History of Neuro-Electromagnetics EM/RF Mind Control

Some of this material was excerpted and quoted in our second major report on the Montauk Project's mind control and spatio-temporal-dimensional "travel" operations; entitled "PHOENIX UNDEAD--The Montauk Project and Camp Hero Today".

There was some uncertainty on my part as to the authorship of the material, when I included portions of this treatise in the Montauk Project book. To the best of my knowledge, it has been ascertained that the author is Val Valerian of the Leading Edge International Research Group, at --http://trufax.org/. However, it has also been noted that Col. Tom Bearden has apparently written at least some of this material as well. (See -- http://www.enterprisemission.com/hyper2.html --).

We're confused!!

Anyway, this information is TREMENDOUSLY important for achieving an understanding of exactly WHAT is REALLY going on in the realms of advanced sciences, physics, etc. today: particularly with regard to ultra-advanced of EM/RF "mind control" technologies as well as interdimensional and "time travel" technologies; which were discussed at length in PHOENIX UNDEAD.

VERY MUCH WORTH READING!

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CH. 1

Maxwell's Equations

Distortion of Truth in Physics

For thousands of years, many discoveries have been suppressed from the populations of the planet in order to keep them in bondage. The burning of the libraries of Alexandria is one example of how information can be suppressed. Another example would be the common technique of suppression of scientific information by alteration of the information itself. Perhaps the most blatant and far reaching alteration of data was the alteration of Maxwell's equations. James Clerk Maxwell was a mathematical genius who lived in the late l9th century. His original work, which is available to covert scientific departments in the government, had the potential to radically alter the entire course of our civilization.

It is certainly clear to most of you by now that the human population can be manipulated by electronic means using various methods developed through the military industrial complex. What may not be clear to you is that many of the EM effects can be initiated from outside of what is normally seen as the electromagnetic spectrum. Just as a magnetic field in a wire is at right angles to the current flow, other fields and waveforms exist that are an integral part of the electromagnetic spectrum, yet exist at a certain number of right-angle rotations (orthogonal rotations) away from the electromagnetic field components we are normally accustomed to. If these hyperspacial components, which are not subject to the usual electromagnetic constraints of time and space, are generated and manipulated, they can in turn generate EM effects that have the capability to influence human biology and consciousness.

The Hertzian Assumption

In late 1864, James Clerk Maxwell published his epic material on electromagnetic waves. His material dealt not only with electrical and magnetic waves, but also the relativistic/etherial psycho-active component of these waves (representing electromagnetics of the second order and above). The equations also included transformations that enabled the change from inertial frames of reference to non-inertial frames of reference. Maxwell's original equations were written in Quaternion notation, a complex mathematical system available at that time before Vector Analysis was introduced by Oliver Heaviside. Today's generalized equivalent of Quaternions is Tensors.

In short, Maxwell's original work gave the necessary information for gravitational propulsion and psychoactive devices. Someone somewhere recognized this, for shortly after his death, the mathematician Oliver Heaviside, the chemist Willard Gibbs, and physicist Heinrich Hertz decided to "interpret" Maxwells famous equations which were, in the original form, the foundations of electromagnetics and Unified Field Theory (UFT). This "unholy trio, especially Heaviside, disregarded the Quaternions or Scalar components of Maxwell's original equations, because they represented potentials and not fields. He thought potentials were akin to "mysticism", because "everybody knows that fields contain mass, and mass cannot be created from apparently nothing, which is what potentials are, both literally and mathematically; they are an accumulation or reservoir of energy. Furthermore, not only did they throw away the gravitational component with the Quaternion/Scalar, but also postulated that gravitation and electromagnetism were mutually exclusive, not interdependent. That was the death blow to subsequent efforts by scientists to realize a functioning unified field theory. Because of this one act, electromagnetism was reduced from its original five dimensions to only four: X, Y, Z, and time. The element of G was removed.

Because of this deliberate act, twenty-two other errors exist today in electromagnetic theory. The very concepts of force, mass and charge are ill-defined, and the so-called "static" electrical charge has been discovered by Quantum mechanics not to be static at all, but to move rotationally by virtue of the quantum mechanical spin. Finally, adding insult to injury, the so-called "imaginary components" of Maxwells original equations as well as the mutilated version of the equations have also been discarded or ignored. With this last error, the door to hyperspacial domains was forever closed, for the present mathematics and physics of electromagnetic theory do not allow for hyperspacial domains (domains outside of three dimensions), superluminal signals (signals that exceed the speed of light or are infinite in speed), and a unified field theory.

Discrepancies in the Present EM Theory

(1) In present electromagnetics theory, charge and charged mass are falsely made identical. Actually, on a charged particle, the "charge" is the flux of virtual particles on the "bare particle" of observable mass. The charged particle is thus a "system" of true massless charge coupled to a bare chargeless mass. The observable "mass" is static, three-dimensional, and totally spatial. "Charge" is dynamic, four-dimensional or more, virtual and spatiotemporal. Further, the charge and observable mass can be decoupled, contrary to present theory. Decoupled charge -- that is, the absence of mass -- is simply what we presently refer to as "vacuum." Vacuum, spacetime, and massless charge are all identical. Rigorously, we should utilize any of these three as an "ether," as suggested for vacuum by Einstein himself (see Max Born, Einstein's Theory of Relativity, Revised Edition, Dover Publications, New York, 1965, p. 224). And all three of them are identically anenergy -- not energy, but more fundamental components of energy.

