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CLASSIC EXPERIMENT VIOLATES RELATIVISTIC ELECTRODYNAMICS

By Gerald N. Pellegrini

Shortly after Maxwell's equations were supposedly confirmed by Hertzian 'electric waves', it became apparent that there were real and acknowledged problems. The medium of the electric and magnetic fields necessary in the theory was undetectable in the experimental attempts made to find it. Also, Maxwell's equations were asymmetric with respect to moving conductors and moving magnets which did not appear to be inherent in the phenomena. Poincare and Lorentz made attempts at resolving the difficulties, but Einstein is credited with the triumphant resolution of the problems by 1905 paper introducing his theory of special relativity. This theory is predicated on the equivalence and non-preferability of inertial frames in electromagnetic theory.

As an early test of the special theory, Einstein and Laub [1] proposed an experiment which would test the predicted transformation properties between two inertial frames of the electric and magnetic fields for a uniformly moving magnetizable insulating material. In 1913 M. and H.A. Wilson [2] performed an experiment which has been classically cited [3] as confirmation of the Einstein and Laub prediction and therefore, the Special Theory of Relativity.

However, the Wilsons, by performing a rotation experiment did not perform the experiment proposed by Einstein and Laub since they did not test the transformation properties between two inertial and equivalent reference frames to which the special theory is restricted. The theory must be correctly applied to rotating (non-inertial) coordinates in this case. This subtle distinction was apparently not appreciated at the time but is, in fact, crucial. Ironically, the Wilson results, instead of confirming the special theory, demonstrate an inconsistency in first order between theory and experiment such that a very real and serious question exists, assuming the Wilson results correct, as to whether the 1905 proposal of Einstein is adequate to

resolve the problem of the Maxwell electromagnetic theory.

The experiment involved measuring the potential difference between the inner and outer surfaces of a hollow magnetized cylindrical insulator which is magnetized and rotated about its symmetrical axis. The magnetization is parallel to the axis. L.I. Schiff [4] derived from the accepted generally covariant theory the electromagnetic field equation in a rotating coordinate system. From very basic considerations and in response to a question posed by J.R. Oppenheimer, Schiff demonstrates that the field equations in a rotating system differ from their inertial

...a fundamental modification of the present understanding of electromagnetic and relativity theories is in order.

frame form by containing additional terms which are the electromagnetic analog to the additional terms required in mechanics (fictitious forces) when described in non-inertial systems. Apparently unknown to Schiff when his equations are applied to the Wilson experiment the prediction is in disagreement with the experimental results! Also from the viewpoint of the inertial observer, it can be demonstrated [5] that the theory prediction is in agreement with Schiff's equations and is in disagreement with experiment. The historical oversight which has had the effect of hiding from view the significance of this experiment, can be traced to a misapplication of the special theory (of relativity) to a problem involving non-equivalent coordinate frames of reference.

Some physicists after having been confronted with this theoretical analysis and after careful considerations being unable to find any flaws in the arguments are of

the opinion that the Wilson results may be erroneous. Confirmation therefore of the Wilson results would represent the surprising and important fact that Einstein's goal, as stated in the opening paragraphs of his 1905 paper, being to remove the motional asymmetry in Maxwell's theory was not completely obtained and that a fundamental modification of the present understanding of electromagnetic and relativity theories is in order. Such a modification, most everyone would agree, has far reaching implications in almost all branches of science and technology as well as our view of the world since basic electromagnetic and relativity theories have a fundamental standing in our present modern understanding of the physical laws. With such a modification reported, then future experimental anomalies may become understandable and whole new areas of technological development may become possible.

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Editorial

NEW SCIENCE TEACHES, SOON ENGINEERS BUILD

By Hal Fox

Dr. Gerald Pelligrini has challenged his scientific friends to discuss, debate, or argue with him on the following proposition: The Wilson & Wilson (c. 1915) experiments were flawed and, therefore, these experiments cannot be used to buttress arguments in favor of the Special Theory of Relativity. Furthermore,

he will challenge his friends with the concept that there is overwhelming evidence that there is an energetic ether.

Dr. Frederick Alzofon has another story. His work of many decades has shown that if one considers the matter-radiation interaction on a micro scale, then one can unify gravity, inertia, electromagnetism, and derive many of the known scientific laws previously shown only by quantum mechanics. This version of a unified field theory has a surprising outcome: The equations developed predict that under certain experimental arrangements, gravity can be reduced to near zero at the surface of the earth. Even more interesting, Alzofon's experiments have already substantiated his theory. Further experiments are planned.

This unified field theory of Alzofon is believed to be consistent with the work of Hal Puthoff but with some added features. Add to this array of intellectual achievements the experimental evidence of Kenneth Shoulders in his high-density charge clusters (electron beads) that there are forces that can repeatedly overcome the Coloumb barrier. In addition, speculate with me, that the Kenneth Shoulders work will be improved to create devices and systems that will tap space energy and provide substantial amounts of electrical power in any location in, on, or away from the earth.

What can a group of engineers do with (1) electrical power from space energy, (2) reduction (or increase) of the effective weight of special materials, (3) the removal of the barriers of special relativity, and (4) a source of development funds? (Perhaps the hardest part to obtain will be the source of funds.) A qualified group of engineers (with these four inputs) could cut the apron strings to Mother Earth and man could roam throughout space without the necessity to carry massive amounts of fuel to throw away to propel a spaceship.

The **Stealth** aircraft was designed and built in the "Skunk Works" by a superb assembly of engineers. What we need now is a "Skunk Works" for applications of some of the developments of **new energy science**, except the development should be done without being classified. We are convinced that there now exists sufficient theory and documented experimental evidence to provide us with the basics for a new revolution in energy production, gravity control, and propulsion to make real the following scenario:

Unfettered soon, we'll build our ships
And cut Mother Earth's apron strings.
We'll build the ships that soar the skies

And roam space on bright metal wings.

We'll stir the dust on Luna's crust.
On Mars, we will gather red sand.
Our kids will terraform Venus' soil.
And grandchildren dwell on that land.

Fusion Briefings

WIDE ECONOMIC EFFECTS

Courtesy of the author

Josef Gruber (Chair of Statistics and Economics, Dept. Econ., Univ. Hagen), "On Economic Effects of New Energy Technologies for Individuals and Society," presented at the Symposium on New Energy, of the Scandinavian Association of Vacuum Field Energy, Stockholm, 3-4 September 1994, 73 mms pages, 49 refs, 4 appendices.

AUTHOR'S INTRODUCTION

From all the information about new energy which I have collected during the last 12 months, I infer the following basic hypotheses for my lecture:

1. There exist new energy supply devices (generators, motors, energy converters, machines) which operate with a so-called over-unity effect: The ratio

$$\frac{\text{useful energy output}}{\text{useful energy input}}$$

is larger than 1.0, if only those forms of useful energy are taken into account which are known in classical physics.

Such new tools use energy from a "new" source, which is unknown in classical physics and which is indepletable (unlimited for all practical purposes). In the recent physical and engineering literature, it is known as vacuum field energy (VFE), zero point energy, space energy, or free energy. The corresponding technology for large-scale applications, we call **new energy technology (NET)**.

2. These new energy devices exist today, as a rule, in the form of small experimental units. For some of

these devices (or more exactly: for parts or components of such devices) patents have been granted. To develop the corresponding new energy technology (i.e. devices for large-scale applications and for widespread use), considerable research and development effort is, as a rule, required. This effort also separates the successful new energy supply devices from others which do not hold what has been promised. There is at least one large successful new device with an overunity effect working on a stand-alone basis.

3. Japan is the first country in which NET receives considerable financial and psychological support. Nobody should therefore be surprised, if Japanese firms would soon (maybe in a few months, maybe in a few years) offer worldwide powerful NET.

On the basis of these hypotheses, we shall investigate the effects of introducing NET on individual consumers and producers and on society as a whole (including the environment). In other words: We shall make an investigation of the "if ... then ..." -type: If the basic hypotheses are true, then the consequences are

UNIFIED FIELD, GRAVITY REDUCED

Courtesy of the Author

Frederick E. Alzofon, "The Unity of Nature and the Search for a Unified Field Theory," *Physics Essays*, vol 6, no 4, pp 599-608, 24 refs.

