being beyond Congressional oversight, they have the license to operate as Government surrogates in intelligence operations about which, "officially" they know nothing.

In this context, a publication disseminated at DA's "The Soldier As A System" symposium noted that the Army's Research and Technology Program sponsors 42 laboratories and R&D centers, employing approximately 10,000 scientists and engineers. The annual budget of \$1.3 billion is only a small part of overall DoD research spending.

Weapons research, which includes the development and testing of "non-lethal" weapons, is not governed by laws restricting the activities of U.S. Intelligence agencies, though it may be presumed that these agencies contribute to and benefit from such research.

Preliminary Findings

1. The technology exists for the types of harassment and experimentation reported to us.
2. About a dozen U.S. citizens have informed us of continuing experiences with effects which directed-energy weapons are designed to produce.
3. U.S. Government-sponsored research into the bioeffects of exposure to microwave radiation is extensive and continuing.
4. The U.S. Government has a past record of having engaged in mind-control experimentation; and various agencies of the Government have a record of circumventing legal restrictions upon their activities.
5. Neither Congress nor the courts appear willing to look closely into “black” intelligence and weapons procurement programs.
6. A number of U.S. Government agencies might have interest in testing directed-energy technologies on U.S. citizens under non-clinical/non-controlled circumstances—DoD, to test ranges and degrees of “non-lethality”; DoE, to explore “safety” limits; CIA, to test “mind-control” capabilities, and NSA, for technological refinement.

PART II - OVERT AND COVERT HARASSMENT

Since publication of the preceding article less than four months ago, the association of National Security Alumni/Electronic Surveillance Project has heard from an additional 13* individuals who report both overt harassment and a range of symptoms which coincide with the known effects of exposure to microwaves, electromagnetic/radio frequency (RF) radiation and/or infrasound.

The similarity of these symptoms will be addressed in greater detail in future Project reports. Suffice it to say, at this point, that the physical and psychological symptoms being reported to us are consistent with the effects which directed-energy weapons are designed to produce. Indeed, the numerous afflictions (or “infections”) being reported appear to parallel standard torture “sequelae,”^[1] (aftereffects).

Overt Harassment

Overt Harassment—which obviously is *meant* to be observed—may be intended to “precondition” individuals for eventual long-term electronic harassment. Persons terrified by unexplained overt harassment are not likely to cope with the sudden onset of electronic harassment in any more reasoned fashion. This phased pattern of harassment is apparent in all of the cases now being investigated. The fact that the overt harassment continues in these cases even after the electronic targeting commences suggests that the objective is to maintain long-term extremes of stress.

Many of the overt harassment tactics discussed below are surfacing in cases which (so far) have *not* involved discernible forms of electronic harassment. These are cases involving so-called “whistleblowers” who, because of their inside knowledge of certain potentially newsworthy events, pose particular threats of embarrassment to the Government or to government-affiliated employers. We have noticed that electronic harassment is beginning to surface as a form of retaliation against persons who try to assist electronic “harasseees.” Retaliation suggests loss of control. Under the circumstances, we are not entirely confident that “whistleblowers” will continue to be exempted from this type of harassment in the long term.

The individuals now in touch with the Project describe their circumstances as involving most, if not all, of the following overt forms of harassment:

- Sudden, bizarrely-rude treatment, isolation and acts of harassment and vandalism by formerly friendly neighbors.
- Harassing telephone calls, which continue even after the targeted individual obtains new, unlisted telephone numbers.
- Mail interception, theft and tampering.
- Noise campaigns.

While unrelenting harassing telephone calls might be considered in this context, other tactics are employed. Blaring horns, whistles, sirens, garbage disposal (run concurrently in apartment settings, for excessively prolonged periods of time), and amplified transmissions of recorded “general racket” have been used on a recurrent basis under circumstances intended to persuade the individual that he or she is under surveillance.

In all of these cases, the individuals’ neighbors apparently pretend to be oblivious and/or indifferent to these sudden, continuous explosions of noise.

Door slamming is also a popular pastime, particularly in apartment buildings. One individual reported that, during a peak period of harassment, the neighbor across the hall began entering and leaving his apartment every 10 minutes, slamming his door loudly on each occasion. This was a daily occurrence, encompassing periods of several hours, over a period of several months. It apparently served to trigger a door-slamming “chain reaction” on the part of neighbors both on that floor and on the floors immediately above and below. When our contact politely asked her immediate neighbor to close his door more quietly, he slammed the door in her face. Prior to commencement of this harassment, that neighbor had apparently been quite friendly and courteous.

In another case, the primary door-slammer is an employee of Radix Systems, Inc., Rockville, MD, a DoD contractor engaged in the “super-secret” research and development of some type of electronic equipment.

Several individuals reported recurrent, loud, strange noises in their ventilation systems

during the preliminary stages of their harassment. One individual complained of being recurrently awakened in the middle of the night by the sound of wires being fed into his (independent) ventilation system. On checking further, he found that a tubular construction had been built into his vent system which appears to lead to the apartment upstairs. His upstairs neighbor is employed by the Department of Justice.

A number of individuals report that occupants of upstairs and downstairs apartments appear to follow them from room to room, tapping on the floor or engaging in other activities which appear intended to advertise an ongoing surveillance.

The Justice Department employee mentioned above went so far as to offer an unsolicited apology to her downstairs neighbor for the all-night "pacing about" in her bedroom (in the event he had happened to notice it). She claimed to be an insomniac. That pacing-about continued during her recent 36-hour absence from the area. When our contact politely alerted her to the fact that her apartment had apparently been entered during her absence, she told him, in effect, to mind his own business and then immediately complained to the building manager that he was stalking her.

She conveniently forgot to inform the building manager that she had assiduously "courted" this individual for several months, without success; and that she had been stealing his newspapers on a regular basis. (On one occasion, she handed him a week's accumulation of those papers, claiming that they had been left outside the door of another apartment. Her reason for collecting and saving newspapers which had not been delivered to her directly is unknown.)

· Recurrent confrontations by unusually hostile strangers; and comments by strangers which appear intended to evoke "paranoid" reactions.

In this context, we note that several individuals have reported confrontations with "homeless" people who, on closer examination, were found to be fastidiously clean, though garbed in offbeat fashion (wigs included). The same "eccentric" confronted two of the individuals in contact with us, at separate distant locations. He is reported as having feigned mental illness on both occasions, and as having apparently enjoyed creating a public scene.

· Entries into the individual's residence, during late-night hours while he/she is sleeping, and/or during the day when the individual is elsewhere.

In virtually all such cases, the burglars leave evidence of their visits, such as by relocating objects, or by committing petty and not-so-petty acts of vandalism. In two cases, the burglar's "calling card" was to slaughter caged pets, leaving the mangled carcasses inside their locked cages.

In one case, the burglar stole several pieces of correspondence and left a packet of crack cocaine behind as a "calling card." Our contact in this case—an individual who has no criminal record and no history of experimentation with drugs—is also being harassed (stalked) by a police officer in her community. One of his recent acts was to "frame" her with a drug possession charge. After pulling her off the road (a frequent pastime) and subjecting her to an illegal search (done, twice, so far), he conveniently managed to find a glassine packet of cocaine eight feet away, in front of his squad car. He retrieved the packet with his fingers and then charged her with Possession. Our contact found the packet of crack cocaine in her apartment shortly after this investigator reminded the attorney handling her case that the police officer had smudged his only piece of evidence with his own fingerprints. It would appear that someone is interested in correcting that police officer's oversight.

In another case, the individual reports that a tremendous amount of money had been stolen from a hiding place in her apartment, within hours after she had withdrawn the money from her

bank. There were no obvious signs of entry into her apartment. The police conducted a cursory inquiry which failed to produce evidence of a crime worthy of investigation. (This case is an anomaly. Money is not usually stolen. Documents appear to be the preferred objects of theft, when thefts occur.)

In another case, the burglars replaced installed lightbulbs with “exploding” bulbs, many of which were *Made in Hungary*. The lightbulbs are now in our possession.

- Rapidly deteriorating health, generally of a digestive nature.

In two cases of the cases reported, massive rectal bleeding accompanied the sudden onset of severe gastrointestinal disturbances. One of these individuals abruptly terminated the deteriorative process simply by changing the locks on her door.

- Sleep disruption/deprivation.

This is achieved by means of both overt and electronic harassment. Sleep deprivation, as a tactic, invariably surfaces when the targeted individual begins exhibiting a strong emotional and irrational response to the other forms of harassment.

- Vandalism of privately-owned vehicles.

Vehicles invite peculiarly ferocious attacks in these harassment campaigns—slashed tires, smashed windows, oil drainage, oil contamination, destruction of electronic components and batteries (frequently involving wildly fluctuating, grounded fuel gages, often within range of weapons research facilities and/or other microwave emitters); and suddenly failed brakes and clutches (possibly involving anti-traction polymers, which are also in DoD’s “non-lethal” weapons arsenal). Recurrent auto thefts have also been reported.

Two individuals reported finding their oil contaminated immediately after having the oil changed by reputable mechanics. In one of these cases, the oil viscosified (thickened) while the individual was driving through a remote rural area. Her car ground to a halt. Getting the “gunk” cleaned out of her engine proved to be an expensive ordeal. (Viscosification agents are also lauded by the U.S. Global Strategy Council as serving “non-lethal” strategic purposes—a topic discussed in Part I of this publication. Had this woman been assaulted while awaiting help in the said isolated area, the “non-lethal” attributes of viscosification agents might have required redefinition.)

Most of those who have experienced these attacks on a recurring basis have abandoned driving all together—an objective apparently sought by their tormentors as a means of increasing their isolation.

- Staged accidents.

The majority of those in touch with us have reported these types of experiences. One individual, for example, was tailgated at a high rate of speed by two vehicles, while concurrently being threatened with a gun by one of the vehicles’ occupants. Two others narrowly avoided what appeared to be deliberately attempted collisions by drivers who quickly sped away from the scene. One avoided three attempts in four days at being run off the road. One survived being run off the road in two incidents within a one-week period, which resulted in “totaling” of her two vehicles. Another narrowly avoided being crushed into an expressway retaining wall, on four occasions, by an off-duty metro bus, as well as, within the same time frame, being “fried” by two suddenly-malfunctioned household appliances which subsequently repaired themselves.

It should be noted that, in some of these cases, “accidental” deaths do occur. One individual in contact with us reported that his mother drove off a cliff to her death, during a period when he

was researching evidence that a still-respected, high level State Department official had passed A-bomb secrets to the Soviet Government during World War II. The accident occurred shortly after her car had undergone routine maintenance. She was returning from a dental appointment when the accident occurred. Witnesses state that it appeared that she had suddenly stepped on the accelerator before running off the road. The accident served to terminate this person's research project.

We are also currently looking into the recent death of a woman in Lexington, MO, who was killed when the brakes on her tractor failed. We are informed that she had been collecting affidavits from persons who believe they are the targets of government harassment and experimentation when her "accident" occurred. We are also informed that those affidavits have disappeared.

Suicides might also qualify as "staged accidents," particularly where "plausibly deniable" government involvement has been surfaced. We are currently looking into the recent suicide of a man in Trappe, PA, who, as early as 1981, had asked the FBI and CIA to intervene in his case. We have copies of that early correspondence. The man, a former U.S. Army radar technician, had a highly technical and—given the date of his correspondence—"precocious" grasp of the experimental objectives apparently being sought in his case. It is apparent from his correspondence that he had wanted to believe that the Soviets were conducting these experiments. The FBI and CIA, of course, did not intervene. We are informed that members of his family have also been targets of this experimentation.

· Isolation of the individual from members of his/her immediate family—virtually assured when highly focused forms of electronic harassment commence.

The exception to this is when elderly parents and young children in the family become targets for apparent purposes of intimidation. This situation has been reported in eight of our cases, to date.

One individual (driven to extremes of stress by ongoing electronic harassment focusing on her children) killed one child in an effort to protect her from further pain.^[2] It appears that lasers were being used in this individual's case. The targeting intensified after she called the Soviet Embassy to report the harassment, which she believed to be U.S. Government-sponsored. It became even more deadly when, in a further show of defiance, she then called the representative of the Iraqi Government to portray the U.S. Government's war in the Middle East as "hypocritical." She is now hospitalized in a midwestern psychiatric facility, where, apparently, the experimentation is now continuing.

(That psychiatric facility is in a State where a disproportionate number of complaints of electronic harassment are beginning to surface. It is also within range of a U.S. Air Force base which houses a "super secret" research facility. We are currently looking into information that spouses and children of persons employed on that USAF base may be the targets of involuntary experimentation involving directed-energy weapons technologies.)

Another individual, during a telephone conversation, was told by an employee of a local power company that, if she valued the lives of her children, she would drop her public opposition to the company's installation of high power lines. Since receiving that threat, the individual's 11-year-old daughter has been reduced to extremes of pain, resulting in her recurrent hospitalization for treatment of illnesses which cannot be diagnosed. It is now also apparent to this individual that her three-year-old son is on the receiving end of externally-induced auditory input. (DoE figures prominently in this case.)

· Progressive financial impoverishment, brought on by termination of the individual's employment, and compounded by expenses associated with the harassment.

The majority of those now in contact with the Project—educated, white-collar professionals—have lost their jobs. Termination of employment in many of these cases involved prefatory harassment by the employer and co-workers, which coincided with the other overt forms of harassment discussed above.

The overt harassment tactics are being described as recurrent, non-sequential and overlapping. As noted above, the overt harassment continues even after the electronic harassment commences.

Failure of “Establishment” Support Systems

Those individuals who have tried to resolve their respective situations through resort to “establishment” channels have invariably encountered the following:

- Apathy, indifference and/or professed helplessness on the part of members of Congress and state legislators.
- Dismissal and/or attempted discrediting by psychiatrists who refuse to include the terms, “government harassment,” “mind-control experimentation” and “torture” in their vocabulary.

Several individuals, thinking that psychiatrists might help to alleviate the extreme stress associated with their harassment, were accorded “treatment” which clearly pointed to cooperation between their psychiatrists and members of the U.S. Intelligence community. One such psychiatrist, in fact, bragged about being a member of the U.S. Intelligence “inner circle,” informing our contact that her harassment was a “Pavlovian Experiment,” intended to “break” her.

- Lack of interest, courage and/or competency in legal circles.

Few of those in contact with us have been able to acquire legal assistance—not helped by their straitened financial circumstances. Most have found that few attorneys are willing to risk their careers by pursuing cases involving what is believed to be government-sponsored harassment and experimentation.

A few attorneys reportedly engaged in egregious violations of codes of professional conduct, in what appear to have been deliberate efforts at sabotaging our contacts’ cases. Subsequent attempts by two individuals at obtaining legal redress were met with stonewalling, obstruction, and high-level denials of wrongdoing.

- Refusal of the mass media to address this topic, except in those cases where suspected experimentees have been driven to the point of committing murder or suicide.

Such cases (particularly where an individual has claimed to be the victim of CIA-directed mind-control involving auditory input) are treated by the press as “curiosities.” An example of this is the individual who shot a Navy officer outside the Pentagon in mid-1991.^[3] He claimed to be a victim of CIA mind control, involving auditory input. According to the press, “he worried ‘about being run over by trains’...” (ref. incident described in following paragraph). He is now permanently residing in a psychiatric facility. He, being institutionalized, and others in the preliminary stages of his predicament are no longer of interest to the media.

Another recent case which received short-lived press attention^[4] involved a woman diagnosed as having “suffered from periods of confusion” who climbed over a fence onto a railroad track and walked into an oncoming train. Because the incident occurred in a community

in which an unusually large number of these mind-control experiments have been reported, we are looking into the situation. The woman was reportedly "under a physician's care" because of her "periods of confusion." A family member described the physician to this investigator as "a psychiatrist." We find that the alleged "psychiatrist" is a General Practitioner, otherwise non-accredited, practicing out of his home. We find also that the suicide may have been witnessed under peculiarly-timed circumstances by an alleged "homeless" person who has since disappeared. Needless to say, our interest has been whetted.

- Refusal and/or inability of local police to intervene.