(2) Electrostatic potential is regarded as a purely 3-dimensional spatial stress. Instead, it is the intensity of a many-dimensional (at least four-dimensional) virtual flux and a stress on all four dimensions of spacetime. This is easily seen, once one recognizes that spacetime is identically massless charge. (It is not "filled" with charge; rather, it is charge!) Just as, in a gas under pressure, the accumulation of additional gas further stresses the gas, the accumulation of charge (spacetime) stresses charge (spacetime). Further, if freed from its attachment to mass , charge can flow exclusively in time, exclusively in space, or in any combination of the two. Tesla waves -- which are scalar waves in pure massless charge flux itself -- thus can exhibit extraordinary characteristics that ordinary vector waves do not possess. And Tesla waves have extra dimensional degrees of freedom in which to move, as compared to vector waves. Indeed, one way to visualize a Tesla scalar wave is to regard it as a pure oscillation of time itself.

(3) Voltage and potential are often confused in the electrostatic case, or at least thought of as "composed of the same thing." For that reason, voltage is regarded as "potential drop". This also is not true. Rigorously, the potential is the intensity of the virtual particle flux at a single point -- whether or not there is any mass at the point -- and both the pressure and the point itself are spatiotemporal (4-dimensional), not spatial (3-dimensional) as presently assumed. Voltage represents the spatial intersection of the difference in the potential between two separated spatial points, and always implies at least a miniscule flow of mass current (that is what makes it spatial!). "Voltage" is spatial and depends upon the presence of observable mass flow, while scalar electrostatic potential is spatiotemporal and depends upon the absence of observable mass flow. The two are not even of the same dimensionality.

(4) The charge of vacuum spacetime is assumed to be zero, when in fact it is a very high value. Vacuum has no mass, but it has great massless charge and virtual particle charge flux. For proof that a charged vacuum is the seat of something in motion, see G.M. Graham and D.G. Lahoz, "Observation of static electromagnetic angular momentum in vacuo," Nature, Vol. 285, 15 .May 1980, pp. 154-155. In fact, vacuum IS charge, identically, and it is also "spacetime" and at least four-dimensional.

(5) Contrary to its present usage, zero is dimensional and relative in its context. A three-dimensional

spatial hole, for example, exists in time. If we model time as a dimension, then the spatial hole has one dimension in 4-space. So a spatial absence is a spatiotemporal presence. In the vacuum 4-space, a spatial nothing is still a something. The "virtual" concept and the mathematical concept of a derivative are simply two present ways of unconsciously addressing this fundamental problem of the dimensional relativity of zero.

(6) The concepts of "space" and "time" imply that spacetime (vacuum) has been separated into two parts. We can only think of a space as "continuing to exist in time " To separate vacuum spacetime into two pieces, an operation is continually required. The operator that accomplishes this splitting operation is the photon interaction, the interaction of vector electromagnetic energy or waves with mass. I have already strongly pointed out this effect and presented a "raindrop model" of first-order physical change itself in my book, The Excalibur Briefing, Strawberry Hill Press, San Francisco, 1980, pp. 128-130.

(7) "Vector magnetic potential" is assumed to be always an aspect of (and connected to) the magnetic field. In fact it is a separate, fundamental field of nature and it can be entirely disconnected from the magnetic field. See Richard P. Feynman et al, The Feynman Lectures on Physics, Addison-Wesley Publishing Co., New York, 1964, Vol. II, pp. 15-8 to 15-14. Curiously, this fact has been proven for years' yet it has been almost completely ignored in the West. The "Vx" operator, when applied to the A-field, makes B-field. If the Vx operator is not applied, the "freed" A-field possesses much-expanded characteristics from those presently allowed in the "bound" theory. Specifically, it becomes a scalar or "shadow vector" field; it is not a normal vector field. (note: for V read inverted capital Delta)

(8) The speed of light in vacuum is assumed to be a fundamental constant of nature. Instead it is a function of the intensity of the massless charge flux (that is, of the magnitude of the electrostatic potential) of the vacuum in which it moves. (Indeed, since vacuum and massless charge are one and the same, one may say that the speed of light is a function of the intensity of the spatiotemporal vacuum!). The higher the flux intensity (charge) of the vacuum, the faster the speed of light in it. This is an observed fact and already shown by hardcore measurements. For example, distinct differences actually exist in the speed of light in vacuum, when measured on the surface of the earth as compared to measurements in space away from planetary masses. In a vacuum on the surface of the earth, light moves significantly faster. For a discussion and the statistics, see B. N. Belyaev, "On Random Fluctuations of the Velocity of Light in Vacuum," Soviet Physics Journal, No. 11, Nov. 1980, pp. 37-42 (original in Russian; translation by Plenum Publishing Corporation.) The Russians have used this knowledge for over two decades in their strategic psychotronics (energetics) program; yet hardly a single U.S. scientist is aware of the measured variation of c in vacuum. In fact, most Western scientists simply cannot believe it when it is pointed out to them!

(9) Energy is considered fundamental and equivalent to work. In fact, energy arises from vector processes, and it can be disassembled into more fundamental (anenergy) scalar components, since the vectors can. These scalar components individually can be moved to a distant location without expending work, since one is not moving force vectors. There the scalar components can be joined and reassembled into vectors to provide "free energy" appearing at a distance, with no loss in between the initial and distant points. For proof that a vector field can be replaced by (and considered to be composed of) two scalar fields, see E. T. Whittaker, Proceedings of the London Mathematical Society, Volume 1, 1903, p. 367. By extension, any vector wave can be replaced by two coupled scalar waves.