AUTHOR'S ABSTRACT

This paper exploits the observed transformability of radiation into matter and its converse to develop a theory that is unified in the sense that radiation and matter appear as difference aspects of the same field: the matter-radiation field. The paper is based upon and discussed from a classical viewpoint, emphasizing conceptual aspects, rather than the theory's formal structure, which has been detailed elsewhere [see following abstract]. It is shown that, by incorporating an observed property of radiation into the basis of the theory -- fluctuations in the intensity of the radiation comprising a light signal in a vacuum -- the Lorentz group of rotations can be extended to include translations of space-time, of vanishing average magnitude. Moreover, a fundamental, nonvanishing average alteration in the metric of space-time (a quadratic expression), analogous to the case for Brownian motion is induced. The corresponding alteration in the equations of motion for the field gives

rise to equations of motion of Bose-Einstein and Fermi-Dirac matter-radiation fields. The resultant theory has the following properties: the electromagnetic (i.e., Maxwell) field and the gravitational field appear as special cases of the matter-radiation field, along with a continuous gradation of these into forces which may be identified with nuclear forces on a sufficiently small scale. Inertial mass, gravitational mass, and radiation appear as different aspects of the matter-radiation field. The theory includes, as special cases, Newtonian mechanics, relativistic mechanics of a mass particle, and quantum mechanics. The probability field introduced in quantum mechanics is replaced by a matter-radiation field, which is an integral part of the theory rather than grafted into particle mechanics. In this way the sharp division between particle and field is eliminated; the zero-point infinite energy of quantum mechanics of fields is eliminated and given a new interpretation; the uncertainty principle is reinterpreted; the infinite energy is eliminated of, for example, static, electric, magnetic, and gravitational field potentials, as the separation of test body and source tends to zero. A simple model of the origin of the gravitational force can be based on the theory, along with the suggestion **of a direct manner of altering this force by use of present technology.** Other implications of the theory can be listed, among them a resolution of the apparent paradox between local realism and quantum mechanics as formulated in the Bell-type inequalities.

AUTHOR'S CONCLUSION

...It is evident that this essay hardly scratches the surface of the many promising consequences of the theory proposed, both for experiment and in further development of the theory itself. The experimental investigation of gravity alteration, for example, has opened many avenues of research which have yet to be fully explored in theory, experiment, and technology. Other researches will no doubt suggest themselves to the reader.

Space Energy

ANTI-GRAVITY NOW?

Courtesy of the Author

Frederick E. Alzofon, "Anti-Gravity with Present Technology: Implementation and Theoretical Foundation," in Proceedings of AIAA/SAE/ASME 17th

Joint Propulsion Conference, July 27-29, 1981, Colorado Springs, Colorado, 33 pages, 36 refs.

AUTHOR'S ABSTRACT

This paper proposes a semi-empirical model of the processes leading to the gravitational field based on accepted features of subatomic processes. Through an analogy with methods of cryogenics, a method of decreasing (or increasing) the gravitational force on a vehicle, using presently-known technology, is suggested. Various ways of utilizing this effect in vehicle propulsion are described. A unified field theory is then detailed which provides a more formal foundation for the gravitational field model first introduced. In distinction to the general theory of relativity, it features physical processes which generate the gravitational field.

EDITOR'S COMMENTS

In a discussion with the author, it was learned that the author has achieved significant experimental results in applying his theory to experimental verification. At the present time, special experimental equipment is being obtained to further advance his experimental work. Dr. Alzofon, who previously worked for Boeing Aerospace, has now retired and has devoted himself to the splendid goal of reducing, hopefully to near zero, the effect of gravity near the earth's surface. His current experimental data is encouraging. We expect to hear more from Dr. Alzofon on this important theoretical and experimental development. If this is an area of special interest for you, please write or call *Fusion Facts*.

ORIGIN FOR INERTIA OF MATTER

Bernhard Haisch (*Journal of Scientific Exploration*, Stanford, CA), "Zero-Point Field Origin for the Inertia of Matter and Mach's Principle," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 426.

AUTHOR'S ABSTRACT

The concept of inertia was originally proposed by Galileo as a fundamental property of matter. In the Principia, Newton defined inertia as a resistance to acceleration, and quantified this into $F = ma$. This equation of motion quantifies the inertia of any physical object and equates it with its mass. In the 19th century,

Ernst Mach proposed that inertia of any given object was somehow linked to the presence of all other matter in the Universe. Einstein tried unsuccessfully to quantify Mach's Principle into General Relativity. Since then inertia has continued to be considered an innate, and indeed archetypal, property of matter. In the article *Inertia as a Zero-Point Field Lorentz Force* (Haisch, Rueda and Puthoff, *Phys. Rev. A*, 49, 678-694, 1994; see also *Science*, 263, 612-613, 1994; *Scientific American*, 270, No. 5, 30-31, 1994) we report on the discovery of a previously overlooked Lorentz force arising in accelerated reference frames as a result of the interaction of matter with the zero-point field (ZPF). We interpret this as an electromagnetic resistance giving rise to the property of inertia. If this proves to be true, there may be significant implications for our understanding of the nature and origin of matter in relation to the ZPF. Attempts to link consciousness to quantum processes may also need to be reexamined given the growing success of stochastic electrodynamics (classical physics plus a random, fluctuating ZPF) in accounting for certain quantum phenomena. On the other hand, possible connections between the ZPF of modern physics and esoteric concepts of light may be worth exploring.

CONVERTING VACUUM ENERGY

H.E. Puthoff (Inst. for Advanced Studies at Austin, TX), "On the Feasibility of Converting Vacuum Electromagnetic Energy to Useful Form," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstracts from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 425.

AUTHOR'S ABSTRACT

Quantum theory tells us that empty space is not truly empty, but rather contains an enormous amount of untapped electromagnetic energy known as the zero-point energy, or ZPE. (The adjective "zero-point" signifies that such energy exists even at a temperature of absolute zero where no thermal effects remain.) Such energy can be traced to radiation from the fluctuating quantum motion of charged particles distributed throughout the universe. Well-known physical consequences of the ubiquitous background ZPE include the perturbation of atomic spectral lines known as the Lamb shift, the van der Waals forces of chemical attraction at absolute zero, and the Casimir force, a unique attractive quantum force between closely-spaced metal or dielectric plates.

The energy associated with the ZPE is known to be essentially inexhaustible and ubiquitous, so the question arises as to whether the ZPE can be "mined" for practical use, that is, extracted to perform useful work. Although it might be natural to assume that any attempt to extract energy from the background ZPE might violate energy conservation laws, or at least thermodynamic constraints (as in misguided attempts to extract energy from the surrounding heat bath under equilibrium conditions), a careful analysis shows that this is not the case, and that energy and heat can, in principle, be extracted without the violation of fundamental precepts. (See D.C. Cole and H.E. Puthoff, *Phys. Rev. E*, 48, 1562, 1994.)

With regard to laboratory experimentation, the candidate mechanism for energy extraction is the Casimir effect mentioned above. This attractive force can be shown to derive from an imbalance in radiation pressure from the background ZPE due to the boundary conditions established by the plates. Proof-of-principle for Casimir energy extraction is demonstrated by the collapse of the plates together, which results in the conversion of vacuum potential energy into heat. Experimentation in our laboratory is directed toward a plasma version of this process hypothesized to involve a Casimir pinch effect. Calorimetry and other measurements of possible excess heat (energy) generation in this process will be discussed.

Rotating Space-Energy Machines

MAGNET FIELDS AND MAGNETS

A.K. Das Gupta, "Unipolar Machines. Association of the Magnetic Field with the Field-Producing Magnet," *Unipolar Machines*, pp 428-430.