The tendency of local police is to dismiss an individual's complaints of government harassment as the ravings of a "fruitcake." In one case, discussed above, it is apparent that one police officer is actively cooperating in the harassment. Some police agencies, while acknowledging the reality of the situation, hesitate to intervene in cases involving what they believe to be U.S. Intelligence. On a few occasions, certain police officials did attempt to intervene, based on what they perceived to be evidence of a systematic harassment/illegal surveillance campaign. Absent a clear mandate to prosecute "stalkers" acting under the aegis of U.S. Intelligence, the police obviously had their hands tied.

- Refusal of the FBI to intervene in any of the cases brought to our attention thus far.

FBI spokesmen do acknowledge that they have received a large number of requests for assistance from "mentally disturbed persons" who believe that they are being "zapped by radio waves" and/or "are hearing voices..." "from Mars, that is."

In one case, an FBI spokesman reacted in an angry, defensive and bizarre fashion when our contact briefly alluded to PROJECT SLAMMER as possibly being related to her surveillance. (PROJECT SLAMMER is a CIA-funded study, managed by CIA and FBI behavioral scientist, which explores the "mental make-up" of alleged security risks, along with their family members and close associates. Participants in PROJECT SLAMMER include NSA, DIA, and Army, Navy and Air Force Intelligence.)

Until PROJECT SLAMMER was mentioned, the FBI spokesman's approach in this case was to politely and redundantly explain that the law, as currently constructed, prevents the FBI's intervening in this individual's case. When she briefly pointed out that the surveillance activities might fall under the purview of PROJECT SLAMMER, the spokesman's response was to abruptly and angrily declaim, "**You** don't know who is conducting that surveillance! **You** don't know if that is a state police surveillance! ...or a local police surveillance! It could be a totally unrelated operation! **You** don't know who is conducting that surveillance! [etc., etc.]"

It was apparent from this response that the FBI was at least acknowledging the existence of a surveillance, if in somewhat emotional fashion. The individual in question subsequently furnished acquired evidence to the local police, who made it clear that they are not participants in the surveillance which, based on the evidence, pointedly suggest that our contact is the target.

- Refusal or inability of the ACLU and Amnesty International to intervene.

Both organizations acknowledge receiving many complaints from persons claiming to be the targets of some type of electronic harassment. An ACLU spokes-woman characterized the complaints as appearing to be rational, except in a few cases. The complaints are not being investigated, she said, because of "limited resources." We have to wonder, of course, why the ACLU could recently find resources to defend the rights of prostitutes and the Ku Klux Klan, yet remains incapable of intervening in cases such as we are now pursuing.

Amnesty International recently informed one of our contacts that they could not intervene in

her case because their focus is on the U.S. Government's treatment of prison inmates. While incarceration does appear to be one sought-for objective in these harassment/mind control experiments, we would like to think that protections by such organizations as Amnesty International can be achieved beforehand.

Related Covert Methodologies

The persons engaged in this harassment tend to become careless, possibly the result of arrogance born of an assumption that nobody can stop them. "Harasseees" who have noted this carelessness have furnished us with the following insights into the covert side of these harassment activities.

- Impersonation of military officers.

One individual found that her next-door neighbor had claimed to be a military intelligence officer, assigned to a space technology unit in California, on year-long "TDY" (temporary duty) in the individual's apartment building. It was subsequently determined that this alleged officer is not in fact a member of the U.S. Armed Forces; and that he had used this bogus status to acquire information from a major defense contractor. Our contact is certain that this person's apartment was used as a base of harassment operations.

- Use of concealment devices, and emitters detected to date.

Several individuals and supportive associates report having seen some of the electronic devices being used in these harassment campaigns.

One saw electronic equipment concealed inside a false-front upright piano being moved out of her apartment building. She had previously noted that all of her surrounding neighbors had identical upright pianos in their apartments, not one of which was ever played.

Other suspected participants in the harassment may be concealing devices in oversized stereo speakers, measuring approximately 5' in height x 3' x 3'. Several of our contacts have noted the presence of such speakers in adjacent dwellings.

One individual was told by a resident of her building that her upstairs neighbor has "microwave ovens" in his bedroom and livingroom, but none in the kitchen.

Another individual, while standing outside, looked into her neighbor's window to find that her bedroom appeared to be the target of a gray-colored, elongated box-like device, measuring approximately 1' in length x 5" in height (side view). A large, black-framed lens protruded from the end facing her window. The electrical cord, if any, was not visible from that vantage point. The equipment was being operated by a stranger in a three-piece suit, who appeared to be quite startled to find that he was being observed.

Another was given strong reason to believe that portable emitters are being concealed in oversized, extremely heavy, sometimes expandable "briefcases" for use in places of public assembly, such as meeting halls, auditoriums and restaurants. Smaller varieties are apparently being used on aircraft.

On one 3-hour flight, our contact noticed that the man sitting next to her seemed peculiarly intent on keeping the attaché case on his lap propped open with his fingertips, while he gazed "blankly" into the distance during the entire flight. She believed that she was being electronically harassed while on the flight (a common complaint, in most of the cases now being investigated).

Our contact reports that, when they prepared to land, the man opened his attaché case to hastily check its contents, thus disclosing the presence of a raised, built-in “concealment device” covering the entire bottom surface of the attaché case. The low-slung, lift-off cover did not appear to be capable of concealing a laptop computer. At one point during the flight — apparently aware that his “reverie” was inviting attention, —the man devoted approximately ten minutes to scribbling assorted entries on a sheet of lined paper, which he had placed on top of his briefcase two hours previously. He devoted roughly ten minutes to the effort (obviously preferring a pen to a laptop computer). His attaché case remained ajar during this process.^[5]

One individual reports that mobile emitters may be installed in certain oversized, non-attributable medical emergency vehicles, possibly for eventual use in civil disturbances. Her unsuccessful attempts at following the “medical emergency” vehicle which had surfaced in her case ended with a high-speed chase.

The phony military intelligence officer, when recently moving out of our contact's apartment building, was found to possess a device which resembles an oversized microwave oven, measuring approximately 4' in width x 2' in height x 2 1/2' in depth. A subsequent examination of his apartment revealed that he had tapped numerous additional lines into existing, in-house telephone and TV cables; and that he had gone to great pains to conceal a major excavation into one wall abutting the “harassee's.” Judging from photographs taken immediately after this person's departure, the wiring suggests that he was hooked by modem into a computer network, and that at least some of his electronic equipment was situated in a large walk-in closet, again abutting the “harassee's.”

When the alleged officer moved out, his equipment (except for the oversized “microwave oven”) was packaged in boxes identifying the contents only as stereo components. During his year-long residency in this building, no sounds emanated from his apartment to indicate use of this “stereo” equipment.

- Use of modified license plates and vehicle look-alikes.

Some individuals have noted that their neighbors' vehicles are periodically replaced (during peak periods of harassment) by others which qualify as “rough look-alikes.” The tags on these latter closely resemble those on the homeowners' vehicles, with a difference being noted in only one digit or one letter. These modified plates appear to have been acquired through State DMV channels, thus suggesting government/intelligence agency involvement.

In one case, where the individual has obtained police assistance, tracking of one plate surfaced evidence of a drug connection. That plate rapidly disappeared from the vehicle in question, to be replaced by another, again bearing a one-letter modification.

- Use of neighbors' residences as bases of operation and training.

One individual recently saw a team of “technicians” in the house behind hers—a consequence of the team's failure to close the curtains and/or dim lighting when puttering around in the kitchen at 5:00 in the morning. The three men (strangers to this individual, all stripped down to their T-shirts) behaved as if they were unaware that they were being watched. Their observer had long suspected that this house was being used as a base of electronic harassment operations. The harassment had been ongoing throughout the night.

To provoke a response from these men, the individual eventually commented aloud on their activities. They responded immediately by turning the lights off and switching to the use of flashlights. Why they failed to close the curtains is unknown.

This individual is working with the police in an effort at ending this surveillance and harassment, with mixed results.

* * *

Another individual, paying a surprise visit to the apartment upstairs, overheard one of her own telephone conversations being played on a tape recorder inside that apartment. Lacking both a legitimate pretext to enter the apartment and the support of the building's management personnel and/or the police, she was prevented from pursuing this further. Her upstairs neighbor is purportedly employed by Stanford University Hospital, in Stanford, CA.

The target of surveillance and harassment in this case is still *also* trying to recover from the effects of exposure to potentially lethal doses of radiation, administered in the 1970's by a dangerously "incompetent" dentist. This might explain the involvement of alleged Stanford University Hospital personnel in her situation.

The government is on record as having experimented on unwitting U.S. citizens with radioactive materials during the 1970's (and earlier).^[6] The House Subcommittee on Energy and Commerce based their investigation into this matter on a 30-year accumulation of documents maintained by the Department of Energy. Under the circumstances, it will come as no surprise if it is ultimately found that DoE has been involved in this woman's surveillance and harassment.

* * *

Another individual paid a surprise visit to the apartment immediately beneath hers, in an attempt to identify the source of a tremendous racket in her ventilation system. Standing outside the door, she could hear an individual moving around, a short distance from the door. She also heard the sound of rustling paper and the steady, sonar-like "pinging" of some type of electronic device. In response to her repeated knockings on the door, the person inside simply stopped moving about. The sound of rustling paper (perhaps a printout of some type) and the steady "...pin-ng! ...pin-ng!" sound continued. The occupant of this apartment resumed moving about only after it was (incorrectly) believed that our contact had departed the area. Typically, this situation could not be pursued further.

* * *

All of those who live in apartment buildings report unusual patterns of occupancy in the apartments surrounding their own; i.e., upstairs, downstairs and on all sides. They have become quite convinced—if only because of the highly focused nature of the symptoms being experienced—that these surrounding apartments are being used as bases of operation. Perhaps this encirclement facilitates studies of holographic human telemetries; or perhaps it is intended to increase the prospect of brain entrainment by electronic means ("entrainment" being one published objective sought in mind control experiments).^[7]

In examining this situation more closely, a number of individuals have found that surrounding apartments are either permanently vacant, for unknown reasons, or that they have been "sub-let" by the original occupants to persons who are purportedly unknown to the buildings' management personnel. In one case, the surrounding renters all list two residences in the local telephone book. Not one lives in the apartment building in question, though the address is identified as one of the renters' places of residence. One individual suspects that the original occupants of apartments surrounding hers have simply been relocated to other apartments in the same (large) building. Another suspects that an adjacent apartment, which has been permanently rented to the U.S. Government for use by "visitors" is also being used as a base of operations.

One individual found that an immediate neighbor's housemate has the same (unusual) name of a university professor who has engaged in extensive research on behalf of the government, studying the bioeffects of exposure to microwave radiation.

- Use of informants/*agents provocateurs*, frequently members of the opposite sex.

As noted in the U.S. House of Representatives Committee on Interior and Insular Affairs' draft report, *Alyeska Pipeline Service Company Covert Operation* (July 1992), the Wackenhut Corporation's Special Investigations Division adopted this tactic when pursuing Alyeska's critics.

A number of individuals in touch with us report a range of experiences with new "friends" who—apparently posing as confidants—used acquired personalia to abruptly end these "friendships" under deliberately degrading and humiliating circumstances. When taken in the context of the ongoing surveillances and harassment, these exercises appear intended to heighten emotional trauma, perhaps to provoke an uncontrolled response and/or to enforce isolation.

- Misuse of covert intelligence personnel (possible former case officers).

One individual, while under contract to the U.S. Government, properly reported what he believed to be an approach by a hostile intelligence service. Within a few weeks, alleged U.S. Intelligence officers contacted this individual. In addition to questioning him about his background, these alleged intelligence officers asked that he keep in constant touch with them, particularly when planning to travel.

It soon became apparent that the alleged intelligence officers were intent only on forcing this individual to report to them as directed, and to account for his activities. He was not asked to assist the U.S. Government in any form of intelligence operation; he was not asked to execute any form of secrecy affirmation statement acknowledging the classified nature of these meetings; nor was he told why these meetings—involving a total of seven alleged case officers—were necessary.

When he began to balk at a continuation of this process, one of his "handlers" conveyed a threat, suggesting that his continued compliance might be "enforced." Finally, when this individual adamantly refused to cooperate further, massive overt harassment commenced and is currently ongoing.

The operation (clearly intended to bully this individual into submissive compliance for purposes which are still unknown) involved crude tactics formerly prized by the KGB.

Whether or not legitimate U.S. Intelligence case officers were involved in this activity remains to be determined. Some private firms retain former U.S. Intelligence case officers for contracting out as "security specialist." The founder and CEO of one such firm (Gerald P. Burke, The Parvus Company, Silver Spring, MD) has informed us that the activities of contract case officers are neither monitored nor subject to formal restraint.

- Use of psychotropic drugs by cooperative physicians.

Shortly after resigning from the CIA, one of our contacts underwent a range of experiences which suggested that she had been massively drugged. One of the alleged perpetrators, whom we have met, alternately claims to be employed by NASA and/or by a firm in Miami, handling, "microwave equipment." NASA has no record of this person under the name furnished.

The "experimentee" ultimately sought the assistance of a psychiatrist, whom her parents had located as a referral. The psychiatrist treated her reported "flashbacks" by immediately placing her on a regimen of Stelazine, which quickly aggravated her condition. He also made comments to this individual which suggested that he had a foreknowledge of her situation, and that he was cooperating with U.S. Intelligence. On one occasion the psychiatrist intimated that our contact might be employable as an assassin; and he repeatedly urged her to move to Great Britain where, he said, she would be put in touch with an unidentified Member of Parliament.

Interestingly, he had a tremendous computer system in his office suite, which he explained as being connected by modem into a national level system which, in turn, connected into private residences. When showing her this equipment, this psychiatrist informed our contact that she had been “CAT scanned,” pointing out that she was the subject of the vast series of “A’s” and “B’s” being printed out by one of the many terminals at his disposal.

Our contact also found that this psychiatrist kept a military uniform in his closet which bore the rank and insignia of a three-star general.

The individual ultimately sought psychiatric support elsewhere. Her new psychiatrist, formerly employed by DoD, immediately put her on a regimen of Haldol Decanoate, Klonopin and Benzatropine. The combined effect of these drugs was loss of memory and a state of mind which, under other circumstances, might be diagnosed as Depersonalization or Dissociative Disorder. All three drugs proved to be highly addictive. Our contact, since severing contact with this psychiatrist as well, has finally successfully overcome the addiction.

* * *

Another individual—the one whose psychiatrist had informed her of her role in a “Pavlovian Experiment”—was subjected to attempted drugging by Trazodone, one of the strongest sedatives on the market. The psychiatrist in question kept no record of the individual’s outpatient visits, nor of her Trazodone prescriptions. Being unaware that the individual was not adhering to his regimen, the psychiatrist urged her to rapidly increase her dosage, renewing her 30-day prescription after a period of only 11 days.

Though aware of her heart condition, he failed to monitor her condition, dismissing her complaints of (electronically-induced) pains in her heart as inconsequential. Trazodone is known to aggravate heart conditions. Perhaps the intent was to have this individual succumb to a “heart attack” as the result of “imagined” government harassment. Neither the appropriate psychiatric society nor the FBI would touch this case.

* * *

Another individual (a clear target of retaliation) sought medical assistance to counter sudden massive headaches and recurrent attacks of vomiting—effects which can be produced by infrasound. The physician to whom she was referred (an alleged specialist in Internal Medicine) placed her on a combination of Compazine and Xanax, prescribing dosages which the Physicians’ Desk Reference warns against.

Compazine, in addition to being an anti-emetic, is used in the treatment of psychotic disorders. It can also cause tardive dyskinesia, an irreversible syndrome involving loss of motor control. Xanax is known to induce vomiting. Both drugs can lead to dependency and a worsening of the patient’s condition. The effects of all such drugs, in fact, can be mutated in high-energy fields, thus increasing the likelihood of adverse reactions.

We have recently found that this prescribing “physician” is not licensed to practice medicine in the State in which she has been practicing since at least 1989.

Our contact, being concerned about the long-term effects of Xanax and Compazine, consulted another physician in that same office. This physician immediately prescribed Prozac, failing to concurrently recommend that her patient discontinue the Xanax and Compazine prescriptions. When our contact refused to take any psychotropic drugs, the doctor became upset and asked, “Don’t you want to get well?”