(10) The classical Poynting vector predicts no longitudinal wave of energy from a time-varying, electrically charged source, In fact, an exact solution of the problem does allow this longitudinal wave. See T. D. Keech and J. F. Corum, "A New Derivation for the Field of a Time-Varying Charge in Einstein's Theory," International Journal of Theoretical Physics, Vol. 20, No, 1, 1981, pp. 63-68 for the proof.

(11) The present concepts of vector and scalar are severely limited, and do not permit the explicit consideration of the internal, finer-grained structures of a vector or a scalar. That is, a fundamental problem exists with the basic assumptions in the vector mathematics itself. The "space'' of a vector field, for example, does not have inter-nested sublevels (subspaces) containing finer "shadow vectors" or "virtual vectors," Yet particle physics has already discovered that electrical reality is built that way. Thus one should actually use a "hypernumber" theory after the manner of Charles Muss. A scalar is filled with (and composed of) nested levels of other "spaces'' containing vectors, where these sum to "zero" in the ordinary observable frame without an observable vector resultant. In Muss' mathematics, for example, zero has real roots. Real physical devices can be -- and have been -constructed in accordance with Muses' theory. For an introduction to Muss' profound hypernumbers approach, see Charles Muss' foreword to Jerome Rothstein, Communication Organization and Science, The Falcon's Wing Press, Indian Hills, Colorado, 1958. See also Charles Muss, "Applied Hypernumbers: Computational Concepts," Applied Mathematics and Computation, Vol. 3, 1976. See also Charles Muss, "Hypernumbers II," Applied Mathematics and Computation, January 1978.

(12) With the expanded Tesla electromagnetics, a new conservation of energy law is required. Let us recapitulate for a moment. The oldest law called for the conservation of mass. The present law calls for the conservation of "mass and energy", but not each separately. If mass is regarded as simply another aspect of energy, then the present law calls for the conservation of energy. However, this assumes that energy is a basic, fundamental concept. Since the energy concept is tied to work and the movement of vector forces, it implicitly assumes "vector movement" to be a "most fundamental" and irreducible concept. But as we pointed out, Whittaker showed that vectors can always be further broken down into more fundamental coupled scalar components. Further, Tesla discovered that these "coupled components" of "energy" can be individually separated, transmitted, processed, rejoined, etc. This directly implies that energy per se need not be conserved. The new law therefore calls for the conservation of anenergy, the components of energy. These components may be coupled into energy, and the energy may be further compacted into mass. It is the sum total of the (anenergy) components -- coupled and uncoupled -- that is conserved, not the matter or the energy per se. Further, this conservation of anenergy is not spatial; rather, it is spatiotemporal in a spacetime of at least four or more dimensions.

(13) Relativity is presently regarded as a theory or statement about fundamental physical reality. In fact, it is only~ a statement about FIRST ORDER reality -- the reality that emerges from the vector interaction of electromagnetic energy with matter. When we break down the vectors into scalars (shadow vectors or hypervectors), we immediately enter a vastly different, far more fundamental reality. In this reality superluminal velocity, multiple universes, travel back and forth in time, higher dimensions, variation of all "fundamental constants" of nature, materialization and dematerialization, and violation of the "conservation of energy" are all involved. Even our present Aristotlean logic -- fitted to the photon interaction by vector light as the fundamental observation mechanism -- is incapable of describing or modeling this more fundamental reality. Using scalar waves and scalar interactions as much subtler, far less limited observation/detection mechanisms, we must have a new "superrelativity" to describe the expanded electromagnetic reality uncovered by Nikola Tesla.

(14) "Charge" is assumed to be quantized, in addition to always occurring with -- and locked to -- mass. Indeed, charge is not necessarily quantized just as it is not necessarily locked to mass. Ehrenhaft discovered and reported fractional charges for years, in the 30's and 40's, and was ignored. See P.A.11. Dirac, "Development of the Physicist's Conception of Nature," Symposium on the Development of the Physicist's Conception of Nature, ed. Jagdish Merha, D. Reidel, Boston, 1973, pp. 12-14 for a presentation of some of Ehrenhaft's results. Within the last few years Stanford University researchers also have positively demonstrated the existence of "fractional charge." For a layman's description of their work, see "A Spector Haunting Physics," Science News, Vol. 119, January 31, 1981, pp. 68-69. Indeed, Dirac in his referenced article points out that Millikan himself -- in his original oildrop experiments -- reported one measurement of fractional charge, but discounted it as probably due to error.

(15) Presently, things are always regarded as traveling through normal space. Thus we use or model only the most elementary type of motion -- that performed by vector electromagnetic energy. We do not allow for things to "travel inside the vector flow itself." Yet, actually, there is a second, more subtle flow inside the first, and a third, even more subtle flow inside the second, and so on. We may operate inside, onto, into, and out of energy itself -- and any anenergy component of energy. There are hypervectors and hyperscalars unlimited, within the ordinary vectors and scalars we already know. Further, these "internal flows" can be engineered and utilized, allowing physical reality itself to be directly engineered, almost without limits.

(16) We always assume everything exists in time. Actually, nothing presently measured exists in time, because the physical detection/measurement process of our present instruments destroys time, ripping it off and tossing it away -- and thereby "collapsing the wave function." Present scientific methodology thus is seriously flawed. It does not yield fundamental (spacetime) truth, but only a partial (spatial) truth. This in turn leads to great scientific oversights. For example, mass does not exist in time, but mass x time (masstime) does. A fundamental constant does not exist in time, but the "constant x time" does. Energy does not exist in time, but energy x time (action) does. Even space itself does not exist in time -- spacetime does. We are almost always one dimension short in every observable we model. Yet we persist in thinking spatially, and we have developed instruments that detect and measure spatially only. Such instruments can never measure and detect the phenomenology of the nested substrata of time. By using scalar technology, however, less limited instruments can indeed be constructed - and they have been. With such new instruments, the phenomenology of the new electromagnetics can be explored and an engineering technology developed.