AUTHOR'S ABSTRACT

In this paper, various experiments are described which prove that in unipolar machines, if the field-producing magnet is rotated, the field does not rotate but remains stationary. If the field producing magnet is solidly fixed with the rotor and both are rotated, a voltage is generated in the rotor which is practically equal to the

voltage generated in the same rotor when rotated at the same speed in the field of the stationary magnet. Similarly, if current is passed through the rotor when the rotor is solidly fixed with the magnet, a torque is generated which is practically equal to the torque generated in the same rotor when the magnet is kept stationary.

THE STATUS OF THE VTA

By Michael Watson

Resume of the Background of the VTA

Several people have attempted to replicate Floyd Sweet's VTA without success. The only person to claim any success in this area is Don Watson (no relation).

Briefly, the VTA consists of one or more Barium Ferrite magnet slabs in a condition of unstable magnetization. This state is brought about through the use of high current pulses initially applied to the magnets. Once conditioned, the magnetic flux can be made to oscillate by applying a small excitation field from a coil. The flux change produced by the conditioned magnets induces a current in an output coil. The power which can be drawn is about 1 Kw while the excitation is only a few milliwatts. Apparently only Barium Ferrite displays this instability, the alternative Strontium Ferrite does not.

Where the energy comes from is not known, but the unit runs cold when in operation. It is assumed that there is some coupling into the zero point energy of space within the Barium Ferrite, if so this ferrite could become an important power source.

It has recently become evident after speaking to Floyd Sweet, that the magnets he uses have been mostly, if not exclusively, acquired from surplus stores during the mid to late eighties. In recent times Barium Ferrite has become unobtainable in slab form in both the U.S.A. and Europe. It can still be obtained in ring form in Europe and is used for loudspeakers.

It is now known that not all Barium Ferrites display the instability necessary for a VTA, and herein lies the problem. The capacity to oscillate depends in some unknown way on the previous history of the magnet. This may be associated with the initial manufacture or with the treatment the magnet has received during its life. It is well known that the present magnetic state of ferromagnetic materials in general depends on their history due to the non linearity of the BH curve.

As far as Sweet's magnets are concerned, their history was unknown even before he obtained them. He found by chance a few magnets that display the needed instability, but as far as I can tell Sweet never attempted or was unable to condition new magnets. He never heated his surplus magnets above the Curie to demagnetize them and restore them to their original, as manufactured, condition.

My guess is that if he were to do this, he would have the same difficulties as the rest of us in reproducing magnetic instability. The fact that the original VTA was on video in 1987 and it is now 1994 without patentable device speaks for itself.

Sweet maintains that he has just sold a working unit to General Motors. I do not know how many usable magnets he has but I suspect the magnets in GM's unit are the best ones, even perhaps the only ones that work. I have seen several magnets at his house but none seem to be used for VTAs, so I presume that they have failed in the past or have never worked.

Sweet told me that the units would stop working for no clear reason or their power output would fail. Some would only work for a few seconds.

Sweet himself is very elderly and seems to have partially lost interest in the VTA, so if further progress is to be made it may be worthwhile pursuing Don Watson's method [1], since he is the only person who has been able to get a unit similar to the VTA working.

There have been certain misleading "economies with the truth" over the VTA, which most likely stem from the above mentioned difficulties with the magnets. All this is now well known and it is not worth laboring the point, but it does suggest that when the hype is stripped away, we are left with an interesting phenomenon of *scientific* value but a very long way from a commercially viable device. This is not to say though, that the magnetic instability effect is not genuine. I firmly believe it is, but it is an effect. The VTA as invention based on an effect is perfectly reasonable, but it is not on a firm footing until the effect is fully understood and repeatable. Nevertheless, why did Floyd Sweet point-blank refuse to show me the working VTA which, according to him, was functioning at that time in this laboratory only one hour drive from his house, during my four day stay? Since the secret lies in the conditioning process, and the configurations which have worked are known. Also people such as Walter Rosenthal and Tom Bearden have seen working devices, Sweet's blank refusal seems to me odd.

Suggested Approach to Further Experiments

In my opinion, it is useless slavishly trying to replicate the VTA. The important point about the VTA is that a form of magnetic instability exists that can act as a significant energy source. Possible magnetic instability should be investigated by looking for small amplitude folding in the demagnetizing characteristic of barium ferrites and also how to produce mobility in magnetic bubbles formed in the ferrite. The possibility that these effects only occur under certain bias conditions or AC signals should be investigated. It is known that RF applied to iron enables recovery of some of the energy normally lost as heat in the hysteresis loop [2]. It seems possible that RF applied to a ferrite can assist in producing the required magnetic bubble or zone mobility. Even if it turns out that a conventional source of energy such as heat or its own magnetic energy is consumed by the VTA and that it requires charging or reactivating in some manner, its power to weight ratio is enormously better than the best batteries. Also it shows the capability of producing several kilowatts for some days or even weeks which would indeed make an electric car a practical possibility. Even if the magnets had to be removed and recycled, the material used, namely iron oxide is very cheap.

The best approach would be to treat the magnetic instability effect as a scientific phenomenon and attempt to discover its nature and what materials are best to optimize it. It is unlikely that Barium Ferrite is the best material and probably a magnetically softer ferrite is required.

A recurrent theme is the so called Coler/Schumann resonance. Dr. W.O. Schumann worked with Hans Coler around 1926. Coler maintained that ferromagnetism was an oscillatory phenomenon with a frequency of 180 Khz [3]. Hendershot is reported to have produced significant power from a relatively simple magnet driven twin oscillatory circuit. Details of the circuit are well known and it has been constructed independently by a number of people, including myself, but only one other author has claimed any success [4]. Additionally Moray has also claimed to have accessed some sort of pervading oscillatory field present in space. Anecdotally, Schumann is supposed to have established the reality of Coler's ferromagnetic oscillation and used it during the second world war. Whether there is any truth in this I do not know, but at least it suggests a line of inquiry.

The first idea that strikes the skeptic is that RF fields from radio transmitters close by are the source of these so called free energy effects, but there is no evidence

for this, also the configuration of the circuits is an inefficient aerial. Direct experiment on using RF from the man-made and natural flux surrounding us has shown that the power obtainable is very small unless the receiving apparatus is close to a radio transmitter, and even then an antenna is required. But it is possible to square the idea that there is some sort of electromagnetic energy source naturally present in the environment that can be tapped, with the fact that conventional antenna/tuned circuits pick up little or nothing in the way of power?

One hypothesis is that an oscillatory curl free magnetic vector potential coexists with the earth's magnetic field or emanates from the sun. The amplitude may be very small but have a large energy content. Conventional electromagnetics tells us that $\text{Curl } \mathbf{A} = \mathbf{B}$ where \mathbf{A} is the magnetic vector and \mathbf{B} is the magnetic flux density. The operation of this is seen in electromagnetic induction in a toroidal transformer. Clearly, if there is a curl free magnetic vector potential \mathbf{A} , no magnetic flux density \mathbf{B} is found, and electromagnetic induction cannot occur. Up until recently, curl free \mathbf{A} was regarded as a fiction. The famous experiment of Aharonov and Bohm has shown that curl free magnetic vector potential exists as a physical reality. Essentially, the Aharonov Bohm experiment showed that surrounding a solenoid where the magnetic flux was totally contained in a superconductive shield, a curl free magnetic potential exists that can be detected by the phase shift it produces in the wavefunction of two electron beams which pass either side of the screened solenoid. Supposing that in space surrounding the earth the curl free magnetic vector potential is in oscillation, since it is curl free it produces no detectable magnetic field. In most substances oscillation in electron phase would have no effect since it applies equally over the whole body, but in magnetized substances, especially ferrites, a differential electron phase shift might occur between the two oppositely polarized components present in ferromagnetic substances and this would oscillate in sympathy with the magnetic vector potential. Also the effect is likely to be directional. Hendershot is reported to have developed his device after seeing some sort of early aircraft direction finder or compass, presumably a rotating coil earth's field inductor or early flux gate. He maintained that his device operated using the earth's magnetic vector potential. At least two US patents exist for the transmission of information by a curl free magnetic vector potential [5].

This very tentative hypothesis is introduced purely because many researchers in the past, such as Tela, Moray, Parage, Hendershot, and more recently Floyd

Sweet, and the Methernitha group, have insisted that there is some "magnetic energy" present in space that can be tapped as a source of power, and these inventors have used non-linear quasi-electromagnetic devices to extract this energy.