This second physician is a licensed practitioner in Internal Medicine, with no background in Psychiatry. We have also found that she apparently refers her patients to yet a third physician in

the office who claims to be a psychiatrist. She, too, is licensed to practice Internal Medicine, only. Her receptionist described this third physician as having a psychiatric "sub-specialty," ... "as an internist." The receptionist also informed us that this internist "is treating a number of psychiatric patients."

On pursuing this further, we find that these physicians are in a small "medical group" which is not listed by specialty in standard regional telephone directories. The group bears the same name as one of the CIA's most infamous recruited physicians (perhaps best described as "the Mengele of MKULTRA").

The doctor's offices are located in a bank building, which, we have found, is a favored hiding place for security-oriented businesses and government agencies. Two computer firms, co-located with an attorney who represents "Island Resort Development, Ltd.," are situated immediately beneath the doctors' offices. The prospect of our finding island resort developments within 500 miles of this attorney's office is limited.

Our contact, being apprised of these findings, is seeking medical help elsewhere.

* * *

In two of our cases, urologists took it upon themselves to play the role of "psychiatrist"; i.e., they rendered psychiatric diagnoses and prescribed psychotropic drugs. One of these urologists, employed by The Mayo Clinic in Rochester, MN, prescribed Haldol, informing our contact that he perceived her to be "psychotic." His efforts at getting a Clinic psychiatrist to confirm this diagnosis were unsuccessful. The psychiatrist, apparently a rare individual who subscribes to codes of medical ethics, found nothing wrong with this woman, even given the nature of her complaints. The urologist's response to this was to issue his own Haldol prescription. Sensing that something was amiss, the woman refused to have the prescription filled.

* * *

Yet another individual ended up in the hands of a psychiatrist who, as a purported means of ending the stress associated with her harassment, offered to put her under hypnosis. She described the hypnotic state as "equivalent to floating" and (based on her overall experiences with this physician) has not ruled out the possibility that drugs may have been surreptitiously administered. The psychiatrist claimed to be interested in psychic phenomena and demonstrated an apparently remarkable ability to read this individual's mind.

While in her "hypnotic state, the individual felt a sharp, painful pressure inside her nose, as if something were being shoved up her nostrils to the sinus cavities. She awoke to find blood pouring out of her nostrils. The psychiatrist casually dismissed this as owing to a probable cold.

Shortly after that experience, the individual began to hear loud tones in her head, followed in due course by auditory input. Brain scans have failed to yield evidence of an implanted device. (We have recommended that she undergo a scan by means of a suitably adapted non-linear junction detector, as a preliminary.) Suffice it to say, this individual has severed contact with the psychiatrist and is continuing to cope with ongoing overt and electronic harassment by other non-medical means.

· Use of medical implant devices.

The situation just described is not our first encounter with the apparent use of medical implant devices in these harassment/mind-control cases. Another of our contacts began receiving auditory input roughly 15 years after she had 4 mm. cochlear implants placed in her ears. The "voices" claimed to be affiliated with the CIA and, among other things, expressed

intentions of running this woman as an agent in denied areas by “piggybacking” their audio transmissions onto standard FM frequencies to avoid detection.

We have been unable to locate the surgeon who implanted these devices, though we do have a copy of his operative reports. A recent CAT scan of this individual failed to disclose the presence of the cochlear implants.

Several years ago, the individual (now a psychologist) applied for a position with the CIA. She was interviewed by four Langley-based, purported psychologist, who allegedly informed her that her job would involve the assessment of certain criminals for purposes of weighing their prospects for loyalty to this agency.

During these interviews, she was told to read several books by such persons as Philip Agee, Stansfield Turner and Ralph McGehee, all of whom were unknown to her. The alleged psychologist claimed that these authors had described the CIA “as it really is.” Our contact was not asked to execute a secrecy affirmation statement acknowledging the classified nature of these proceedings.

The unconventional manner of this interview process suggests that this individual was being toyed with, for reasons which remain to be determined. She did not get the job and in fact more recently lost her job with a state penitentiary. She was fired on the recommendation of the prison’s psychiatrist, because of her insistence that she is receiving auditory input from CIA personnel who persist in feeding her classified information.

Interestingly, though this individual was deemed unfit to function as a psychologist in the penitentiary system, the State has rehired her, assigning her to a mental health facility where, apparently, she is to develop a behavioral modification program for retarded adults with diagnosed mental illnesses.

This individual claimed to be receiving and responding to externally-induced auditory “advice” while working with prison inmates. It may be presumed that the process will continue. Under the circumstances, we have to wonder if this case qualifies as a benchmark in mind-control experimentation; i.e., employment of a mind-controlled psychologist to run the equivalent of mind-control experiments on mentally-ill retarded adults. We will continue to monitor the situation.

* * *

The individual whom we previously identified as having challenged a local power company also appears to have been “tagged” by some type of implant device. During a recent symposium, she was approached by a man whose business card identifies him as “Program Manager, Electromagnetic Radiation Division,” DoE. His approach was suitably sympathetic. Our contact ultimately accepted the man’s invitation to continue discussing their common ranges of interest in his hotel room. During this meeting, she accepted the offer of a drink, blacked out after consuming it, and awoke four hours later, still in this man’s hotel room, to find that the back of her ear had been punctured and was bleeding. There was no evidence of a sexual assault. The man glibly evaded this woman’s requests for an explanation. She has since found two adjacent puncture marks behind her ear, which are not healing properly, and between which she can feel the presence of a “wire” measuring approximately 1/4" in length. We are pursuing this further.

The said DoE Project Manager has more recently initiated contact with yet another activist in touch with this Association. His call was unsolicited. He apparently wanted to know if this woman would be attending an upcoming conference. We have warned the individual to avoid any form of private meeting with the said Project Manager.

* * *

To date, we are aware of three cases involving clandestine behavior on the part of alleged DoE employees. The CIA figures prominently (if peculiarly) in the majority of our other cases. Two of those have been discussed above.

In another, also involving auditory input, the individual is certain that the current Director of Central Intelligence (DCI) participated in the "voice transmission" process on at least one occasion. She claims to have recognized his voice. When she commented aloud on the DCI's perceived involvement in this experimentation, the "voice" responded with stuttered and stammered denials. We are told that this particular "voice" has not been heard from since.

* * *

In yet another case involving auditory input, the individual has allegedly been informed by her "voices" that the technologies being used against her were stolen from the CIA by a maverick employee, whose group is now targeting her from a distance of 2,000 miles. She reported this to the DCI's office and was allegedly informed by the Deputy DCI that she will be awarded millions of dollars if she can produce the equipment and any of the personnel involved in her harassment.

One unusually-candid CIA spokesman also allegedly informed this individual that, "while the CIA does not deny having this equipment," they "do not use it in this country." Perhaps this explains why a number of our contacts have also been electronically harassed while traveling overseas.

This woman has also been repeatedly assured by CIA DDS (security) personnel of the Agency's sincere concern for her welfare. During a recent telephone conversation with that Office, we confirmed that she is indeed known to the CIA. Based on this, we asked that the Agency "put its money where its mouth is," so to speak, by conducting a long-term electronic sweep of this individual's premises. That was two months ago. No sweep has been conducted, though CIA spokesmen continue to "sympathize" with her predicament.

* * *

Another individual, a target of harassment and experimentation since 1952 (apparently singled out because of his student activism while at Penn State University) began hearing "voices" after having most of his teeth capped. He has more recently been informed by his "handlers" that implanted devices are no longer used for purposes of inducing auditory input. No explanation was offered. He was quite visibly surprised when informed by this investigator that auditory input can be achieved solely by means of pulsed microwave audiograms (discussed in Part I of this report).

This individual's "handlers" allegedly have also stated that their experiments on U.S. citizens are in pursuit of a variety of objectives; viz.,

- (1) develop an effective means for creating a perfect, "robotized" soldier;
- (2) alter individual sexual preferences, such as by turning heterosexuals into homosexuals (they allegedly claim to be having "difficulties" reversing the process); and
- (3) enhance or destroy levels of academic achievement, at will, such as by degrading the performance of otherwise brilliant students, and by drastically improving the performance of poor students.

Given the technology at the government's disposal and a predisposition on the part of

certain governmental agencies to “play God” in experimental fashion with citizens’ lives, these purported projects do not come across as being totally far-fetched.

* * *

Another case involves a woman whose experiences suggest that she, too, is an MKULTRA experimentee being kept on the books, so to speak. The woman, apparently a “pet” experimentee, found herself being introduced to a wide array of prominent individuals whose connections with the CIA she believed to be quite apparent. One of those she states, was Robert Jay Lifton, a well-known author and expert on brainwashing, whose books include *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (Basic Books, 1986).

Her experiences included a voluntary (“referral”) admission to Hollywood Hospital, Vancouver, British Columbia, Canada, in 1973, during an era when MKULTRA experiments at the Alan Memorial Institute, McGill University, Montreal, Canada, were only beginning to capture the attention of the U.S. Senate.^[8]

More recently, in 1990, she was transported to New York University’s Cameron Medical Center, in Westchester, NY (under circumstances which qualify as an abduction), where she was forcibly wrestled to the ground by approximately six Center staffers and forcibly confined for a period of approximately three weeks. She was neither psychiatrically counseled nor formally tested while in that facility. The psychiatrists assigned to her case appeared more intent on forcing her to take a combination of neuroleptic drugs, to include Haldol, Navane, and Cogentin. (Haldol and Navane can cause tardive dyskinesia.) She resisted those attempts.

A court ultimately ordered this woman released from the Center, stipulating that she was not to be administered drugs. On subsequently acquiring her medical records, under conditions which prevented censoring or doctoring of those records, she found that her psychiatrists had planned to inject her with drugs (in defiance of the court order) on the day of her release. As luck would have it, she was released a day early.

This woman states also that she has met Budd Hopkins, of the Intruders Foundation, and that she had a long-term, confiding relationship with John E. Mack, Professor of Psychiatry, Harvard Medical School, and founding Director of the Center for Psychological Studies in the Nuclear Age (previously named, Research Program for the Study of Human Continuity; and, still previously, rumored to have cooperated with the CIA in studies of “human ecology”).

At one point in their relationship, Professor Mack apparently accompanied this woman to a “support group” meeting of UFO abductees, who, she observed bemusedly, “spent their time comparing [extraterrestrially] implanted devices.” Professor Mack is on record as promoting the perception that UFO abductions are legitimate.^[9]

We frankly doubt that extraterrestrials who have a means to commute intergalactically would stoop to implanting comparatively primitive devices in human beings. However, should it be proved that the psychiatrist, surgeon and DoE Project Manager discussed above are extraterrestrials posing as humans, we will be happy to weigh that information. If it is similarly established that the vehicular “abduction” of the woman discussed above was the work of an extraterrestrial named Kaplan, who is posing as a human with Cornell Medical Center connections, we will be happy to ponder that as well.

In the meantime, it would seem reasonable that the government would want the public to believe that extraterrestrial visitations are on the upswing. Mind-altering drugs, externally-induced auditory input, holographic projections (also a DoD capability),^[10] appropriately focused directed-energy targeting, device implantations, special effects and abductions are all within this government’s capabilities and can be used for purposes of creating illusions of UFO experiences. Persons not cognizant of this might be more inclined to fall for the UFO

mythologies now being officially “legitimized.”

* * *

Other cases, possibly involving U.S. Navy Intelligence, NSA, the Drug Enforcement Agency (DEA) and, peripherally, members of former Soviet Bloc intelligence services will be discussed in future reports.

Harassment Objectives

In his book, *Psychiatry and the CIA: Victims of Mind Control*, Dr. Harvey Weinstein quotes the following passage from a book entitled, *Battle for the Mind: A Physiology of Conversion and Brainwashing*, by William Sargant (Greenwood Press, Westport, CT, 1957):

“By increasing or prolonging stresses in various ways, or inducing physical debilitation, a more thorough alteration of the person’s thinking processes may be achieved. ...If the stress or the physical debilitation, or both, are carried one stage further, it may happen that patterns of thought and behavior, especially those of recent acquisition, become disrupted. New patterns can then be substituted, or suppressed patterns allowed to reassert themselves; or the subject may begin to think or act in ways that precisely contradict his former ones.

“...If a complete sudden collapse can be produced by prolonging or intensifying emotional stress, the cortical slate may be wiped clean temporarily of its more recently implanted patterns of behavior, perhaps allowing others to be substituted more easily.”

Dr. Weinstein then comments: “The parallel with [Dr. Ewen] Cameron’s theory of differential amnesia is striking, and the relationship to brainwashing is abundantly clear.”^[11] Dr. Cameron, employed by McGill University’s Allan Memorial Institute in Montreal, Quebec, Canada, between 1943 and 1964, conducted brainwashing experiments upon select, non-volunteer psychiatric patients on behalf of the CIA. Dr. Weinstein’s father was one of Cameron’s victims.

Sargant’s theorems and Cameron’s associated experimental findings appear to be the driving force behind the harassment and experimentation now being reported to this Association. All of these individuals are being subjected to a series of overlapping circumstances which apparently are meant to induce and sustain long-term extremes of stress. All of these individuals have been effectively isolated. Unethical psychiatrists and physicians are involved in the majority of these cases. Mind-altering prescription drugs are being used for clearly non-therapeutic purposes. Evidence of LSD use is also beginning to surface (one of Cameron’s favored mind-altering substances). And “psychic driving” techniques—Cameron’s pet brainwashing method—are involved in all these cases, to a much greater and more potentially effective degree where auditory input is involved.

The long-term objectives of these harassment and experimentation campaigns appear to be quite fundamental; viz.,

(1) induce a sense of perverted “loyalty” toward the very agencies engaged in the individual’s harassment, to confuse his or her priorities where the possibility of obtaining legal redress might be concerned;

(2) redirect the targeted individual’s feelings of hopelessness, anger and frustration toward racial and ethnic groups, and toward select, prominent political figures, to include the President of the United States; and

(3) force the individual to commit an act of violence, whether suicide or murder, under conditions which can be plausibly denied by the government.

An operation's ultimate success apparently hangs on this latter objective. We have successfully obstructed this process in a number of cases now being investigated.

The “Stalker” Phenomenon

In recent weeks, considerable publicity has been given the trauma suffered by victims of “stalkers” (persons who obsessively surveil, harass and, in some cases, kill targeted individuals for assorted, unfathomable reasons). Movie stars who have been stalked recurrently make the news. Stalking, as a problem, is in fact becoming widespread, to the point where, in some States, the activity has finally been specifically proscribed by law.

The individuals in contact with our Association are reporting the same terrifying ranges of experiences as are now being reported in the press on behalf of other victims of stalkers. The only difference in the cases reported to us is that the stalkers operate in groups over extremely prolong periods of time, and (it would appear) with the blessing of certain agencies of the U.S. Government. The laws being passed to protect victims of stalkers are clearly being selectively applied. We hope to put an end to this situation; that is, in addition to achieving the objectives discussed above.

It should be noted that the FBI, though unwilling to intervene in the cases described above recently intervened on a massive scale to protect Joy Silverman, a Bush-appointed trustee of the J.F. Kennedy Center for the Performing Arts, from the ardent “stalkings” of her estranged paramour, Sol Wachtler, Chief Justice, Court of Appeals for the State of New York.^[12]

Wachtler had apparently threatened to kidnap Silverman's daughter if not paid \$20,000. Since no kidnapping had occurred, and the case qualified merely as an attempted extortion, a question arises as to why the New York State Police could not have handled this investigation. Mrs. Silverman resides in New York.

It would appear that the FBI devoted more than 100 agents and technicians to the effort, resolving the case within approximately 30 days. On November 7, 1992, the day of his arrest, Wachtler ran a gauntlet of 80 FBI special agents on the Long Island Expressway. Apparently the FBI does not have enough to do, if staking out a lone stalker is their top priority. We have to wonder, of course, if the FBI's massive response was prompted by what was perceived to be Wachtler's usurpation of governmental stalking prerogatives.

Mrs. Silverman's \$300,000 donations to Republican Party causes could be considered a basis for the FBI's solicitous concern for her welfare. It would appear, under the circumstances, that the “stalking victims” discussed above—being by now quite poverty-stricken—should abandon all hope of FBI intervention in their respective situations. FBI protection appears to have a price tag, which not one of our contacts can afford.