(17) We do not recognize the connection between nested levels of virtual state (particle physics) and orthogonally rotated frames (hyperspaces). Actually the two are identical, as I showed in the appendix to my book, The Excalibur Briefing, Strawberry Hill Press, San Francisco, 1980, pp. 233-235. A virtual particle in the laboratory frame is an observable particle in a hyperspatial frame rotated more than one

orthogonal turn away. This of course implies that the hyperspatial velocity of all virtual particles is greater than the speed of light. The particle physicist is already deeply involved in hyperspaces and hyperspatial charge fluxes without realizing it. In other words, he is using tachyons (particles that move faster than light) without realizing it.

(18) Presently quantum mechanics rigorously states that time is not an observable, and therefore it cannot be measured or detected. According to this assumption, one must always infer time from spatial measurements, because all detections and measurements are spatial. With this assumption, our scientists prejudice themselves against even looking for finer, subquantal measurement methodologies and instrumentation. Actually this present limitation is a result of the type of electromagnetics we presently know, where all instruments (the "measurers") have been interacted with by vector electromagnetic energy (light). Every mass that has temperature (and all masses do!) is continually absorbing and emitting photons, and in the process they are continually connecting to time and disconnecting from time. If time is continually being carried away from the detector itself by its emitted photons, then the detector cannot hold and "detect" that which it has just lost. With Tesla electromagnetics, however, the fundamental limitation of our present instruments need not apply. With finer instruments, we can show there are an infinite number of levels to "time", and it is only the "quantum level time" which is continually being lost by vector light (photon) interaction. By using subquantal scalar waves, instruments can move to deeper levels of time -- in which case the upper levels of time ARE measureable and detectable, in contradistinction to the present assumptions.

(19) In the present physics, time is modeled as, and considered to be, a continuous dimension such as length. This is only a gross approximation. Indeed, time is not like continuous "dimension," but more like a series of "stitches," each of which is individually made and then ripped out before the next stitch appears. "Vector light" photons interact one at a time, and it is this interaction with mass that creates quantum change itself. The absorption of a photon -- which is energy x time -- by a spatial mass converts it to masstime: the time was added by the photon. The emission of a photon tears away the time, leaving behind again a spatial mass. It is not accidental, then, that time flows at the speed of light, for it is light which contains and carries time. It is also not accidental that the photon IS the individual quantum. Since all our instruments presently are continually absorbing and emitting photons, they are all "quantized," and they accordingly "quantize" their detections. This is true because all detection is totally internal to the detector, and the instruments detect only their own internal changes. Since these detections are on a totally granular quantized background, the detections themselves are quantized. The Minkowski model is fundamentally erroneous in its modeling of time, and for that reason relativity and quantum mechanics continue to resist all attempts to successfully combine them, quantum field theory notwithstanding.

(20) Presently, gravitational field and electrical field are considered mutually exclusive. Actually this is also untrue. In 1974, for example, Santilly proved that electrical field and gravitational field indeed are not mutually exclusive In that case, one is left with two possibilities: (a) they are totally the same thing, or (b) they are partially the same thing. For the proof, see R. M. Santilli, "Partons and Gravitation: Some Puzzling Questions," Annals of Physics, Vol. 83, No. 1, March 1974. With the new Tesla electromagnetics, pure scalar waves in time itself can be produced electrically, and electrostatics (when the charge has been separated from the mass) becomes a "magic" tool capable of directly affecting and altering anything that exists in time--including gravitational field. Antigravity and the inertial drive are immediate and direct consequences of the new electromagnetics.

(21) Presently, mind is considered metaphysical, not a part of physics, an not affected by physical means. Literally, the prevailing belief of Western scientists is that man is a mechanical robot -- even though relativity depends entirely upon the idea of the "observer." Western science today thus has essentially become dogmatic, and in this respect borders on a religion. Since this "religion," so to speak, is now fairly well entrenched in its power in the state, Western science is turning itself into an oligarchy. But mind occupies time, and when we measure and affect time we can directly measure and affect mind itself. In the new electromagnetics, then, man regains his dignity and his humanity by restoring the reality of mind and thought to science. In my book, The Excalibur Briefing, I have already pointed out the reality of mind and a simplified way in which it can be modeled to the first order. With scalar wave instruments, the reality of mind and thought can be measured in the laboratory, and parapsychology becomes a working, engineering, scientific discipline.