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Electricity

SUMMARY OF EXPERIMENTAL OBSERVATIONS: THE NIEPER / SEIKE TRANSISTOR RING

By N. A. Reiter, Gibsonburg, Ohio

INTRODUCTION

In July of 1994, a fellow investigator of unusual effects, Dr. Samuel Faile, mailed me some excerpts from a published article by a Dr. Hans Nieper [1]. Previously, I had never heard of Dr. Nieper, or the concepts disclosed in the article. Described in the excerpts was a simple electronic device of unusual design. According to the text, the circuit embodies the concept of an oscillating semiconductor coil, which would theoretically absorb "gravity field energy". This effect should be denoted by a noticeable change in weight. At about the same time as Dr. Faile sent me material on the subject, another investigator had informed me that he had constructed the circuit described in the Nieper article and had observed a 15% weight reduction! A bold

claim indeed! Nevertheless, I desired to attempt a duplication of this effect.

I decided that several lunch hours of time would not be too much to contribute to this little enigma.

The schematic shown in the Nieper article describes a three-transistor oscillator built in a peculiar fashion. Three NPN power transistors are set up as class A amplifiers with the final output fed back into the base of the first stage through a coupling capacitor. When energized with 5 to 15 VDC, the circuit was said to oscillate at about 1.3 MHZ. Dr. Nieper claims that when powered up, over a period of time, the frequency of oscillation of the circuit will decrease. This effect was taken as an indication that gravitational energy was being absorbed by the p-type silicon of the transistors. I have included a faithful rendering of Nieper's circuit schematic for reader reference.

I felt that the most direct approach would be to simply build the circuit shown; or at least as close a facsimile as reasonable parts procurement would allow. On 18 July, I completed a version of the Nieper circuit on a 3" x 5" piece of vector board. The single deviation from the original was in the transistors. Nieper used 2SC521A's - 200watt NPN audio transistors. I found these to be quite expensive, so my version was built with TIP 31 NPNs. These are similar audio transistors, but rated at about 20 watts power dissipation. A schematic of my circuit version is included. (FIG. 1)

INITIAL TESTING

On 19 July, I connected my circuit to a Lambda variable DC supply; model # LPT-7202-FM. A Tektronix 310A scope was clipped across one of the collectors to ground. Power was applied and set at 5.0 VDC. To my delight, the circuit immediately began to oscillate at a level of about 2.8 Vp-p. A calculation of frequency from the scope display provided a starting figure of 1.370 MHZ. Current draw from the supply was read by the on-board meter and appeared to be stable at .86 A.

After a few minutes, it became obvious that the frequency of oscillation was indeed decreasing. At T+10 minutes, the calculated value from the display was at 1.333 MHZ. By T+30 minutes, this had dropped further to 1.282 MHZ. Temperatures of the 10 ohm resistors were taken at several points, and seemed to stabilise by T+10 minutes at about 65C.

At this point, I was confident that the first two important criteria of the experiment had been satisfied:

A. The circuit schematic given to me was valid, and a circuit built from it will oscillate at a frequency close to that disclosed by Dr. Nieper.

B. The frequency of oscillation does indeed drop off with time.

I should also note that the waveform produced was not purely sinusoidal, and appeared to have some harmonics superimposed on it. However, I had no way of performing any spectrum analysis to examine this more closely.

The main question was yet to be addressed. Did the circuit gain or lose any weight?

WEIGHT CHANGE EXPERIMENTS :

The first attempt at verifying a change in circuit weight was conducted on July 21 1994. The circuit was allowed to rest on top of a 4" high stack of styrene boxes which were placed on a Mettler BB2400 electronic scale. A pair of clip leads were run from the circuit to the Lambda supply, about eighteen inches away. The power supply was set at 5.0V DC. I should note that the resolution of the Mettler scale is .01 grams. The circuit was allowed to rest undisturbed for 10 minutes, then the Mettler was zeroed. At 1300 the total weight of the circuit before scale zeroing was 72.68 grams. Shortly after zeroing, the table on which the assembly was sitting was bumped slightly, and the zeroed weight shifted to -.13 grams. I left the scale alone, and turned on the power supply. Throughout the remainder of the afternoon, I turned the circuit on and off at irregular intervals and noted any changes in weight as read by the Mettler. The results of this first trial are shown in TABLE 1.

What I observed was a slight negative change in weight at the end of ON periods, and a slight recovery during OFF periods. The magnitude of these changes were observed to be all 100mg or less. I felt that I should be very cautious in my interpretations at this point, though the trend seemed real enough.

TABLE 1

Time	Circuit State At Time	Indicated Weight
1300	Off	-.13 g
1330	On	-.17 g
1347	Off	-.14 g
1441	On	-.24 g

1508	Off	-.17 g
1529	On	-.25 g
1600	Off	-.17 g

Over the course of August, four more trials were run with the TIP31 circuit. Trials # 2 and 3 were duplications of #1, but conducted in different locations. On 9 August, I added 1.0 microfarad capacitors to the three existing circuit caps, to attempt to lower the frequency of oscillation. As read from scope divisions, the new starting frequency was 285.7 KHZ. After 10 minutes, this had dropped to 270.3 KHZ, in similar fashion to earlier operation. Trial #4 was made at this lower frequency.

Trials #2 and #3 gave similar results to trial #1, as indicated in the accompanying tables. Trial #4 likewise, showed the weight loss/ recovery effect, perhaps to a higher degree.

During these trials, I observed that the temperature of the three transistor tabs was running about 55C; rather hot. On 12 August, I added heat sinks to the transistors. After 10 minutes of operation at 5 volts, the devices were now running at about 34C. Trial #5 was run on the circuit after the addition of the heat sinks. To my surprise, the deviations of weight as read by the Mettler were now completely zero! The effect had vanished! I have included a table for this trial also. Could the weight changes I had been observing have been due to heat or hot air from the transistors acting in a mechanical fashion? Or was the effect genuinely dependent on a HOT N-P junction?

At this point, I felt that I really should build the full scale circuit shown in the Nieper diagram, hoping that this thermal issue might be clarified, I procured three ECG-87s, the direct replacements for 2SC521A's. The devices were heat sunk, and the circuit laid out symmetrically on an 8" diameter lexan disc. When powered up, I immediately observed that the circuit was oscillating, but at a much lower frequency than the small version. With 7.5V DC applied, and a current of 1.49 A noted, the freq. of operation was 588.2 KHZ. At T + 1 hour, it had dropped to 555.6 KHZ.

A first weight loss trial was performed on 18 August. The same Mettler scale, and Lambda power supply were used. Results were as shown:

TRIAL #6 - Large Circuit 18 Aug. 1994
 7.5VDC, 1.49A
 Cold weight of circuit - 791.56 grams

TABLE 2

Time	Circuit State at Time	Indicated Weight
1523	Off	0.00g
1540	On	-.08g
1556	Off	+.17g
1620	On	-.09g
1632	Off	+.39g

On 30 Aug. I ran a second trial (#7) with the large circuit. The circuit was powered up with a more robust DC supply, an Electronic Measurement HGR-30-8.

10VDC, 1.87A

TABLE 3

Time	Circuit State at Time	Indicated Weight
1245	Off	0.00g
1254	On	-.23g
1306	Off	-.14g
1319	On	-.33g
1345	Off	-.18g
1410	On	-.36g
1430	Off	-.16g
1511	On	-.78g *
1521	Off	-.62g

* Desk where apparatus was set up was bumped once, at 1450, by a second party.

Where with the small circuit I had seen deviations on the order of tens of milligrams, I now was observing changes up to 200 milligrams. What indeed was going on here?

On 3 September, I catered to the hunch that there might be some merit in turning the circuit on in different positions (upside down, up on end). Previously, the small circuit had been mounted on it's perf board with both transistors and 10 ohm resistors on top. All trials had been run with the circuit "right side up". On the large device, the heat sunk transistors were at the periphery of the lexan disk, but the 10 ohm transistors were "on top". I felt that if a genuine gravity absorption effect was at work, then the weight change profile should be similar no matter what the bulk orientation of the device was like. With components that were noticeably hot, such as the un-heat sunk transistors on the little circuit, and the 10 ohm resistors on the large circuit, would the warming of air above or below the

device create a small weight difference which could complicate matters?