There can never be any justification for torture. It creates an escalation of violence in the internal affairs of states. It spreads like a contagious disease from country to country. It has lasting effects on the mental and physical health of the victim and brutalizes the torturer. It is our fundamental duty as human beings to express what is surely the conscience of humanity and to eradicate this evil.

[Amnesty International, February 1990, in the context of the U.S. Government's continuing failure to ratify the U.N. Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, dated December 10, 1984]

Footnotes

* 71 (7-30-93)

* 59 (7-30-93)

[1] Peters, Edward, *Torture*, Basil Blackwell, Inc., New York/London, 1985.

[2] *The Plain Dealer*, Cleveland, OH, June 28, 1991, p. 4-B ("Psychiatrist Testifies at mom's Hearing"); November 6, 1991, ("Woman Ruled Competent for Trial"); and December 21, 1991, p. 4-C ("Ruling Expected Monday on Sanity of Parma Mother/Woman says she stabbed her 3 children to protect them").

[3] *The Washington Post*, June 1, 1991, p. C-1 ("Voices' Led to Tragedy for 2 Men/Pentagon Suspect's Mother Says Institutions Should Have Held Son") and December 14, 1991, p. D-3 ("Suspect in Pentagon Killing Is Found Unfit to Stand Trial").

[4] *The Washington Post*, September 4, 1992, p. D-3 ("Freight Train kills Woman Near Home in Silver Spring").

[5] *Jane's Security and Co-In [Counter-Insurgency] Equipment*, (Surrey, UK, 1991-92), as a preliminary source, contains a number of references to attaché-case concealment devices, for use in surveillance/communications operations. The electronic components are built into the bottom interior of these cases. Obviously the man just described could not have carried a "microcircuitried" attaché case aboard a U.S. airliner without first clearing Security. We are advised by a former CIA DDS (Security) employee that credential-carrying members of U.S. Intelligence can bypass airport security checks of their carry- on luggage.

[6] *St. Paul Pioneer Press Dispatch*, October 15, 1986, p. 1-A ("U.S. Used Humans for Radiation Guinea Pigs").

[7] See, for example, Weinstein, Harvey M., M.D., *Psychiatry and the CIA: Victims of Mind Control*, American Psychiatric Press, Washington, D.C., 1990; Marks, John, *The Search for the "Manchurian Candidate": The CIA and Mind Control*, Times Books, New York, 1979; Delgado, Jose M. R., M.D., *Physical Control of the Mind: Toward a Psychocivilized Society*, Harper & Row, New York, 1969; and Hutchison, Michael, *Megabrain: New Tools and Techniques for Brain Growth and Mind Expansion*, Ballantine Books, New York, 1986.

[8] According to a *Vancouver Sun* archivist, Hollywood Hospital, Ltd. (a privately-owned institution), went out of business in 1975, two years after this woman's hospitalization and after approximately 30 years of doing business. The event coincided with findings by the U.S. Senate Church Committee concerning the CIA's brainwashing experiments under MKULTRA. Our contact also identified the Director of Hollywood Hospital as Dr. Ross MacLean—information also confirmed by the *Vancouver Sun*. Nothing in these records, copies of which are being obtained, points to CIA involvement with the hospital. Perhaps a portion of history has been overlooked. Cornell Medical Center's role in MKULTRA is a matter of public record. (See, for

example, Thomas, Gordon, *Journey Into Madness: The True Story of Secret CIA Mind Control and Medical Abuse*, Bantam Books, New York, 1989).

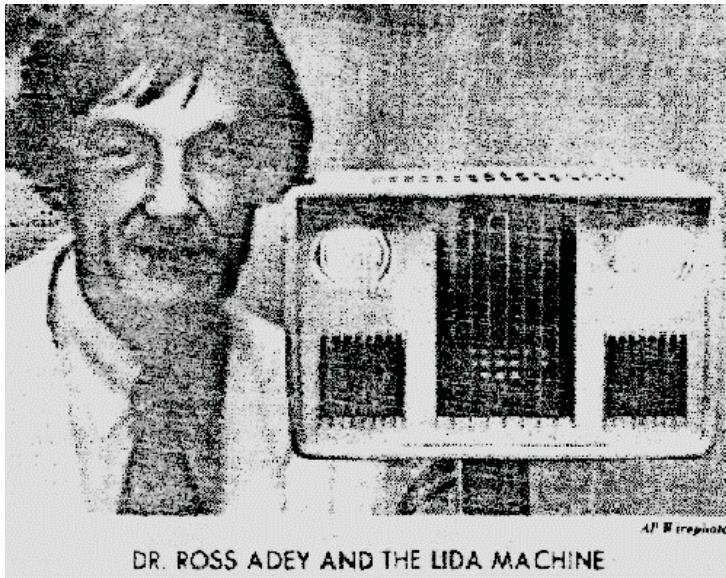
[9] The Roper Organization, *Unusual Personal Experiences: An Analysis of the Data from Three National Surveys*, (Bigelow Holding Corp., Las Vegas, NV, 1991. Contributors lending “credibility” to this publication include John Mack and Budd Hopkins.

[10] *Defense Week*, October 19, 1992, Vol. 13, No. 41, pp. I and II, (“Pentagon, State [Department] Collaborate on Counterterror Gear”).

[11] Op. cit., Weinstein, pp. 140-141.

[12] *The Washington Post*, November 10, 1992, p. A-I (“An Unlikely Suspect for Scandal/Top N.Y. Judge Accused of Breaking Law in Secret Life”).

THE LIDA MACHINE



An old medical, Russian-made device that transmits pulses of 40 MHz radio signal at pulse rates designed to match relaxed and sleeping states originally.

The machine, known as the LIDA, is on loan to the Jerry L. Pettis Memorial Veterans Hospital through a medical exchange program between the Soviet Union and the United States.

Hospital researchers have found in changes behavior in animals.

"It looks as though instead of taking a valium when you want to relax yourself it would be possible to achieve a similar result, probably in a safer way, by the use of a radio field that will relax you" said Dr. Ross Adey, chief of research at the hospital. [Dr. Adey is now deceased.]

[Missing one line on the photocopy] ... manual shows it being used on a human in a clinical setting, Adey said. The manual says it is a "distant pulse treating apparatus" for psychological problems, including sleeplessness, hyper-tension and neurotic disturbances.

The device has not been approved for use with humans in this country, although the Russians have done so since at least 1960, Adey Said.

Low frequency radio waves simulate the brain's own electromagnetic current and produce a trance-like state.

Adey said he put a cat in a box and turned on the LIDA.

"Within a matter of two or three minutes it is sitting there very quietly ... it stays almost as though it were transfixed" he said.

The hospital's experiment with the machine has been underway for three months and should be completed within a year, Adey said.

Eleanor White's comments (Dr. Byrd's statement follows):

1. Heavy "fatigue attacks" are a very common experience among involuntary neuro-electromagnetic experimentees. The LIDA device could, right out of the box, be used as a fatigue attack weapon, FROM HIDING, thru non- or semi-conductive walls.

2. If the LIDA machine is tuned for tranquilizing effect, then it might also be tuned for "force awake" and other effects too. This device is an electronic harassment weapon, AS IS. A TV documentary stated the Russian medical establishment considers this 1950s device obsolete. (Wonder what has taken its place?)

Below is a statement from Dr. Eldon Byrd, U.S. psychotronic researcher who funded Dr. Adey's work with the LIDA machine:

"The LIDA machine was made in the 1950's by the Soviets. The CIA purchased one through a Canadian front for Dr. Ross Adey, but didn't give him any funds to evaluate it.

"I provided those funds from my project in 1981, and he determined that the LIDA would put rabbits into a stupor at a distance and make cats go into REM.

"The Soviets included a picture with the device that showed an entire auditorium full of people asleep with the LIDA on the podium. The LIDA put out an electric field, a magnetic field, light, heat, and sound (of course light and heat are electromagnetic waves, but at a much higher frequency than the low frequencies of the electric and magnetic fields mentioned above).

"The purported purpose of the LIDA was for medical treatments; however, the North Koreans used it as a brain washing device during the Korean War. The big question is: what did they do with the technology? It could have been improved and/or made smaller. It is unlikely that they abandoned something that worked.

"Direct communication with Ross Adey: While he was testing the LIDA 4, an electrician was walking by and asked him where he got the "North Korean brain washing machine". Ross told him that it was a Russian medical device.

"The guy said he had been brain-washed by a device like that when he was in a POW camp. They placed the vertical plates alongside his head and read questions and answers to him. He said he felt like he was in a dream. Later when the Red Cross came and asked questions, he responded with what had been read to him while under the influence of the device. He said he seemed to have no control over the answers.

"The LIDA is PATENTED IN THE US. Why? They are not sold in the US--the only one I know

that exists is the one that was at Loma Linda Medical Center where Adey used to work. Eldon"

Involuntary neuro-experimentation activist Cheryl Welsh, Davis CA, sent in this clipping from an article by Dr. Ross Adey but without complete bibliographic references:

"Soviet investigators have also developed a therapeutic device utilizing low frequency square wave modulation of a radiofrequency field. This instrument known as the Lida was developed by L. Rabichev and his colleagues in Soviet Armenia, and is designed for "the treatment of neuropsychic and somatic disorders, such as neuroses, psychoses, insomnia, hypertension, stammering, bronchia asthma, and asthenic and reactive disturbances".

It is covered by U.S. Patent # 3,773,049. In addition to the pulsed RF field, the device also delivers pulsed light, pulsed sound, and pulsed heat. Each stimulus train can be independently adjusted in intensity and frequency.

The radiofrequency field has a nominal carrier frequency of 40 MHz and a maximum output of approximately 40 Watts. The E- field is applied to the patient on the sides of the neck through two disc electrodes approximately 10 cm in diameter. The electrodes are located at a distance of 2-4 cm from the skin.

[Eleanor White's comment: The fact that Dr. Ross Adey mentioned an "audience" being put to sleep by the LIDA suggests that the "E-field" electrodes may not play an essential role. The radio signal appears to be the primary cause of the sleep/trance effect.]

Optimal repetition frequencies are said to lie in the range from 40 to 80 pulses per minute. Pulse duration is typically 0.2 sec. In an 8 year trial period, the instrument was tested on 740 patients, including adults and children. Postivive therapeutic effects were claimed in more..."

AD-A282 886



RL-TR-94-53
in-House Report
June 1994



RADIOFREQUENCY/MICROWAVE RADIATION BIOLOGICAL EFFECTS AND SAFETY STANDARDS: A REVIEW

Scott M. Bolen

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Rome Laboratory
Air Force Materiel Command
Griffiss Air Force Base, New York

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This report has been reviewed by the Rome Laboratory Public Affairs Office (PA) and is releasable to the National Technical Information Service (NTIS). At NTIS it will be releasable to the general public, including foreign nations.

RL-TR-94-53 has been reviewed and is approved for publication.

APPROVED:



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Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
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Radiofrequency/Microwave Radiation Biological Effects and Safety Standards: A Review

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June 1988

Abstract

The study of human exposure to radiofrequency/microwave radiation has been the subject of widespread investigation and analysis. It is known that electromagnetic radiation has a biological effect on human tissue. An attempt has been made by researchers to quantify the effects of radiation on the human body and to set guidelines for safe exposure levels. A review of the pertinent findings is presented along with the American National Standards Institute (ANSI) recommended safety standard (C95.1-1982) and the United States Air Force permissible exposure limit for RF/MW radiation (AFOSH Standard 161-9, 12 February 1987). An overview of research that was conducted in the Soviet Union and Eastern Europe is also included in this report.

I. INTRODUCTION

In 1956, the Department of Defense (DOD) directed the Armed Forces to investigate the biological effects of exposure to radiofrequency/microwave (RF/MW) radiation. The Army, Navy, and Air Force Departments commissioned a Tri-Service Program under the supervision of the Air Force to meet the DOD directive [14], [15]. The Rome Air Development Center and the Air Research and Development Headquarters were ultimately given responsibility to manage the program. On July 15-16, 1957 the first of four Tri-Service Conferences was held to discuss the effects of RF/MW radiation. These conferences were the first major effort put forth by the scientific community to explore the biological effects of exposure to RF/MW radiation [14]. Since then, researchers have discovered a number of biological dysfunctions that can occur in living organisms. Exposure of the human body to RF/MW radiation has many biological implications. The effects range from innocuous sensations of warmth to serious physiological damage to the eye [1], [2], [5], [6], [8], [15]. There is also evidence that RF/MW radiation can cause cancer [8].

The absorption of RF/MW radiated energy causes biological reactions to occur in the tissue of the human body. In order to determine safe exposure levels and to understand the effect of RF/MW radiation it is necessary to know the absorption characteristics of the human tissue. The National Institute for Occupational Safety and Health (NIOSH) [8] has reported several physical properties that account for energy absorption in biological materials. Factors which govern energy absorption include: (1) strength of the external electromagnetic (EM) field, 2) frequency of the RF/MW source, 3) the degree of hydration of the tissue, and 4) the physical dimensions, geometry, and orientation of the absorbing body with respect to the radiation EM field [8]. There is some disagreement among researchers in determining a specific measure for the dose of RF/MW radiation contracted by

biological materials. The most commonly accepted measure is the Specific Absorption Rate (SAR). The SAR is defined as the rate at which RF/MW radiated energy is imparted to the body - typically in units of watts per kilogram (W/Kg) [4]. The deposition of energy specified in terms of milliwatts per square centimeter (mW/cm²) over the irradiated surface is also widely accepted [9].

Based on the known absorption rates and the inherent biological effects of RF/MW radiated energy, researchers have put forth a number of standards regarding safe exposure levels. In some instances standards recommended by different examining authorities are in conflict. For example, the USAF Standard 161-9 (enacted 12 February 1987) allows for a permissible exposure level of 10 mW/cm² for persons working in restricted areas and 5 mW/cm² for persons working in unrestricted areas [10]. The ANSI guideline specifies a maximum safe exposure level of 5 mW/cm² over the whole-body area for anyone in contact with RF/MW radiation [9]. These differences reflect the way in which each examining authority has interpreted the available RF/MW radiation exposure data.

II. BIOLOGICAL EFFECTS

Exposure to RF/MW radiation is known to have a biological effect on animals and humans. Damage to major organs, disruption of important biological processes, and the potential risk of cancer represent the dangers of RF/MW radiation to living organisms. Pulsed radiation appears to have the greatest impact on biological materials [8].

The response of biological materials to the absorption of thermal energy is the most perceptible effect of exposure to RF/MW radiation [7]. The energy emitted from an RF/MW source is absorbed by the human tissue primarily as heat. In this case, the radiated energy is disposed in the molecules of the tissue. Dipole molecules of water and protein are stimulated and will vibrate as energy is absorbed throughout the irradiated tissue area. Ionic conduction will also occur in the same area where the radiation is incident. It is from these two natural processes that radiant energy is converted into heat [11]. The thermal effect of continuous wave (CW) and pulsed radiation is considered to be the same [13].

Nonthermal responses can be less noticeable and are often more difficult to explain than thermal effects. These responses are related to the disturbances in the tissue not caused by heating. Electromagnetic fields can interact with the bioelectrical functions of the irradiated human tissue [8]. Research conducted in the Soviet Union and Eastern Europe suggests that the human body may be more sensitive to the nonthermal effects of RF/MW radiation [3].

There are many reported biological effects to humans and animals that are exposed to RF/MW radiation. A review of the important findings is given in the following:

A. Heating Effect on the Skin

Most RF/MW radiation penetrates only to the outer surface of the body. This is especially true for RF/MW frequencies greater than 3 GHz where the likely depth of penetration is about 1-10 mm [3]. At frequencies above 10 GHz the absorption of energy will occur mostly at the outer skin surface. Since the thermal receptors of the body are contained primarily in this region, the perception of RF/MW radiation at these frequencies

may be similar to that of infrared (IR) radiation [3], [6].

