New Energy Technologies

Research on advanced propulsion systems and new energy sources
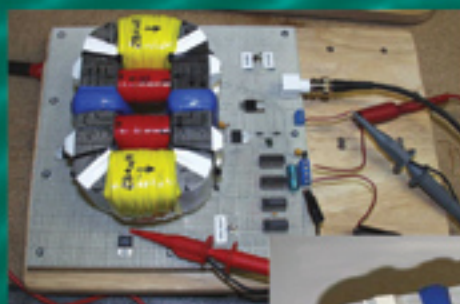

The scientists of VIESH participating in 10 kW SWEPS project to Siberia From right to left: Eng. S. Avramenko, Prof. D. Strebkov, Dr. V. Verjushin, Eng I. Antonov, Dr. A. Nekrasov

20 kW SWEPS during testing

Also in this issue:

* New universal engine-generator of energy
* Experiments with asymetrical electric capacitors
* Additional energy of vortex heat generators
* History of invention: Electrokinetic Apparatus

SOLIDmSTATE ELECTRICAL OVER UNITY DEVICES by William Alek

Universal Engine-Propulsion Unit Generator of Energy
by Eugene Arsentyev
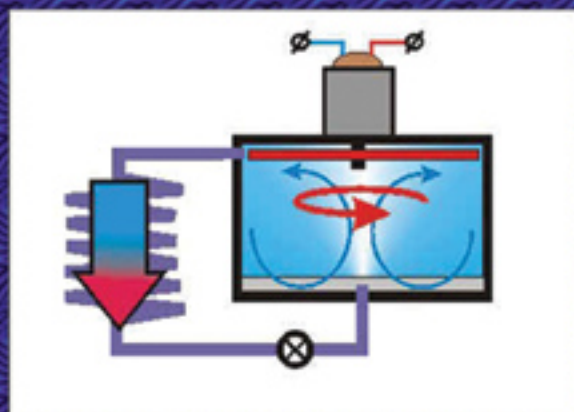
Fig. A
Shauberger's Engine
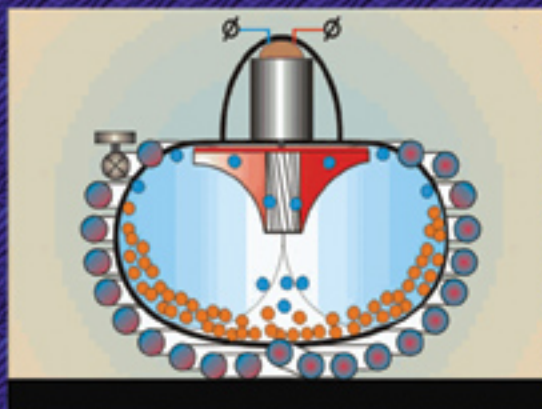
Fig. B
Vortex engine-generator
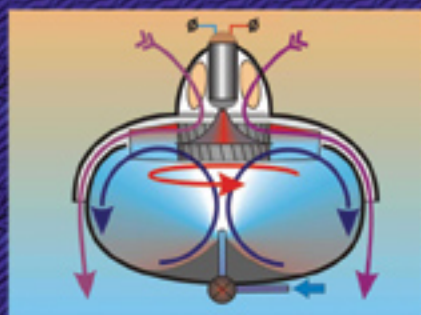
Fig. C
Vortex engine-propulsion unit-generator of energy

Fig.E
Arsentyev's Engine-tornado
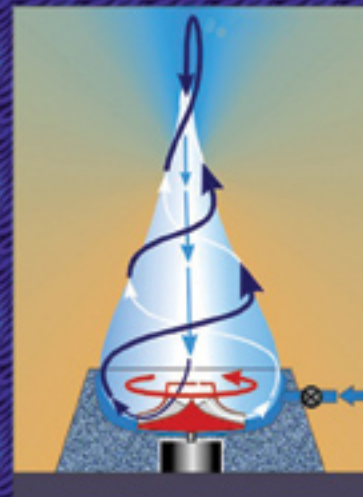
Fig. D
Block of the vortex electricity generating plant
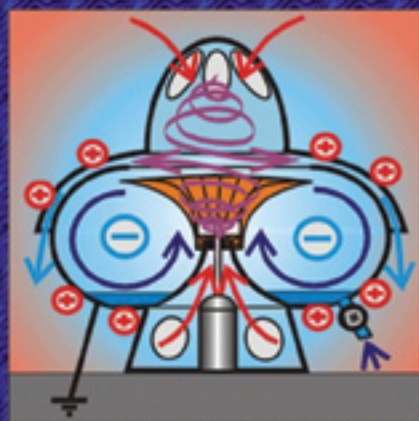
Fig. F
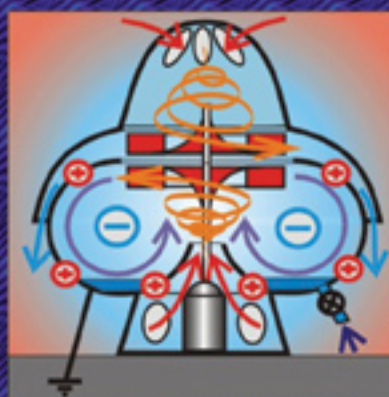
Fig. G
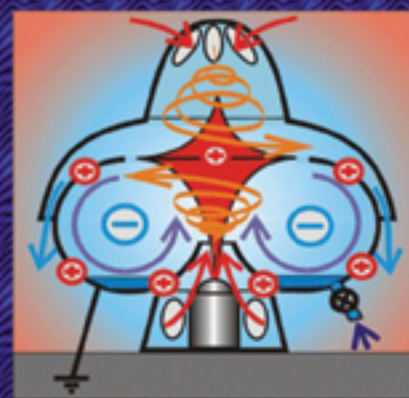
Fig. H

Possible electrostatic model of Shauberger's engine-generator by E. Arsentyev

VORTEX DC MOTOR

By Rick Harrison
Source of information:
http://www.fuellesspower.com/vortex.htm

A new discovery never seen before!

It's a new way to extract free spinning electrons that have been excited within a copper coil. It is an unusual reaction taking place!

Rick Harrison likes to call it a vortex effect, once DC energy is applied to the copper primary coil in a pulsing method, this energy acts as a catalyst and the new vortex device takes over and vacuums more free spinning electrons from the copper, in a vacuum vortex effect! 25 times more energy can be extracted from a generator coil or motor coil! This is how we can make a motor or generator more than 100% high efficiency.

American Antigravity
De Aquino's Gravitational Shield

The System-G Antenna
System-G was an earlier design that used a high-current antenna in pure-iron powder - it was less efficient than System-H.

De Aquino GravCraft This concept drawing by Jean-Louis Naudin shows the De Aquino concept Gravitational Craft based on the System-G apparatus.

Read T. Ventura's article in this issue

NEW ENERGY TECHNOLOGIES #8

Frolov's Asymmetrical Capacitors

Alexander V. Frolov

General Director, Faraday Lab Ltd
Phone/fax 7-812-3806564

Modern experimenting with asymmetrical electric capacitors is well known today as **"Lifter" topic**. What is the history of this research and what is the most perspective direction of its development? I'll try to present my ideas on it.

On the history of invention

At first we should remember **T.T. Brown's patent 3,187,206 of 1965** (you can read it and look at the figures in this issue of the magazine). T.T. Brown claimed that thrust could be produced due to special shape of dielectrical member of a capacitor and/or due to the gradient of dielectrical permittivity. I think it is the most essential ideas by T.T. Brown that allow us to get propulsion force just due to shape or the properties of the design elements but without any fuel and input power! Sure, some primary source of electrical field is necessary to restore losses but there are no any principal needs in any conductivity current.

Some experiments were produced in my laboratory. The goal was to get asymmetry in the vector sum of the field components. For example, in classical plane capacitor the plates are in attraction but the forces are contradirected. In T-shape capacitor there **are two perpendicular electrodes (Fig.1A)** or **in other version they are placed in the same flatness (Fig.1B) t**hat was proposed by me in 1994.

Fig.1A   Fig.1B
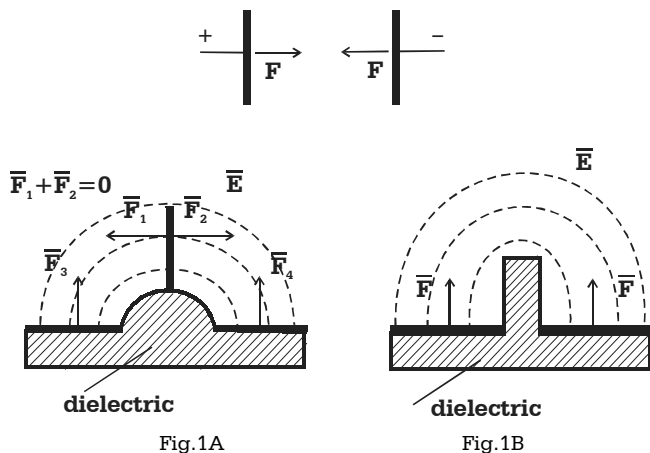
Electrodes are separated by "dielectric wall" to exclude electric discharge along the minimal distance way between electrodes. The electric field structure is configured here to create co-directed electrostatic forces for both electrodes.

One of the first articles on the topic was published in 1994, in USA and Canada [1-3]. The main conclusion was stated as following: ***"To discover a solution for a non-zero resultant force, all we need is to note that the force lines of the potential field are always perpendicular to the charged surface and take advantage of that fact."***

Also comments by Thomas E. Bearden to my article are very interesting.

Also it is necessary to note that known Biffeld-Brown effect describes the active force, which is created in the flat capacitor to the positive plate side (usually if the voltage is above 50 kV). In one of his first patents **UK #300,311 of 1927 T.T. Brown did not explain the reason of the force**, which he named as "X-force" in the text of his patents. In my opinion, ***this force is the result of the asymmetry in orbital motion of the electrons in dielectric atoms due to the electric field between the plates***. In other words, this asymmetry leads to the asymmetry of centrifugal force (i.e. to its gradient) and non-zero linear component of this force.

Fig.2
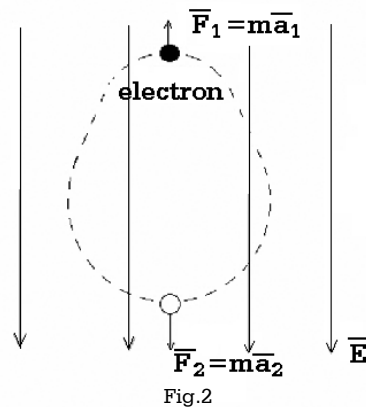
I reported this idea in 1996, during scientific congress "New Ideas In Natural Sciences", St.Petersburg, Russia, and my report was published in Proceedings of the Congress.

Fig.3
Alexander V. Frolov's demonstration of some experiments during scientific congress "New Ideas In Natural Sciences", St.Petersburg, Russia, 1996

There is the useful mechanical analogy of this approach that is disclosed in my article "The Gravitation Conception and Experiments"
http://www.faraday.ru/gravityconcept.htm.

Later this idea was developed by Jean-Louis Naudin, France, and you can find very good quality diagrams at his web site, Fig.4.
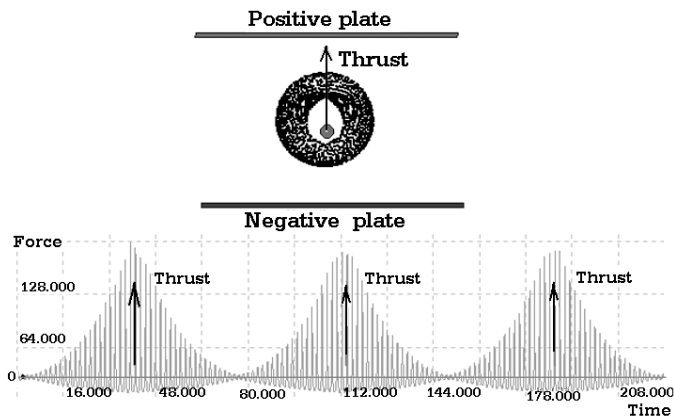
Fig.4

Some my experiments to prove the principles were demonstrated for people of well-known Japan company during their visit in St.Petersburg, 1999, Fig.5.
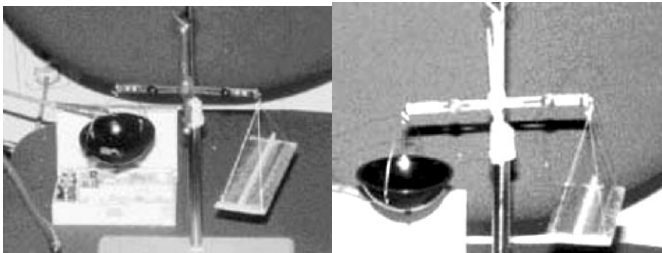
Fig.5

Small changes of T-capacitor weight can be detected with simple balance scales. Voltage is 10 kV.

Then some video files of the rotation test produced in my home laboratory (July of 1999) were submitted in Internet (see Fig.6). Asymmetrical capacitor is made of cylindrical electrode and flat electrode. You can see MPEG file here: http://www.faraday.ru/electrogravity.mpeg

Fig.6

Then the research group from France (Jean Louis Naudin, web site address: http://jnaudin.free.fr/) also experimentally confirmed this principle (photos below,

see Fig.7). They named this asymmetrical capacitor as "Frolov's Hat".
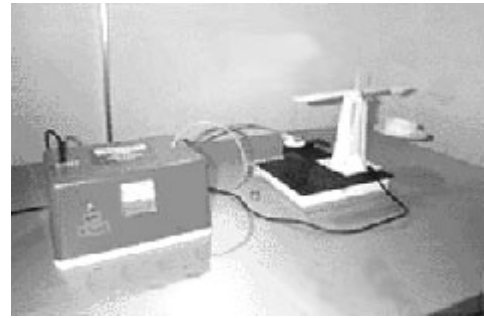
Fig.7

After some time we have got news from USA that similar technology was presented by Transdimensional Technologies, USA as "the next evolutionary step in propulsion". A small prototype was named as "lifter" and it was demonstrated that it could rise to the height of four feet without an engine, moving parts, conventional thrust, or propellant. Transdimensional Technologies, LLC is a small company started in Huntsville, Alabama in February of 2000. Physicist Jeffery Cameron is Chief Scientist and inventor of this device. It was claimed that after twenty years of research and study, Cameron conducted his first successful experiments in his garage (a plastic license plate was moved a few inches with this force). The work of Mr. Cameron has been evaluated and verified by a team of scientists contracted by NASA Langley. It is supported by mathematical analysis and modeling that is verified within experimental limits by actual demonstration. There is info about pending patent http://www.tdimension.com/ but **NASA already have got US patent #2002012221 granted on January 31, 2002.**

Lifter version #3 made by Jean Louis Naudin allows rising 4 g of useful load and future development of the idea is quite clear (see photo below Fig.8).
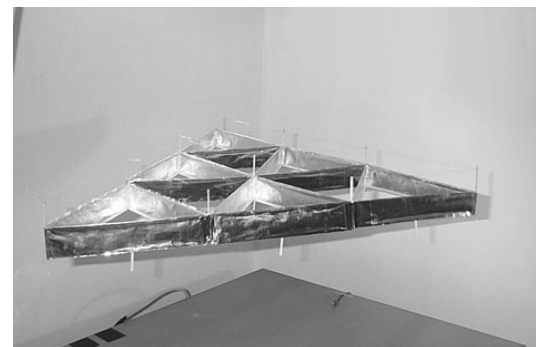
Fig.8

At the present time there are many research groups on the topic and I can note that most developed versions of the technology realization are Russell Anderson's device and Lifter by Tim Ventura.

Problems and proposals for development of the technology

The commercial application of this technology is very complex due to high voltage equipment. You can try to calculate the lifting force for air asymmetrical capacitor (I made the calculations, they are not perspective). So, we need other solution. **In 1995 I proposed the LIQUID DIELECTRIC version** of the same asymmetrical capacitor, Fig.9. Simplest tests were produced in Faraday Lab Ltd in 2001. Some weight changes were detected in experiments with asymmetrical capacitor (the jar and liquid oil dielectric):
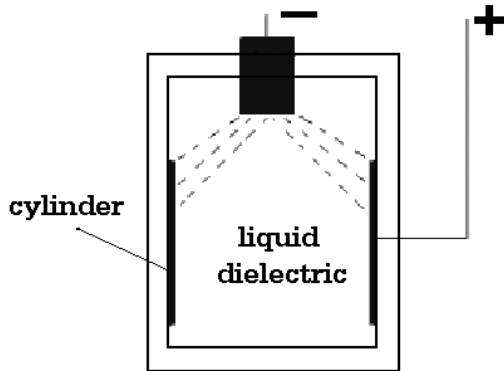
Fig.9

Force about 0,4 gram was detected in this case if 10 KV was applied to the electrodes. Measurements were made with HL400EX digital scales.

But most perspective is research on SOLID STATE GRADIENTAL DIELECTRIC as it was proposed by T.T. Brown. This work is very complex. It is necessary to produce gradual changes of dielectrical permittivity in dielectrical material between two plates of flat capacitor. But I am sure that this topic is deal of the great commercial perspectives. The calculations are submitted here: http://www.faraday.ru/gradient.html.