Eagerly, I flipped the circuit over, allowed the clip leads to stabilise, and zeroed the Mettler. At T+15 minutes, I observed that the circuit had gained .45grams! (The 10 ohm resistors were now on the bottom of the lexan disk.) I then propped the circuit up on end, and turned it on after a similar stabilise and re-zero period. After T+ 45 minutes, the scale reading had only shifted from 0.00g to 0.02g. As Senior Technician in an R&D lab, I sheepishly chided myself for not trying this sooner! Nevertheless, I felt that another trial was necessary, and that the vertical orientation; disk up on end, was a reasonable position for minimising the effects of warm air.

On 12 September, I ran a 10v trial in this fashion:

TABLE 4

Time	Circuit Condition at Time	Indicated Weight
1449	On	+.02g
1510	Off	+.48g
1520	On	+.50g
1537	Off	+.51g
1552	On	+.54g
1650	Off	+.54g

This profile did not resemble that of earlier trials, however I felt that a little more work should be done before writing off the whole endeavor. A colleague suggested that I bypass the transistors, and simply allow current to flow through the collector resistors to provide a heat source without any oscillation or semiconductor path. The trials would then be run again and weight changes looked for.

On 22 September, I set the circuit up once again with the 4" cardboard stand on the Mettler balance. By using clip-lead jumpers, I bypassed each of the three transistors, thus causing current to flow directly through the three collector resistors in parallel. The Lambda power supply was used to provide 5.0v at 1.6 amperes. The following trial was run:

TABLE #5

Time	Circuit Condition at Time	Indicated Weight
0639	Off	0.00g
0701	On	0.00g

0711	Off	0.00g
0732	On	0.03g
0752	Off	0.00g

At 0732, the clip leads were removed to put the transistors back into the circuit. (7.2v at 1.43A)

0743	On	-.03g
0753	Off	+.01g
0910	On	-.10g
0930	Off	-.05g
0954	On	-.12g

An Omega K-type thermocouple probe was used to take the following temperature readings:

RESISTIVE CIRCUIT ONLY
(after 10 minutes of on condition)

R1 - 61.7C
 R2 - 74.6C
 R3 - 67.2C
 Q1 heatsink - 21.6C
 Q2 heatsink - 21.0C
 Q3 heatsink - 20.8C
 Ambient room temperature - 20.2C
 Ambient air temperature 6" above center of circuit
 -20.4C

OSCILLATING CIRCUIT
(after 10 minutes of on condition)

R1 - 59.6C
 R2 - 77.2C
 R3 - 68.2C
 Q1 heatsink - 22.6C
 Q2 heatsink - 24.2C
 Q3 heatsink - 23.9C
 Ambient room temperature - 20.5C
 Ambient air temperature 6" above center of
 circuit - 20.4C

At a glance, the indicated temperatures are quite similar. Yet the resistive configuration did not cause the anticipated weight change profile, at least in this trial. I had to conclude that thermal conduction and convection MAY not be the sole cause for the weight changes after all. But why did the ring act differently in different positions?

In early September, I had the opportunity to review a work by Dr. Shinichi Seike which also included descriptions of experiments with transistorised ring circuits [2]. Seike has made claims of weight loss with

several ring circuits, and interestingly enough these loss figures tend to be in the tens or low hundreds of milligrams. However, I find no mention of experimental results from circuits placed in different orientations. The document which I reviewed seemed to be poorly translated from the Japanese, and was a bit vague, in my own opinion. I have, as of yet, been unable to find any other researcher or amateur scientist who has tested a ring circuit thoroughly.

On 24 September, I ran another weight loss trial, using the Mettler balance, cardboard stand, and EM power supply. This time, the trial was run in a small closed room which was smoke tested for air currents. Nothing was detectable by this coarse method. Room measurements were 5ft. x 5ft. x 8ft. high. Floor was glazed cement, and all components were placed on a wooden desk. The power supply was set at 10VDC, current draw was 1.85 A. The results are shown here:

TABLE #6

Time	Circuit Condition at Time	Indicated Weight
1446	Off	0.00g
1510	On	-.40g
1530	Off	+.46g
1600	On	-.26g
1625	Off	+.57g
1650	On	-.20g

These figures represent the most dramatic weight changes that I have observed to date.

CONCLUSIONS:

As time permits, I will continue to explore this peculiar device. I have not yet come to any firm conclusion about what is really happening here, or whether what I witnessed is due to artifact. I can, however, in good conscience, state the following:

A. The transistor ring circuit disclosed by Drs. Nieper and Seike functions electronically, as described in documents by both. The device goes into an oscillating state, and it is observable that the frequency of oscillation drops off with time. There appears to be a stabilization of frequency after about 20 to 45 minutes. Maximum deviation from starting frequency is between 3 and 10 %. The oscillating frequency may be adjusted by varying the values of coupling capacitors and collector resistors. Typical values are from 200 KHZ to 1.3 MHZ.

B. In a number of trials, it was observed that the circuits experimented with would lose weight when energised, and would tend to regain this weight after being turned off. This effect tended to occur over periods of time extending up to 30 minutes. In one trial, the observed rate of weight loss appeared to be averaging at about 2 mg/sec. Total changes in weight ranged from 20 mg up to and over 500 mg.

C. The weight changes observed are similar to those claimed by Seike.

D. It is possible that the weight changes are due to thermal/convective effects which include the uneven warming of air around the circuit. Attempts to confirm this experimentally were not successful, though.

E. The weight loss effect DOES appear to be dependant on circuit orientation, and this may correlate to item D.

F. If thermal/convective effects are ruled out, the mechanism for weight loss still remains unknown, experimentally.

FURTHER DISCUSSION:

It seems counter-intuitive that a device as simple as a three transistor amplifier/oscillator would be capable of demonstrating genuine gravitic - interactive effects. Nevertheless, I do not pretend to possess an adequate explanation for the actions of this circuit! My guess is that further investigation, conducted with more time and care than I could give, will show the weight loss effect to be due to some mundane, non-gravity source.

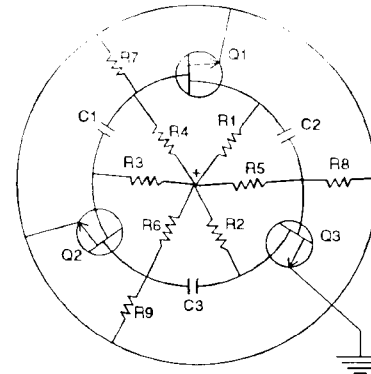
It is quite obvious, though, that the ring circuits DO seem to act as Drs. Nieper and Seike claim, and that neither was erroneous in his observations. I simply do not know why.

The total cost for building a full scale ring circuit, for me, was about \$50.00 US. I have enjoyed toying with the device, and it has provided me with some challenging exercises for the mind. I have met other investigators who have spent far more money on devices which have done far less. I heartily encourage the amateur scientist with a taste for the mysteries of gravity to build this device and work with it. Serendipity often occurs during investigations like these.

I am available for consultation, and I welcome any reader feedback.

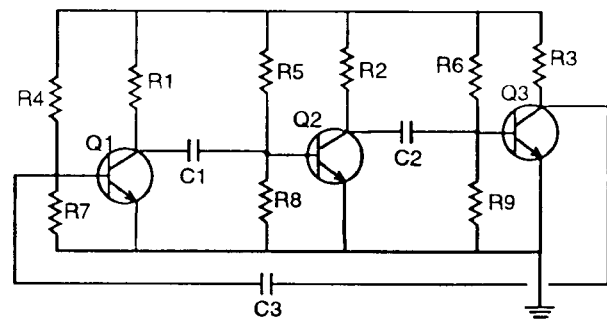
[Data tables for trials 2, 3, 4, and 5 with small circuit are available upon request. -Ed.]