In 1937, J. Hardy and T. Oppel published an investigative paper on the thermal effects of IR radiation. Their findings were used by Om Gandhi and Abbas Riazi [6] to explain the thermal effect of RF/MW radiation on the human body (the reference for Hardy and Oppel can be found in [6]). Figure 1 shows the results obtained from the 1937 report. As described by Gandhi and Riazi, the findings presented by Hardy and Oppel show that sensations of warmth begin to occur when the whole-body is irradiated at a CW power density of about 0.67 mW/cm^2 . Hardy and Oppel based their work on exposure to IR radiation. From other published reports, Gandhi and Riazi noted that there is a correlation between the radiating frequency of the incident RF/MW energy and the threshold for perception. For example, on an exposed area of the forehead of 37 cm^2 a perception of warmth was reported for incident power densities of 29.9 and 12.5 mW/cm^2 from sources radiating at 3 and 10 GHz respectively [6].

Other observations made by Hardy and Oppel showed that when smaller body areas were irradiated, larger power densities were required to stimulate the thermal receptors in the skin. Gandhi and Riazi were able to confirm this result with reports from recent papers. They found that irradiation of an exposed body area of 40.6 cm^2 to a power density of about 21.7 mW/cm^2 yielded the same thermal perception as did the irradiation of a smaller body area of 9.6 cm^2 to a power density of about 55.9 mW/cm^2 . Hardy and Oppel reported that thermal sensations occurred within about 3 seconds after irradiation of the body tissue. More recent findings indicate a reaction time of closer to 1 second [6].

Gandhi and Riazi [6] have also reported that the depth of penetration of RF/MW radiation has an impact on the power density threshold needed to stimulate the perception of warmth. As a comparison, IR radiation will not penetrate the outer body surface as deeply as RF/MW radiation emitted at a frequency of 2.45 GHz. Clinical observations have shown that irradiation of the ventral surface of the arm by an RF/MW source radiation at 2.45 GHz will cause a sensation of warmth when the incident power density is about 26.7 mW/cm^2 . For incident IR radiation a perception of warmth occurs at a power density of 1.7 mW/cm^2 . They estimated that at millimeter wavelengths the perception of warmth may occur at a power density level of about 8.7 mW/cm^2 .

Exposure to higher levels of radiation can cause serious biological effects. Because of the physical dimensions and geometry of the human body, RF/MW radiated energy is nonuniformly deposited over the whole-body surface. Some areas on the skin and outer body surface will absorb higher amounts of the radiated energy. These areas will be marked by "hot spots" of high temperatures [7], [11], [16]. Experiments conducted on laboratory animals have shown, that skin burns typically occur in the areas of hot spots. The penetration of RF/MW radiation also causes skin burns to be relatively deep [11]. In experiments sponsored by the Tri-Service Commission, it was reported that RF/MW radiation burns over the rib cages of dogs caused severe subcutaneous damage that did not visibly appear for weeks after the injury was sustained [20]. Burns can cause increased vascular permeability. This can lead to significant losses of body fluids and electrolytes. Serious burns can suffer fluid losses for a few days. Blood circulation can be altered in the effected area and other biological functions could be indirectly affected [12].

B. Whole-Body Hyperthermia

Thermal energy absorbed by the whole-body can cause a rise in body temperature. When the human body is irradiated by an RF/MW source at an incident power density of 10 mW/cm² there will be a rise in body temperature of about 1° C. The total thermal energy absorbed at this power density is about 58 watts. Typically, at rest the human basal metabolic rate is about 80 watts and it is about 290 watts during periods of moderate activity. Exposure of the human body to low power RF/MW radiation does not appear to impose any appreciable thermal hazard. These figures were reported by The U.S. Department of Health, Education and Welfare [3].

Adverse biological effects can occur when the body is subjected to high doses of RF/MW radiation [16]. In this instance large amounts of thermal energy can be absorbed by the body. A dramatic influx of energy can overburden thermoregulatory mechanisms. If excess heat cannot be exhausted the core temperature of the body will rise to a dangerous level resulting in hyperthermia [12], [16]. The biological response to excess heat buildup is the dilation of blood vessels at the surface of the skin and the evaporation of water through sweating. These are the primary mechanisms for heat dissipation. Hyperthermia can cause severe dehydration and the loss of electrolytes such as sodium chloride. Other harmful effects include fever, heat exhaustion, and heat fatigue. Heat stress is the most serious consequence of hyperthermia. Cardiac failure and heat stroke can result from heat stress [12].

It has also been noted that hyperthermia may cause injury to blood-brain barrier (BBB) [19]. This barrier refers to the several biological materials that separate the essential elements of the central nervous system from the blood [18]. High cerebral temperatures exceeding 43°C may damage the BBB. The result can be a disruption of blood vessel continuity or integrity and degradation of the flow of blood and other body fluids in the brain [19].

C. Local Hyperthermia

The nonuniform deposition of RF/MW radiated energy over the whole-body surface causes the body to be heated unevenly. Local areas where temperatures rise above 41.6°C can experience damage to the tissue [16]. In these areas it is possible that harmful toxins could be released as result of the high temperatures. Heating can cause cell membranes and blood capillaries to become more permeable. An increase in capillary permeability can lead to a loss of plasma proteins. The denaturation of proteins can also occur within cells [11], [16]. This can lead to changes in the physical properties and biological functions of proteins [18]. Denaturation of proteins can also cause polypeptide and histamine-like substances to become active [11], [16]. Histamines can stimulate gastric secretion, accelerate the heart rate, and cause the dilation of blood vessels resulting in lower blood pressure [18]. Areas of the body where blood circulation is poor or where thermal regulation is insufficient, are more susceptible to injury [11].

D. Carcinogenic Effects

The carcinogenic effects of exposure to RF/MW radiation are not well known. It is difficult to clinically establish a link to cancer. The problem that researchers have in linking

RF/MW radiation to cancer is that the disease itself is prevalent and can be caused by a variety of environmental factors. In fact cancer is the second leading cause of death in the United States. There are, however, published reports that reveal some insights into the carcinogenic nature of RF/MW radiation. Nonthermal effects may provide important clues to the understanding of carcinogenic reactions in the human body [8],[32].

i. Pathological Reports

In 1962, S. Prausnitz and C. Susskind reported experimental results that showed an increase in cancer among test animals exposed to RF/MW radiation. In the experiment, 100 male Swiss albino mice were irradiated by a 10 GHz RF/MW source at an incident power density of about 100 mW/cm². The mice were exposed for 4.5 minutes/day, 5 days/week for a total of 59 weeks. It was noted that irradiation caused the whole-body temperature of the mice to rise about 3.3°C. Upon examination, it was found that 35% of the mice had developed cancer of the white blood cells. The disease was observed as monocytic or lymphatic leucosis or lymphatic or myeloid leukemia. Only 10% of a similar control group had developed cancer [21].

There have been a few allegations that RF/MW radiation has induced cancer in humans [8], [15]. The NIOSH Technical Report [8] cites charges made in the early 1970's against Philco-Ford and The Boeing Corporation that occupational exposure to RF/MW radiation caused cancer among employees. One incident was reported at each company. At Philco-Ford it was claimed that exposure caused a rare form of brain cancer to manifest in one worker that eventually resulted in death. In each case, there was no scientific proof that RF/MW radiation had induced cancer in the company employees. There was also a report that EM fields induced cancer in an individual that worked at the U.S. Embassy in Moscow. Again, there was no scientific evidence that supported the claim [8].

Recently, the Observer Dispatch, a local newspaper published in Utica, New York, reported that a major study has just been completed in Sweden. The study concluded that children who live near high power lines have a greater risk of developing leukemia than children who live farther away from the power lines. The study involved 500,000 people and provided some evidence to link the electromagnetic fields produced by low frequency power lines to cancer. The researchers, however, cautioned against drawing firm conclusions as a result of the research [33]

ii. Effect on Chromosomes

It has been observed that disturbances in chromosomal activity can cause cancerous aberrations to occur in the human body. In 1974, a paper published by K. Chen, A. Samuel, and R. Hoopingarner (reference found in [8]) reported that chromosomal abnormalities can be linked to chronic myeloid leukemia. Serious genetic mutations can also result from such abnormalities that can lead to malignancies in the tissue [8].

In 1976, A. A. Kapustin, M. I. Rudnev, G. I. Leonskaia, and G.I. Knobecva (reference found in [17]) reported alterations in the chromosomes of bone marrow cells in laboratory animals that were exposed to RW/MW radiation. They exposed inbred albino rats to a 2500 MHz RF/MW source at incident power density levels of 50 and 500 uW/cm². Irradiation lasted for 7 hours/day for 10 days. Upon examination of the animals, they

observed chromosomal anomalies that appeared in forms described as polyploidy, aneuploidy, chromatic deletion, acentric fragments and chromatic gaps [17].

The NIOSH Technical Report [8] summarizes the findings of several researchers. Chromosomal and mitotic anomalies have been observed in a variety of animal and human cells for varying exposures to RF/MW radiation. Pulsed and CW radiation ranging in frequency from 15 to 2950 MHz and power densities from 7 to 200 mW/cm² have caused abnormalities to occur in chromosomes. The reported affects include: linear shortening of the chromosomes, irregularities in the chromosomal envelope, abnormal bridges and stickiness, translocations, chromosomal breaks and gaps, chromatid breaks, acentric chromosomes, dicentric chromosomes, deletions, fragmentation, and ring chromosomes [8].

iii. Mutagenic Effects

Reported evidence indicates that biological interaction with EM fields can cause the formation of mutagens in cells. In 1974, three Soviet researchers, Danilenko, Mirutenko, and Kudrenko (reference found in [8]) published results showing a mutagenic effect of RF/MW radiation. Mutagens were observed to form in cells that were irradiated by a pulsed RF/MW source operating at 37 GHz and 1 mW/cm² power intensity. They concluded that irradiation of tissue by pulsed RF/MW sources causes cell membranes to become more permeable to destructive chemical mutagens [8].

Results published in 1963 by G. H. Mickey (reference found in [8]) showed hereditary changes to occur in drosophila germ cells that were exposed to pulsed modulated RF/MW radiation for carrier frequencies between 5-40 MHz [8]. Evidence of RF/MW induced teratogenesis in animals has also been reported by researchers. The effect of exposure to CW radiation was observed by Rugh and McManaway in 1976 (reference found in [8]). They found gross congenital abnormalities in rodent fetuses that were irradiated by a 2450 MHz RF/MW source at an incident power intensity of 107.4 mW/g [8].

iv. Lymphoblastoid Transformations

Lymphoblastoid Transformations refer to changes in the physical nature of lymphoblasts. Mature lymphoblast cells (i.e. lymphocytes) participate in the immune system of the body [18]. Lymphoblastoid transformations induced by RF/MW radiation appear to be similar to transformations present in disorders contributing to abnormal growth in lymphoid tissues and in certain types of leukemia. RF/MW radiation induced transformations, however, do not appear to be malignant and are not likely to spread among healthy cells [8].

W. Stodlink-Baranska reported (reference found in [8]) lymphoblastoid transformations to occur when human lymphocyte cells were exposed to a 2950 MHz pulsed RF/MW source at power density levels of 7 and 20 mW/cm². In 1975, P. Czerski also reported (reference found in [8]) observing lymphoblastoid transformations after irradiation of purified human lymphocyte suspensions by an RF/MW source radiating at 2950 MHz for variable power density levels. In addition, Czerski reported acute transformations occurring in adult mice and rabbits that were irradiated by a pulsed RF/MW source radiating at 2950 MHz and at low power density levels of 0.5 and 5 mW/cm² respectively [8].

v. Oncogenic Effects

Oncogenic effects have been linked to imbalances in the regulatory mechanisms of the body. A 1974 report published by E. Klimkova-Deutshova (reference found in [8]) claimed that persons exposed to RF/MW radiation experience biochemical reactions. The report indicated alterations in fasting blood sugar levels, a decrease in the ability to dispose of normal metabolic waste, and depressed serum levels of pyruvate and lactate. These biochemical reactions point to the possibility of regulatory malfunctions occurring in the body. It has been suggested that certain regulatory imbalances may promote the growth of tumors. A change in hormonal levels has been observed to cause oncogenic effects in tissues that require hormonal balances to function properly. The presence of hormones in other tissue areas may effect the development of existing tumors in those areas [8].

E. Cardiovascular Effects

Most of the cardiovascular effects of RF/MW radiation have been reported by researchers in the Soviet Union and Eastern Europe. Soviet investigators claim that exposure to low levels of RF/MW radiation that are not sufficient to induce hyperthermia can cause aberrations in the cardiovascular system of the body [7].

One experiment performed on rabbits indicates that several types of cardiovascular dysfunctions could be possible. An RF/MW source radiating at 2375 MHz was used to irradiate rabbits for a test period of 60 days under varying field intensities. For field strengths ranging from 3-6 V/M researchers noted a sharp increase in the heart rate of the animals. This effect was observed to subside with time. Exposure to field strengths of 0.5-1.0 V/M caused the heart rate to become slower than normal. No effect was reported for rabbits that were exposed to EM field intensities below 0.2 V/M [17]. Other effects that have been observed by Soviet researchers, are alterations in EKG and low blood pressure [7], [17].

The NIOSH Technical Report [8] references a Soviet study published in 1974 by M. N. Sadcikoiva that suggests some connection between RF/MW radiation exposure and the potential for cardiovascular disturbances in humans. Researchers examined 100 patients suffering from radiation sickness. It was found that 71 of the patients had some type of cardiovascular problem. Most of these patients had been exposed to RF/MW radiation for periods ranging from 5-15 years. A smaller group of patients exposed for shorter time periods also experienced cardiovascular irregularities. The study concluded that there is a probable link between exposure to RF/MW radiation and cardiovascular disease [8].

F. The North Karelian Project

In response to earlier Soviet reports, the World Health Organization (WHO) decided to conduct a comprehensive study on the biological effects of exposure to RF/MW radiation. In 1976, M. Zaret published the results of the study (reference found in [8]). The WHO investigation focused on the population of North Karelia, a remote area of Finland that borders the Soviet Union. This region was selected because of its close proximity to a then Soviet early warning radar station. North Karelia is geographically located in the path of intercontinental ballistic missiles that would originate from the midwest United States. To

detect these missiles, the Soviets constructed a number of high power tropospheric scattering radar units adjacent to nearby Lake Ladoga. The operation of these units exposes the residents of North Karelia to large doses of ground and scatter radiation. The WHO investigation found evidence linking exposure of RF/MW radiation to cardiovascular disease and cancer. The North Karelian population suffered from an unusually high number of heart attacks and cases of cancer. In addition, it was found that the affliction rate of these diseases was much higher among residents living closest to the radar site [8].

G. Hematologic Effects

There is evidence that RF/MW radiation can effect the blood and blood forming systems of animals and humans. Experiments conducted in the Soviet Union have indicated changes in blood cell levels and alterations in the biological activities of hematologic elements. Other investigators have reported similar effects [7], [8], [17].

The results of an experiment reported in 1979 by V. M. Shtemier showed a decrease in the biological activity of butyryl cholinesterase in rats that were exposed to pulsed RF/MW radiation (reference found in [17]). The experiment subjected 15 rats to a 3000 MHz pulsed RF/MW source with an incident power density of 10 mW/cm². The rats were irradiated for 1 hour/day over several days. After 42 days, there was a loss of biological activity of the butyryl cholinesterase enzyme caused by a decrease in the concentration of the enzyme in the bloodstream of the rats [17]. Cholinesterase is a catalyst in the hydrolysis of acetylcholine into choline and an anion. Choline is a useful enzyme that prevents the deposition of fat in the liver [18].

In another experiment, 20 male rats were exposed to a 2376 MHz pulsed RF/MW source with an incident power density of 24.4 mW/cm². Each rat was exposed for 4 hours/day, 5 days/week for 7 weeks. Blood samples were taken periodically and examined for anomalies. After repeated exposures, it was discovered that the number of lymphocytes and leukocytes (white blood cells) in the bloodstream of the rats was lower than normal. The biological activity of alkaline phosphatase in neutrophil leukocytes was also found to increase when the rats were irradiated [17].

The results of several other experiments are summarized in the NIOSH Technical Report [8]. RF/MW radiation has been observed to cause: an increase in the amount of exudate in bone marrow, the transient disappearance of fat cells from bone marrow, destruction and loss of essential bone marrow cells, underdeveloped marrow, a decrease in the number of red blood cells, and an imbalance in the number of lymphocytes in the bloodstream [8].