(22) Multiple-valued basic dimensional functions are either not permitted or severely discouraged in the present theory For one thing, integrals of multiple valued derivative functions have the annoying habit of "blowing up" and yielding erroneous answers, or none at all. And we certainly do not allow multiple types of time! This leads to the absurdity of the present interpretation of relativity which permits only a single observer (and a single observation) at a time. So if one believes as "absurd" a thing as the fact that more than one person can observe an apple at the same time, the present physics fails. However, the acceptance of such a simple proposition as multiple simultaneous observation leads to a physics so bizarre

and incredible that most Western physicists have been unable to tolerate it, much less examine its consequences. In the physics that emerges from multiple simultaneous observation, all possibilities are real and physical. There are an infinite number of worlds, orthogonal to one another, and each world is continually splitting into additional such "worlds" at a stupendous rate. Nonetheless, this physics was worked out by Everett for his doctoral thesis in 1956, and the thesis was published in 1957. (See Hugh Everett, III, The Many-Worlds Interpretation of Quantum Mechanics: A Fundamental Exposition, with papers by J. A. Wheeler, B.S. DeWitt, L. N. Cooper and D. Van Vechten, and N. Graham; eds. Bryce S. Dewitt and Neill Graham, Princeton Series in Physics, Princeton University Press, 1973.) Even though it is bizarre, Everett's physics is entirely consistent with all the present experimental basis of physics. The present electromagnetic theory is constructed for only a single "world" or universe -- or "level." The expanded theory, on the other hand, contains multiply nested levels of virtual state charge -- and these levels are identically the same as orthogonal universes, or "hyperframes." Multiple kinds -- and values - of time also exist. The new concept differs from Everett's, however, in that the orthogonal universes intercommunicate in the virtual state. That is, an observable in one universe is always a virtual quantity in each of the other universes. Thus one can have multi-level "continuities" and "discontinuities" simultaneously, without logical conflict. It is precisely these levels of charge -- these levels of scalar vacuum -- that lace together the discontinuous quanta generated by the interaction of vector light with mass.

Out with the OLD and in with the New

The edited version of Maxwells work, which every physicist and engineer has had to contend with, discards electrogravitation, and avoids the unification of gravitation and electromagnetics. It also prevents the direct engineering of gravitation, space-time, time flow rates, free energy devices, and quantum changes, which is viewed by the altered equations that are vector-based as only a statistical change. The quaternion approach captures the ability to utilize electromagnetics and produce local curvature of spacetime. Heaviside wrote a subset of Maxwell's equations where this capability is excluded.

In the 1960's the Hertz (Hz) replaced Cycles Per Second. Since, then everyone thinks that all electromagnetic waves are hertzian. Only the upper portion of the spectrum before Infra-red contains Hertzian waves. ELF and ULF are not; waves in biosystems and natural phenomena are not Hertzian in nature.

However, to understand the new electromagnetic reality, one requires a new, expanded logic which contains the old Aristotlean logic as a subset. I must point out the new logic in a paper, "A Conditional Criterion for Identity, Leading to a Fourth Law of Logic," 1979, available from the National Technical Information Center, AD-A071032.

Dr. Henry Monteith independently discovered that Maxwell's original quaternion theory was a unified field theory. Einstein assumed, because he only had access to the altered equations, that curving spacetime could only be achieved by the weak gravitational force due to mass, that the local frame would always be a Lorentz frame, which would mean that all operations would be constrained to "conservation laws of physics."

The present electromagnetics is just a special case of a much more fundamental electromagnetics discovered by Maxwell and used by Nikola Tesla, just as Newtonian physics is a special case of relativistic physics. But in the electromagnetics case, the differences between the old and the new are far more drastic and profound.

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_____ History of Neuro-Electromagnetics

CH. 2

Tesla's Technology

Tesla's writings have many references to the use of his wireless power transmission technology as a directed energy weapon. These references are examined in their historical relationship to the development of today's modern directed energy devices (DEW).

The French ship Iena blew up in 1907. Electrical experts were sought by the press for an explanation. Many thought the explosion was caused by an electrical spark and the discussion was about the origin of the ignition. Lee De Forest, inventor of the Audion vacuum tube adopted by many radio broadcasters, pointed out that Nikola Tesla had experimented with a "dirigible torpedo" capable of delivering such destructive power to a ship through remote control. He noted, though, Tesla also claimed that the same technology used for remotely controlling vehicles also could project an electrical wave of "sufficient intensity to cause a spark in a ship's magazine and explode it."

In the summer of 1913, Signor Giulio Ulivi, blew up a gas meter with his "F-Ray" device and destroyed his laboratory. Then, in August of that year, exploded three mines in the port of Trouville for a number of high

ranking French naval officers. The following November, he traveled to Splezzia, Italy to repeat the experiments on several old ships and torpedo boats for that country's navy.

In the Spring of 1924 newspapers carried several stories about "death rays" inventions in different parts of the world. The work of Harry Grindell-Matthews, London, was the first reported. The New York Times of May 21st had this one:

Paris, May 20 - If confidence of Grindell Matthews, inventor of the so-called ' diabolical ray,' in his discovery is justified it may become possible to put the whole of an enemy army out of action, destroy any force of airplanes attacking a city or paralyze any fleet venturing within a certain distance of the coast by invisible rays. So much the inventor consented to tell The New York Times correspondent today while continuing to refuse to divulge the exact nature of the rays beyond that they are used to direct an electric current able to perform the program just mentioned.

Grindell-Matthews stated that his destructive rays would operate over a distance of four miles and that the maximum distance for this type of weapon would be seven or eight miles. Asked if it would be possible to destroy an approaching enemy fleet, the inventor said it would not, because "Ships, like land, are in continual contact with the earth, but what I can do is to put the ships out of action by the destruction of vital parts of the machinery, and also by putting the crews temporarily out of action through shock." Airplanes, on the other hand, could be completely destroyed. As soon as his ray touched the plane it would burst into flames and fall to earth.

Grindell-Matthews asserted, "I am convinced the Germans possess the ray." He believed, though, they were carrying out their experiments with high frequencies and at high power, around 200 kilowatts, and could not control the weapon to hit a specific target. So far, said Grindell-Matthews, he had tried tests at 500 watts in his laboratory over a distance of sixty-four feet.