DIAGRAM OF ORIGINAL RING CIRCUIT BY NIEPER



Q1, 2, 3 - 25C521A
 C1, 2, 3 - .1 μ F
 R1, 2, 3 - 10 Ω 10W
 R4, 5, 6 - 100 Ω
 R7, 8, 9 - 7.5 K Ω
 V+ = 5 to 13 VDC

FIG. 1 - FIRST (SMALL) CIRCUIT SCHEMATIC



Q1, 2, 3 - TIP31
 C1, 2, 3 - .1 μ F 50V Mylar
 R1, 2, 3 - 10 Ω 10W
 R4, 5, 6 - 500 Ω 1/2W
 R7, 8, 9 - 7.5 K Ω 1/4W
 V+ = 5 to 7.5 VDC

RESOURCES:

[1]. Nieper, Hans A. "Revolution in Technology, Medicine, and Society," Epilogue for the Hanover and Toronto Energy Conferences - 1981

[2]. Seike, Shinichi "The Principles of Ultra-Relativity - Eleventh Edition." Space Research Institute, 1992

FINAL THOUGHT - 06 October 1994

This exercise in empirical knowledge brings up a good point about gravity. Whether we attempt to duplicate the works of Brown, Hooper, Dotto, et al. or if we choose to follow our own crazy ideas, it should be remembered that there are two possibilities of the Final Breakthrough.

A. Control of gravity will require advanced materials, and tremendous expenditures of energy (and cash). It will likely come about only at the hands of large laboratories or the defense industry.

B. The secret of gravity control MAY be hidden in some easily obtained technology, process, or principle. Maybe it DOES only require some simple materials and a few watts of power combined with diligent observation.

The hope of the amateur scientist lies, obviously, with option B. The twist which makes B possible, though, is that very few components of our modern era, such as three-phase motors, solar cells, LEDs, Peltier or thermocouple junctions, laser tubes, and many more have ever actually BEEN WEIGHED before and during operation!!! Calibrated scales are affordable to many investigators. Why not start a crusade of weighing all kinds of things in a controlled manner. Maybe a silicon solar cell, when shorted and illuminated will lose or gain a few milligrams. The point is, how many people ever thought to weigh something like a solar cell...?

FORCES IN A WIRE

Courtesy of Ashley Gray

W.R. McKinnon, S.P. McAlister and C.M. Hurd (Nat. Research Council of Canada, Ottawa, Ont.), "Origin of the Force on a Current-Carrying Wire in a Magnetic Field," *Am. J. Phys.*, vol 49, no 5, May 1981, pp 493-494.

What is the microscopic origin of the force $F = L(i \times B)$ which acts on a wire of length L carrying a current i in a magnetic induction B ? This deceptively simple question, which is a least 100 years old [1], relates to a fundamental experiment in electromagnetism. Yet in the current literature [2] and in some basic text books [3] one still sees an explanation that is wrong, except for free electrons. Proper discussions of the problem are rare, and brief [4]; here we draw attention to the incorrect textbook arguments and provide a more

detailed view of the origin of the force F than is currently available.

Let us refer to the arrangement of fields and current shown in Fig. 1. Given that the induction B acts on the itinerant electron system in the conductor via the Lorentz force, the contentious point is how its influence is transferred to the material of the conductor to appear as Ampere's force F . The incorrect textbook argument involves the action of the transverse Hall field E_H on the lattice of positive ions. In an ideal conductor containing itinerant electrons with identical dynamical properties, E_H is established such that its effect in the steady state just balances the Lorentz force on each electron. The electrons thus move longitudinally under the influence of the primary electric field, but with a transverse concentration gradient. It is argued [2,3] that since the itinerant negative charges are piled up transversely, giving E_H , there is exposed positive charge on the fixed ions at the sample's other transverse extremity. The effect of E_H acting on this exposed charge is said to be the source of Ampere's force F . Thus the force on the itinerant electron system is in this view transmitted to the material of the conductor through the Hall field's effect on the stationary lattice of positive ions.

This argument gives the correct sign for F in the special case of a negative Hall coefficient (R) considered in Fig. 1, but it predicts incorrectly that the direction of F depends on the sign of R . To avoid this difficulty, one might argue that a positive R implies positive mobile charges (holes). The lattice must then have a net negative charge to preserve charge neutrality, and the direction of F is correctly predicted. However, experiments show [5,6] that the longitudinal current i comprises negatively charged particles whatever the sign of R . Furthermore, regardless of the sign of the charge carriers, the argument predicts incorrectly that there is no Amperian force when R is zero [7].

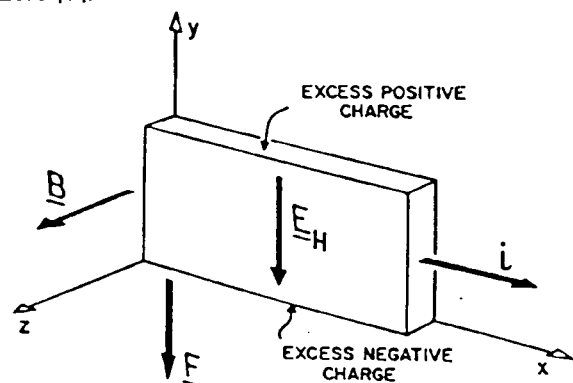


Fig. 1 This shows the arrangement of fields considered for an ideal conductor (Hall coefficient is negative) where in the steady state the

electrons flow longitudinally along the negative x axis with a concentration gradient along the y direction.

The flaw in the above argument is the incomplete treatment of the electron-lattice interaction. For an electron with a velocity \mathbf{v} , mass m , and charge $-e$, moving in a periodic potential, its \mathbf{k} vector changes according to [8,9]:

$$\hbar \frac{d\mathbf{k}}{dt} = -e\mathbf{E} - e(\mathbf{v} \times \mathbf{B}) . \quad (1)$$

In general, $\hbar \frac{d\mathbf{k}}{dt} \neq m \frac{d\mathbf{v}}{dt}$, which implies [9] that the electron must feel an additional force \mathbf{F}' caused by the positive ions. Thus

$$m \frac{d\mathbf{v}}{dt} = -e\mathbf{E} - e(\mathbf{v} \times \mathbf{B}) + \mathbf{F}' . \quad (2)$$

\mathbf{F}' is responsible for deviations from free electron behavior such as a positive R , and vanishes for free electrons. \mathbf{F}' will also be affected by deviations from perfect periodicity, which causes scattering of electrons, but here we need not enquire further about the nature of \mathbf{F}' .

In the steady state in a fixed conductor the net transverse force on the n itinerant electrons must be zero. Thus

$$-neE_H - ne(\mathbf{v}_d \times \mathbf{B}) + \mathbf{F}'_t = 0 , \quad (3)$$

where \mathbf{F}'_t is the net transverse component of \mathbf{F}' and \mathbf{v}_d is the drift velocity of the electrons. For a wire the latter is given by $\mathbf{v}_d = L \mathbf{i}/ne$. The transverse force (\mathbf{F}) on the positive lattice comprises the force neE_H from the Hall field and the reaction force $-\mathbf{F}'_t$. Thus

$$\mathbf{F}_t = neE_H - \mathbf{F}'_t = -ne(\mathbf{v}_d \times \mathbf{B}) + L(\mathbf{i} \times \mathbf{B}) , \quad (4)$$

with the second step following from (3). This is just the Amperian force \mathbf{F} . Thus it is wrong to think in general that \mathbf{F} is communicated to the lattice through E_H alone; both E_H and \mathbf{F}' are involved, the latter being responsible for deviations from free electron behavior. The argument which neglects \mathbf{F}' applies only to free electrons.

References

- [1] E.H. Hall, *Am. J. Math.*, vol 2, no 287, (1879).
 [2] C.A. Coombes, *Am. J. Phys.*, vol 47, no 915, (1979).

[3] See, for example, E.M. Purcell, *Electricity and Magnetism*, Berkley Physics Course, vol 2, (McGraw-Hill, NY 1965), p 219, or E. Della Torre and C.V. Longo, *The Electromagnetic Field*, (Allyn and Bacon, Boston 1969), p 433.