H. Effect to the Central Nervous System

There is documented evidence that exposure to RF/MW radiation can cause a disturbance in the central nervous system (CNS) of living organisms [3], [8], [11], [17]. Soviet investigators claim that exposure to low-level radiation can induce serious CNS dysfunctions. Experiments conducted in the Soviet Union and Eastern Europe have exposed live subjects to radiation levels that are near or below the recommended safe levels prescribed by the ANSI Standard and the USAF AFOSH Standard [17].

i. Pathological Report

Soviet investigators claim that the central nervous system (CNS) is highly sensitive to RF/MW radiation [3], [8], [11], [17]. The NIOSH Technical Report [8] summarized the results of a pathological study published by A. A. Letavet and Z. V. Gordon in 1960. The researchers reported that several CNS related disorders were discovered among 525 workers exposed to RF/MW radiation. The symptoms were listed as: hypotension, slower than normal heart rates, an increase in the histamine content of the blood, an increase in the activity of the thyroid gland, disruption of the endocrine-hormonal process, alterations in the sensitivity to smell, headaches, irritability, and increased fatigue. Other researchers have acknowledged similar biological responses [8].

ii. Soviet Union Experimental Results

Several experiments have been performed in the Soviet Union and Eastern Europe that demonstrate a variety of biological effects that can occur in living organisms. observations of laboratory animals subjected to low power EM fields showed alterations in the electrical activity of the cerebral cortex and disruptions in the activity of neurons [17].

L. K. Yereshova and YU. D. Dumanski (reference found in [17]) exposed rabbits and white male rats to a continuous wave 2.50 GHz RF/MW source. The animals were irradiated for 8 hours/day over a period of 3 to 4 months at power density levels of 1, 5, and 10 $\mu\text{W}/\text{cm}^2$. It was observed that rabbits exposed to the 5 and 10 $\mu\text{W}/\text{cm}^2$ power density levels suffered alterations in the electrical activity of the cerebral cortex and disturbances to the conditioned reflex response. They concluded that exposure to RF/MW radiation caused perturbations in the higher functioning centers of the CNS in the laboratory animals [17].

An experiment conducted by V. R. Faytel'berg-Blank and G. M. Frevalov demonstrated the biological effects of RF/MW radiation on the activity of neurons (reference found in [17]). They subjected chinchilla rabbits to a 460 MHz RF/MW source at incident power densities of 2 and 5 mW/cm^2 . Only the heads of the rabbits were irradiated and exposures lasted for 10 minutes. Exposure at the 2 mW/cm^2 power density level caused neuronal activity to increase and evoked an electroencephalogram (EEG) activation reaction. Neuronal activity was observed to decrease at the higher power density level. These results indicated that RF/MW radiation can cause neurophysiological alterations in animals. These biological responses may be dependent on the intensity of the radiation [17].

iii. Behavioral Effects

Exposure to RF/MW radiation has been observed to cause a disruption in the behavior of animals. Experiments conducted on rats and nonhuman primates indicates that conditioned responses can be altered as a result of irradiation. Researchers indicate that behavior may be the most sensitive biological component to RF/MW radiation [1], [7], [9], [29].

D. R. Justesen and N. W. King (reference found in [7]) reported experimental results that demonstrated a degenerative behavioral effect in laboratory animals that were exposed to RF/MW radiation. The results were published in 1970. They exposed rats to a 2450 MHz multimodal resonating cavity system. Exposure was periodic with irradiation times lasting for 5 minutes and recurring every 5 minutes. This cycle was sustained for 60 minutes. The

experiment tested the effect of irradiation at whole-body energy absorption rates of 3.0, 6.2, and 9.2 W/Kg. It was observed that for a SAR of 6.2 W/Kg the behavioral performance of the rats degraded significantly and activity usually terminated at the end of the 60 minute exposure period [7].

In 1977, James Lin, Arthur Guy, and Lynn Caldwell [29] reported experimental results that showed alterations in the behavioral response of rats that were exposed to RF/MW radiation. White female rats were trained to execute a "head raising" movement in return for a food pellet. The total number of such movements was counted during each exposure session in order to quantify the effect of irradiation. The animals were exposed to a 918 MHz RF/MW source at power density levels of 10, 20, and 40 mW/cm². Clinical observations showed that baseline responses remained unchanged for irradiation at the lower power density levels of 10 and 20 mW/cm². At 40 mW/cm², however, behavioral responses decreased rapidly after 5 minutes of continuous exposure. After about 15 minutes of exposure, behavioral activity terminated. It was determined that the peak energy absorption at 40 mW/cm² was about 32 W/Kg and the average absorption was 8.4 W/Kg over the whole-body surface [29].

iv. Synergetic Effect of Drugs RF/MW Radiation

In 1979, J. R. Thomas et al. reported that psychoactive drugs and RF/MW radiation may have a synergetic effect on living organisms (references for Thomas can be found in [1]). Experiments were conducted on laboratory animals. Male albino rats were administered dextroamphetamine and irradiated with a pulsed 2450 MHz RF/MW source at 1 W/cm² power intensity for periods of 30 minutes. It was found that the number of clinical responses observed per minute in the rats diminished more rapidly under the stimulus of both agents than in the control condition where just the drug was administered. This indicates that the effects of RF/MW radiation may be enhanced by certain drugs [1].

v. Analeptic Effect in Animals

Pulsed RF/MW radiation was reported to have an analeptic effect in laboratory animals. Experimental results presented by R. D. McAfee in 1971 showed that anesthetized animals could be awakened by irradiation from a pulsed 10 GHz RF/MW source. The energy incident on the test animals was estimated to have a power density of between 20-40 mW/cm². Experiments conducted on rats showed that these animals were aroused from states of deep sleep by irradiation. It was observed that the blood pressure of a rat decreased simultaneously with the arousal response and that laryngeal spasms would occur when the rat was awakened. McAfee reported that the laryngeal spasms would obstruct the airway causing convulsions, asphyxiation, and eventually death. Other experiments performed on rabbits, cats, and dogs showed that these animals could also be awakened by irradiation. The larger animals, however, did not asphyxiate themselves. The blood pressure of the dogs and cats was observed to rise as they were awakened. In all cases, the arousal response was stimulated only when the head of the animal was irradiated. The body temperature of the test animals was not observed to rise as a result of irradiation. This indicates that the analeptic effect of RF/MW radiation may be nonthermal in nature [20].

I. Immunological Effect

Exposure to RF/MW radiation has been observed to cause physical alterations in the essential cells of the immune system and a degradation of immunologic responses [7], [17]. Experimental results published by Soviet and Eastern European researchers indicate that irradiation can cause injury and trauma to the internal body organs that comprise the immune system. Even exposure to low levels of RF/MW radiation can impair immunologic functions [17].

As discussed earlier, lymphoblasts can undergo physical alterations as a result of irradiation. Lymphoblastoid mutagens are similar in structure to leukemia cells [8]. Lymphoblasts are the precursors to leukocyte cells that participate in the immune system [18].

In 1979, N. P. Zalyubovskaya and R. I. Kiselev (reference found in [17]) reported that exposure to RF/MW radiation caused serious damage to the immune system of laboratory animals. They exposed mice to an RF/MW source radiating at 46.1 GHz with an incident power intensity of 1 mW/cm² for 15 minutes/day for 20 days, it was observed that the number of leukocytes in the bloodstream of the mice decreased as a result of irradiation. Effective quantities of enzymatic proteins in serum that combine with antigen-antibody complex and antibacterial agents such as lysozyme were also reduced. Zalyubovskaya and Kiselev reported a decrease in the phagocytic activity of neutrophils and a diminished resistance to infections caused by tetanic toxins. Immunity to typhoid and other tetanic toxins induced by vaccination or by the administration of antitoxins was rendered ineffective. Further examination of the mice revealed injury and trauma to the internal body organs. Irradiation had caused physical alterations in the thymus, spleen, and lymph nodes. The lymphoid organs suffered a total loss of mass [17].

J. Effect on the Eye

Clinical studies indicate that exposure to RF/MW radiation causes physiological damage to the eye that can result in loss of sight. It has been observed that irradiation causes the formation of cataracts in the lens of the eye. Tissue damage appears to be the result of thermal trauma induced by the heating property of RF/MW radiation. Experiments conducted on laboratory animals have demonstrated severe ocular damage as a result of exposure [30], [31].

i. Ocular Sensitivity

Exposure of the eye to RF/MW radiation causes physical duress that can lead to damage of the ocular tissue. The incident power intensity and the duration of radiation exposure are factors that determine the amount of tissue damage. The lens of the eye appears to be most susceptible to RF/MW energy radiated at frequencies between 1-10 GHz. For this frequency range, it has been observed that lens fibers will suffer irreversible damage to a greater extent than other ocular elements [30]. Lens fibers are elongated, thread-like structures that form the substance of the lens [18]. In 1979, Stephen Cleary reported [30] that cataracts are formed in the lens as a result of alterations in the paracystalline state of lens proteins. Physical, chemical or metabolic stress may be responsible for opacification of

the lens [30].

ii. Experiments on Rabbits

Severe tissue damage has been observed in rabbits that have been exposed to RF/MW radiation. Stephen Cleary [30] reports that intense radiation exposure can cause "immediate tearing, injection, pupillary constriction, and anterior turbidity" in the rabbit eye. Lens opacities can occur when the eye is irradiated by a 2450 MHz RF/MW source at incident power density levels of 100-300 mW/cm². At this exposure level, cataracts have been observed to form 24-48 hours after irradiation [30]. In 1976, Kramer, Harris, Emery, and Guy (reference found in [30]) reported observing the formation of cataracts in rabbit eyes that were exposed to 2450 MHz RF/MW radiation at an incident power density level of 180 mW/cm² for an exposure time of 140 minutes [30].

Acute ocular damage and the formation of cataracts appears to be the result of local hyperthermia of the eye. It has been observed, however, that trauma induced by heating of the ocular tissue may be unique to the exposure effects of RF/MW radiation [30]. In 1975, Kramer, Harris, Emery, and Guy (reference found in [30]) reported subjecting rabbits to hyperthermia not induced by exposure to RF/MW radiation. Heating caused the intra-ocular temperature of the eye to rise above normal. The retrolental temperature was reported to be about 42°C during the test period. Hyperthermia was sustained for approximately 30 minutes. Despite heating conditions that were similar to exposure from RF/MW radiation, lens opacities did not occur in the rabbit eyes [30]. Similar results have been reported by other researchers [30]. These results indicate that hyperthermia alone may not be sufficient to cause the formation of cataracts. Direct exposure to RF/MW radiation may be necessary to induce opacities in the lens [30].

iii. Cataracts in Humans

Exposure to RF/MW radiation is known to cause cataracts in the human eye. Several cases have been documented that report RF/MW induced cataracts in humans. Typically, lens opacities have resulted from exposure levels that are greater than specified by the various safety standards. However, minimum exposure levels sufficient to cause ocular damage are not certain [30].

In 1970, Zaret, Kaplan and Kay (reference found in [30]) reported a large number of cataracts induced in humans as result of occupational exposure. This report cited 42 cases of chronic exposure to RF/MW radiation. They reported that workers suffered damage to the posterior lens capsule. In one case, exposure periods lasted about 50 hours/week for 4 years. During most of the 4 year period the incident average power density level was approximately 10 mW/cm². For one 6 month period, however, power density levels may have reached 1 W/cm² [30].

In 1966, S. Cleary and B. Pasternack (reference found in [30]) published the results of an epidemiological study of military and industrial microwave workers. It was reported that minor alterations had occurred in the ocular lenses of the workers as a possible result of chronic RF/MW radiation exposure. Defects were found in the posterior pole of the lens. Cleary and Pasternack noted that the number of minor ocular defects was related to the specific occupational duties of the workers. The greatest number of defects was found

among persons working in research and development jobs. The results of the study were based on a comparison of the microwave workers with a similar control group. The researchers concluded that exposure to RF/MW radiation had caused the lens of the eye to age faster than normal [30].

Similar cases of RF/MW radiation induced ocular damage have been reported by other researchers. In one case, a 22 year old microwave technician was exposed 5 times over a 1 month period to a 3 GHz radiation source. The incident power density level was about 300 mW/cm² and irradiation lasted approximately 3 minutes during each exposure time. It was reported that the technician had developed bilateral cataracts as a result of irradiation [30]. In another case, M. Zaret (reference found in [30]) reported that a 50 year old woman had developed cataracts after intermittent exposure to a 2.45 GHz microwave oven. The incident power density levels were about 1 mW/cm² during operation of the oven and as high as 90 mW/cm² when the oven door was opened [30].

K. Auditory Effect

Individuals exposed to pulsed RF/MW radiation have reported hearing a chirping, clicking or buzzing sound emanating from inside or behind the head. The auditory response has been observed only for pulsed modulated radiation emitted as a square-wave pulse train. The pulse width and pulse repetition rate are factors that appear to determine the type of sound perceived [1], [31].

James Lin [31] reports that the sensation of hearing in humans occurs when the head is irradiated at an average incident power density level of about 0.1 mW/cm² and a peak intensity near 300 mW/cm². Auditory responses have been observed for a frequency range of 200-3000 MHz and for pulse widths from 1-100 us [32].

III. RF/MW ENERGY DEPOSITION

The absorption of RF/MW radiated energy causes biological reactions to occur in living organisms. In order to understand the potential effects of RF/MW radiation, it is important to quantify the absorption characteristics of biological materials. Researchers have identified several principal factors that govern the absorption of RF/MW energy by the human body. Experimental results have indicated that clothing thickness, physical dimensions, degree of hydration, and the resonance frequency of the human body are important parameters that determine the amount of energy absorbed by the body [1], [8], [9], [16], [22].

A. Specific Absorption Rate (SAR)

The specific absorption rate (SAR) is a measure of the dose of RF/MW energy absorbed by biological materials. It is intended to give a quantitative understanding to the absorption of energy. The SAR is defined as the amount of energy that is imparted to the body as a function of body mass [4]. SAR's are usually expressed in terms of watts of incident power per kilograms of irradiated body mass (W/Kg) [4], [9].

B. Depth of Energy Penetration

It is known that RF/MW radiated energy will be absorbed by the tissue of the human body. The depth of energy penetration into the tissue depends primarily on the wavelength of the incident radiation and the water content of the tissue [3], [6].

Energy emitted in the millimeter-wave band is not likely to penetrate to more than about 1 or 2 mm into the tissue [6]. Essentially, RF/MW energy radiated at wavelengths less than 3 centimeters will be captured in the outer skin surface. RF/MW wavelengths from 3 to 10 centimeters will penetrate to a depth of about 1 to 10 mm. The greatest depth of penetration into the body will occur at wavelengths between 25 to 200 centimeters. At these wavelengths RF/MW radiated energy can directly effect internal body organs and cause serious injury. The human body is reported to be "transparent" to RF/MW radiated energy emitted at wavelengths greater than 200 centimeters. Also, at frequencies above 300 MHz it has been observed that the depth of energy penetration fluctuates rapidly with changes in frequency. In general, the depth of energy penetration into the body will decline as the frequency of the incident radiation increases. At 10 GHz, the absorption of RF/MW energy will be similar to IR radiation [3]. These figures were published by the U. S. Department of Health, Education and Welfare [3].

The water content of the human tissue will also influence the depth of energy penetration into the body. Millimeter-wave radiation is reported by Ghandi and Riazi [6] to penetrate less than 2 mm into the body because of the "Debye relaxation of the water molecules" in the tissue [6]. The Debye Effect was observed by a Dutch physicist named Peter Debye [23]. He discovered that EM waves are absorbed by a dielectric because of molecular dipoles present in the dielectric material [24]. Water molecules are essentially dipoles constructed from atoms of hydrogen and oxygen. Biological materials such as skin are dielectrics that consist mostly of water. Hence, these dielectrics are rich in molecular dipoles and are able to quickly absorb millimeter-wave radiation. High frequency radiation emissions are not expected to penetrate deeply into the human body [6].