A French company, the Great Rhone Engineering Works of Lyon, had offered Grindell-Matthews extensive financial backing that would allow him to test his device at much higher power levels. He replied that would not undertake such tests "except under conditions of absolute safety on a wide tract of uninhabited land," such was the destructive power of his rays.

Details of the "diabolical rays'" destructive power surfaced that August. "Tests have been reported where the ray has been used to stop the operation of automobiles by arresting the action of the magnetos, and an quantity of gunpowder is said to have been exploded by playing the beams on it from a distance of thirty-six feet." Grindell-Matthews was able, also, to electrocute mice, shrivel plants, and light the wick of an oil lamp from the same distance away.

His own laboratory assistants were themselves became unintentional victims of the ray. When crossing its path during tests they were either knocked unconscious by violent electrical shocks or received intense burns. The inventor stated that though it would be possible to kill enemy infantry with the ray, "it would be quite easy to graduate the electric power used so that hostile troops would only be knocked out long enough to effect their capture."

On May 25th, a second death ray was announced in England. Doctor T.F. Wall, a "lecturer in electrical research in Sheffield University, "applied for a patent for means of transmitting electrical energy in any direction without the use of wires. According to one report. even though he has not made tests on a large scale yet "Dr. Wall expressed the belief that his invention would be capable of destroying life, stopping airplanes in flight and bringing motor cars to a standstill." On a more positive note, he added that his invention would have beneficial applications in surgical and medical operations.

Germany joined the technology race on May 25th when it announced its electrical weapon. As the Chicago Tribune reported:

Berlin - That the German Government has an invention of death rays that will bring down airplanes, halt tanks on the battlefields, ruin automobile motors, and spread a curtain of death like the gas clouds of the recent war was the information given to Reichstag members by Herr Wulle, chief of the militarists in that body. It is learned that three inventions have been perfected in Germany for the same purpose and have been patented.

Sensing something of importance the New York Times copyrighted its story of May 28th on a ray weapon developed by the Soviets. The story opened: "News has leaked out from the Communist circles in Moscow that behind Trotsky's recent war-like utterance lies an electromagnetic invention, by a Russian engineer named Grammachikoff for destroying airplanes."

Tests of the destructive ray, the Times continued, had began the previous August with the aid of German technical experts. A large scale demonstration at Podosinsky Aerodome near Moscow was so successful that the revolutionary Military Council and the Political Bureau decided to fund enough electronic anti-aircraft stations to protect sensitive areas of Russia. Similar, but more powerful, stations were to be constructed to disable the electrical mechanisms of warships. The Commander of the Soviet Air Services, Rosenholtz, was so overwhelmed by the ray weapon demonstration that he proposed "to curtail the activity of the air fleet, because the invention rendered a large air fleet unnecessary for the purpose of defense."

An English engineer, J.H. Hamil, offered the American army plans for producing " an invisible ray capable of stopping airplanes and automobiles in midflight," invented by a German scientist. The ray device was said to have been used the previous summer to bring down French planes over Bavaria. Hamil noted, however, that "the fundamental work was done by Nikola Tesla in Colorado Springs about 30 years ago. He built a powerful electrical coil. It was found that the dynamos and other electrical apparatus of a Colorado fuel company within a 100 yards or so were all put out of business.

Hamil believed the Tesla coil scattered rays which short- circuited electrical machinery at close range. Laboratories all over the world, he added, were testing methods of stepping up the Tesla coil to produce its effects at greater distances. "Working on an entirely different principle," Hamil said, "the German scientist has succeeded in projecting and directing electrical power."

Those Colorado Springs tests carried out by Tesla were well remembered by local residents. With a 200 foot pole topped by a large copper sphere rising above his laboratory he generated potentials that discharged lightning bolts up to 135 feet long. Thunder from the released energy could be heard 15 miles away in Cripple Creek. People walking along the streets were amazed to see sparks jumping between their feet and the ground, and flames of electricity would spring from a tap when anyone turned them on for a drink of water. Light bulbs within 100 feet of the experimental tower glowed when they were turned off. Horses at the livery stable received shocks through their metal shoes and bolted from the stalls. Even insects were affected: Butterflies became electrified and "helplessly swirled in circles - their wings spouting blue halos of 'St. Elmo's Fire.'"

The effect that captured the attention of foreign death ray inventors occurred at the Colorado Springs Electric Company powerhouse. One day while Tesla was conducting a high power test, the crackling from inside the laboratory suddenly stopped. Bursting into the lab Tesla demanded to know why his assistant had disconnected the coil. The assistant protested that had not done anything. The power from the city's generator, the assistant said, must have quit. When the angry Tesla telephoned the power company he received an equally angry reply that the power company had not cut the power, but that Tesla's experiment had destroyed the generator!

The inventor explained to The Electrical Experimenter, in August of 1917 what had happened.

As an example of what has been done with several hundred kilowatts of high frequency energy liberated, it was found that the dynamos in a power house six miles away were repeatedly burned out, due to the powerful high frequency currents set up in them, and which caused heavy sparks to jump through the windings and destroy the insulation! The lightning arresters in the power house showed a stream of blue-white sparks passing between the metal plates to the earth connection.

When questioned about the Ulivi ray that created so much comment a few years earlier, Tesla asserted, in the same interview, that "it was transplanted from this country to Italy." He saw it as simply a modification of his ultra-powerful high frequency coil tested in Colorado. With thousands of horsepower of energy "it would become readily possible to detonate powder and munitions magazines by means of the high frequency currents induced in every bit of metal, even when located five to six miles away or more."