[4] For example, W.E. Hazen and R.W. Pidd, *Physics* (Addison-Wesley, Reading, MA 1965), p 378.

[5] G.G. Scott, *Phys. Rev.*, vol 83, no 656, (1961).

[6] S. Brown and S.J. Barnett, *Phys. Rev.*, vol 81, no 657, (1961).

[7] The Hall coefficient in several pure metals, including In, Al, Zn, and Ca, can be zero for suitable combinations of temperature and magnetic field strength.

[8] See, for example, J.M. Ziman, *Principles of the Theory of Solids* 2nd ed. (Cambridge Univ., MD, 1972), p 171.

[9] A.B. Pippard, *The Dynamics of Conduction Electrons* (Blackie, London 1965), p 9.

Miscellaneous

CHARLES YOST AND THE ELECTRIC SPACECRAFT JOURNAL

The Electric Spacecraft Journal is published quarterly at 73 Sunlight Drive in Leicester, N.C. 28748. The Issue 13, (Jan/Feb/Mar 1995 issue published October 12, 1994) is one of the best issues of this growing publication. Here are some excerpts and comments:

"The Alzofon Papers: Gravity Control" by Charles Yost

This article is an excellent review of Dr. Frederick Alzofon's theoretical and experimental work on reducing the effect of gravity at the earth's surface on specific types of materials. We have had the opportunity of reading Dr. Alzofon's work and are impressed. A close personal friend, who is an outstanding theoretician, has also read these papers and is "fifty percent convinced that Dr. Alzofon has made a real breakthrough." Charles Yost appends to this article an excellent list of references for

further study by the reader who is interested in deeper studies.

Timothy M. Rynne and John P. Dering, "Experimental Investigation of an Electromagnetic-Gravitational Interaction."

AUTHORS' ABSTRACT: While present standard unified field and high energy models require **big science** for experimental verification, a fairly recent theory offers the prospect of allowing experimental investigations at a level that can be performed with more traditional experimental systems. We have performed an experiment based on the dynamic theory of Pharis E. Williams that attempts to search for the existence of a macroscopic coupling between electromagnetism and gravity. Preliminary results from a bench level test appear to show the existence of such a coupling. Based on a preliminary model by Williams we have estimated the coupling constant of this effect to be $4 \times 10^{-15} \text{ kg/m}^4$.

NEN EDITOR'S COMMENTS: The five-dimensional theory of Pharis E. Williams [The Dynamic Theory--A New View of Space, Time and Matter, 1993] uses mass density as the fifth variable (dimension). The resulting equations are somewhat like Maxwell's equation for electricity and magnetism. Gravitation and electromagnetism are coupled by a constant. The paper reports on the experimental work that has led the authors to an estimate of the size of the coupling constant. The author provide their data, interpretation of the data, and specifications for further experimental work.

D. L. Cravens, Pharis Williams & Franklin Mead, "Electric Propulsion/Antigravity"

ABSTRACT: This article contains regrouped and abbreviated excerpts (causing some text discontinuity) from the electric propulsion study (of 162 pages) prepared for the U.S. Air Force Systems Command at Edwards Air Force Base in California. It was compiled during the period from 21 Sept. 1988 to 30 Nov. 1989 and published in August, 1990. The particular excerpts chosen provide some background to the Tynne and Dering experiment also featured in this issue [of Electric Spacecraft Journal.]

NEN EDITOR'S COMMENTS: Note that one of the authors, Pharis Williams, is the theoretician whose work led to the experimental work reported in the

preceding article referenced above. Dennis Cravens is more recently noted for his excellent replication work in cold fusion and his very practical descriptions of how to make working cold fusion cells. The article examines a few of the many possible approaches to gravity modification that was the subject of the original USAF report.

William Jay Fogal & Thomas Bearden, "Charged Barrier Technology--Part I"

ABSTRACT: This is a preliminary report on a new solid-state amplifier device which has very low switching voltages and little or no amplification noise. Its principle of operation is based upon the use of electric field potential; that is, variations of an electrostatic field imposed upon a base plate. The device has been tested for transmission of data over long distances without echo phenomena (instantaneous transmission?) and a question arose--does it show weight loss? Antigravity on a microscale!

NEN EDITOR'S COMMENTS: This report by Fogal and Bearden illustrate the basic design of this new transistor and the tests that have been run. The extremely low noise is related to a greatly improved efficiency, ergo, little or no heat loss in the transistor. In addition Bearden speculates that this type of device may herald a breakthrough in the transport or amplification of energy without the usual losses that occur in most electronic devices. Bearden suggests that this device (or a specially developed device) may be the answer to the fast switching of potential and therefore the basis of a practical over-unity system. Little mention is made of the teaser in the abstract about weight loss.

Charles Morton, "Experiments with Aluminum".

In a letter to the editor, Morton describes some very interesting experiments with aluminum powder (dust). Morton uses two electrodes hooked to a radio frequency generator. The voltage, frequency, and current are not given but the results of the apparent rise of the aluminum powder seems to be an interesting anomaly. The reader may want to contact Charles Morton, P.O. Box 1691, Grand Canyon, AZ 86023 for further information.

ANALYTICAL CHEMISTRY

Courtesy of Eugene Mallove

Michael Epstein (National Capital Area Skeptics, 8006 Valley Street, Silver Spring, MD 20910), "The Critical Role of Analytical Chemistry in the Investigation of Anomalies," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 429.

AUTHOR'S ABSTRACT

Analytical chemistry is the science of materials characterization for chemical composition. Since the verification of an anomalous event often relies on the characterization of materials remaining after the event, the analytical chemist can play a vital role in providing conclusive evidence. However, the limitations and controls needed on the analytical chemistry measurement are often underestimated by those who are not familiar with measurement science. Analytical chemistry has been best characterized as the one discipline in which you can do one hundred things right and one thing wrong, and still come out with the wrong answer.

This presentation will critically review several examples of how analytical chemistry and spectroscopy have been used (or misused) in an attempt to verify anomalies. Examples will include attempts at verifications of religious miracles (Shroud of Turin, Blood of Januarius, Image of Our Lady of Guadalupe); the Allison Magnetic-Optic method; Polywater; and UFO related cattle mutilations. We will then discuss the development of a protocol to **examine the evidence for biotransmutation, the claim that biological systems can perform nuclear transformations in which nuclides are transmuted into those of a different element.**

EDITOR'S COMMENTS

See, for example:

Hisatoki Komaki (Biological and Agri. Research Inst., Otsu, Japan), "Observations on the Biological Cold Fusion or the Biological Transmutation of Elements," presented at the Third International Conference on Cold Fusion, October 21-25, 1992, Nagoya, Japan. (FF Dec. 1992)

Hisatoki Komaki (Biologic & Agricultural Res. Inst.), "An Approach in the Probable Mechanism at the Non-radioactive Biological Cold Fusion or So-

called Kervran Effect (Part 2)," poster presentation at ICCF4, 4 pages, 4 tables, 14 refs. (FF Feb. 1994)

TWO KINDS OF KNOWLEDGE

Courtesy of Eugene Mallove

Henry H. Bauer (Professor of Chem. & Science Studies, Virginia Polytechnic Inst. & State Univ., Blacksburg, VA), "Two Kinds of Knowledge," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 430.

AUTHOR'S ABSTRACT

The character of scientific knowledge and its degree of reliability have long been argued over. Philosophers of science have looked for ways of demarcating scientific knowledge from non-scientific knowledge. Anomalies -- knowledge claims that don't fit with other things that are known -- have been a central issue. For Thomas Kuhn, the accumulation of inescapable anomalies prepares the way for scientific breakthroughs. In this Society we address, at least implicitly, the question: What does it take to convert an anomalous claim into accepted scientific knowledge?

the accumulation of inescapable anomalies prepares the way for scientific breakthroughs

I'm going to suggest that it's useful to think about human knowledge -- scientific knowledge included -- as an admixture of two ideal types: "map-like" knowledge and "story-like" knowledge. I will illustrate how the notion can illuminate such issues as how education differs from indoctrination; what the differences are between the natural and the social sciences, and between the various natural sciences; and how such analysis may help in resolving debates.