C. Effect of Geometry

The orientation of the human body with respect to the incident EM field will determine the amount of RF/MW energy that is absorbed by the tissue. Experimental results published by Om Gandhi in 1980 indicate that the condition for maximum absorption occurs when the electric field is parallel to the major axis of the body and the direction of the field propagation is from arm to arm. Figure 2 shows the amount of energy absorbed versus the radiating frequency for various EM field orientations [22].

D. Effect of the Resonance Frequency

Researchers have reported that the human body will absorb the greatest amount of RF/MW energy from sources radiating at the whole-body resonance frequency [1], [9], [22], [25], [27]. The ANSI Standard [9] reports that the human body will absorb 7 times more energy from radiation emitted at the resonance frequency than at a frequency of 2450 MHz [9]. Experiments conducted on fabricated human models have been used to determine the resonance frequency of the human body [22]. Partial-body resonances have also been

observed by researchers. Computer simulation techniques have been used to estimate the resonance frequency of the human head [26].

The free space whole-body resonance frequency is reported to be between 61.8-77 MHz for a Standard Model of Man [9], [22], [25]. The standard model depicts an average man standing 175 cm tall [9]. Experimental results tend to differ somewhat from numerical calculations. The ANSI Standard [9] reports the whole-body resonance frequency to be 70 MHz [9]. Similarly, experimental results presented by Hagman, Gandhi, and Durney [25] indicate the resonance frequency to be between 68-71 MHz. However, calculations put forth by the same researchers place the whole-body resonance at 77 MHz [25]. In 1980, Om Gandhi reported that the maximum absorption of energy will occur at frequencies where the free space wavelength (λ) of the incident radiation is about 2.50-2.77 times greater than the major length (L) of the body (i.e. $\lambda > 23.50L-2.77L$). This formula puts the value of the resonant frequency between 61.8-68.5 MHz for a standard model of man. When the human body is in contact with the electrical ground, the whole-body resonance frequency is reduced to about 47 MHz [22]. Figure 3 shows the SAR versus the incident EM field frequency for conditions of free space and grounding [22].

Numerical calculations have been presented by Hagman, Gandhi, D'Andrea, and Chatterjee [26] that indicate the free space resonance frequency of the human head to be about 375 MHz [26]. In a separate report, Gandhi determined that the head resonance will occur when the free space wavelength of the incident radiation is about 4 times the diameter of the head [22]. The condition for maximum energy absorption occurs when the direction of the EM field propagation is parallel to the long axis of the body. This orientation differs from the condition determined for RF/MW energy absorption by the whole-body. Figures 4 and 5 show the absorption of energy versus frequency for different EM field orientations [26].

E. Effect of Clothing

Clothing can act as an impedance matching transformer for RF/MW radiation. In 1986, Gandhi and Riaz [6] reported that the coupling efficiency of clothing may be as high as 90-95 percent for incident radiation in the millimeter-wave band. They determined that the thickness of the clothing and frequency of the incident radiation are important factors in the coupling condition. Figure 6 shows the relationship between clothing thickness and coupling efficiency as a function of frequency. The authors note that wet or damp clothing may actually reduce the amount of energy absorbed by the body because of the Debye relaxation of the water molecules [6].

IV. RF/MW RADIATION EXPOSURE STANDARDS

Exposure of living organisms to RF/MW radiation can have a potentially dangerous biological effect. To ensure the public safety and to safeguard the workplace against unnecessary RF/MW radiation exposure, protective guidelines have been adopted by the United States and several other nations. The maximum safe exposure levels recognized by individual examining authorities tends to vary as a result of differing interpretations of the

available RF/MW exposure data. There is a large distinction between permissible exposure levels observed in the United States and the Soviet Union. East Block countries have set more stringent standards than nations in the West [3], [8], [11], [22].

A. ANSI Standard C95.1-1982

In response to the need for a national RF/MW radiation protection guide, the American Standards Association commissioned the Department of the Navy and The Institute of Electrical and Electronics Engineers to cooperate in formulating an acceptable standard for safe radiation exposure levels. In 1960, the Radiation Hazards Standards Project was established to coordinate the efforts of researchers. Since then, work has progressed and in 1982 a modern RF/MW radiation protection guide was established. The American National Standards Institute (ANSI) designated this guide as C95.1-1982 [9]. Presently, a new ANSI guide is due for publication in May 1993. The new guide is entitled "ANSI/IEEE C95.1-1992". This guide will supersede C95.1-1982 when it is published.

i. Recommendations

The ANSI C95.1-1982 Standard specifies the maximum recommended RF/MW radiation exposure levels over a frequency range of 300 KHz to 100 GHz. Typically, the standard calls for an exposure of no more than 5 mW/cm² for frequencies between 1500 MHz to 100,000 MHz. The reader should consult with the actual ANSI publication for the detailed recommendations. In addition, the standard limits the whole-body SAR to 0.4 W/Kg and indicates that the spatial peak SAR should not exceed 8.0 W/Kg over any one gram of tissue. For both CW and pulsed EM fields the exposure time should not exceed 6 minutes at the recommended levels. These maximum safe levels are not intended to apply to the medical treatment of patients where irradiation is sometimes useful in combating diseases like cancer. The standard does pertain to the general public and to persons that work in electromagnetic environments. There are two exceptions to the recommendation: 1) at frequencies between 100 KHz and 1 GHz the maximum exposure levels may be exceeded as long as the stated SAR values are not violated and 2) at frequencies between 300 KHz and 1 GHz the exposure levels may be exceeded if the output power of the radiating device is less than 7 W [9].

ii. Philosophy

An explanation of the recommended maximum exposure levels is given as part of the protection guide. The ANSI Standard is intended to afford the best possible protection of human life against RF/MW radiation exposure. The biological effect on the human body for all RF/MW frequencies and modulation schemes is not known, therefore, investigators sought to interpret the available data in a way that would allow for the construction of the best possible RF/MW radiation protection guide. Investigators emphasized studies that reported harmful or potentially serious biological effects. Unlike past standards, researchers agreed that the modern protection guide would also account for the nonthermal effects of RF/MW radiation [9].

The safe exposure levels expressed by the ANSI guideline were determined for far field exposures. The plane wave model used to specify the maximum exposure levels may not be accurate to describe conditions in the near field. However, the power density levels expressed in the protection guide are not considered great enough to induce EM fields with sufficient energy intensities capable of exceeding the recommend SAR's [9].

In selecting a measure for the dose of RF/MW radiation, it was recognized that the SAR does not encompass all of the important factors necessary to determine safe exposure levels. The modulation frequency and peak power of the incident EM field should also be considered. Some of the investigators warned that extra care should be taken by persons that are subjected to pulsed EM fields or by fields that are modulated near the whole-body resonance frequency [9].

In assessing the biological effects, it was found that behavior was the most sensitive biological component to RF/MW irradiation. It was observed that behavioral effects were reversible for exposure to carrier frequencies between 600 MHz and 2450 MHz when whole-body SAR's were limited to between 4 and 8 W/Kg. For these SAR's, power densities were calculated or measured to range from 10 mW/cm² to 50 mW/cm². Behavioral effects were considered to be among the most serious consequences of exposure to RF/MW radiation [9].

It was established that in order to ensure an acceptable margin of safety the whole-body average SAR should not exceed 0.4 W/Kg. Most of the researchers concluded that this was a necessary and reasonable standard. The exceptions cited in the recommendations were justified on the basis of the total rate of energy absorption by the human body. The Standard reports that small radio transceivers are able to emit EM fields that exceed the prescribed power density levels. Such devices, however, are not expected to compromise the prescribed maximum SAR levels. In general, compliance with the ANSI RF/MW protection guide is the best safeguard against harmful biological effects [9].

B. USAF PEL (AFOSH Standard 161-9, 12 February 1987)

Since the early investigations of the Tri-Service Commission, the United States Air Force has recognized the need to establish an RF/MW protection standard. The USAF permissible exposure level (PEL) is specified in AFOSH Standard 161-9 enacted 12 February 1987. This standard stipulates maximum safe RF/MW radiation exposure levels over a frequency range of 10 KHz to 300 GHz. The PELs are shown in Figures 7 and 8 [10].

In general, the USAF protection guideline agrees with the ANSI Standard except that a distinction is made between exposure to persons in restricted and unrestricted areas. No explanation for this policy is given in the USAF Standard. The PEL for restricted areas shows only a slight alteration from the ANSI recommendation. For a frequency range of 1500-300,000 MHz the USAF PEL is given as 10 mW/cm². The PEL put forth by the USAF is intended to protect personnel from harm by limiting the whole-body SAR to 0.4 W/Kg. Exposure periods at the maximum safe levels should be limited to 6 minutes. It is also recommended that exposure in the near zone to RF/MW sources radiating at less than 30 MHz may require a separate evaluation to determine safe exposure levels of irradiation [10].

C. Canada Western Europe

Concern over safe RF/MW radiation exposure levels has sparked controversy and sharp debate in many countries around the world. The ANSI Standard is currently recognized by most countries of the Free World including Canada, the United Kingdom, Sweden, France, and West Germany [8], [22].

D. Soviet Union & Eastern European Standards

The RF/MW radiation exposure standards prescribed in the Soviet Union and Eastern Europe are more conservative than standards adopted by countries in the West [3], [8], [11]. In the Soviet Union, permissible exposure levels for whole-body irradiation are specified for various time intervals. RF/MW radiation exposures may not exceed 0.01 mW/cm^2 for 3 hours/day, 0.1 mW/cm^2 for 2 hours/day, and 1.0 mW/cm^2 for 15-20 minutes provided that safety goggles be worn [3]. Czechoslovakia has recommended a maximum exposure level of 0.025 mW/cm^2 for an average working day [8].

Investigators in the Soviet Union and Eastern Europe have placed a great emphasis on the nonthermal effects of biological exposure to RF/MW radiation. They contend that electromagnetic interactions with the bioelectrical and biochemical functions of the body constitute a more serious health risk than effects from thermal heating. Nonthermal disruptions have been observed to occur at power density levels that are much lower than are necessary to induce thermal effects. Soviet researchers have attributed alterations in the central nervous system and the cardiovascular system to the nonthermal effect of low level RF/MW radiation exposure [3], [8].

The U. S. Department of Health, Education and Welfare [3] reports that the differing standards put forth by the East and West may be attributed to philosophical differences in basic research. Soviet investigators were intent on examining the effect of RF/MW radiation on the conditioned reflex response of living organisms whereas their counterparts in the West do not view this effect as an appropriate endpoint to research [3]. Recently, however, researchers in the West have sought to account for nonthermal effects in modern permissible RF/MW radiation exposure standards [9].

V. CONCLUSION

Exposure to RF/MW radiation is known to have a biological effect on living organisms. Research conducted over the past 30 years has provided a basis for understanding the effect of irradiation of biological materials. Experimental evidence has shown that exposure to low intensity radiation can have a profound effect on biological processes. The nonthermal effects of RF/MW radiation exposure are becoming important measures of biological interaction with EM fields. Modern RF/MW radiation protection guides have sought to account for the effects of low level radiation exposure. Adherence to the ANSI Standard [9] should provide protection against harmful thermal effects and help to minimize the interaction of EM fields with the biological processes of the human body [9].

It is essentially the absorption of RF/MW energy that causes stress and trauma to biological systems. The greatest amount of energy will be absorbed when the incident radiation is emitted at the resonance frequency of biological material [9], [22]. In this regard, RF/MW radiation emitted at nonresonant frequencies should be absorbed to the

greatest extent when the radiating mode is a pulsed signal. The generation of such signals creates transient responses that will match the resonant frequencies of biological materials. Nonresonant pulsed RF/MW radiation may be more harmful to living organisms than CW radiation emitted at nonresonant frequencies.

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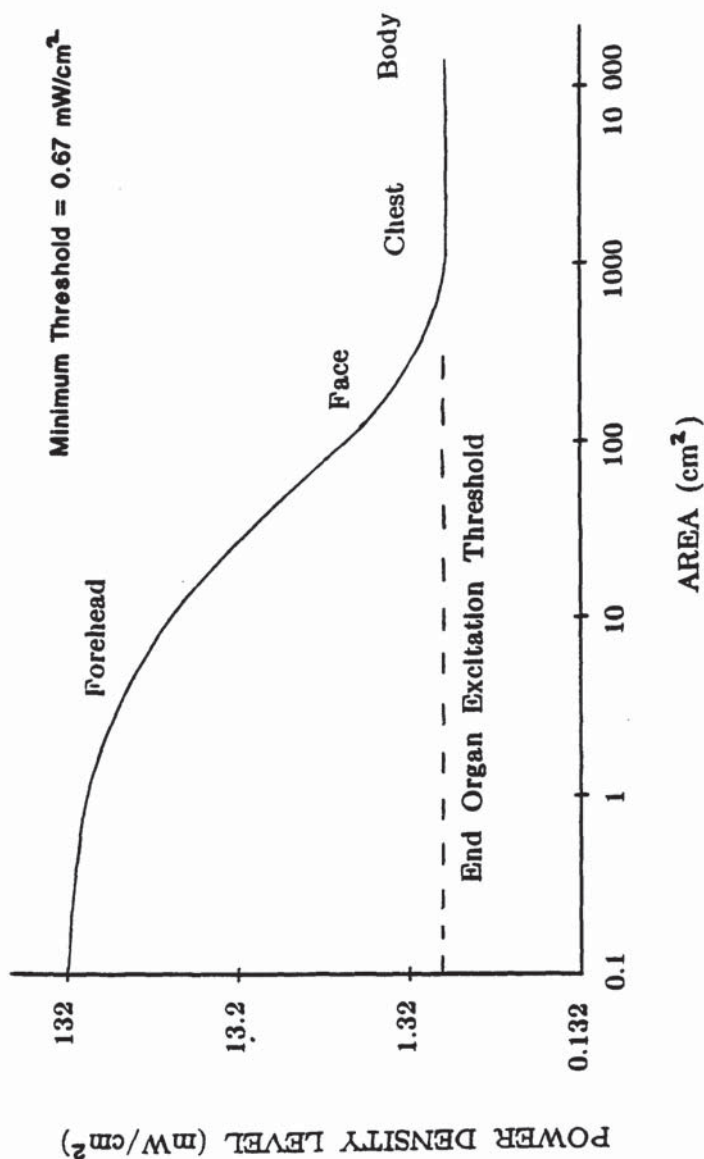


Figure 1: Observed threshold of infrared perception.

Absorbed continuous wave intensity versus exposed body area.

(ref: J. Hardy & T. Oppel, results reported by Om Gandhi and Abbas Riaz, IEEE MTT-34, pp. 228-235, Feb 1986)

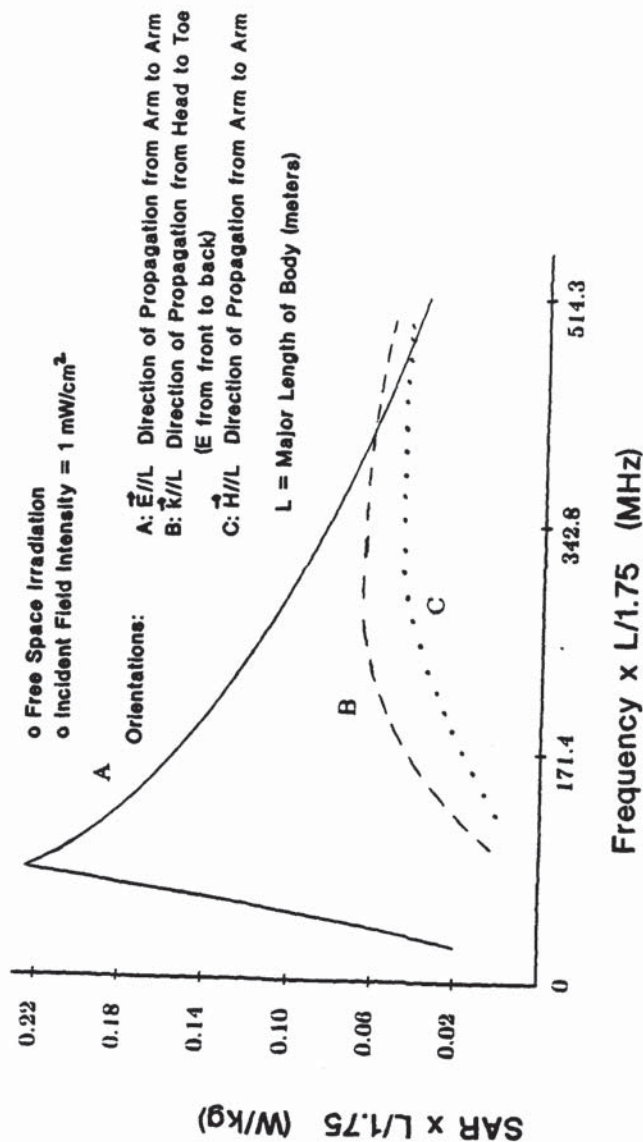


Figure 2: Comparison of field orientations for whole-body exposure of humans. Normalized SAR versus normalized radiated wave frequency.