With others attributing an energy weapons technology to Tesla's wireless power transmission research, his comments on the destructive capabilities of his system take on a great deal of importance. Writing tersely for Liberty magazine of February 1935 he stated:

My invention requires a large plant, but once it is established it will be possible to destroy anything, men or machines, approaching within a radius of 200 miles. It will, so to speak, provide a wall of power offering an insuperable obstacle against any effective aggression.

He went on to make a distinction between his invention and those brought forward by others. He claimed that his device did not use any so-called "death rays" because such radiation cannot be produced in large amounts and rapidly become weaker over distance. He likely was making reference to a Grindell-Matthews

type of device that, according to contemporary reports, used a powerful ultra-violet beam to make the air conducting so that high energy current could be directed to the target. The range of an ultra-violet searchlight would be much less than what Tesla was claiming. As he put it: "all the energy of New York City (approximately two million horsepower [1.5 billion watts]) transformed into rays and projected twenty miles, would not kill a human being."

Not wanting to give away a potentially valuable creation in an interview, he was intentionally opaque concerning the details of his design. He did clarify how his design differed from the ray type of devices.

My apparatus projects particles which may be relatively large or of microscopic dimensions, enabling us to convey to a small area at a great distance trillions of times more energy than is possible with rays of any kind. Many thousands of horsepower can be thus transmitted by a stream thinner than a hair, so that nothing can resist.

If Tesla's energy weapon cannot be called a "ray" device, but as one projecting microscopic particles, it would seem that it had to differ from the other designs in one of two ways. Either he was making the distinction between a beam of radiant energy, like a beam from a flashlight that has billions of energy carrying photons, and his own with all of its energy concentrated into a stream a single particle wide, or he was making a distinction about the size of the beam and the method it is used to reach the target.

In a Grindell-Matthews type of beam, the flashlight model, a huge number of high energy particles or photons would have to be sent out from the system so that a large enough area on the target would be covered to disable it. What Tesla seems to have intended was that his energy transmitter would set up a field of force around itself which, when penetrated, would release its energy directly to the target. The effect would be like sending a current of particles through a wire directly to the target. A large area on the target would not have to be "painted" by a beam, so the current reaching the intruder could be very thin and deliver a great deal of energy to a small area.

The Colorado tests that gave rise to the variety of "death ray" inventions in the U.S. and Europe may have lead to the development of a much more powerful weapon.

When Tesla realized that economic forces would not allow the development of a new type of electrical generator that would supply power without burning fuel he "was led to recognize [that] the transmission of electrical energy to any distance through the media as by far the best solution of the great problem of harnessing the sun's energy for the use of man.", His idea was that a relatively few generating plants located near waterfalls would supply his very high energy transmitters which, in turn, would send power through the earth to be picked up wherever it was needed.

Receiving energy from this high pressure reservoir only would require a person to put a rod into the ground and connect it to a receiver operating in resonance with the electrical motion in the earth. As Tesla described in 1911, "The entire apparatus for lighting the average country dwelling will contain no moving parts whatever, and could be readily carried about in a small valise."

The difference between a current used to "light the average country dwelling" and a current used as a method of destruction, however, is a matter of timing. If the amount of electricity used to run a television for an hour is released in a millionth of a second, it would have a very different, and negative, effect on the television.

Tesla said his transmitter could produce 100 million volts of pressure and currents up to 1000 amperes, with experimental power levels of billion or tens of billions of watts. If that amount of power were released in "an incomparably small interval of time," the energy would be equal to the explosion of millions of tons of TNT, that is, a multi-megaton explosion. Such a transmitter would be capable of projecting the force of a nuclear warhead by radio. Any location in the world could be vaporized at the speed of light.

Not unexpectedly, many scientists doubted the technical feasibility of Tesla's wireless power transmission scheme whether for commercial or military purposes. Modern authorities in electronics, even those who express admiration for the Tesla's genius, believe he was mistaken in the interpretation of his experiments when it came to electrical transmission through the earth.

On the other hand, statements from authoritative witnesses who saw Tesla's equipment in operation support his claim about transmission with something other than the radio waves known today. During the Chicago World's Fair of 1893, the Westinghouse exhibit set up by Tesla was visited by the Herman Von Helmholtz, the first director of the Physico-Technical Institute of Berlin and one of the leading scientists of his time. When Tesla "asked the celebrated physicist for an expression of opinion on the feasibility of the

[transmission] scheme. He stated unhesitatingly that it was practicable." In 1897, Lord Kelvin visited New York and stopped at the Tesla laboratory where Tesla "entertained him with demonstrations in support of my wireless theory."

Suddenly [Kelvin] remarked with evident astonishment: 'Then you are not making use of Hertz waves?' 'Certainly not', I replied, 'these are radiation's.' ... I can never forget the magic change that came over the illustrious philosopher the moment he freed himself from that erroneous impression. The skeptic who would not believe was suddenly transformed into the warmest of supporters. He parted from me not only thoroughly convinced of the scientific soundness of the idea but strongly expressed his confidence in its success.

A recent analysis of Tesla's wireless transmission method shows that he used an electrostatic transmission technique that did not radiate radio waves as we know them and could sent waves through the earth with little loss of power. The question remains of whether Tesla demonstrated the weapons application of his power transmission system. Circumstantial evidence found in the chronology of Tesla's work and financial fortunes between 1900 and 1908 points to there having been a test of this weapon.