Let's consider some experiment (see Fig.10) produced by me in 1997. The basis of the design is a dielectric plate of permittivity 6 and the second layer is a dielectric plate of permittivity 1. The square of the plate is 100 square cm. The high potential (direct current) source is a home-made design. The potential is about 10 kV. The calculated active force should be about 0.001 N or 100 mg that was detected by means of rotation torsion effect.

The experiment

$\varphi = 10^4 \text{v}$
$S = 100 \text{ cm}^2$
$\varepsilon_1 = 1; \varepsilon_2 = 6$
$C = 3 \cdot 10^{-12} \text{ F}$
$q = 1.8 \cdot 10^{-7} \text{K}$
$F = qE_0(1/\varepsilon_1 - 1/\varepsilon_2)$
$F = 1,5 \cdot 10^3 \text{N}$
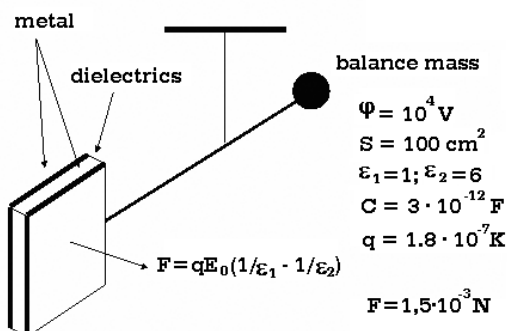
Fig.10

Fig.11 is an example of calculation for commercial aerospace project. Let's take the surface to be 100 square meters. The capacity of 1 cm radius sphere is about 1 pF, so the calculated capacity of the system should be about 1 micro Farad. The special gradiental ceramics can be used in the design, that allows to increase the permittivity gradually in the dielectric layer from 1 up to 80. The potential of 100 kV is a quite real value. So, for this potential and this surface we'll get the electrical charge about 8 Coulomb. The difference of forces, which act on the particles of this gradient dielectric, should be about 80 ton.

$$F = qE_0(1/\varepsilon_1 - 1/\varepsilon_2)$$

to high potential source
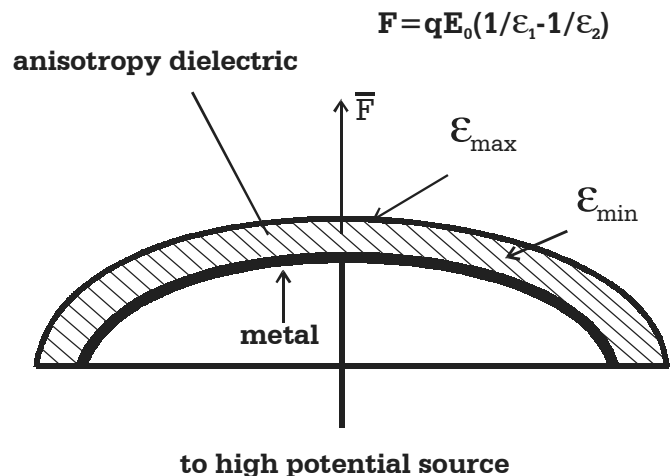
Fig.11

There is a square function of the force from the potential, so it is more useful to increase the potential than to increase the surface. As a conclusion, let me say about necessity of the true law of the momentum conservation. The "reactionless propulsion" means the absence of ordinary reactive flow of mass (rocket fuel). In the systems considered above there is a reaction, since the velocity of system changes and the compensation effect here is the change of the impulse (momentum) of the "virtual particles" or "particles of ether". So, the heat energy exchange balance should be changed due to the change of the momentum and ether becomes colder. It can be experimentally detected as 4-dimensional effects, since the time rate should be changed in local space around the device working according to the reactionless principle of active force.

References

1. The Application of Potential Energy for Creation of Power, Alexander V. Frolov, New Energy News, USA, May 1994.

2. Potential in Power Generation, Planetary Associationfor Clean Energy, Vol.8(1), Sept.1994

3. ELECTRIC SPACECRAFT, Leicester, North Carolina 28748 USA, Issue 27, 1997 p.30-31.

US Patent 3,187,206
Patented June 1, 1965

ELECTROKINETIC APPARATUS

Thomas Townsend Brown

Website: http://www.soteria.com

This invention relates to an electrical device for producing thrust by the direct operation of electrical fields.

I have discovered that a shaped electrical field may be employed to propel a device relative to its surroundings in a manner, which is both novel and useful. Mechanical forces are created which move the device continuously in one direction while the masses making up the environment move in the opposite direction.

When the device is operated in a dielectric fluid medium, such as air, the forces of reaction appear to be present in that medium as well as on all solid material bodies making up the physical environment.

In a vacuum, the reaction forces appear on the solid environmental bodies, such as the walls of the vacuum chamber. The propelling force however is not reduced to zero when all environmental bodies are removed beyond the apparent effective range of the electrical field.

By attaching a pair of electrodes to opposite ends of a dielectric member and connecting a source of high electrostatic potential to these electrodes, a force is produced in the direction of one electrode provided that electrode is of such configuration to cause the lines of force to converge steeply upon the other electrode. **The force, therefore, is in a direction from the region of high flux density toward the region of low flux density, generally in the direction through the axis of the electrodes. The thrust produced by such a device is present if the electrostatic field gradient between the two electrodes is non linear. This non linearity of gradient may result from a difference in the configuration of the electrodes, from the elec-trical potential and/or polarity of adjacent bodies, from the shape of the dielectric member, from a gradient in the density, electric conductivity, electric permittivity and magnetic permeability of the dielectric member or a combination of these factors.**

A basic device for producing force by means of electrodes attached to a dielectric member is disclosed in my Patent 1,974,433. In one embodiment disclosed in my patent, an electrostatic motor comprises devices having a number of radially directed fins extended from one end of the dielectric body and a point electrode on the opposite end of the dielectric body. When this device is supported in a fluid medium, such as air, and a high electrostatic potential is applied between the two electrodes, a thrust is produced in the direction of the end to which the fins are attached.
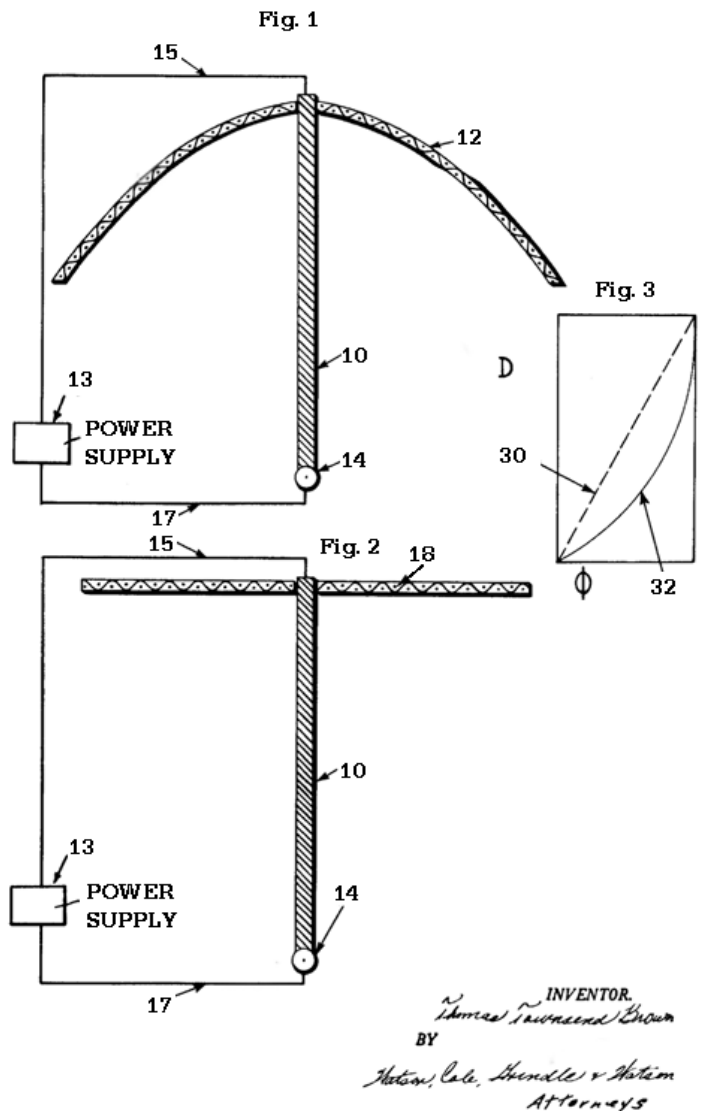
Other electrostatic devices for producing thrust are disclosed and described in detail in my British Patent 300,--311, issued August 15, 1927.

Recent investigations in electrostatic propulsion have led to the discovery of improved devices for producing thrust by the use of electrical vectorial forces.

Accordingly, it is the primary object of this invention to provide an improved electrical device for producing thrust.

It is another object of this invention to provide a device for producing modulated thrust in response to varying electrical signals, which device produces a greater effect than the prior type devices mentioned above.

Fig. 4

Fig. 5

Fig. 6

Fig. 7

POWER SUPPLY
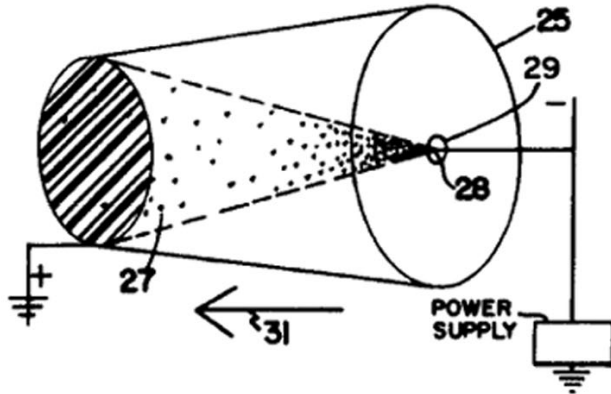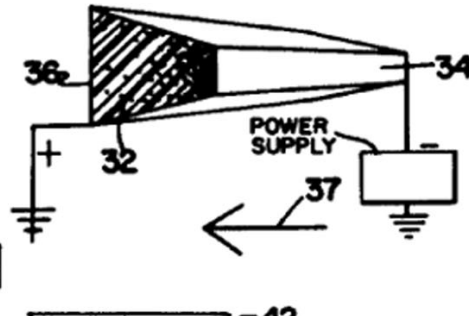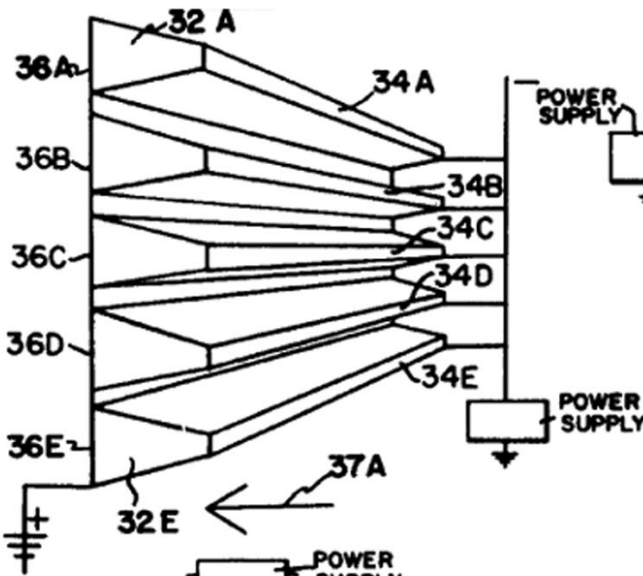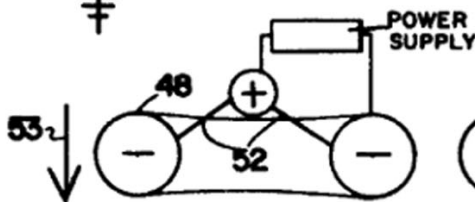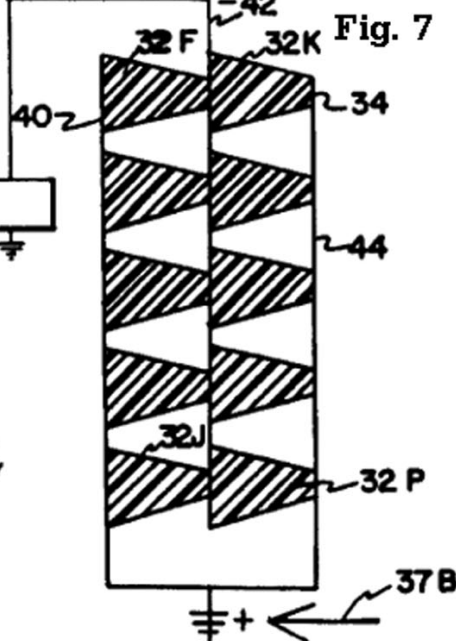
Fig. 8B
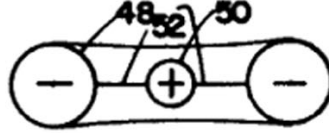
Fig. 8A
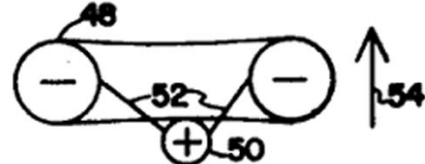
Fig. 8C

INVENTOR

Thomas Townsend Brown

BY

Watson, Cole, Grindle & Watson

ATTORNEYS

A Method of and an Apparatus or Machine for Producing Force or Motion.
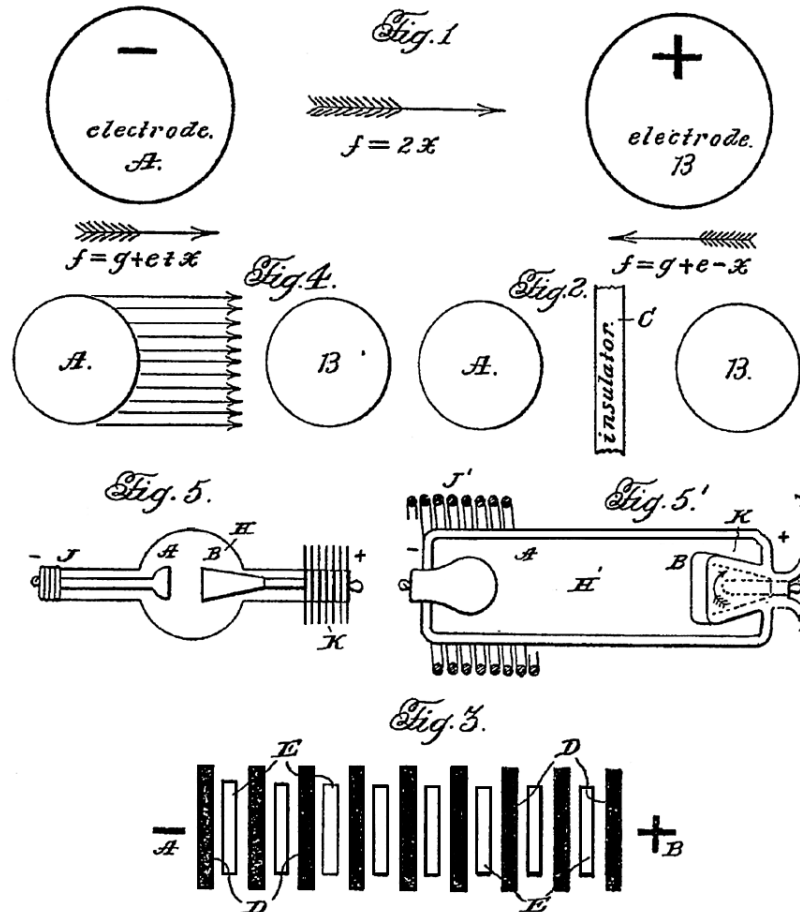
I, THOMAS TOWNSEND BROWN, of 15, Eighth Street in the city of Zanesville, State of Ohio, United States of America, a citizen of the United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:

This invention relates to a method of controlling gravitation and for deriving power therefrom, and to a method of producing linear force or motion. The method is fundamentally electrical.

The invention also relates to machines or apparatus requiring electrical energy that control or influence the gravitational field or the energy of gravitation; also to machines or apparatus requiring electrical energy that exhibit a linear force or motion which is believed to be independent of all frames of reference save that which is at rest relative to the universe taken as a whole and said linear force or motion is furthermore believed to have no equal and opposite reaction that can be observed by any method commonly known and accepted by the physical science to date.

The invention further relates to machines or apparatus that depend for their force action or motive power on the gravitational field or energy of gravitation that is being controlled or influenced as above stated; also, to machines or apparatus that depend for their force action or motive power on the linear force or motion exhibited by such machines or apparatus previously mentioned.

The invention further relates to machines and apparatus that derive usable energy or power from the gravitational field or from the energy of gravitation by suitable arrangement, using such machines and apparatus as first above stated as principal agents.

To show the universal adaptability of my novel method, said method is capable of practical performance and use in connection with motors for automobiles, space cars, ships, railway locomotion, prime movers for power installations, aeronautics. Still another field is the use of the method and means enabling the same to function as gravitator weight changer. Specific embodiments of the invention will be duly disclosed through the medium of the present Specification.

Referring to the accompanying drawings, forming part of this Specification:

Figure 1 is an elevation, with accompanying descriptive data, broadly illustrating the characteristic or essential elements associated with any machine or apparatus in the use of which the gravitational field or the energy of gravitation is utilized and controlled, or in the use of which linear force or motion may be produced.

