

ELECTROMAGNETIC POLLUTION

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ELECTROMAGNETIC DISHARMONY ON THE EARTH

Our association was created in 1975 and is composed of 3,600 scientists from 60 countries. Our first position was that the world does not realize the seriousness of the electromagnetic pollution problem that exists today, and our scientists have been searching for ways of protecting us if this problem continues to exist. In order to eliminate the need for power lines and decrease electromagnetic pollution, we have been working on alternatives to local electricity and long distance transmissions. We can do this and yet have all, if not more, of the benefits of civilization that we know today. In the 1950's and 60's before so many atomic bomb explosions had occurred, the world was in a much more balanced state, with both hemispheres in harmony. Today's excessive electromagnetic pollution is aided by the destruction of our forests and we have changed our climate to such a degree that even the nature of electric storms has changed.

The most intense and widespread electromagnetic radiation produced by man - many times stronger than from natural sources - is in the *extremely low frequency (ELF)* spectrum. In 1989, the average intensity of the background man-made ELF magnetic fields was about **ten times** stronger than that resulting from all natural planetary and cosmic events, doubling the ELF fields monitored less than a decade earlier. A spectrum analysis done in Ottawa in 1982 showed radiation from 60 hertz power lines, hydro stations, 10 hertz Soviet radar emissions, and signals from the Soviet Union, Japan, China, Europe and Africa. These all contribute to the changes we see today. This permeates our homes, work places, industries and our outdoors and it increases every year as we pollute more and more electromagnetically, and creates a tremendous stress to all living systems. Since all living organisms on earth are exposed to electromagnetic radiation, it is urgent to establish standards of acceptable exposure levels for various frequencies of electromagnetic radiation. Cancer, birth defects, decreased immunity to disease, even new sicknesses have been linked to extended exposure to electromagnetic fields of specific frequencies and intensities. Perhaps this may account for the much higher susceptibility to death from AIDS in regions of highest electromagnetic pollution.

Over the last 25 years, all kinds of studies of the effects of low level frequency exposure on the nervous system, on the blood and on growth and development, have been conducted. The United States Navy conducted very well funded studies, probably in the

order of 50 to 100 million dollars. Their study, published in 1984, showed that exposure to harmful electromagnetic frequencies resulted in altering the behaviour of cells, tissues, organs and organisms; altered hormone levels, altered cell chemistry, altered immune processes, affected calcium ion bonding in cells, modified human brain waves, caused defects in chick embryos, and caused sterility in male animals. They also found that certain diseases can be cured by applying specific extreme low frequency levels. Their results have been reproduced in numerous laboratory tests, but these studies are not very well known publicly. The first serious news report was done in the New York Times in 1987. Scientists statistically linked ordinary power lines and commonly used household devices to an increase in human cancer. High quality laboratory research was done on both animals and humans. They found that if human beings or animals came within a certain range of electric power lines, which is considered to be safe, they augmented the field. Ten thousand volts per meter is considered safe because conventional research states that voltages higher than 10,000 volts per meter are strong enough to penetrate the skin and have possible biological effects on living cells. Although the field is 10,000 volts, on the skin surface it is 18 times higher. Even by conventional logic, safety levels should be 18 times higher than existing levels. When this research was published, many electrical companies got very worried. Our association is very unhappy about this situation because we have been saying this for ten or fifteen years. We can't understand why government ministers and power companies who spend your money to hurt you don't seek their advice from scientific advisors like they should; but they are insisting more than ever before, that it is safe.

SCHUMANN RESONANT FREQUENCY OF THE EARTH

Electromagnetic pollution is an important problem because it alters the natural *Schumann resonant frequency* of the earth of 7.8 hertz which everything that lives on earth, from a simple cell to a human being, uses as its term of reference. The human body uses good frequencies between 7 to 9 hertz, but frequencies outside this range cause biological damage to all living organisms. Fortunately, human beings naturally produce the 7.8 hertz signal when they are healthy and mentally balanced. *Alpha waves* which are produced by the brain in a relaxed state or in a state of meditation are also in the beneficial range of 7 to 9 hertz. If a little irritability is present, people will produce the higher frequencies.

THE ELECTROMAGNETIC SPECTRUM

The electromagnetic spectrum consists of electrical energy travelling in the form of waves of different wavelengths and is divided into two parts: the ionizing portion which is radioactive, and the non-ionizing portion which consists of the visible spectrum and the longer wavelengths. At the lowest end are the *extremely low frequency* waves which include power lines. Energy emitted throughout this spectrum is regulated by every civilized government in the world except for the very low frequencies and the extremely low frequencies. The World Health Organization has published a report which classified extremely low frequency fields as an environmental health problem in line with mercury and cadmium poisoning, which makes it a toxic problem, but there are presently no regulations on low level radiation produced by power lines and electrical currents.