1900: Tesla returned to New York from Colorado Springs after completing the tests of wireless power transmission that destroyed the power company's generator. He received $150,000 from J.P. Morgan to build a transmitter to signal Europe. With the first portion of the money he obtained 200 acres of land at Shoreham, Long Island and built an 187 foot tall tower with a steel shaft running 120 feet into the ground. This tower was topped with a 55 ton, 68 foot diameter metal dome. He called the research site "Wardenclyffe" and envisioned 2000 people eventually working at his global communications center.

A stock offering is made by the Marconi company. Supporters of the Marconi Company include his old adversary Edison and one-time associate Michael Pupin. Investors rushed to buy the Marconi shares. On December 12th, Marconi sent the first transatlantic signal, the letter "S," from Cornwall, England to Newfoundland, Canada. He did this with, as the financiers noted, equipment much less costly than that being built by Tesla.

1902: The Wardenclyffe transmitter nears completion. Marconi is hailed as a hero around the world while Tesla is seen as a shirker by the public for ignoring a call to jury duty in a murder case (he was excused from duty because of his opposition to the death penalty).

1903: When Morgan sent the balance of the $150,000, it would not cover the outstanding balance Tesla owed on the Wardenclyffe construction. To encourage a larger investment in the face of Marconi's success, Tesla revealed to Morgan his real purpose was not to just send radio signals but the wireless transmission of power to any point on the planet. Morgan was uninterested and declined to provide further funding.

A financial panic that Fall put an end to Tesla's hopes for financing by Morgan or other wealthy industrialists. This left Tesla without money even to buy the coal to fire the transmitter's electrical generators.

1904 - 1906: Tesla writes for the Electrical World, "The Transmission of Electrical Energy Without Wires," noting that the globe, even with its great size, responds to electrical currents like a small metal ball.

Tesla declares to the press the completion of Wardenclyffe. Marconi is hailed as a world hero.

Tesla subject to multiple law suits over unpaid Colorado Springs expenses. George Westinghouse, who bought Tesla's patents for alternating current motors and generators in the 1880's, turns down the inventor's power transmission business proposal. Workers gradually stop coming to the Wardenclyffe laboratory when there are no funds to pay them. In an article, Tesla comments on Peary's expedition to the North Pole and tells of his, Tesla's, plans for energy transmission to any central point on the ground.

1907: When commenting on the destruction of the French ship Iena, Tesla noted in a letter to the New York Times that he has built and tested dirigible torpedoes (remotely controlled torpedoes), but that electrical waves would be more destructive. "As to projecting wave energy to any particular region of the globe ... this can be done by my devices," he wrote. Further, he claimed that "the spot at which the desired effect is to be produced can be calculated very closely, assuming the accepted terrestrial measurements to be correct."

1908: Tesla repeated the idea of destruction by electrical waves to the newspaper on April 21st. His letter to the editor stated, "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." He added: "This is not a dream. Even now wireless power plants could be constructed by which any region of the globe might be rendered uninhabitable without subjecting the population of other parts to serious danger or inconvenience."

In the period from 1900 to 1910 Tesla's creative thrust was to establish his plan for wireless transmission of energy. Undercut by Marconi's accomplishment, beset by financial problems, and spurned by the scientific establishment, Tesla was in a desperate situation by mid-decade. The strain became too great by 1906-1907 and, according to Tesla biographers, he suffered an emotional collapse. In order to make a final effort to have his grand scheme recognized, he may have tried one high power test of his transmitter to show off its destructive potential. This would have been in 1908.

In 1907 and 1908, Tesla wrote about the destructive effects of his energy transmitter. His Wardenclyffe facility was much larger than the Colorado Springs device that destroyed the power station's generator. Then, in 1915, he stated bluntly:

"It is perfectly practical to transmit electrical energy without wires and produce destructive effects at a distance. I have already constructed a wireless transmitter which makes this possible. ... But when unavoidable [it] may be used to destroy property and life. The art is already so far developed that the great destructive effects can be produced at any point on the globe, defined beforehand with great accuracy."

A typical statement about the light induced by his transmitter is this from the New York American of December 7th, 1914:

The lighting of the ocean ... is only one of the less important results to be achieved by the use of this invention [the transmitter]. I have planned many of the details of a plant which might be erected at the Azores and which would be amply sufficient to illuminate the entire ocean so that such a disaster as that of the Titanic would not be repeated. The light would be soft and of very small intensity, but quite adequate to the purpose.

When Tesla used his high power transmitter as a directed energy weapon he drastically altered the normal electrical condition of the earth. By making the electrical charge of the planet vibrate in tune with his transmitter he was able to build up electric fields that effected compasses and caused the upper atmosphere to behave like the gas filled lamps in his laboratory. He had turned the entire globe into a simple electrical component that he could control.

Given Tesla's general pacifistic nature it is hard to understand why he would carry out a test harmful to both animals and the people who herded the animals even when he was in the grip of financial desperation. The answer is that he probably intended no harm, but was aiming for a publicity coup and, literally, missed his target.

At the end of 1908, the whole world was following the daring attempt of Peary to reach the North Pole which he claimed in the Spring of 1909. If Tesla wanted the attention of the international press, few things would have been more impressive than the Peary expedition sending out word of a cataclysmic explosion on the ice near or at the North Pole. Tesla, then, if he could not be hailed as the master creator that he was, could be seen as the master of a mysterious new force of destruction.

Or, perhaps, Nikola Tesla did shake the world in a way that has been kept secret for over 85 years.

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Wardenclyffe, 4/10/1906

Dear Mr. Tesla:

I have received your letter and am glad to know you are vanquishing your illness. I have scarcely ever seen you so out of sorts as last Sunday; and I was frightened.

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