Figure 2 is a similar view of negative and positive electrodes with an interposed insulating member, constituting an embodiment of the invention.

Figure 3 is a similar view of a cellular gravitator composed of a plurality of cell units connected in series, capable of use in carrying the invention into practice.

Figure 4 is an elevation of positive and negative electrodes diagrammatically depicted to indicate their relation and use when conveniently placed and disposed within a vacuum tube.

Figures 5 and 5^1 are longitudinal sectional views showing my gravitator units embodied in vacuum tube form wherein heating to incandescence is permitted as by electrical resistance or induction at the negative electrode; and also permitting, where desired, the conducting of excessive heat away from the anode or positive electrode by means of air or water cooling devices.

Figure 6 is an elevation of an embodiment of my invention in a rotary or wheel type of motor utilizing the cellular gravitators illustrated in Figure 3.

Figure 7 is a view similar to Figure 6 of another wheel form or rotary type of motor involving the use of the gravitator units illustrated in Figure 5 or Figure 5^1.

Figure 8 is a perspective view partly in section of the cellular gravitator of Figure 3 illustrating the details thereof.

Figures 9, 10 and 10a are detail views of the cellular gravitator.

Figure 11 is a view similar to Figure 8 with the same idea incorporated in a rotary motor.

Figures 12 and 13 are detail views thereof.

The general showing in Figure 1 will make clear how my method for controlling or influencing the gravitational field or the energy of gravitation, or for producing linear force or motion, is utilized by any machine or apparatus having the characteristics now to be pointed out.

Such a machine has two major parts A and B. These parts may be composed of any material capable of being charged electrically. Mass A and mass B may be termed electrodes A and B respectively. Electrode A is charged negatively with respect to electrode B, or what is substantially the same, electrode B is charged positively with respect to electrode A, or what is usually the case, electrode A has an excess of electrons while electrode B has an excess of protons.

While charged in this manner the total force of A toward B is the sum of force g (due to the normal gravitational field), and force e (due to the imposed electrical field) and **force x** (due to the resultant of the unbalanced gravitational forces, caused by the electro negative charge or by the presence of an excess of electrons on electrode A and by the electro positive charge or by the presence of an excess of protons on electrode B).

Likewise the total force of B toward A is the sum of force g (due to the normal gravitational field), and force c (due to the imposed electrical field), minus **force x** (due to the resultant of unbalanced gravitational forces caused by the electro-negative charge or by the presence of an excess of electrons on electrode A and by the electro positive charge or by the presence of an excess of protons on electrode B).

By the cancellation of similar and opposing forces and by the addition of similar and allied forces the two electrodes taken collectively possess a force 2x in the direction of B. This force 2x shared by both electrodes exists as a tendency of these electrodes to move or accelerate in the direction of the force, that is, A toward B and B away from A.

Moreover any machine or apparatus possessing electrodes A and B will exhibit such a lateral acceleration or motion if free to move. Such a motion is believed to be clue to the direct control and influence of the energy of gravitation by the electrical energy, which exists in the unlike electrical charges present on the affected electrodes. This motion seems to possess no equal or opposite motion that is detectable by the present day mechanics.

Editor's note: There is no more explanation of the x-force by T.T. Brown.

NIKOLA TESLA'S LATER ENERGY GENERATION DESIGNS

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In the 1880's, Nikola Tesla invented the alternating current system we use today. By the 1890's, he was working on a new type of electrical generator that would not "consume any fuel".

This paper documents where in his writings the description of this new generator is found, a theory of how a fuelless generator could work and a suggestion as to how Tesla's new device might have operated.

ABSTRACT

Ten years after patenting a successful method for producing alternating current, Nikola Tesla claimed the invention of an electrical generator that would not "consume any fuel". Such a generator would be its own prime mover. Two of Tesla's devices representing different stages in the development of such a generator are identified.

INTRODUCTION

While in college Nikola Tesla claimed it should be possible to operate an electrical motor without sparking brushes. He was told by the professor that such a motor would require perpetual motion and was therefore impossible. In the 1880's he patented the alternating current generator, motor, and transformer.

During the 1890's he intensively investigated other methods of power generation including a charged particle collector patented in 1901. When the *New York Times* in June of 1902 carried a story about an inventor who claimed an electrical generator not requiring a prime mover in the form of an external fuel supply, Tesla wrote a friend that he had already invented such a device.

Fuelless electrical generation raises the same objection of perpetual motion, as did the generator in use today when it was first proposed. Research Nikola Tesla carried out during his second creative period and the resulting devices that were the basis for his assertion of fuelless electrical generation will be examined. Whether Tesla's fuelless generator was a "perpetual motion scheme" of the sort his teacher warned him against, or a creative application of recognized natural phenomena will be discussed.

TESLA'S STATEMENTS

In *The Brooklyn Eagle*, Tesla announced, on July 10th, 1931, "I have harnessed the cosmic rays and caused them to operate a motive device". Later on in the same article he said that "More than 25 years ago I began my efforts to harness the cosmic rays and I can now state that I have succeeded." In 1933, he made the same assertion in an article for the *New York American*, November 1st, under the lead in "Device to Harness Cosmic Energy Claimed by Tesla". Here he said:

This new power for the driving of the world's machinery will be derived from the energy, which operates the universe, the cosmic energy, whose central source for the earth is the sun and which is everywhere present in unlimited quantities.

Dating back "more than 25 years ago" from 1933 would mean that the device Tesla was speaking about must have been built before 1908. More precise information is available through his correspondence in the Columbia University Library's collection. Writing on June 10th, 1902 to his friend Robert U. Johnson, editor of *Century* Magazine, Tesla included a clipping from the previous day's *New York Herald* about a Clemente Figueras, a "woods and forest engineer" in Las Palmas, capital of the Canary Islands, who had invented a device for generating electricity without burning fuel. What became of Figueras and his fuelless generator is not known, but this announcement in the paper prompted Tesla, in his letter to Johnson, to claim he had already developed such a device and had revealed the underlying physical laws.
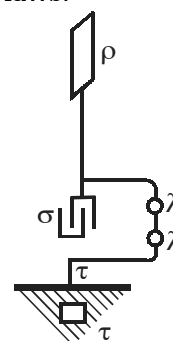
Fig.1
Particle collector

IDENTIFYING THE INVENTION

The device that, at first, seems to best fit this description is found in Tesla's patent for an "Apparatus for the Utilization of Radiant Energy", number 685,957, that was filed for on March 21, 1901 and granted on November 5, 1901. The concept behind the older technical language is a simple one. An insulated metal plate is put as high as possible into the air. Another metal plate is put into the ground. A wire is run from the metal plate to one side of a capacitor and a second wire goes from the ground plate to the other side of the capacitor. Then:

The sun, as well as other sources of radiant energy, throw off minute particles of matter positively electrified, which, impinging upon [the upper] plate, communicate continuously an electrical charge to the same. The opposite terminal of the condenser being connected to ground, which may be considered as a vast reservoir of negative electricity, a feeble current flows continuously into the condenser and inasmuch as the particles are ... charged to a very high potential, this charging of the condenser may continue, as I have actually observed, almost indefinitely, even to the point of rupturing the dielectric
(http://www.xmission.com/~acparker/onichelson/).

This seems like a very straightforward design and would seem to fulfill his claim for having developed a fuelless generator powered by cosmic rays, but in 1900 Tesla wrote what he considered his most important article in which he describes a self-activating machine that would draw power from the ambient medium, a fuelless generator, that is different from his Radiant Energy Device. Entitled "The Problem of Increasing Human Energy - Through the Use of the Sun", it was published by his friend Robert Johnson in *The Century Illustrated Monthly Magazine* for June 1900 soon after Tesla returned from Colorado Springs where he had carried out an intensive series of experiments from June 1899 until January of 1900.

The exact title of the chapter where he discusses this device is worth giving in its entirety:

A DEPARTURE FROM KNOWN METHODS - POSSIBILITY OF A "SELF ACTING" ENGINE OR MACHINE, INANIMATE, YET CAPABLE, LIKE AN LIVING BEING, OF DERIVING ENERGY FROM THE MEDIUM - THE IDEAL WAY OF OBTAINING MOTIVE POWER

Tesla stated he first started thinking about the idea when he read a statement by Lord Kelvin who said it was impossible to build a mechanism capable of abstracting heat from the surrounding medium and to operate by that heat. As a thought experiment Tesla envisioned a very long bundle of metal rods, extending from the earth to outer space. The earth is warmer than outer space so heat would be conducted up the bars along with an electric current. Then, all that would be needed is a very long power cord to connect the two ends of the metal bars to a motor. The motor would continue running until the earth was cooled to the temperature of outer space. "This would be an inanimate engine which, to all evidence, would be cooling a portion of the medium below the temperature of the surrounding, and operating by the heat abstracted" (http://www.xmission.com/~acparker/onichelson/), that is, it would produce energy directly from the environment without "the consumption of any material".

(No Model)

N. TESLA.
DYNAMO ELECTRIC MACHINE.
No. 406.968.   Patented July 16, 1889.
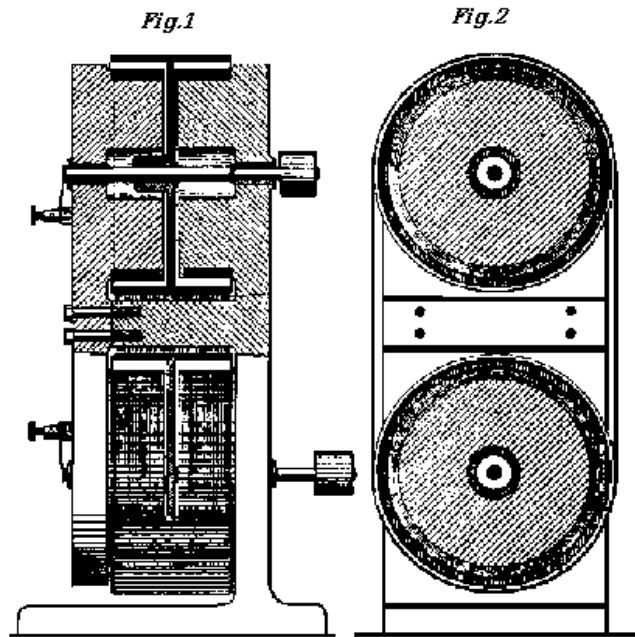
Fig.2

Dynamo Electric Machine

Tesla goes on in the article to describe how he worked on the development of such an energy device, and here it takes a bit of detective work to focus on which of his inventions he meant. He wrote that he first started thinking about deriving energy directly from the environment when he was in Paris during 1883, but that he was unable to do much with the idea for several years due to the commercial introduction of his alternating current generators and motors. It was not "until 1889 when I again took up the idea of the self-acting machine"
(http://www.xmission.com/~acparker/onichelson/).

THE TURBINE

He quickly came to realize that an ordinary electrical machine, like his generator, would not be able to directly extract energy from the cosmos and turned his efforts to what he called a "turbine" design.

The best-known turbine, that is, water pump, associated with Tesla is his patent for such a device,

#1,061,206, which was filed for in 1909 and granted in 1913. The unique point about this water pump is that instead of using some form of paddle wheels inside a box to move the water, he discovered that more water could be moved faster by using a set of flat metal disks. The turbine is, in itself, fascinating and may yet prove to be another important overlooked invention, but what is of concern regarding the electrical design is the general shape of the turbine - metal disks turning inside a supporting box.

This same shape turns up in another patent, this one for a "Dynamo-Electric Machine". This patent was filed and granted in the same year that Tesla said he returned to work on the "self-activating" machine, in 1889. The dynamo consists of metal disks that are rotated between magnets to produce an electric current.

Compared to his alternating current generator, this "dynamo" represents something of a curious throwback to the days of Faraday's early experiments with a copper disk and a magnet. Tesla makes some improvement over the Faraday setup by using magnets that completely cover the spinning metal disks and he also adds a flange to the outside of the disks so current can be taken off more easily - all of which makes for a better generator than Faraday's. On the surface, though, it is hard to see why Tesla patented such an anachronistic machine at this point in his work.
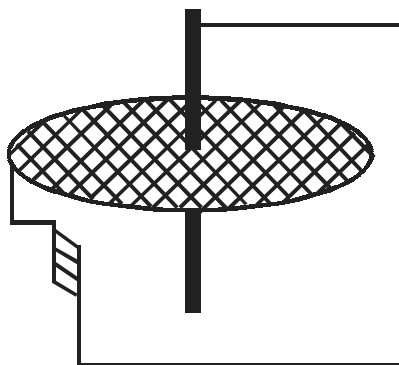
Fig.3

Faraday Generator with electromagnet

The next piece of the puzzle is found in an article Tesla wrote for *The Electrical Engineer* in 1891 entitled "Notes on a Unipolar Dynamo". Here Tesla presents an in-depth analysis of the Faraday disk generator, explains why it was an inefficient generator, describes his improved variations on the Faraday machine, and, at the bottom of the third page of the article, states that he has devised a generator in which "the current, once started, may then be sufficient to maintain itself and even increase in strength"(http://www.xmission.com/~acparker/onichelson/). Then, at the close of the article, he states that "several machines ... were constructed by the writer two years ago..." (http://www.xmission.com/~acparker/onichelson/). Two years before the writing of that article was 1889. All the evidence points to the turbine-shaped Unipolar

Dynamo as being Tesla's first design for a machine that can continue to produce electricity after being disconnected from an outside source of power.

SELF-SUSTAINING CURRENT

Before going into the details of this invention it would be worthwhile to have an idea of how any generator, even in theory, could be capable of producing a self-sustaining current. This has been clearly explained by Walter M. Elsasser in a *Scientific American* article (May 1958) titled "The Earth as a Dynamo".

Elsasser models the earth-dynamo, conveniently for this explanation, on the Faraday generator of a metal disk spinning over a bar magnet placed at the edge of the disk. He notes, also, that the bar magnet could be replaced by an electromagnet which could get its power from the spinning disk by attaching one end of the electromagnet's wire to the outside of the disk and the other end of the wire to the metal rod running through the center of the disk.

Elsasser then points out that an ordinary disk generator "could not maintain a current for very long because the current induced in the disk is so weak that it would soon be dissipated by the resistance of the conductor (the disk)". This conventional arrangement would not be an answer to "how currents could be built up and perpetuated to maintain the earth's magnetic field". He does, though, propose three options in the dynamo model that would explain the earth's persistent magnetism.

If we had a material that could conduct electricity a thousand times better than copper, the system would indeed yield a self-sustaining current. We could also make it work by spinning the disk very fast... a third way we could make such a dynamo self-sustaining ... is to increase the size of the system: theory says that the bigger we make such a dynamo, the better it will function. If we could build a coil-and-disk apparatus of this kind of scale of many miles, we would have no difficulty in making the currents self-sustaining (http://www.xmission.com/~acparker/onichelson/).

Tesla did not have a material a thousand times more conductive than copper, neither was he able to spin a disk at the ultra-high speeds needed to produce such a current, nor did he plan on using a piece of rotating metal several miles in diameter. What he did was to use energy that is usually wasted in a generator and turn it into a source of power.

UNIPOLAR DYNAMO

Tesla's design varied from that of Faraday in two major ways. First, he used a magnet that was bigger in diameter than the disk so that the magnet completely covered the disk. Second, he divided the disk into sections with spiral curves radiating out from the center to the outside edge.
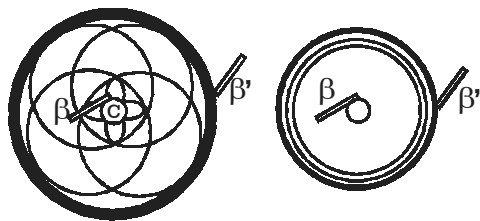
Fig.4
Tesla's Unipolar Generator

In the Faraday unipolar generator "the current", as Tesla noted, "set up will therefore not wholly pass through the external circuit ... and ... by far the greater portion of the current generated will not appear externally..." (http://www.xmission.com/~acparker/onichelson/). By having the magnet completely cover the disk, Tesla made use of the whole disk surface in current generation instead of only a small section directly adjacent to the bar magnet, as happened in the Faraday device. This not only increases the amount of current generated, but, by making the current travel from the center to the outside edge, makes all of that current accessible to the external circuit.

More importantly, these modifications on the Faraday design eliminated one of the biggest problems in any physical system - the reaction to every action. It is this reaction that works to cancel out whatever effort goes into causing the original action. In an electrical system if there are two turns of wire wound next to each other and a current is sent through the wire, the current passing through the first loop will set up a magnetic field that will work against the current passing through the second loop.

The spiral divisions in the disk cause the current to travel the full radius of the disk or, as in his alternative version of the generator, to make a full trip around the outside edge of the disk. Because the current is flowing in a large circle at the rim of the disk, the magnetic field created by the current not only does not work against the field magnet above the circular plate, as in conventional generators, but it actually reinforces the magnet. So as the disk cuts the magnetic lines to produce a current, the current coming off of the disk strengthens the magnet, allowing it to produce even more current.

Like conventional direct current generators, the unipolar dynamo also functions as a motor if current is put into the disk while under the magnet, and this seems to be the last element that could make the device self-sustaining, that is, capable of generating a current after being disconnected from an outside source of movement like falling water or steam.