ELECTROMAGNETIC SPECTRUM 0-1000Hz 1-200kHz EXTRA LOW VERY LOW
RADIO MICRO-WAVES INFRARED VISIBLE ULTRA X-RAYS & GAMMA RAYS
FREQUENCY FREQ. FREQ. LIGHT VIOLET SOFT HARD power lines VDT radio radar
sun sun x-ray nuclear VDT TV,VDT m-w ovens VDT VDT TV fall out VDT

Electromagnetic fields are measured in the following units:

frequency (the number of cycles per second expressed in cps, hertz or Hz), electric field strength (volts per meter), magnetic flux density (tesla).

SOURCES OF ELECTROMAGNETIC POLLUTION:

a) POWER LINES:

A noticeable source of extremely low frequency radiation is the high voltage electrical transmission lines, which in some instances produce such high losses that they bend the earth's ionosphere. Lines transporting 750,000 volts are quite common and there are some running at 1,500,000 volts. Power lines are dangerous because they are constantly losing energy. Because you can't see electricity, and you don't have a detector, you can't see it oozing, but it is. Forty per cent of electricity in Canada is lost in the environment. If you have an extremely low frequency spectrum analyzer, you will find that extremely low frequency fields go very far, even at long distances, and the intensity will be quite significant biologically for long term exposures.

It is dangerous to be exposed to electric transformers or to work on power line repairs even for short term exposures. Even if you are living quite some distance from a power line, that is if it is within sight and sufficiently noticeable (not just a speck on the horizon), long term exposure may be dangerous. Very often we have found that secondary transmission lines, the kind you see in streets, are much worse polluters than the huge power lines. The human body is a *living antenna* and can absorb strong fields like power lines or video display terminals, and then *augment* the intensity of the environment. Animals also augment the intensity of the field. So what might have been a safe situation, like a school full of children and workers near a power line, can become a tremendous new source of electrical energy and a major polluter, not only to the children in the school, but even to people living near the school.

b) SOVIET & U.S. EXTREMELY LOW FREQUENCY (ELF) EMISSIONS:

Almost daily, since 1976, ELF magnetic and electric emissions have been pulsed from a number of USSR installations at the rate of approximately 10 Hz. Since mid-1979, the U.S. have been pulsing similar emissions at the rate of approximately 10 Hz and 30 Hz. A major study has been done for the United States Navy at Laurentian University to discover what happens when extremely low frequency fields, similar in fact to those used by the Soviet Union since 1976, occur in front of brain cells. Everyone was saying, come on, the Soviets are only doing radar, it's not going to affect any place in North America. But it did. This study actually showed that when brain cells are subjected to the Soviet level of emissions, degranulation takes place after a very short exposure. This study so shocked the Pentagon that since that time in 1985, the United States government has made a full scale very expensive secret study on how to protect North

American citizens from Soviet emissions. Fortunately when Reagan and Gorbachev met in New York, they shook hands and the Soviets turned off the emissions.

c) SATELLITE DISHES:

Another case of electromagnetic pollution is satellite dishes. Main or secondary power lines in the vicinity may actually be *amplified* by the satellite dish. If antennas of satellite dishes are pointing at a certain angle, even partially towards a power transmission line, they will actually absorb and focus its frequency, and once it is captured, it will travel vertically above or below the dish. It can also pick up and augment the Bell Canada System and microwave communication between buildings.

d) CELLULAR TELEPHONES:

Portable and car telephone systems also amplify surrounding fields. Do not use these telephones unless you really have to. Some people have a tendency to put a whole day through on this device and can suffer detrimental effects such as loss of concentration and memory. So be very careful with them.

e) RADAR SITES:

Never stay near a radar site even when it is off. Some people just go crazy. Radar sites augment all kinds of electromagnetic fields. Radar is a serious problem especially when the radar frequencies are changed, but are still in the same frequency range. That sudden change can be too much for the body and may trigger a whole series of problems. We know soldiers who have not been able to stand this. There is a massive pollution problem in Annapolis Valley, Nova Scotia, partially linked to a radar station operating since 1982 near Forest Glade, that no longer needs to be there. Suddenly, from being one of the most benign places in Canada, it has become the cancer hot spot. The infant mortality rate is high, multiple sclerosis has become a serious problem and some flocks of geese are no longer able to lay fertile eggs.

f) VIDEO DISPLAY TERMINALS:

In a video display terminal, there are various sources of problems; however, the major problem is the fly back transformer. It can produce stronger fields than if you are near a substation. And that's a very intense field, 50,000 volts or more per meter. If you keep a distance of about 70 cm away from the modern types and if there are no other VDT's around, that should be o.k., but you should not be in the **rear** of a VDT. That is the worst place. Appliances such as VDT's produce voltages of up to 10,000 v/m in the **older models**, and 5 to 50 v/m for **newer models**, and 300,000 nT magnetic flux at operating distance. The governments of Germany, Sweden and Norway have accepted safety standards for video display terminals which have been determined by our organization, and have made their terminals less dangerous. Six hundred studies done over the last 20 years have shown that electrical fields, up to 6 volts per meter and magnetic fields up to 64 nanoteslars are safe, and this should cause no biological interaction, even for very long term exposure. It only costs about 10 cents more to make them safe, but for years, many governments have refused to do anything about it. Only one company in America

changed their systems, and that was IBM, who have met our safety guidelines since 1981 when we established that higher levels are dangerous. One of our founders was the scientific advisor for IBM at the time.

g) POLLUTION IN THE AVERAGE HOME:

In our homes and offices, all of our electrical appliances produce not only electrical but also magnetic fields, even when they are "off". For example, a television set will still produce quite strong fields even when it is off, as long as it is plugged into the electric supply. The same is true of lamps, typewriters, photocopiers, fluorescent light fixtures, video display systems, telephones, extension cords and unused electric wires inside walls. Sometimes the difference between "off" and "on" is negligible once plugged in and drawing on the power supply.

LEVEL OF RISK TO ADVERSE ELECTRIC FIELD MAGNETIC FIELD BIOLOGICAL EFFECT TO HUMANS (VOLT/METER) (NANOTESLA (nT)) normal 0 - 5.9 0 - 64 threshold 6.0 65 dangerous 6.1 - 8.9 66 - 99 very dangerous 9.0 - 13.9 100 - 249 extremely dangerous 14+ 250+

ELECTRIC FIELDS IN THE AVERAGE HOME (CENTER OF THE ROOM) MEASURED IN VOLTS PER METER: living room 3.3 bedroom 5.5 bathroom 1.5 kitchen 2.6 bedroom 2.4 laundry room 0.8 master bedroom 7.8 dining room 0.9 hallway 13.0
ELECTRIC FIELDS OF ELECTRICAL APPLIANCES (30 CM. AWAY) MEASURED IN VOLTS PER METER: electric range 4 broiler 40 vaporizer 60 colour TV 30 toaster 40 coffee pot 16 hair dryer 40 stereo 90 refrigerator 30 iron 60 electric blanket 250

The above table contains a list of the average electric fields in the average home. Six volts per meter is considered safe. You can see that bedrooms are the worst. Most people have nearby **bedside lamps** and these are invariably very badly insulated. Many people insist on having **clock radios** which are terrible polluters. They are even dangerous at a distance of one or two meters. **Heated water beds** and **electric blankets** can be a problem, but they are now trying to make safer electric blankets. Hallways are very bad because that is where most of the wiring is. Poorly insulated wiring often concealed within walls may pose serious losses, especially in older homes. **Irons** are terrible things. Don't do too much ironing; iron for half an hour to 45 minutes, take a break and come back. **Air conditioners, air cleaners** and **ionizers** are a problem. Colour TV is all right if people stay two meters away. However, **stereos** are much worse, even when they are off. Toasters can be a problem but only if you work in a restaurant and make toast for many hours, that is, exposures of 30 minutes or more at a time. **Refrigerators** are polluters. Never sleep near a freezer or refrigerator. In many crowded homes this can be a serious problem. We advise people to stay away from **microwave ovens**. Some people suffer from allergies when they eat microwaved foods. Somehow, microwave can be captured as information; we're not sure how, but we believe it's in the water molecule which exists in almost every food.

Another important consideration is the proximity of radiofrequency, TV and microwave sources. Hospitals, schools, offices, apartment buildings etc. should not be located in

positions where they are aligned with radio/microwave communications and guidance system networks.

GEOMAGNETIC FIELDS

In addition to the electromagnetic fields which we produce artificially, we are also influenced by variations in magnetic fields produced by the earth itself, called geomagnetic fields. Many people near power lines are affected adversely because there is a synergistic effect between geomagnetic fields and the electromagnetic fields produced by power supply and certain electrical appliances (that is, they enhance each other). This can be a serious problem, especially when there is geomagnetic variation, sharp dips in the earth's magnetic field. If a *bed or a work place* which is routinely used over prolonged periods is situated in a place where there are high variations in the geomagnetic field, persistent health problems may occur. Geomagnetic surveys of magnetic fields are useful in determining these disturbing abnormal variations. These surveys, which are displayed in three-dimensional computer generated graphics, can confirm specific health problems diagnosed by medical practitioners. When the bed is changed to a more suitable position, often only 10 or 20 centimeters away, the person will be able to improve and respond to medical help. A normal bed position should have just a gradual descent in intensity and almost no variation. This may be determined by using a detection instrument called a geo-magnetometer.