(ref: Om Gandhi, Proceedings IEEE, Vol. 68, pp. 24-32, Jan 1980)

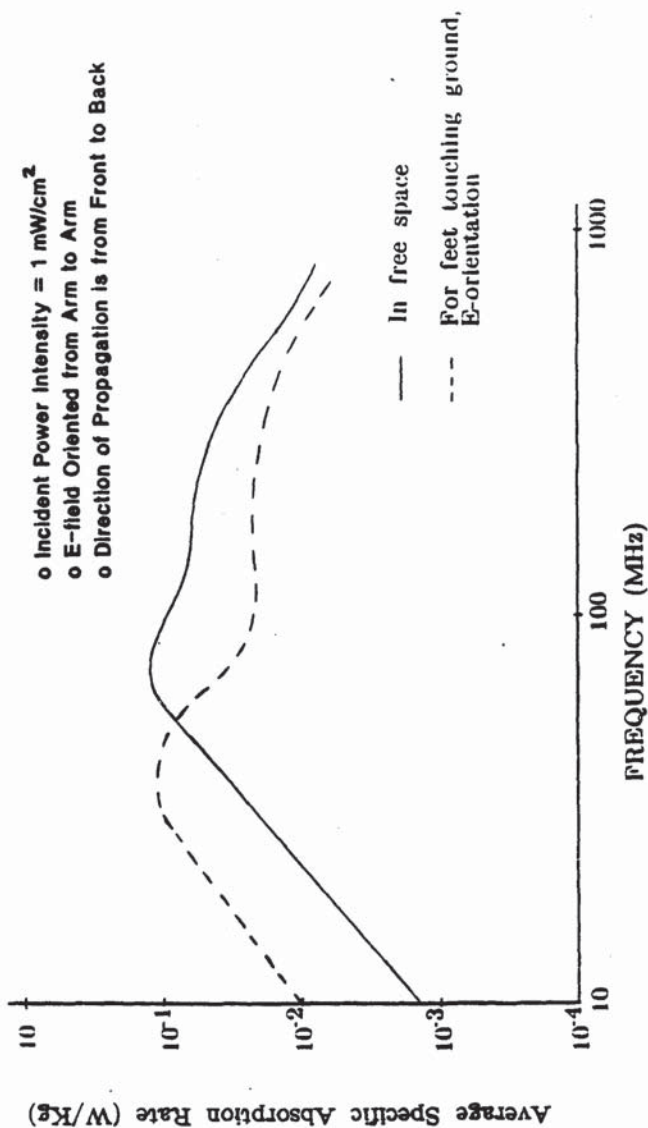


Figure 3: SAR versus frequency of incident radiation for a homogenous model of man.

(ref: OM Gandhi, Proceedings IEEE, Vol. 68, pp. 24-32, Jan 1980)

- o Incident Power Intensity = 10 mW/cm^2
- o E-field Oriented from Front to Back
- o Direction of Propagation is from Head to Toe

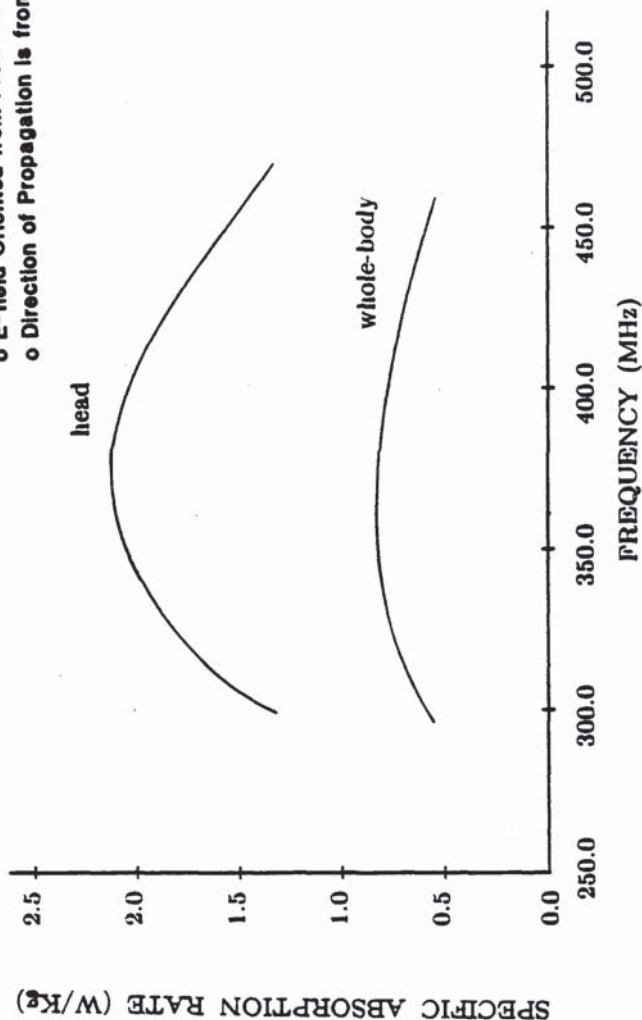


Figure 4: Head and whole-body energy absorption.
SAR versus frequency of incident radiation.

(ref: Hagmann, Gandhi, D'Andera, and Chatterjee, IEEE MTT-27,
pp. 809-813, Sep 1979))

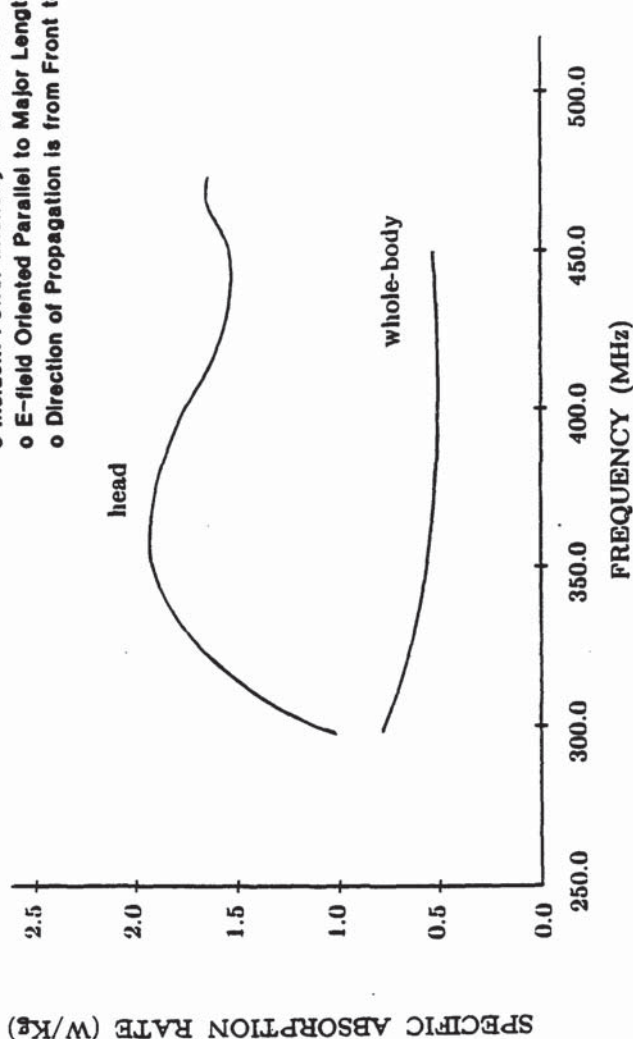


Figure 5: Head and whole-body energy absorption for $\vec{E} // L$.
 SAR versus frequency of incident radiation.

(ref: Hagmann, Gandhi, D'Anders, and Chatterjee, IEEE MTT-27,
 pp. 809-813, Sep 1979)

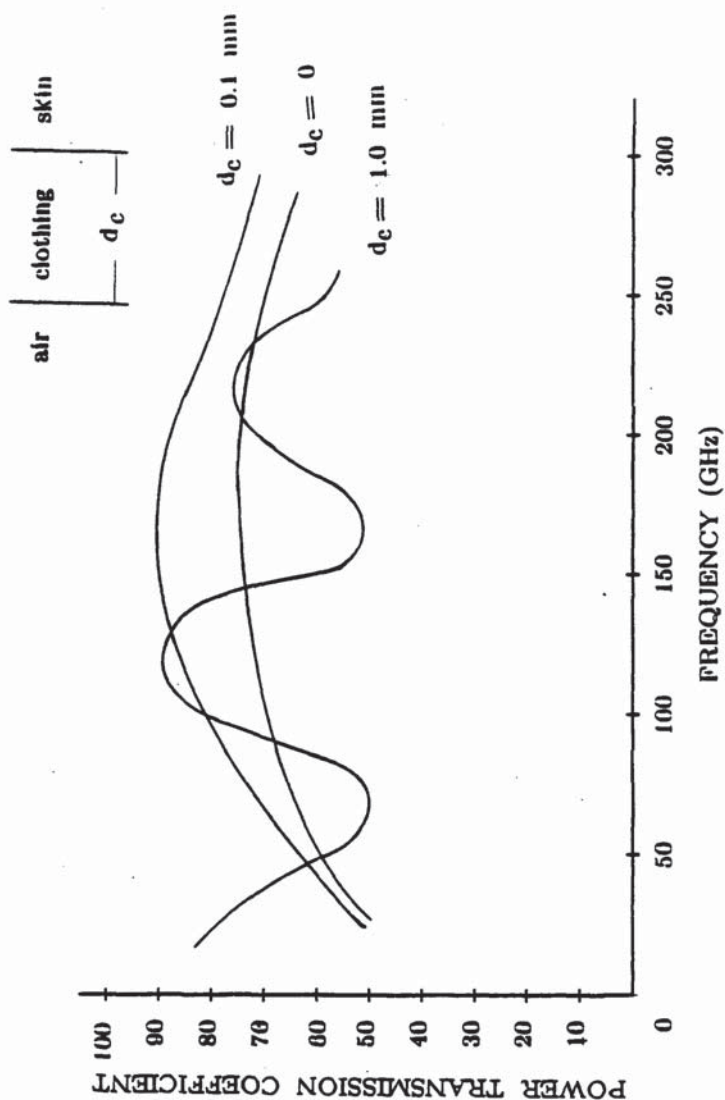


Figure 6: Comparison of transmission coefficient with and without clothing; no air gap between skin and exterior clothing.

(ref: Om Gandhi and Abbas Riaz, IEEE MTT-34, pp. 228-235, Feb 1986)

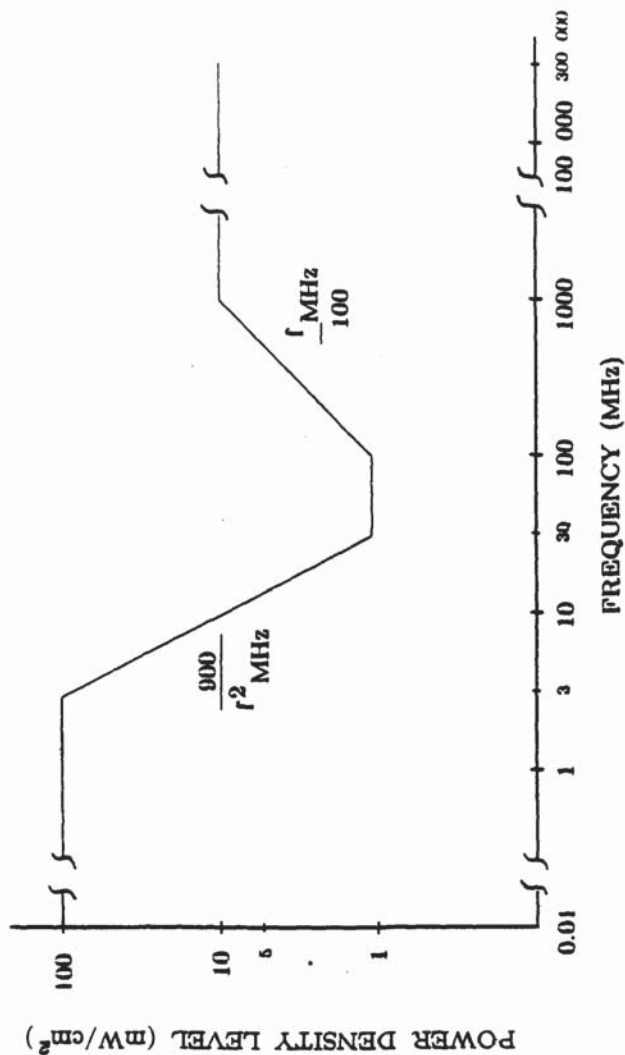


Figure 7: USAF RF/MW radiation permissible exposure limit (PEL) for humans working in restricted areas.

(ref: AFOSH Standard 161-9, 12 Feb 1987)

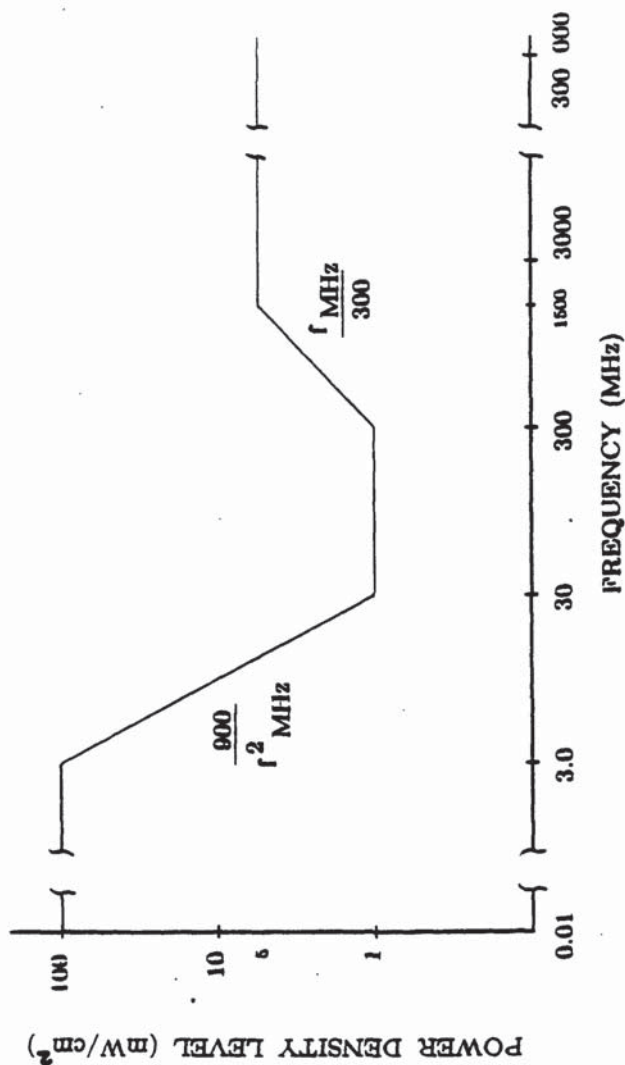


Figure 8: USAF RF/MW radiation permissible exposure limit (PEL) for humans working in unrestricted areas.

(ref: AFOSH Standard 161-9, 12 Feb 1987)

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- b. Transitions technology to current and future systems to improve operational capability, readiness, and supportability;
- c. Provides a full range of technical support to Air Force Materiel Command product centers and other Air Force organizations;
- d. Promotes transfer of technology to the private sector;
- e. Maintains leading edge technological expertise in the areas of surveillance, communications, command and control, intelligence, reliability science, electro-magnetic technology, photonics, signal processing, and computational science.

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