Rotation is started by, say, a motor powered by line current. Both a generator and a motor disk are mounted in the magnetic enclosure. As the disks gain speed, current is produced which, in turn, reinforces the magnets, which cause more current to be generated.

That current is, likely, first directed to the motor disk, which increases the speed of the system. At a certain point the speed of the two disks is great enough that the magnetic field created by the current has the strength to keep the dynamo/motor going by itself.

What process might have kept the unipolar dynamo operating after the powered start-up is speculation at this point, however two features of the generator are significant. First, when a resistive load, like a light bulb is added to the circuit, it lowers the voltage at the center of the disk. This lower voltage at the center means that there is a greater difference in voltage between the center and the outside edge of the disk than there was before the light bulb was added. As the difference between the center and the outside increases, the dynamo works harder and makes more current. Second, yet more important, the dynamo takes either very little, or no energy to keep going because the current coming off the generator is doing double duty. The current makes the bulb glow, but on its way from the generator to the filament in the bulb, it travels a path that adds to the momentum of the dynamo and, therefore, consumes energy at a very low rate. The process continues, it would seem, until heat losses in the filament equal the rotational energy of the generator's flywheel.

In terms of Elsasser's criteria for a self-sustaining generator, the Tesla unipolar dynamo comes closest to satisfying the condition of a better electrical conductor. It is not that a new material is used, but a new geometry is applied so that the current does not create its own opposing forces. This is similar, but not equivalent, to having a better conductor.

Whether or not the dynamo is in fact a "fuelless" generator it appears to be an ingenious feat of engineering that takes one of the basic principles of nature, an equal and opposite action for every action, and turns it, by the use of a novel circuit geometry, into a reaction that is additive to the original action. Instead of the opposite reaction slowing down the system that created it, the reaction adds energy to the system.

Tesla, however, was not satisfied with his mechanical self-sustaining generator. The dynamo would provide the energy to run a single machine, but his vision was to light cities and in the 1900 *Century* magazine article he elaborated on the theory of such a machine.

Imagine, he suggested, an enclosed cylinder with a small hole in it near the bottom. Let us say that this cylinder, he added, contains very little energy but that it is placed in an environment that has a lot of energy. In this case, energy would flow from the outside environment, the high energy source, through the small opening at the bottom of the cylinder, and into the cylinder where there is less energy. Also suppose that as the energy passing into the cylinder is converted into another form of energy as, for example, heat is converted into mechanical energy in a steam engine. If it were possible to artificially produce such a "sink" for

the energy of the ambient medium then "we should be enabled to get at any point of the globe a continuous supply of energy, day and night" (http://www.xmission.com/~acparker/onichelson/).

He continued, in the article, to elaborate on his energy pump but changed the image slightly. On the surface of the earth we are at a high energy level and can imagine ourselves at the bottom of a lake with the water surrounding us equal to the energy in the surrounding medium. If a "sink" for the energy is to be created in the cylinder, it is necessary to replace the water that would flow into the tank with something much lighter than water. This could be done by pumping the water out of the cylinder, but when the water flowed back in, we would only be able to perform the same amount of work with the inflowing water as we did when it was first pumped out. "Consequently nothing would be gained in this double operation of first raising the water and then letting it fall down".

Energy, though, can be converted into different forms as it passes from a higher to a lower state. He said, "assume that the water, in its passage into the tank, is converted into something else, which may be taken out of it without using any, or by using very little power" (http://www.xmission.com/~acparker/onichelson/). For example, if the energy of the ambient medium is taken to be the water, oxygen and hydrogen making up the water are the other forms of energy into which it could change as it entered the cylinder.

Corresponding to this ideal case, all the water flowing into the tank would be decomposed into oxygen and hydrogen ... and the result would be that the water would continually flow in, and yet the tank would remain entirely empty, the gases formed escaping. We would thus produce, by expending initially a certain amount of work to create a sink for... the water to flow in, a condition enabling us to get any amount of energy without further effort
(http://www.xmission.com/~acparker/onichelson/).

Tesla recognized that no energy conversion system would be perfect, some water would always get into the tank, but "there will be less to pump out than flows in, or, in other words, less energy will be needed to maintain the initial condition than is developed (by the incoming water), and this is to say that some energy will be gained from the medium"
(http://www.xmission.com/~acparker/onichelson/).

He found that this pumping could be done with a piston "not connected to anything else, but was perfectly free to vibrate at an enormous rate"
(http://www.xmission.com/~acparker/onichelson/).

This he was able to do with his "mechanical oscillator", a steam-driven engine used for producing high frequency currents. The faster the pump would work, the more efficient it would be at extracting energy from the cosmos. Research along this line culminated in the

oscillator demonstrated at the Chicago World's Fair in 1893. It was not until much later, in the 1900 article, he revealed: "On that occasion I exposed the principles of the mechanical oscillator, but the original purpose of this machine is explained here for the first time" (http://www.xmission.com/~acparker/onichelson/).
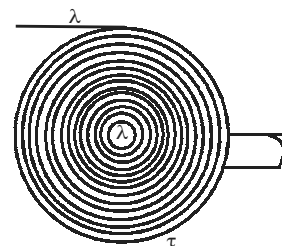
Fig.5
Coil for Electro Magnets

It was also in 1893 that Tesla applied for a patent on an electrical coil that is the most likely candidate for a non-mechanical successor of his energy extractor. This is his "Coil for Electro-magnets", patent #512,340 (Fig.5) It is another curious design because, unlike an ordinary coil made by turning wire on a tube form, this one uses two wires laid next to each other on a form but with the end of the first one connected to the beginning of the second one.

In the patent Tesla explains that this double coil will store many times the energy of a conventional coil (http://www.xmission.com/~acparker/onichelson/). Preliminary measurements of two helices of the same size and with the same number of turns, one with a single, the other with a bifilar winding, show differences in voltage gain (http://www.xmission.com/~acparker/onichelson/). In Fig. 6, the upper curve is from the Tesla design; the lower was produced by the single wound coil. The patent, however, gives no hint of what might have been its more unusual capability.

VOLTAGE GAIN (Vin/Voult): Standard @ Alternative Design, 4" Coils
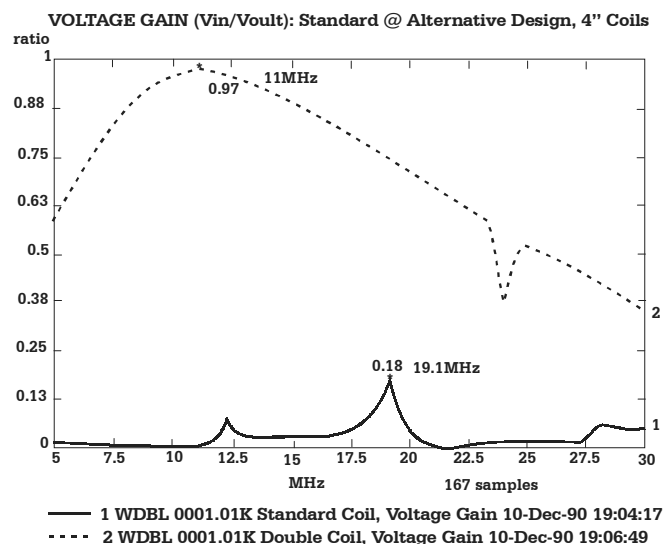
Fig.6
Voltage gain comparison

In the *Century* article Tesla compares extracting energy from the environment to the work of other scientists who were, at that time, learning to condense

atmospheric gases into liquids. In particular he cited the work of a Dr. Karl Linde who had discovered what Tesla described as a "self-cooling" method for liquefying air. As Tesla said, "This was the only experimental proof which I was still wanting that energy was obtainable from the medium in the manner contemplated by me" (http://www.xmission.com/~acparker/onichelson/).
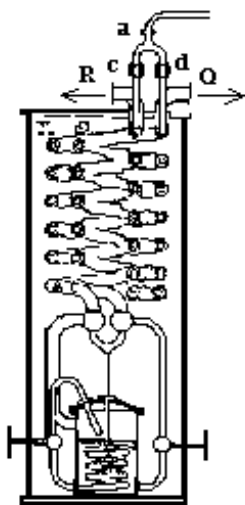
Fig.7
Linde's condenser

What ties the Linde work with Tesla's electromagnet coil is that both of them used a double path for the material they were working with. Linde had a compressor to pump the air to a high pressure, let the pressure fall as it traveled through a tube, and then used that cooled air to reduce the temperature of the incoming air by having it travel back up the first tube through a second tube enclosing the first (http://www.xmission.com/~acparker/onichelson/). The already cooled air added to the cooling process of the machine and quickly condensed the gases to a liquid.

Tesla's intent was to condense the energy trapped between the earth and its upper atmosphere and to turn it into an electric current. He pictured the sun as an immense ball of electricity, positively charged with a potential of some 200 billion volts. The earth, on the other hand, is charged with negative electricity. The tremendous electrical force between these two bodies constituted, at least in part, what he called cosmic energy. It varied from night to day and from season to season but it is always present.

The positive particles are stopped at the ionosphere and between it and the negative charges in the ground, a distance of 60 miles; there is a large difference of voltage - something on the order of 360,000 volts. With the gases of the atmosphere acting as an insulator between these two opposite stores of electrical charges, the region between the ground and the edge of space traps a great deal of energy. Despite the large size of the planet, it is electrically like a capacitor, which keeps positive and negative charges apart by using a non-conducting material as an insulator.

The Earth has a charge of 90,000 coulombs. With a potential of 360,000 volts, the earth constitutes a capacitor of 0.25 farads (farads = coulombs/volts), http://www.xmission.com/~acparker/onichelson/.

If the formula for calculating the energy stored in a capacitor ($E = 1/2CV^2$) is applied to the earth, it turns out that the ambient medium contains $1.6 \cdot 10^{11}$ joules or 4.5 megawatt-hours of electrical energy.

In order to tap this energy storehouse Tesla had to accomplish two things - make a "cold sink" in the ambient energy and devise a way of making the "sink" self-pumping. Explaining how this process might have worked requires, again, speculation.

Such a "sink" would have to be at a lower energy state than the surrounding medium and, for the energy to continually flow into it, the "sink" would have to maintain the lower energy state while meeting the power requirements of the load attached to it. Electrical energy, watt-seconds, is a product of volts x amps x seconds. Because the period of oscillation does not change, either voltage or current has to be the variable in the coil's energy equation.

In that the double wound coil maximizes the voltage difference between its turns, it is probable that it is the current that is minimized to produce a low energy state in the coil. For the coil to be initially "empty" and at low energy would mean it operated at high voltage with a small amount of charge (http://www.xmission.com/~acparker/onichelson/).

The coil, then, would be set into oscillation at its resonant frequency by an external power source. During a portion of its cycle the coil will appear to the earth's electric field as one plate of a capacitor. As the voltage across the coil increases, the amount of charge it can "sink" from the earth's higher energy field will increase. The energy taken into the coil - through the "small opening" which appears to be the atomic structure of the conductor according to the physics of Tesla's time - is "condensed" into positive and negative components of current, a lower energy state relative to the originating field.

The current is equivalent to the water converted to gases in Tesla's description of the self-acting engine. The current would "escape" from the "sink" into whatever load was connected across the coil. The movement of current into the load would produce a strong magnetic field (the stated intention of the patent) which, when it collapsed, would, again, produce a high potential, low charge "sink" to couple with the earth's electric field.

Because the inflowing energy performs a double function similar to the unipolar generator, supplying current to the load and aiding the pumping function, the system's energy expenditure in moving charge is low, allowing the system to gain more energy from the

medium than it expends in its operation. The coil needs no extra energy from an outside source to pump the energy it has extracted.

Energy would come directly from the sun

A more modern view of such a device, should it prove to operate in this theoretical manner, would be to describe it as a self-oscillating capacitive system. Once the device is set into oscillation, very little power is expended in driving the load. Because it is an electrostatic oscillating system, only a small amount of charge moves through the load per cycle, that is, the coulomb per seconds = amps are low. If the charge is used at a low rate, the energy stored in the capacitive system will be turned into heat at a slow rate enabling the oscillations to continue for a long period of time.

With his prominent position in the world of science at the time, it is curious why Tesla's invention was not commercialized or at least publicized more. Economics, not science, appear to have been the main factor. The adoption of alternating current was opposed by powerful financiers of the period. Michael Pupin, another leading electrical researcher at the turn of the century, noted in his autobiography:

> *...captains of industry...were afraid that they would have to scrap some of their direct current apparatus and the plants for manufacturing it, if the alternating current system received any support ... ignorance and false notions prevailed in the early nineties, because the captains of industry paid small attention to highly trained scientists (http://www.xmission.com/~acparker/onichelson/).*

Tesla's patents for electrical generators and motors were granted in the late 1880's. During the 1890's the large electric power industry, in the form of Westinghouse and General Electric, came into being. With tens of millions of dollars invested in plants and equipment, the industry was not about to abandon a very profitable ten-year-old technology for yet another new one.

Tesla saw that profits could be made from the self-acting generator, but somewhere along the line he had pointed out to him the negative impact the device would have. At the end of the section in *Century* where he described his new generator he wrote:

> *I worked for a long time fully convinced that the practical realization of the method of obtaining energy from the sun would be of incalculable industrial value, but the continued study of the subject revealed the fact that while it will be commercially profitable if my expectations are well founded, it will not be so to an extraordinary degree (http://www.xmission.com/~acparker/onichelson/).*

Years later, in 1933, he was more pointed in his remarks about the introduction of his fuelless generator. In the Philadelphia *Public Ledger* of November 2nd, is an interview with Tesla under the headline "Tesla 'Harnesses' Cosmic Energy". In it he was "Asked whether the sudden introduction of his principle would upset the present economic system, Dr. Tesla replied, 'It is badly upset already'. He added that now as never before was the time ripe for the development of new resources".

It has been nearly a century since Nikola Tesla claimed a radically new method for producing electricity. The need for the development of new resources is greater now than at the end of the last century. Perhaps these overlooked inventions will make his vision of "increasing human energy through the use of the sun's energy" become a reality.

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11. Reference 2, p. A-141.
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13. Reference 2, p. A-142.
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High-Efficiency Electrolysis

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Introduction

Efficiency of water electrolysis, if being clearly defined, is an infinite value since pure water is dielectric and its permittivity is about 81. The conductivity current cannot be created in dielectric before electric pressure value is below electric discharge minimum level. In this case Work of water dissociation is produced by potential electric field that was disclosed in [1]. The potential field as power source in general but not only for water decomposition was discussed also in [2].

Formulation of the Problem

Since 1888, when Dmitry A. Latchinov patented his method for hydrogen production it is known that one of electrodes can be insulated from water. But hydrogen output for this case is very small. The problem is: in initial stage of the reaction water molecules directly interact with metal of electrodes but then all surface of the electrode becomes to be covered by thin gaseous layer. The layer is dielectric and it cannot transfer electrons from metal to water molecules. Owing to this reason dissociation process is stopped. When gaseous bubbles become quite great known Archimedes force become strong enough to pull off them from surface of electrode. The force is produced by weight of water. Understanding of this mechanism allows to find the way for high efficiency process.

Some experimental methods include increase of electrode surface (porous electrodes) to make the initial stage more continuous. Some special electrode metal can be also used that demonstrates the so-called «affinity» to hydrogen. By this way the gaseous insulation process is delayed if cathode can absorb protons. But in any case when all surface of electrode is insulated from water by gaseous layer the process will be stopped. There is one known solution to work in the initial stage of process only: it is pulsed electric field, which was experimentally tested by Igor Goryachev, Moscow [3].

The method to increase efficiency

Some technical solution is proposed to change conditions for creation of gaseous bubbles and to increase efficiency of pure water decomposition by permanent electric field, which is potential and does not require any power after it is created.

The solution is artificial increase of gravity force by means of rotation. Great Archimedes force in this case

can be made and conditions for gaseous bubbles are changed. The centripetal force will make bubbles to move in center of rotation. The force value determines efficiency and it depends on design only.

Some input power is necessary to keep rotation and electric potential field but ratio between output power and input power could be very high.

$$K_{eff} = P_{out} / P_{in} >> 1 \qquad \text{F.1}$$

In this case there is some question about nature of extra power. In 1994-1998 the author published conception [4] about possibility of the transformation of gravity field energy into heat energy for high efficiency electrolysis processes. In this case some changes of time rate and gravity should be detected in local area of process. So, this technology is important both for energetic and aerospace industry. Also the local changes of space-time parameters can be used to clean radioactivity wastes that was described in 1960th by Ivan M. Filimonenko [5].

Conclusion

If gravitation field in area of process is considered as free power source, known law for energy conservation is valid.

$$E = E_g + E_{em} = \text{const} \qquad \text{F.2}$$

where E_g is gravity field energy, E_{em} is electromagnetic field energy. Physical sense of the formulation is: quantity change of electromagnetic energy in closed system is possible but only with corresponding change of other energy form in the same closed system.

Since network of potential field by closed cycle is equal to zero, F.2 for Work and Power can be presented as F.3

$$A = A_{em} + (-A_g) = 0 \qquad \text{F.3}$$

This formulation demonstrates the work of gravitation field and the work of potential field are in opposite sign. It is the sign of time direction so existence of space and mass need no power input since it is zero balanced process. When high efficiency electrolysis is created to extract heat power, second part of F.3 should be also changed.