SCIENTIFIC METHOD RENEWED

Courtesy of Eugene Mallove

John P. MacLean (MacLean Engineering Innovations, Stafford, TX), "A New Renaissance in the Scientific Method," *Journal of Scientific*

Exploration, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 431.

AUTHOR'S ABSTRACT

The author's 35 years as a user, observer and director of scientific progress have revealed many barriers that inhibit progress both in industry and in scientific research. The first step in overcoming these deficiencies is to understand the mentalities that result in these barriers.

We examine the process today, its successes and failures, and the need for paradigm shifters. Barriers to progress from the funding processes are examined.

Three facets of the "Not Invented Here" attitude are examined: information from outside a discipline, results that do not mesh with conventional wisdom, and Thomas Gold's "Herd Instinct."

Prejudice against progress from some sources is rampant. Vilification of information coming from unconventional, or metaphysical sources is discussed.

Anecdotal data is nearly totally ignored. The illogic of this position is considered, and examples briefly discussed.

***Prejudice against progress
from some sources is rampant.***

Negative feedback is a significant barrier to progress. The Peer Review Process and "Quality" programs are examined. Self- and public-centered fear inhibits progress. Examples in both areas are considered.

The "All or Nothing" syndrome and the mentalities that it generates result in much nonproductive, antagonistic dialogue that inhibits the free flow of creative juices.

Personal egos and self-centered mentalities inhibit communication and block synergistic effects.

Some "Quality Initiatives" successful in industry are desperately needed in scientific research. A blending

of spiritual and physical information is needed instead of present mutual antagonism.
[Presentation sponsored by Roger Nelson]

SCIENTIFIC HERESIES

Courtesy of Eugene Mallove

Peter A. Sturrock (Stanford Univ., Stanford, CA), "The Role of Heresies in Scientific Research," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 430.

AUTHOR'S ABSTRACT

Many topics of interest to SSE members have been referred to as examples of "pseudoscience," "pathological science," or the "paranormal." These terms have not proved particularly helpful in promoting a rational and constructive discussion between the various parties involved in their study. We explore the possibility that it might be more realistic and more constructive to regard these complex topics as "heresies."

It is proposed that a heresy can be understood as being a proposition, directed at a profession or other organization, that is both a challenge to understanding and a challenge to power. Hence, a heresy has essentially both an intellectual content and a political content.

We examine these ideas in relation to some topics of historical interest, such as the heliocentric theory and continental drift, and to some topics of current interest, such as the red-shift controversy, cold fusion, parapsychology, and the UFO controversy.

MODES OF SCIENTIFIC CHANGE

Courtesy of Eugene Mallove

Marcello Truzzi (Eastern Michigan Univ., Ypsilanti, MI), "Pseudoscience, Pathology, or Protoscience? Some Descriptive and Scientific Prescriptive Reflections on Scientism and Scientific Change," *Journal of Scientific Exploration*, vol 8, no 3, 1994, (abstract from the 13th annual meeting of the Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 432.

AUTHOR'S ABSTRACT

Society for Scientific Exploration, Austin, TX, June 9-11, 1994), pp 432.

AUTHOR'S ABSTRACT

The terms "pseudoscience" and "pathological science" are examined for their uses by both journalistic critics of anomaly claims and various philosophers and historians of science. These are considered in the light of current deviance theory in sociology, especially labeling theory. Though one can properly speak of real instances of pseudoscience, the label is often premature, mal-descriptive and ultimately dysfunctional for science. Consideration is given to the alternative term "protoscience" and its functional advantages.

We turn next to the adjudication of problems confronting protoscientific anomaly claims. Consideration is given to the differing problems encountered by cryptoscientific and parascientific claims and their respective strategies for acceptance. Attention is given to both the manifest and latent rules operating for scientific acceptance and rejection of anomaly claims. These include the presentation of and defenses against arguments in the areas of data, theory, and application. Examining the adjudication process in science (especially the question of weight of the burden of proof and what constitutes the "extraordinary evidence" expected to support "extraordinary claims") reveals that it places many anomaly claimants in a no-win (or Catch 22) situation. It is argued that much of this bias stems from a form of Scientism counterproductive for progressive science. Recommendations are then made for correction of the currently dysfunctional process.

LETTERS

LETTER FROM ASHLEY GREY, NEW ZEALAND

Yes, you are welcome to publish my somewhat brief paper on Unipolar testing which was written in haste for John Whitehead (from N.Z.) to take to the Denver Symposium specifically aimed at pointing out the pitfalls many people working in the Unipolar are likely to fall into. [To be published in *NEN* December

1994] I have not gone into great detail in this paper but I would not give any credence to test results unless the factors I outline are taken into account. This statement is based on 10 hard years of Unipolar experimentation and the construction of three large Unipolar test machines of several kilowatt capacity. Because of the nature of the funding of this work I was restricted from public disclosure.

There are many many misconceptions floating around about the OverUnity Unipolar phenomena, relative motion between magnetic flux and conductor disc, nature of the back torque etc. etc. There are a number of experiments I've devised that clearly demonstrate the nature of this unique device and the primary forces involved. Having said that however, there are still things I have further to discover and there is no substitute for hands on experimentation.

There is no question that the Unipolar is uniquely different from other types of electrical generators and displays effects that really test our true understanding of the nature of electrical induction and 'primary' magnetic forces.

In a nutshell:

- * It is well known and understood that rotation of a cylindrical magnet does not result in the rotation of the magnetic flux. (see Das Gupta paper [1])
- * In a One piece Unipolar machine (magnet and disc co-rotate) there is relative motion between the conductor disc and stationary "inertial" flux.
- * A reduction in the back torque (or turning moment produced from the reaction of the generated current and the main field flux) is what we have to achieve for Over-Unity operation.
- * The essence of Unipolar Over-unity effect hinges on the nature of the "reactive forces" acting in or, on the conducting disc and co-rotating magnet due to the generated current. in the disc. [2]
- * The whole circuit of the machine must be taken into account when analysing the reactions involved.

* Provided the current in the disc is symmetrical there will be no armature reaction because the magnetic field set up by the disc current will be in quadrature to the main magnet field flux. However there will still be back torque from the action of the current flowing in disc. Our main concern is how and how much of this back torque is reflected back to the drive motor.

I hope in the future to write up more fully our experimental results and work which is still to be completed.

Ashley Gray

[Mr. Gray's paper will be published in next month's *New Energy News*.]

References:

[1] A.K. Das Gupta, "Unipolar Machines. Association fo the Magnetic Field with the Field-Producing Magnet," *Unipolar Machines*, 1993, pp 428-430. [page 5 this issue]

[2] W.R. McKinnon, S.P. McAlister, and C.M. Hurd, "Origin of the Force on a Current-Carrying Wire in a Magnetic Field," *Am. J. Phys.*, vol 49, no 5, May 1981, pp 493-4. [page 13 this issue]

LETTER FROM RICKY BUTTERFASS

I am writing to inform you that I am still doing the local radio talk shows here in Honolulu on KWAH 1080 AM representing IANS, INE, and CSETI. I am also starting a new cable TV public access broadcast. A series may be the result.

I am still interested in the Cold Fusion Ramjet R&D project. Will you help me get in touch with some of the people I referred to in my last correspondence. I would like to see if there is an interest among the researchers to join such a project. As you know, I believe there is much spin-off potential from such a project in many areas. Communication is the first step.

I am enclosing a copy of my design theory as it appears in the 1991 International Forum on New Science proceedings.

I believe that if we can all come together to work on a main focus project with a very large potential

return on useful new products. We will receive the necessary funding to manifest all of our dreams and fulfill all of our needs, including a healthy planet.

Ricky Butterfass, "Theory and Design of a Three Stage Fusion Electromagnetic Ramjet Drive Unit/Aerospace Vehicle," courtesy of author.

INTRODUCTION

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[Anyone who is interested in this proposal, please write to Ricky Butterfass, 84-755 Ala Makiku #64C, Makaha, HI 96792. -Ed.]

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