ELECTROMAGNETIC THERAPY

Robert Becker has discovered and developed a method of using external input of electromagnetic fields to induce bone growth, increase cell division, nerve conduction, and chemical production and even accelerate wound healing. A therapeutic device can emit different frequency levels, e.g. 1, 10, 100, 1000 and 10,000 cycles per second (or hertz). At certain frequency levels, ailments will improve. For example, a lady who had allergies felt better at the Schumann frequency of 7.8 hertz. People who already have a weak immune system and considerable stress are very sensitive sometimes to the slightest hint of harmful frequencies. In electromagnetic therapy, the ionic movements appear to be capable of changing chemical energies, which means that electromagnetic fields are translated eventually into chemical events in the body. The Canadian government made this analysis in 1960, but it was kept within the realm of the National Research Council only, and not given to the medical community nor to Health and Welfare Canada. The Germans and the Soviet Union were also very interested in this type of research. In order to protect embassy personnel in the United States Embassy in Moscow against microwave radiation, they were provided with a protective device which would produce the earth's natural resonant frequency. This magnetic pacer device was similar to the Teslar watch device which is used today.

ELECTROMAGNETIC PROTECTION DEVICES

The natural electromagnetic frequency extremely important to all life is the Schumann resonance. NASA scientists found that the first astronauts returned to earth with health problems due to lack of this 7.8 Hz. magnetic resonant field. The Schumann resonant frequency is an important medium for acquiring the well-being, mentally, emotionally

and physically, which our planet once gave to all our forefathers and foremothers. When the planet earth does not provide us with the Schumann resonance, we can administer it with a Teslar device which looks like a watch. This will produce balance in the individual and provide protection against external problems. Individuals who suffer from multiple allergies find that most of their allergies disappear over time when they wear this device.

Various protectional devices which help to get rid of some of the pollution problems are designed to eliminate the dipolar activity in the environment. Almost everything on earth has a north and south pole. If you have something which is *neutral*, not polarized either negatively or positively, everything around it literally behaves differently. For example, if you place a glass of water near such a neutral element, the water will go back to the normal ph level. Water will also acquire less bacterial growth. Many radical elements such as fluorine and chlorine lose their radicality. There are different ways of scientifically producing neutral matter which has no polarity. The most useful military application of this kind of technology is "radar absorbant materials", the type of materials that makes the Delta bomber invisible to radar. The material has no polarity and allows electromagnetic fields of any kind to pass through it in such a way that it renders them harmonious; they pass through and do not bounce back.

The technology used to create the correctional device I am wearing now, the Teslar watch, and the Pulsor, are made of the same material as the Delta aircraft. Shielding mechanisms which amplify the beneficial natural magnetic ELF signal, and override electromagnetic pollution include the *Teslar watch*, '*Pulsers*', and '*Cocoons*'. The Teslar watch shielding device has a magnetic chip inside of the watch which neutralizes harmful ELF frequencies. Dr. G. Rein of Stanford Medical School found that the Teslar device increased immune production. Dr. Eldon Byrd, former the Chief Scientist for Investigation and Research on Biological Effects of ELF for the U.S. Navy, has performed preliminary testing on the benefits of the Teslar ELF protection device. His findings indicate "the shielding device appears to block signals that may be harmful to the body, produces a beneficial frequency, and promotes an amplified energy field in the subject wearing it." The Cocoon is a small magnetic shielding device which you can carry in your pocket with a center frequency of 8 Hz. Pulsors are professional protective devices composed of micro-crystals. VDT protective shields are also available.

ELECTROMAGNETIC DETECTION DEVICES:

In order to measure the ELF fields, special detection devices are required. The ELF magnetic non-linear polarized field detector is complicated to find or build; some university physics faculties have access to these. Our association has built the lightest and the most perfect detectors in the world. Detectors available are: the *geo-magnetometers* which measures static magnetic fields, ELF magnetic-field *dosimeters*, *Geiger counters*, and *ELF spectrum analyzers*.

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Protection and detection devices are available from Consumer Health and The Planetary Association for Clean Energy, Inc. and ESSENTIA Communications Inc., 100 Bronson Avenue, #1001, Ottawa, K1R 6G8, 613-238-4437, Monique Michrowski.

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