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New Results of Development and Testing of Single-Wire Electric Power System

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(See photos on the cover page)

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Abstract

10 kW, 3 kV, diameter 100 mkm, 6 m long electric power transmission line was tested, demonstrating specific current density 428 A/mm² and specific electric power density 1,28 MW/mm² without overheating of copper single-wire line with diameter 100 mkm.

Scientists of the All-Russia Scientific Research Institute of Electrification of Agriculture (VIESH) Academician D.S. Strebkov, Eng. S.V. Avramenko, Dr., A.I. Nekrasovym, by post-graduate student O.A. Roschin developed a new method and the equipment for transmission of electric energy on a single-wire line using resonant idle operation mode and reactive capacitive currents for transmission of active electric power. There is created the experimental sample of single-wire electric power system (SWEPS) with 10 kW electric capacity and 3000 V voltage. A single-wire line is made from a copper wire, which has 100 microns diameter and 6m length. At room temperature there was a specific transmitted electric capacity of 1280 kWt at effective density of a current of 428 Amperes on one square millimeter of the area of cross section of the single wire line.

Obtained SWEPS electric parameters a hundred times exceed parameters of a usual two-wire or three-wire alternative and direct current line. It could be achieved for existing methods of electric power transmission only at use of special materials in the mode of low temperature superconductivity.

With use of SWEPS technology VIESH scientists developed:

- the new method and the equipment for single-trolley electric transport (electric car, a trolley bus, a tram, an electric train), **the patent of the Russian Federation - 2I365I5, 26.08.1998**;

- electric power supply of mobile electric units on a single-channel superthin cable (a tractor, an air balloon, the helicopter), **the patent of the Russian Federation – 2158206, 15.04.1999**;

- method for transmission of electric energy on the isolated sites of the ground, water, pipelines, carbon strings and films made of oxides of metals on fiber optic communication lines, **the patent of the Russian Federation – 2172546, 24.01.2000**;

- method for wireless transfer of electric energy in atmosphere of the Earth on a laser beam, **the patent of the Russian Federation - 2143775, 25.03.99** and outside an atmosphere on an electronic beam, **the patent of the Russian Federation – 2163376, 03.07.2000**; with use of the Earth and conducting channels in ionosphere , **the patent of the Russian Federation -2I6I650, 14.07.1999**;

- cold plasma coagulator for veterinary science and medicine, **the patent of the Russian Federation – 2100013, 11.04.1995**.

Practical value of SWEPS consists in an possibility to develop:

- reduction of both aluminum and copper consumption in wires and cables in 100 times with their replacement by steel wires with the copper anticorrosive covering, used in wire radio and telecommunication;

- significant (50 %) economy of motor fuel and improvement of ecological conditions (reduction of emissions in 10 times) due to usage of single trolley private and public transports in large cities and of electrotractors with thin (1 mm²) cable;

- creation of wireless transmission of electric energy on the Earth and in Space, and also between objects on the Earth and in Space;

- creation of essentially new electrotechnological installations and plasma generators.

Experimental results

The method of electric energy transmission on a single-wire using operation mode and reactive capacitive currents for transmission of active electric power has been developed. The equipment with capacity of 20 kW has been designed. The equipment comprised Tesla transformers, which were connected to the line with two resonant circuits, and adjusted to the resonant frequency f_0, where 100 Hz < f_0 < 100 kHz. Placed in the beginning of a line the resonant circuit consists of the primary winding, the step-up high-frequency Tesla

transformer and condensers battery, which were connected in parallel to the primary winding. The parallel resonant circuit was connected to the static frequency converter. As a load there were used 24 filament lamps (220V, 1 kW) that were arranged in 12 parallel groups, each consisted of 2 connected in series lamps. The lamps were connected to a step-down Tesla transformer through a 400V/25kW bridge rectifier.

A three-phase *Petra-0115A* thyristor converter (input: 25 kW 220/380V, 50 Hz, output: 400 V, 2.5-7 kHz) was used as a static frequency converter. A 6 m long, 100 mkm diameter copper solid wire in 10 m thick enamel isolation was used.

The parameters of the single-wire line were defined by RLC mether *ELC- 1310*. The parameters of the electric equipment were measured with the use of the following devices:

At the input of the frequency converter: by the electronic energy meter **"Energy – 9" STSK3-10 Q1H6P**, designed for measurement of active and reactive capacity and energy, phase currents and voltage, frequency and power factor.

The **panel-board ampermeter and voltmeter M42301**, class of accuracy 1.5 with measurement limits 150A and 600V were used in the rectifier circuit of the frequency converter.

Load current and voltage at the output of the rectifier bridge were measured by a **DC ampermeter M38I**, class 1.5 with maximum current 75A, the shunt of 75 mV, 0.035 Ohm and a **DC voltmeter E59**, class 0.5 with measurement range of 75, 150, 300 and 600 V.

The single-wire line voltage was measured by means of **kilovolt-meter C196** with measurement limits of 7.5 kV, 15kV and 30kV.

The line frequency was measured with a **digital multi-meter *Protek 505***.

Since January till October 2002, more than 100 tests of the electric equipment and single-wire electric power transmission lines with various types of transformers and frequency converters have been carried out.

In the Table 1 and 2, the results of tests of electric equipment 1 dated 27.09.2002 are given. Test results show that a copper wire with 100 m diameter (cross-section is $7.85 \cdot 10^{-3}$ mm^2) is capable to transfer electric capacity of 10.08 kW under 3 kV voltage without over heating of power line. For a conventional or three-phase line, these parameters (power density of 1.28 MW/mm^2 and current density of 428 A/mm^2 and line voltage of 3 kV) could not be achieved, using standard equipment (Fig 1).

Thus, the ability of a single-wire line to transmit active power without considerable Joule losses in the line is experimentally proved. The losses in this electric power transmission technology occur mainly in the converter as in DC high-voltage lines. These losses can be reduced to a level acceptable for industrial application owing to improvements of electric and mechanic design.

Table 1

Test results (2002-09-27) for single wire electric power transmission line equipment

Main parameters at the input of the frequency converter	Parameters of the rectifier of the frequency converter	Single wire line parameters	Parameters of DC load at the output of the bridge rectifier
I = 22.1 A	I = 25 A	L = 6 m d= 0.1 mm	I_L = 40 A
Vph = 225 V	V = 520 V	V = 3 kV	V_L = 252 V
Pa = 14.9 kW		L_{1kHz} = 2.9 µH	P_L = 10.08 kW
Q = - 0.692 kVAr			
f = 50.0 Hz		f = 2.647 kHz	
φ = 3° (power factor = 0.9986)		R_{1kHz} = 9.54 Ohm	

Table 2

Results of tests of 10 kW single-wire electric power transmission system (SWEPS)

1.	**Electric capacity on loading** Operating current Operating voltage	10 kW 40 A 252 V
2.	**Parameters of the single- wire power line:** Voltage of the line Frequency of a line Diameter of copper wire Effective current density Specific electric power	3 kV 2.647 kHz 100 mkm 428 A/mm^2 1.28 MW/mm^2

CONVENTIONAL ELECTRIC POWER SYSTEM.
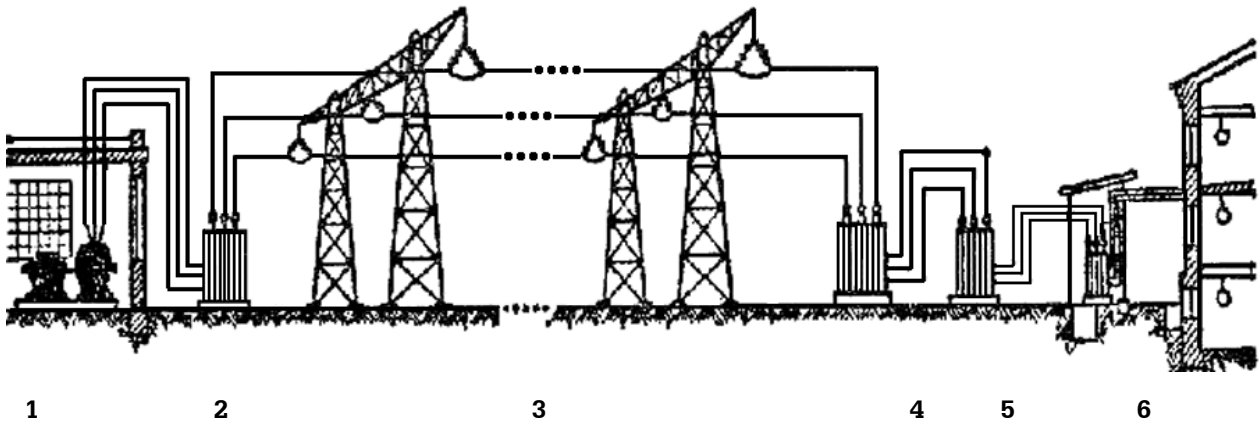
1 – Electric station generator 6 kV, 50Hz;

2 – Step-up transformer   6 kV/ 110 – 500 kV, 50Hz;

3 – Three phase electric transmission line 110 – 500 kV, 50Hz;

4, 5, 6 – Step-down electric transformer 110 – 500 kV/36/10/0,38 kV, 50Hz

SINGLE – WIRE ELECTRIC POWER SYSTEM.
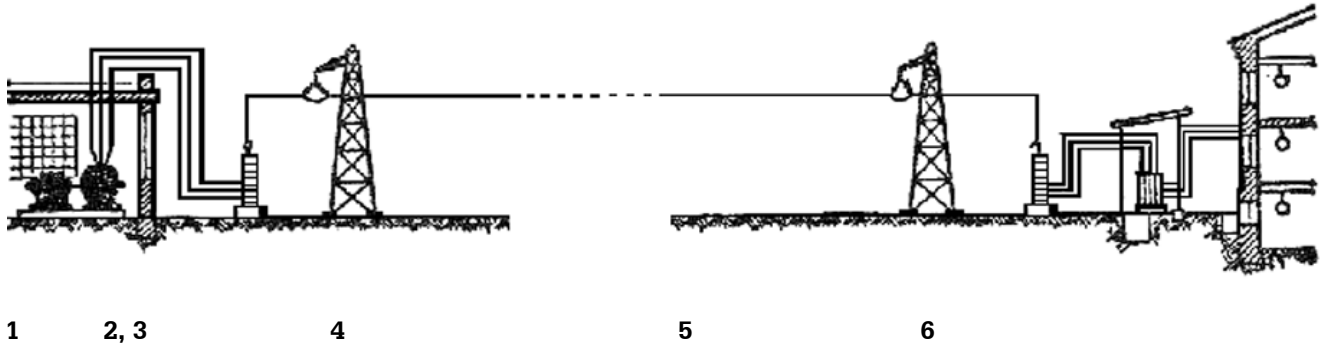
1 – Electric generator 6 kV, 50Hz, 1-10 kHz;

2 – Frequency converter (is not necessary if frequency of electric generator 1-10 kHz);

3 – Step-up transformer   6 kV/ 110 – 500 kV;

4 – Single – wire power transmission line 110 – 500 kV;

5 – Step-down transformer 110 – 500 kV/10 kV, 0,4 kV;

6 – Inverter 1-10 kHz/50 Hz. Output: The conventional electric grid of customer's standards.

Fig 1.
Comparisons of SWEPS and conventional 3-phase transmission line

THE TRANSMISSION CAPACITIES:
1 W – 1 GW

THE ADVANTAGES:
-   High electromagnetic stability due to the resonance mode of operation;

-   Considerable decrease in resistance losses due to the idle mode of the power transmission and the use of reactive capacitive current for transmission of active power;

-   Considerable decrease in investment due to simple design of pillars and the significant decrease in wire materials consumption. Wire diameter is 3-5 mm, material is steel, instead of copper or aluminum, and wire diameter is 10 - 20 mm;

-   Independence of operation mode and frequency for different parts of electric grid.

SHAUBERGER'S DEVICE?

Eugene Arsentyev

http://evg-ars.narod.ru/Eng.htm
Russia

Abstract

The author of the article gives a brief description of the real design of aircraft engine. Probably, this design is not similar to Shauberger's one. However the very appearance of some ideas is rather interesting. Different people in different places and time come to the same conclusions. Whether people think in a common way, or Nature laws are the same. Could you believe that the author of the article has never read or heard about Shauberger's works (I mean his engine, which operates on environment energy and has levitation properties)? But by accident (thanks to Internet) when come upon the description of designs, I was surprised to find so much in common between Shauberger's ideas and my suppositions. Outwardly Shauberger's engine looks like the following (see Fig.1):
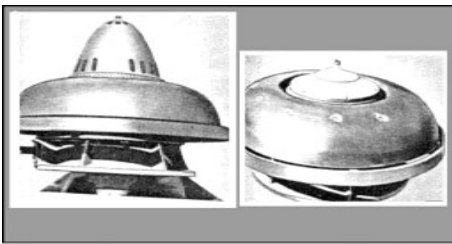
Fig.1

The possible internal device is shown in Fig.2 (the device is turned upside-down with respect to the photos).
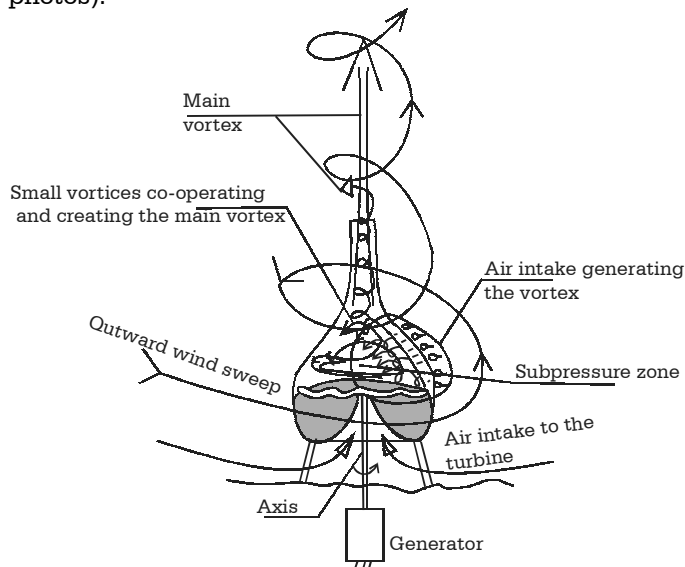
Fig. 2

Since the author of this work does not purpose to appropriate other's fame, then there is an attempt to explain easily the arrangement of the engine. Besides, in spite of the fact that in Internet there is rather extensive information on the device, however its immediate operation is not properly explained. There is an opinion that the device is a mystification and cannot work at all. But I think this is not the case.

Undoubtedly a wheel, which seems strange at first sight (see Fig.3), is the main part of the engine. The engine consists of 24 corkscrews-like devices, which rotate in circle (see http://evg-ars.narod, on the origin of tornados).
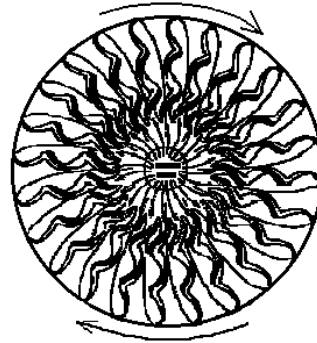
Fig.3

Shauberger created the ideal conditions for appearance of the group of mini-tornados and the central tornado, which is the motive force of the device. At the first stage by means of the wheel, air swirls around the axis of the electric motor. Due to centrifugal force the same air is thrown to the periphery, passes through "corkscrews" of the wheel and obtains rotation down axis of each "corkscrew". **Air simultaneously swirls around 2 axes of rotation.**

Let's try to take a high-speed electric motor with a flywheel, which is fixed on the axis. Then rotate the device around your hand. At the turning of the motor you will feel the forces, which acted in the way you do not expect.

Thus the wheel creates 24 mini-tornados. The upper part of the device looks like a copper basin (see Fig.4). Turning round the internal surface of the upper part of the device, mini-tornados move away to the internal cone of the device and forward the outlet.

Fig.4

The approximate demonstration of the internal arrangement of Shauberger's device is shown in Fig.5 (see the animation of the device on http://evg-ars.narod.ru/Eng.htm).
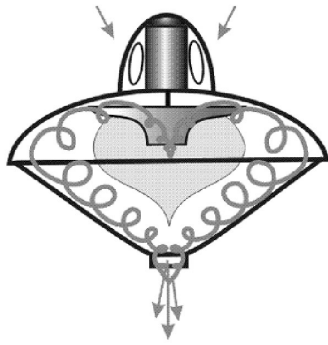
Fig.5

The cross section of the device allows understanding of the essence of tornado, which is observed from the vertical view. The first section, which is placed a little lower than the "copper basin", is the cross-section of the tornado. The rest of two sections are placed closer to the outlet (only 9 balls are represented in Fig.6 but the principle of operation is the same).
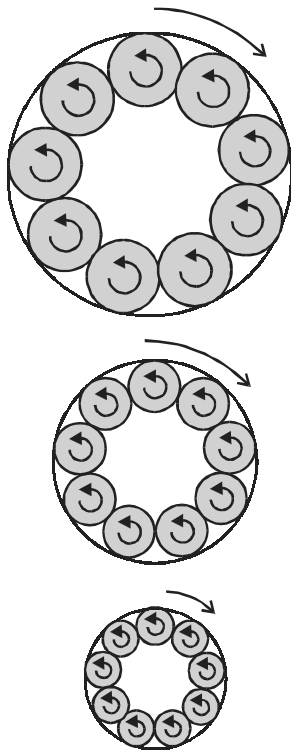
Fig.6

Thus, 24 (9) balls (mini-vortices) roll inside the wall of the circle. The walls of each ball rotate in opposite directions with respect to the walls of the neighbor balls. These balls will be concerned as a dual medium: on the one hand it is a ball, since it rolls as a part of a ball-bearing and laws of mechanics influenced on it, but at the same time it is air, for which laws of hydrodynamic are valid. These balls at any collision of their neighbors tend to collide to each other and thus simultaneously move to the center of the device. At the same time the opposite movement of walls of the neighbor balls represent a rarified medium, by Bernoulli's law. Thus the balls are "attracted" to each other. As a result, the

whole mass of the rotating air is constricted towards the center, and then considerably accelerates (because the diameter of the device is decreasing). Finally this mass flies out the nozzle, which is placed in the lower part of the device. The wheel with "corkscrews" rotates, and constantly supplying these minivortices-bearings, entrains air, which comes from inside…

Shauberger asserts that the process becomes to be self-sustaining. Natural tornado can exist for a long period of time and, obviously, the very existence of it is sustained only by pressure difference between environment and the internal cone of the tornado. The discharge zone is created in the very center of the device. It means that ambient air must approach there, after coming on the turbine blade and entraining in the rotation with complicated trajectory (such a rotation can be called a "self-eversible toroid").

It seems to me that these are the basic principles of operation of the device. Indeed, such a process can be concerned as an opposition to the ordinary **explosion**, since the matter does not move from the center but on the contrary, **tends to constrict into the common point** (to the top of the vortex). Shauberger called this process as **implosion.**

The rotating mini-vortices, which composite a tornado, are attracted to each other and tend to move to the basic center of rotation.

Let us return to Shauberger. The witnesses of operation of Shauberger's device asserted that only air and water were used as a fuel. Possibly, they were wrong a little. Most likely there were air and spirit, which looks like water. During the operation the engine must consume ambient air and if to provide it with some fuel and burn it, then it will forward the process of the vortex creation. In the presence of the big amount of oxygen, the flame of spirit is almost invisible. As a result, there is a "flameless and smoke-free engine", as it was presented in some publications.

In my conclusions I came to approximately the same design. Thus I offer a device, which remotely resembles Shauberger's "windmill". In general, operation of the device is based on the same principles. The similar laws are valid for the whirlpool in a bath and for the devices given below.

Fig.7

Fig.8

As distinct from Shauberger's device, there is no main cone, along which the vortex constricts to the center and is ejected through the nozzle. Another distinction consists in more simple design of the wheel, which is used for creation of the vortex (actually it is a usual centrifugal pump). The simplification of Shauberger's design (Fig. 7) is caused by the fact that a natural tornado does not need similar contrivances (though his "corkscrew" wheel calls nothing but admiration, sinc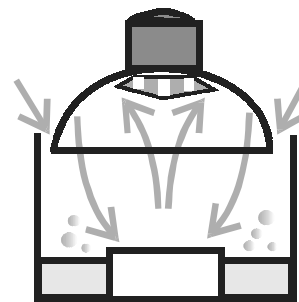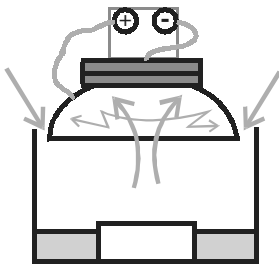e by the simplest and effective way it swirls air blasts at 2 perpendicular axes of rotation!). My aim is to swirl the air blast into a small tornado as simply as possible and it is desirable to use no mechanical components. This can be achieved, if instead of turbine of centrifugal pump, we will use something like MHD-engine (magnetohydrodynamic engine) for swirling (see http://evg-ars.narod.ru). There is a design, which has no moving components (except for the vortex). In the lower part of the device (Fig. 8) there is a burning fuel (possibly, kerosene?). Moreover for MHD-engine we should use electro-conductive kerosene (possibly, salted) and natrium addition agent. Roughly speaking, there is an attempt to reproduce the natural phenomenon in a can. The essence of the process can be understood from Fig.9.
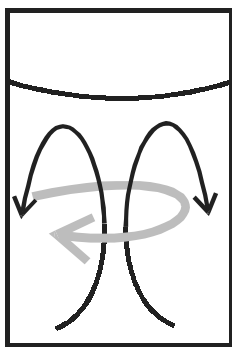
Fig.9
"Tornado in a glass"

Fig.10
"Natural tornado"

The process, represented in Fig. 9 (see the animation on http://evg-ars.narod.ru/Eng.htm), was firstly noticed by Einstein in an ordinary glass with tea and floating tea-leaves (let us call it **Einstein's glass)**. Examine closely the central upward part, which is namely a "trunk of tornado". It seems strange that Einstein did not made the same conclusions.

The processes, which take place in Einstein's glass, are certainly the basis of the engine operation. Let us try to make process stable. For that let us swirl water in a

reservoir by means of a disk, which is fixed on the axis of electric motor engine (Fig.11). Having been swirled, water moves along the complicated trajectory (fluid motion is described on http://www.evert.de/, see Fig.12).
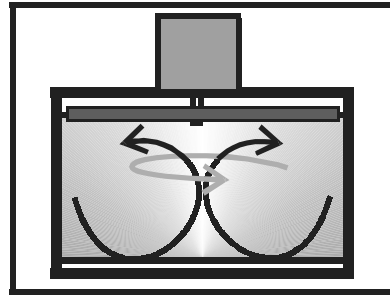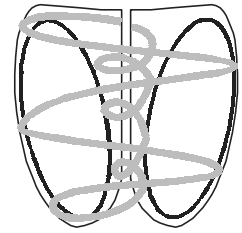
Fig. 11   Fig. 12

These figures allow us make very interesting conclusions. Linear speed of water motion is constant by all the way and it is defined by **linear speed of the disk edges**. Fluid, which is accelerated by the disk, spires down and forces itself to the center. At that moment there is an increase of angular speed of water rotation (if we rotate a weight hanging on a thread, which is winded round the finger then we will see the analogous increase of speed of rotation). Fluid with the increased angular speed of rotation goes up and bears against the central part of the disk. The most interesting is the fact that **speed of water rotation in the central part is higher than speed of disk rotation!** Water "pushes" the disk in direction of rotation. **The rotating stream supports itself!** This is almost a perpetual mobile. But force of friction is the usual obstacle. This process occurs to be very stable and low-damping. The conclusion is:

Vortex can be easily created at rotation of fluid or gas and if the conditions of rotation at top and bottom of the device are unequal, it is nearly a ready self-sustaining system.

Not much of energy is necessary to make the process continuous. And what is more, **the vortex absorbs energy from environment in the form of heat!**

Let us examine the simplified diagram of Shauberger's engine (see cover page, Fig.A). The design can be presented as the following simple diagram, which is nothing but the development of the idea of **Einstein's glass**.

At the top of the internal part of the device there is a rotating disk (it is in red color). There is an upright plate below. This design allows the unequal conditions of rotation for lower and upper sheets of water (air?). On the left there is a heat-exchanger (it will be described below). On top there is a motor-generator, which at first serves as a starter of the process, and after it reaches the tornado mode of operation it serves as energy generator. A valve, which is fixed on the heat-exchanger,

serves as a breaker of the process. The arrow in the left is an actuating fluid of the device. This actuating fluid is heated by environment.

Centrifugal forces cause the increase of pressure at walls of the vessel and rarefaction in the central part. Due to the high angular speed of rotation of upper water (air) sheets, as compared to the lower sheets, a meridional stream is created. This stream goes down along walls of the vessel and goes up in the central part (in nature it is nothing but "trunk of tornado"). Moving along its complicated trajectory, fluid (gas), falls sometimes into compression space, sometimes into vacuum space.

Let us remember the fundamental physical law, viz Boyle's law. If we take a definite gas mass, then gas will be heated at forced compression and cooled at rarefication. Thus, in the central part of the device air-and-water compound comes to vacuum space, which is caused by centrifugal forces. At that there is **a decrease of temperature and increase of volume** of the final gas mass. This increase of gas volume causes the increase of kinetic motion of the stream, which comes upwards, along the central axis of the device. This recharged stream with new energy arrives to the turbine disk, forces it to rotate with higher speed and to produce still more intensive vortex. This vortex creates still higher rarefication etc. Cooled damp air is thrown out by centrifugal force in the tube of the heat exchanger. Ideally, temperature of the heat exchanger is about absolute zero. The heat exchanger is placed in the environment, which is "medium of energy excess", though from the ordinary point of view it is normal. The heat exchanger is heated by it. Heat energy penetrates into the device and as a result transfers into energy of rotation of the "self-eversible toroid".

We can make an interesting conclusion that there is also **the oscillation process!** And oscillations have a resonance, that is the increase of amplitude at minimal energy supply! Thus we will be able to stabilize the effect since there are evaluated the dependences between amplitude of oscillation and all influencing parameters. **There is a temperature resonance!**

In my opinion, Shauberger was a great person and his name is undeservedly forgotten. I think he had nevertheless succeeded in making a generator, which gets energy from **"nothing"**, more precisely, from environment. Even if it is made very ineffectively, since this energy is free, it can remove all against arguments.

I believe that there is a possibility to make such engine-generator of amazing abilities, which can generate, or more precisely, concentrate energy from environment energy. Social and economic consequences of such invention are undoubtedly boundless. That is both a solution of energetic problems and change of the understanding of the notion "transport".

From the foregoing, we can depict a certain design.

Let's make the following device as a hypothetical, "virtual" engine (see cover page, Fig. B).

This device can serve as:

1. Generator of energy, i.e. a concentrator of environment energy.

2. Heat engine, which has abilities to cool and condition. Besides, not necessarily to use water-air as actuating fluid, since air and freon are also possible.

3. Gravitational mechanism. (This statement seems to be rather bold, but let me explain it):

3.1. There is a well-known effect of weight loss of fast-rotating masses. What does it depend on? Let us return to Fig. 12. It is clear that at such a rotation of air there is a possibility to run up to unconceivable speeds (due to small air mass). The device is not threatened with destroy, for example, as distinct from a metal flywheel. In spite of complexity of the trajectory, each point of it moves **at a tangent** to the Earth surface. It is quite possible to reach 8 km/sec linear speed on this trajectory. If an artificial satellite with 1m orbit can exist, then there is a question: "Is levitation possible here?"

3.2. Some time ago an article on gravitational mechanisms (inertioids) was published in "Technica Molodyozi" ("Technics for Young People"). There was a description of about 10 types of mechanism as well as the explanation why they could not fly. However, in the end of the article it is stated that there is no final verdict on the work of such devices, and the issue remains open. Thus I offer #11. Let us concern the experiment I made, i.e. the rotation of the usual flywheel, which was placed on the axis of electromotor. I hold the motor with my hands. The capacity of the motor was about 70 Wtt at 7000 r/min and U=24V. The rotating flywheel (aluminum disk of 10cm diameter and about 200 gram weight) looks like an inertioid! It is enough to rotate the device around your arm to feel incomprehensible propulsion, which is definitely directed. This interesting effect is obtained due to the simultaneous rotation around 2 axes (axis of the motor and axis of the arm). The results of the experiment caused the appearance of the idea, which has much in common with Shauberger's device.

Thus we can formulate some general principles of operation of the devices, which generate mechanical energy at "absorption" of energy from environment:

1. **There is a generation of the process, which is close to be self-sustaining (We can find such examples in hydraulics. The vortex of the type of Einstein's glass is very unstable and**

rather inertial state. There are many examples in nature, such as: swirl of water or air, natural tornado; in electrotechnics, such as: electromotor and dynamo, which are connected on the same axis, etc). For real self-support it is necessary to add external energy in such a system. Sometimes energy, which compensates losses by friction or resistance, can be enough.

2. **There is amplification of the process right up to resonance, which takes place in such a device (in vortex there is a process of heating-cooling of air-water compound and in electrotechnics there is the induction of electromagnetic fields).**

3. **The device is "reversed" with respect to the environment in such a way, that some part of the device will have energy with very decreased energy potential. This "reversing" will become an absorber of environment energy. For example, in hydraulics the central part of Shauberger's device is a space, which is close to absolute zero by temperature and pressure. Therefore this part of the device is placed in the usual environment of excess energy potential. In electrotechnics it is more complicated, since there is a superposition and resonance of fields.**

4. **There is a release of "absorbed" energy from the closed space of the device in the form of mechanical or electric energy. This energy is absorbed from the outside.**

There are striking examples of such devices:

- Shauberger's Engine (see: http://www.dromo.com/fusionanomaly/viktorschauberger.html) and Klem's Engine, which is very similar by its principles **in hydraulics**;

- Tesla's generator and Serl's generator **in electrotechnics**.

Thus we can conceive the interior of Shauberger's Repulsine. Most likely, this device was similar to vortex engine-propulsion unit-generator of energy (see cover page, Fig. C).

Vortex, which is created in the central part of the device, absorbs heat from air, which traverses through turbine blades by means of heat-exchanger. The heat-exchanger is actually a usual centrifugal pump. Vortex absorbs that minimal part of heat, which is necessary to keep rotation. The engine starts the operation at turbine untwisting and at slight water injection, which comes from below. Probably, after the mode of tornado is reached, there is no need in water and only air serves as actuating fluid. During operating of the engine, pressure is decreased in the center and increased at

the periphery of it. Rank's effect works in full here. More precisely, its work is even more pronounced than in "Rank's tubes" (since in Rank's tubes swirled air is thrown outside instantly and rather uneconomically, and in the given case there is "accumulation" of the effect at circular meridian rotation). The cooled from below heat-exchanger-turbine is heated from above by compressed air. The rejection of this cooled air causes usual reactive thrust.

If it actually works (I think that if Shauberger's engine really existed, it had the similar design) then this design could be considered as absolutely **universal engine-propulsion unit-generator of energy**. It is super ecological and fuel-less, since it has cool airflow as exhaust. Technological effectiveness of the design is on the level of the beginning of past century. Simplicity of the design can make us doubt its capacity for work. But I believe there are no distinct contradictions here. The commercial plant, designed for generation of electric energy, could look in the following way (see cover page, Fig. D).

The design is very simple. Why should the "vortex trunk" be directed downwards? Let us turn the design upside down. Thus, the generation of artificial vortex is greatly simplified. What is necessary to create the vortex? The answer is as follows: we need **not much of environment heat, moisture and the initial swirl of mass of damp air**. A cup-shaped vessel is filled with usual water. At the starting stage of operation, motor-generator starts to swirl a water-air cone by means of turbine with helical blades. When the device starts operating in tornado regime, then **heat is absorbed from the ambient air**. At that, **motion of rarefied air accelerates along the center of vortex and this airflow starts pressing upon turbine blades**.

Motor-generator can be switched to the mode of energy generation. There is a minimal description of the device operation, but really the processes are more complex (there is advisedly left out the description of mini-tornado, which is created at the appearance of the main tornado. The possible electrostatic effects are not described also). Figure D is an attempt to emphasize the main thing, i.e. the fact, that **process of vortex self-supporting is possible** and in my opinion, it is rather simple. I have no ideas about the height of the obtained vortex (at least if the scales are kept it will be much higher than in the Fig. D). But if the process of natural vortices creation is ordinary (at that, sometimes there are no obvious reasons for their appearance), then I offer to consider the proposed device as a set of details, which provide the artificial creation of the natural phenomenon.

There is another question on the size of the device. I do not offer the giant size (50 meters in diameter Messiah mashine can be concerned as such negative example). The description of Shauberger's Home Machine Power seems to be more likely. Its diameter is about 1 meter. Besides, my own design is a symbiosis between these

two devices, however constructively it seems simpler and probably better. Its minimal size is still defined by laws of nature, since I have never seen natural air vortex, the size of which was less than 1 meter (usual swirls on dusty road are the simple example of such phenomenon). But at the same time, if we imagine the maximal size of such a system, then our imagination will easily picture a huge plant, which is placed on the open air and which is able to generate a real tornado with all its disruptive power. But this tornado is "tamed" and therefore it always stays at one and the same place, i.e. exactly over the energy plant. And what if we build a system of large-scaled vortex energy plants, which are able to cool environment? Then we can speak about the influence on climate! It would be an important contribution to the global warming control.

In my opinion, these devices can be widely produced as a small-sized autonomous energy source (for example, for a detached building). Do you remember how in their time personal computers "thrown down" big electronic computers? **It is necessary to be closer to a consumer!**

Of course, everything looks rather fantastical, however I would like to intensify the impression and to understand at last the essence of **Implosion** and what Shauberger wanted to offer.
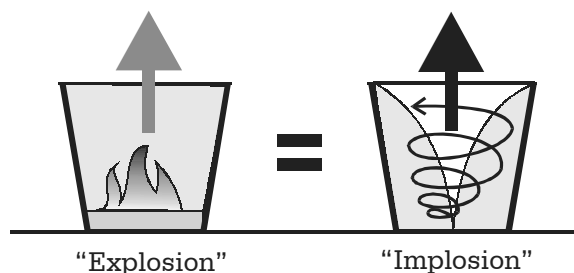

"Explosion"   "Implosion"

Fig. 13

Nowadays the whole man-caused civilization depends on **Explosion** *(in translation from Latin it means "explosion", "exhaust")*. Operation of any modern heat-engine (see the left part of Fig. 13) is fuel combustion of a certain extension, which causes raise of temperature and expansion of working body due to this burning. The expanded working body pushes a piston or turbine and then is thrown away to obtain reactive impulse. Practically, operation of any engine is based on the process of expansion, which is the result of fuel combustion. This causes squandering of nonrenewable natural resources, viz: gas, oil, coal, and uranium (the products of such a technology is a separate great problem). However the expansion of the working body can be obtained in result of absolutely different process! Natural tornado can serve as an example.

Let me explain. Imagine that a working body rotates in some vessel (the simplest case is the swirling of usual air (see the right part of Fig. 13, which represents the miniature model of natural tornado). Right away the

accelerating ascending progressive motion will appear in the central part. There are three reasons for that:

1. Due to **the rarefication of the central part of the vortex by centrifugal forces**, there is a definite **volume expansion of final mass of gas and decrease of gas temperature.** This mass is "supported" by walls and bottom of the vessel. The only way to expand is to move upwards.

2. In the central part of the vessel the rarefied part of gas behaves according to **Archimedean principle** (more lightweight body floats). It looks like a coverless balloon.

3. **Swirling air obtains a considerable electric potential**, which is positive in the center and negative at the periphery. In spite of its simplicity, this tornado model (as well as the very tornado) is an excellent electrostatic generator (the theory of appearance of such electric potential has the best representation in materials on Searl's generator). In natural tornado the millions Volt value is obtained that results in the constant appearance of lightnings in "tornado eye" and in its "trunk". Thus in the presence of such high voltage there is air electrization in the body of tornado. And as is well known, **like charges** repel each other! (Positively charged air molecules, which are devoid of electrons, repel each other). In such a way, **due to electrostatic forces there is a rise of gas pressure!** This **expansion** causes the additional impulse for the upward motion of air. Is there in physic a formulation of such an effect, i.e. **the expansion of gas volume at its electrization?** If there is no, then it seems to be a discovery! Figure 14 is an attempt to prove, that **tornado is electrostatic machine, and at that it has the simplest design**.
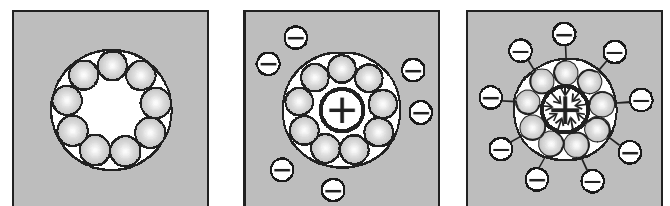
Fig. 14
Electrostatic model of tornado

The sectional view of tornado (see Fig. 14) represents an attempt to synthesize the designs, which are offered by different inventors (in such devices a simple cylinder serves as rotor. This cylinder is made of dielectric and on each side of it there is high voltage in several tens of KV). There is also an attempt to answer the question: what are the means for tornado swirling?

The researchers of natural tornados speak about the presence of the system of mini-tornados at inner walls

of the main tornado (here I return to the balls-rolls, which were concerned above). There is also high electric potential, which is generated on this inner wall with respect to the center of swirling. In my opinion, these balls-rolls are under high electric potential and serve as rotors of the peculiar electric engine. **That is an immediate source of tornado swirling!** There is a usual process of electrization at friction of dielectrics (see the animation on http://evg-ars.narod). At some boundary voltage there is "switching off" the forces of electrostatic attraction, which compressed the balls. As a result of that, balls increase in their diameter. Pressure release, which exists in the balls, should cause their cooling. This process is constant along the whole height of the tornado trunk. There is an interesting effect to be noted: the higher speed of tornado, the thinner its trunk. But these are electrostatic forces that can explain everything! **The higher speed of swirling, the more potential difference of the center and periphery is, the more intensive attraction of the charged particles, and the thinner trunk of tornado!** Tornado has the ideal conditions for electrization, since there are huge friction dielectric surfaces (nobody knows why there is a transmission of electrons at friction of wool on amber, but it does not mean we cannot use that).

Let me summarize all aforesaid and offer my own design of the vortex device. Most likely, during the XX century the inventors of vortex devices have actually created really operational devices, which used heat energy of environment (these are: Shauberger's engine-generator, Klem's engine, Tesla's turbine, Searl's generator, Roshchin-Godin's experiment *(Editor's: See the description of this experiment in the early issues of "New Energy Technologies")*, Potapov's generator, etc). All these devices have much in common at their operation:

1. **There is heat absorption** at operation of the device, and **cooling of environment,** which is a particular "exhaust" (the reason is the conversion of environmental heat energy into the swirling);

2. The presence of strong **magnetic** and especially **electric fields** at operation of the device, caused by electric forces, which are the reason of the process appearance;

3. Strange luminescence of the spaces, which are **around the devices and inside the vortices** (the reason is air ionization at multi-kilovolt voltages);

4. All devices have **not less than 1 meter proportions** (since the operation of all these devices is based on the presence of a vortex-tornado. Appearance of this tornado is caused by physical properties of water and air, which are heat capacity, heat conduction, breakdown voltage, sluggishness etc).

Let me summarize the principles of operation of all these devices and offer my own design, which include the most useful of them (see cover page, Fig.E).

The device generates **local natural tornado.** There is an attempt to elaborate the principles, which are in the basis of the electrostatic model of tornado (see Fig. 14). In its principle of operation the device has very much in common with well known from school electrostatic generator (do you remember 2 rotating in opposite directions plexiglass disks covered with foil and a lightning, appearing at breakdown between two metal balls, which take the potential form these discs?). In our case the whole device is rolled up in a cone. Rotating inner rotor, which is made of maximum possible lightweight material (e.g. thin-walled plastic), creates spiral and swirling on their axes air bunches. These very air bunches are charge suppliers (they are not presented at Fig.E).

The device operates in the following way: the plates are positively charged on rotor and negatively on stator (metallized black straps can be applied on the cone of rotor-stator by galvanoplastics method). Engine-generator works as a motor until the plates reach break-down voltage. Then there appears a charge between pairs of rotor-stator plates that causes appearance of impulses, promoting acceleration of rotation. Inflow of "fresh" air from below provides self-sustaining of rotation. Motor-generator turns to the oscillating mode. Water, is pumped from below and promotes intensification of air electrization (there is an effect of intensive electrization at splashing of water drops in air, e.g. waterfall streams). It is well known that tornado is strongly "attracted" by ponds. That is the principle of operation in general. The only energy sources are **water and a huge amount of air, transmitted through the device.** Lightweight thin-walled plastic with galvanoplastic metallization can be used as a material for rotor-stator (the usage of glued foil is also possible). The device must have not less than 1 meter diameter, since it is very important for the successful operation (there was a failure of Roshchin-Godin's experiment with the device, which had 20 cm diameter, whereas the device with 1 meter diameter worked).

Do not forget to ground metal parts of motor-generator!

Here is the project of the generator. There are no elaborated design drawings and everything should be tested. However, if it is able to operate, then the similar commercial plant can be easily produced, especially since the simpler device, the more effective it is.

At this stage the author focused attention on **generation of energy**, while creation of **aircraft** is the further step in development of the project.

Let us return to Shauberger's Repulsine, the electrostatic model of his device assumes the following approximate form (see cover page, Fig. F, G)

Most likely, in Shauberger's engine **"supply" air proceeds both from below and from above** (i.e. there is a vortex chamber on top of the device just as it is). Two mirror vortices have common "tornado eye". During operation there is **constant electrization** of the flow inside the device. Negatively charged ring is created in the center of toroidal space (according to the suggested electrostatic theory of tornado). In principle, framework of the device can acquire positive potential. However to make sure, it is better to ground the framework. At electric breakdown of water-air compound there is cooling and twisting of tornado cords inside the device. That is a motive force of the device. Air ionization is possible around the framework (in the absence of grounding). At the first stage it is offered to use classic Shauberger's turbine as turbine of the device (corkscrews allow to obtain required twisting of water and air flows inside the device). It is also possible to use a usual doubled centrifugal turbine. The device can be made of metal (as Shauberger's one) or of dielectric (for example, plastic) that is more interesting from the modern point of view. Diameter of the whole device is about 1 meter. Water-air cords, which are generated by the corkscrews (or by blades in the second case) have 3-5 cm diameter.

There are many publications on Koand effect, which appears during the operation of Shauberger's engine. For some reason in these works Koand effect is always described as an explanation of wing lift. But Koand effect is a phenomenon of absolutely another kind! **It is the adherence of gas or fluid flow to the surface along which they move!** Obviously, the problem is in the erroneous understanding of Shauberger's notes about the presence of such effect during the operation of the device. In my opinion, using Koand effect we can make **a rotor wheel**, which has no blades or corkscrews. This rotor wheel can have the form of doubled hyperbolic cone. At **hyper-high** speeds of rotation of such a turbine, water-air compound will be involved in tornado swirling exactly **by means of Koand effect,** i.e. by means of adhesion of particles to the surface of the rotating cone. (See cover page, Fig. H). By its design this turbine is very simple, since only maximal lightness and durability are demanded. Plastic seems to be the best material, hence the design represents **a rotor-thin-walled plastic "whirligig".** All electrostatic effects and other principles of operation are valid here (See Fig.H).

Let us now move away from Shauberger's principles and formulate the following problem: **to achieve stability of the process by modernization of the device, i.e. by removing of all mechanically movable parts.**

Can you imagine fireworks, which are the rotating wheels with burning rockets on the rims? These rims gradually accelerate and turn into the burning ring. It looks very effectively but absolutely useless, at first sight. Speed of rotation is very high but nevertheless it is definite. What is the limit for this speed of rotation? Have you ever thought why usual electro-motor is not

able to rotate with the speed, which is higher than some maximal one, and no matter how long you will apply voltage to the device? Everything is limited by moment of inertia, existing for gyrating masses. This moment of inertia is defined by the weight of rotating body and by weight distribution on the axis of rotation. Therefore massive rotor of electric motor or of rotating turbine can never be rotated up to super speeds. Nowadays aircraft turbines have the highest speed of rotation (about 150 thousand rot/min). Why should we need to rotate a heavy turbine or rotor? What if we will rotate air or, more precisely, combustion products? Roughly speaking, I offer to stop rotation of the firework wheel and force rotation of air or combustion products along some inner rim. Therefore we will obtain a burning ring, which will get required reactive force at rejection of incandescent gases in proper direction. Let us consider the problem from this point.

Operation of rocket engine is based on the expansion reaction, which takes place in some closed space (at combustion of fuel + oxidant in the chamber) and also the emission of combustion products in the same direction. At that, a body moves in the opposite direction.
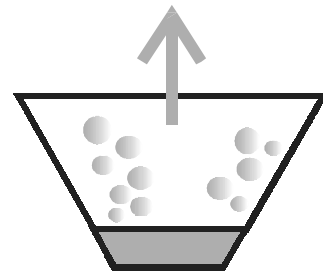
Fig. 15

Let us fill a cup with fuel and burn it (see Fig.15). Fuel expands at combustion and as a result of natural convection the combustion products go up. In the real rocket engine there is a forced injection of fuel and oxidant into the cup that causes more intensive motion of combustion products, than in our case. Let us modernize the cup and make a hole in its center (see Fig. 16).
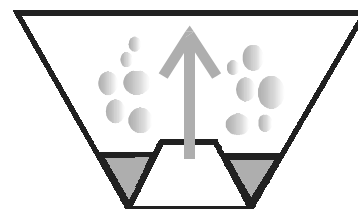
Fig. 16

Thus, portions of air can inflow from below and sustain combustion. Expanding consumption products repel themselves from inclined walls of the combustion chamber and therefore their raise is more justified.
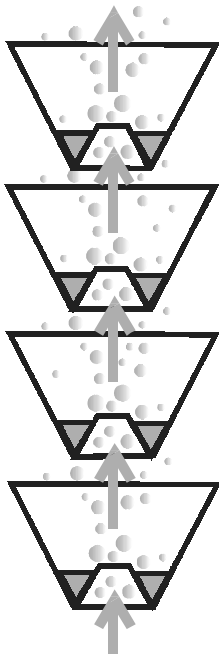
Fig. 17

Let us place several similar chambers one after another (Fig. 17). If we concern each chamber individually, then combustion products at their expansion repel themselves from inclined walls of the chamber and obtain some impulse. At that, the process appears in the lower chamber and then becomes more intensive in the second and all subsequent chambers. Thus combustion products are gradually accelerated. **There is a process of kinetic energy storage.** In order to make the process of storage to be continuous, we should coil everything up.

Let us examine operation of the following device, which can be made of a metal tin (see Fig. 18). The arrows symbolize burning fuel, which obtains an impulse at the expansion. This diagram is not connected with attraction as the presented above figures of cups. It is caused by the fact that centrifugal forces come into force, i.e. fuel is pressed to the rim and portions of air are delivered by centrifugal force through the hole in the center of the device (see the top view on Fig. 18).
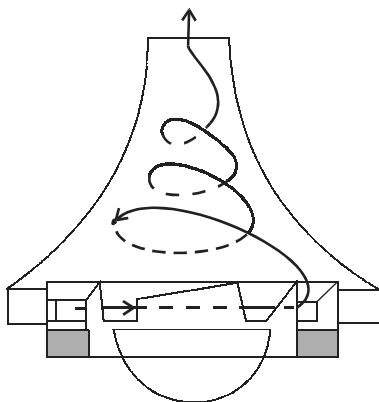
Fig. 18

In the center there can be placed a motor-generator to release energy (see Shauberger's device). The presented design has 4 combustion chambers and most likely, the

vortex will be swirled of 4 rotating cylinders. Shauberger's device has 24 cylinders at 1-meter diameter of the construction. Such proportions can be justified in physical sense. In the same way we can take the required number of chambers. Then **the vortex is contracted to point** as in the aforesaid description of balls-rolls.

The operation of the device is presented in Fig.19 (view from within). **There is a toroid, which has self-support of combustion reaction. The toroid draws air by means of centrifugal force and throws up combustion products.** Speed of rotation of the toroid can be very high since its small mass. At the same time, at superhigh speed of rotation of this tore, some new and still unknown phenomena can become apparent. If this engine really works, then there is no necessity of production accuracy and of high technologies, which are required for making of aircraft turbines and rocket engines. The only essential requirement is heat resistance of the device. **Such an engine could be made at the appearance of ceramic stuff, i.e. far earlier than modern era.**
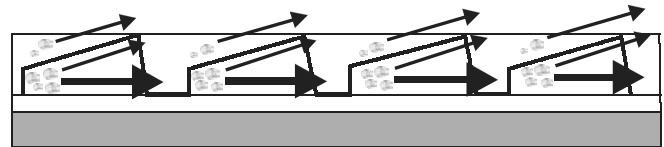
Fig. 19

Now there is another "technological nonsense". I offer to make the simplest air-reactive engine, which has no movable parts. Certainly, many readers have used to observe benzine or another inflammable substance burning in a metal bucket or barrel. From time to time, tongues of flame create rising swirled vortex, which disappears at once, since there are no special reasons for its existence. What if we help the flame and **spend for rotation all energy, which is generated in result of expansion of combustion products?** Progressive motion will be the consequence of this process.
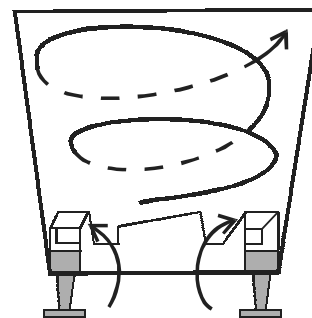
Fig. 20

The device (see Fig. 20) represents a bucket with legs and a hole in its lower part. To support the reaction, air inflows from below. The plate-made, corona-like part of the device coils up combustion products. Then under the influence of centrifugal forces combustion products go up along walls of the bucket. New portions of air are

drawn in the device from below and at once react with each other (the more intensive combustion, the more portions of air are drawn into swirling that in its turn promotes combustion). **The only aim is to forward all energy output to swirling.** This device is a miniature model of typhoon-tornado-spout, i.e. a naive attempt to reproduce a natural phenomenon in a simple leaky bucket. But there is still undecided question: what is the reason for limitation of speed of swirling and therefore speed of the flow, which goes from below?
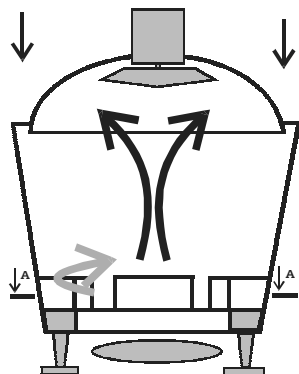
Fig.21

One more Shauberger's device is presented at Fig. 21. There are some changes along the section A-A. Combustion products are drawn to the **center** of swirling and then they are divided in two flows: the first flow goes upward, creating the vortex, and the second goes downward, making the motive force of the device. Motor-generator is placed on the upper part of the device. It operates as a starter of the process at first and as generator of energy, after it reaches regime of tornado. Let me remind of the fact that this engine

uses energy, which is generated as a result of **fuel combustion** (i.e. in any case, a kind of liquid fuel is required). Shauberger asserts that it is sufficient to use air and water as fuel. I am not sure it is a realistic assertion, but later on I will try to offer my own suggestion on the point, since from respect of energy consuming, natural vortex has no need in something else.
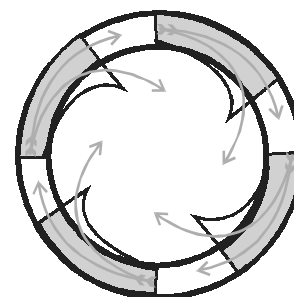
Fig. 22
A-A section

Let me say several words about fuel for the device. It is evident that at the initial stage of operation the device has lack of air. Therefore, fuel should have oxidant in its compound (something like napalm, which can burn by itself). But, quite possible, I am wrong and usual aviation spirit is enough. Later on I will try to develop this idea and modernize the design. The main point will be the same, i.e. how to make engine, which has no movable parts. There are so many new ideas on the variants of engines that I am hardly able to describe them, not to mention about making. If you will decide to make something similar, please, write (http://evg-ars.narod.ru/Eng.htm), but let me get notice that everything is submitted in Internet without diagrams and calculations.

The De Aquino ELF Gravitational Shield

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It should have been an open and shut case. System-H had at one time promised to be potentially the biggest breakthrough in history — a gravitational shield capable of lifting hundreds of pounds of weight using little more power than a common household appliance. However, after 3 years, several research papers, and experimental claims that couldn't be verified, the Internet community was beginning to doubt that De Aquino had even conducted the experiment...and De Aquino himself was nowhere to be found. Welcome to the story of System-H – a tale of government cover-ups and the mystery of an experiment that remains unresolved to this day...

Fran De Aquino, a professor of physics at Maranhao State University in Brazil, first became known the Antigravity community on the Internet when he proposed in 1999 that under certain conditions Extra-Low Frequency (ELF) electrical waves can be utilized to create a gravitational shield. After nearly 3 years and several subsequent experimental designs, he published claims in 2001 that he had succeeded in generating nearly 220 pounds of lift with his newest device, dubbed "System-H". While De Aquino's theory is unique to the world of physics, the basis for his work is actually rooted in research from 1986 by two scientists from the University of Massachusetts in Amherst.

The De Aquino theory of ELF-gravitational shielding is based on a paper called "Aristotle was Right" in which the authors, physicists John F. Donoghue and Barry R. Holstein claim that inertial and gravitational mass are only equivalent in an environment where the atoms composing the mass have no energy from surrounding radiation. In other words, only in an environment of absolute 0 degrees in temperature are the inertial and gravitational mass of an object equivalent.

De Aquino took their theory and generalized it - while "Aristotle was Right" only covered thermal radiation, De Aquino postulated that this theory would also apply to the larger-case example of any type of absorbed radiation that by the mass. De Aquino also showed that the effect of absorbed energy caused a decrease in mass, which is important because it means that if any object absorbs radiation it loses gravitational mass – in other words, it weighs less.

The physics equations that De Aquino created show that energy is absorbed better by materials with a very high magnetic permeability, which is why De Aquino's System-H experimental design uses 99.99% pure iron.

That is also the expensive part, because that is higher than pharmaceutical grade iron, and during my research I was quoted $4000 for it by the only company I could find that manufactures it - ESPI chemical.

Not only are materials with a very-high magnetic permeability required, but the physics equations also show a negative-dependency between frequency and gravitational-mass – i.e.: the lower the frequency, the better it is supposed to work.

Generally speaking, the physics community looks at this idea rather strangely, because typically speaking higher-frequency wavelengths are considered to impart energy better, but in this case the assumption is that given a low enough frequency and high-enough permeability of the material, each "incoming graviton" will be met by energy that blocks it from entering the mass.

De Aquino doesn't say this outright – nor I am sure that he consciously realizes it – but if you are blocking all incoming gravitons it can have big consequences in relativity theory. To begin with, what you are effectively doing is creating a bubble of localized time and space, similar to the way that the Earth's own gravitational field creates a localized bubble of time and space. On the quantum-scale this doesn't even matter, but in relativity theory this can have really strange side effects, potentially even including changes to the speed of time in the localized bubble in which time and space are affected.

One of the beneficial aspects of the De Aquino design is that it is usually very difficult to have an atom absorb energy without increasing its temperature. If a higher-frequency was required, then the test-apparatus that is described would probably melt in a matter of minutes. Fortunately, due to the properties of the ELF current involved, the lower-frequencies don't get converted into heat.

Most of the physicists that I've talked to believe that this idea appears to be workable, but that only actually building the device will determine whether or not this project is truly feasible. To begin with, the scientific basis for this design - the "Aristotle was Right" paper by Donoghue and Holstein - has been eroded by more recent research that indicates that perhaps the difference between inertial and gravitational mass isn't as easy to determine as they believed it was.

Additionally, even if the Donoghue and Holstein paper is correct, De Aquino's physics are not perfect. While De Aquino has done an excellent job creating the physics for the System-H device, his physics are new formulas that are currently untested. Perhaps the only saving grace for De Aquino's physics theorems is that he is deeply rooted in conventional theory, which provides a good basis to build new theory from.

While I was unable to get directly in touch with De Aquino, I was able to find a valuable resource in Steve Burns, an MS in Nuclear Engineering. In addition to his career as a design-engineer in the computer-industry, Burns maintains the "Starship Technology" website in his spare time, and is considered by many to be the "resident expert" on the De Aquino experiment.

Burns reputation as being an expert is not without reason, as I came to understand after several in-depth phone conversations with him on the subject of the De Aquino experiment. I had known Burns already through his thoughtful newsgroup posts on various technologies, but didn't realize until speaking with him exactly how he was involved with the De Aquino experiment. While I had previously believed that De Aquino had been responsible for the experimental design involved with proving his theory, I came to understand that Burns had actually worked with De Aquino from 1999 to 2001, and was responsible for designing the System-H experiment - De Aquino's current experimental design.

Burns insight into De Aquino's thought process included the observation that De Aquino himself has maintained a very theoretical approach to his gravitational-shielding experiment that unfortunately often neglected to address the real-world needs of creating a successful experiment. Burns had indicated that one of De Aquino's earlier experimental designs — System-A — had power-requirements in the megawatt range, which could only be provided in an experimental setting by a directly-coupled nuclear reactor. A more recent experiment dubbed "System-G" had also been designed by Burns, but he noted that the more recent calculations for the current "System-H" design cast some doubt on the workability of the older design. Burns, however, seemed convinced that the combination of the System-H iron-ball antenna and De Aquino's physics would provide a workable experiment.

Disregarding for a second the physics of the System-H device, there is currently an additional issue of credibility surrounding De Aquino himself. From what I have been able to piece together from conversations from Steve Burns and a few other unnamed sources, De Aquino was very forthcoming about this project up and published a great deal of information between 1999 and 2001 about the theory, the physics, and several related topics on the Los-Alamos bulletin board – a semi-moderated bulletin board that apparently is a bit more lenient about the theoretical work that they will publish than some other physics repositories are.

Everything changed in 2001 – De Aquino, who had once been very active in publishing on the Internet, corresponding with Steve Burns in developing antenna designs for his experiment, and speaking with interested persons via email, went silent. The last publicly available correspondence involved with his active participation is the publication of the experimental results of the System-H experiment. He claimed that the device generated what can be basically termed "Antigravity", or "Negative Gravitational Mass" of approximately 220 gross pounds. The experimental apparatus is supposed to have weighed approximately 100 pounds due to the weight of the iron-ball antenna, which means that his experiment, which used a torsion balance to measure the weight of the ball, should have in fact moved into a negative weight range of approximately 120 pounds.

The fact that De Aquino went silent is very strange, and many people at that time started to question why he might have done this. His experimental results were published at generating 220 pounds of Antigravitational force at only 10 amps, meaning that he should have had an efficiency of somewhere around 120 pounds of lift per horsepower. This result is absolutely amazing if it is correct, and it was compelling enough to prompt people to write him, and even someone to drop by his residence in Brazil to obtain an interview with him about his work.

While De Aquino did respond to emails after 2001, he did not mention much about his work, other than the things that he had already published in a public manner on the Internet. No new research, no video clips, no "general follow up" information – nothing. I wrote to him on several occasions – on the one occasion that he did respond, it was only a "thank you" email with a copy of "Appendix B" attached - the very same Appendix that I was asking him a question about!

The story of the visitor to the De Aquino household in Brazil may hold the key to understanding his silence. Apparently a casual female acquaintance of a researcher was kind enough to drop by De Aquino's house while on vacation in South America, and she brought back a strange story about her encounter there.

The unnamed woman who attempted to follow up on De Aquino's experiment by dropping by his house was not met by De Aquino himself – rather, his daughter answered the door. The daughter explained that De Aquino's work had been taken over by the Brazilian military, and that De Aquino himself was on permanent sabbatical from the University – he was now working in a local government office building, and had been putting in many hours there.

Can this be the truth? I often like to ponder the supposition that perhaps the United States government might be involved with hijacking and/or suppressing new and amazing technologies, but I've always

considered the possibility in a very theoretical sense – never in terms of a practical, real-life situation. The indication from the story that the woman brought back from Brazil indicates that perhaps the Brazilian government was involved with the very same thing that the United States government has been accused of many times.

It is difficult to find evidence to support the supposition that De Aquino's abrupt lapse into silence is due to government influence, but there is at least one piece of evidence to support this conjecture.

During my inquiries about De Aquino's relationship with the Brazilian military, I came across a copy of a most interesting paper entitled "The Socio-economical effects of the introduction of Gravitational control", written by one Paulo Vicente, a Captain in the Brazilian Military's "CTEx- Weapons Systems Subdivision". This paper is a first draft of the document, published in November 2001 – right about the same time that De Aquino went silent. Additionally, out of the 20 or so references that this paper cites in the bibliography, four of De Aquino's papers on gravitational control are listed.

While it is possible that the Vicente Paulo document could be a fake, I would prefer to believe that it is a real and valid document establishing a link between De Aquino and the Brazilian military. There are a few reasons why I believe that this is the case – the most obvious of which being that if it was a fake, then it would probably have been written by De Aquino himself. In my opinion, the writing-style in the paper is not De Aquino's – it contains a different meter than De Aquino typically writes with, and the vocabulary and writing style indicate that it was written by someone less familiar with English than De Aquino himself is – something to be expected in Brazil, where the native tongue is Portuguese, not English. The differences are obvious enough that even an untrained observer can detect that the author was not De Aquino (who writes in text-book English), but someone else — for instance, even the capitalization in the title of the paper "The Socio-economical effects of the introduction of Gravitational control" is incorrect.

While the case can be made that De Aquino's research is either willingly or otherwise being suppressed by the Brazilian military so that they can study it for their own ends, the conclusion does not necessarily follow that the System-H design works. Martin Tajmar, a consultant on space-related physics for the European Space Agency, indicated that he is not convinced that the De Aquino experiment is grounded on solid physics, stating "further analysis from Donoghue & Holstein's approach leads to no deviation in the equivalence principle". Tajmar's basis for this belief is apparently more recent research on the foundation paper of De Aquino's theory – "Aristotle Was Right" by Donoghue and Holstein. Tajmar cites the analysis conducted by Professor Gabriel Barton from the School of Mathematical and Physical Sciences at the University

of Sussex as the basis for this rebuttal of Donoghue and Holstein's work.

Steve Burns, after careful review of the Barton paper, offers the following comment," This is an excellent paper but again inconclusive. Barton himself suggests experiment or a more extensive analysis to resolve the issue. The bottom line is it depends on metric interpretation as to what conclusion is drawn and no one is sure about interpretation."

Since Donoghue and Holstein predicted that the difference between gravitational and inertial mass would be incredibly tiny – on the order to 10·E-12 – the experiment that apparently discredited their experiment out to something like 1000 times less of a difference than they believe could easily have been corrupted. Tajmar indicates that the best way to tell is simply waiting for the results of "Gravity Probe B", which should be taking very precise measurements on the Earth's gravitational field when it launches in the near future.

There is some indication that De Aquino himself may be following the close scrutiny of the Donoghue and Holstein paper – in fact, according to Steve Burns, De Aquino apparently made some revisions to his work in 2001 to show that the theory still works based on the "basic Hamiltonian" despite whatever the case involving the Donoghue and Holstein investigation reveals. Martin Tajmar has analyzed the revision of the De Aquino theory, and firmly asserts "in his simplified approach using Hamiltonian etc., he also makes some basic mistakes."

For the moment, it would seem that the majority of scientists would agree with Martin Tajmar's criticisms of the De Aquino apparatus. However, the physics community does not unanimously condemn the De Aquino experiment, and I was pleasantly surprised during my research to find several scientists who support the possibility that the De Aquino theory may in fact work.

Dr Eugene Podkletnov, the famous Russian Materials scientist conducting research into super-conductive gravitational shielding at the University of Tampere, Finland, offered a following opinion on the De Aquino experiment, "I entirely agree with you on your approach to the work of De Aquino and in my opinion his system, when replicated exactly to his requirements, should bring positive results. Better analysis of various approaches might allow better understanding of the mechanisms of practical gravity modification".

Dr. Thomas Bearden, a retired Nuclear Engineer well known for holding views considered heretical by the mainstream of science, stated "the lower in frequency you go, the more gravity-effect you get, because you are affecting the time-domain energy". Bearden's comment attempts to address the basis for the De Aquino's theory, the assumption that an ELF field might

be used in certain conditions to create a gravitational shield. Bearden hypothesized that in physics, $\Delta E \cdot \Delta T$ = constant – in other words, by reducing the ΔT (time) variant you increase the amount of energy (ΔE) available to the closed energy system of each ELF photon.

It is important to understand that the support for the De Aquino experiment by Podkletnov, Bearden, and the few scientists arguing in favor of investigation of this approach to gravitational shielding stems from a curiosity about the basis for this experiment, which in the engineering world is a very unique approach that has never been tried before. De Aquino's experiment utilizing ELF waveforms with frequencies down to approximately 1 cycle-per-ten-seconds – this is a uniquely low frequency, and falls well below any large-current experimentation ever attempted – including military research into ELF deep-sea communication tools from the early 1980's.

Opponents of the De Aquino theory might argue that the United States military regularly uses high-current ELF waveforms for submarine communication, and has never reported gravitational effects as a result of those. However, a document entitled "Extremely Low Frequency Communications Program" on the American Federation of Scientists' website describes the frequency ranges used by the Navy in Projects Seafarer and Sanguine as being in the 40 to 80hz range – a large enough difference in frequency that De Aquino's own theorems would not show a noticeable gravitational shielding effect.

In a conversation with Steve Burns, he addressed several other differences between the military ELF systems and the De Aquino experiment such as the incredibly-high magnetic permeability required from the iron-core, which he feels precludes the military from ever having noticed a gravitational-shielding effect in their work with ELF communications. Another factor includes the weight of the Navy's apparatus being so heavy that any slight reduction in weight of up to even a ton would go unnoticed – Project Sanguine utilized an antenna 222km in length, which is also no doubt either buried or anchored to prevent movement from weather-related effects, and most surely weighed-in at least several tons.

Up until this point, I have resisted the temptation to reveal the "crucial piece of evidence" in the De Aquino case for three reasons. First, I wanted to provide an adequate setup to the story so that the reader could understand why accurate and concise information from De Aquino himself is currently impossible to come by. Second, I wanted to show the reader that at the present time, the outcome of the De Aquino experiment is still up in the air. An experiment to demonstrate his apparatus could go either way at this point – either in his favor with a working Antigravity device, or against him with a complete experimental failure. The third reason is that the "crucial piece of evidence" may not even exist.

I had given up on finding any new information on the De Aquino experiment and tried to put the experiment out of my mind, when three weeks later I mentioned it in passing to Reed Murray – a former investigator for the Disclosure Project, a renowned UFO-investigation organization. Surprisingly, not only did Murray know the name "De Aquino", but he also proceeded to tell me that the Disclosure project had received a copy of a video-tape in which De Aquino successfully conducts the System-H experiment, causing the iron-ball to degravitate in a slow manner exactly as De Aquino's theory claims it will.

Murray, who no longer works for the Disclosure Project, recalled seeing this video a few months ago, and in his description the video involves a man that he described as elderly in a rather eclectic-looking laboratory standing over a ball attached to what he called a "pendulum" – this is an almost perfect layman's description of the De Aquino device, and I assure you that I had not told him about what the device looked or performed like before he said this.

Murray then further startled me, when he said that he couldn't understand what the man in the video was saying because it was apparently in Spanish, but that when the man switched the power on, the ball began to slowly lift on the balance!

I took the information that Murray had given me and contacted Space Energy Access Systems, where Murray had indicated that the tape was now most likely to be found. Jonathan Kolber, the Vice President of Planning and Product Development at SEAS, also remembered seeing the tape. He recalled seeing the same tape that Murray had described several months ago, and agreed with my recounting of Murray's story about what was on it.

Neither Jonathan Kolber nor Reed Murray apparently realized the value of the De Aquino video because of the Portuguese audio-track that neither of them spoke. Without knowing in advance that the torsion balance in the De Aquino's tape is not acting upon the iron sphere, neither of them would have immediately realized that the iron-ball is actually exhibiting a negative-gravitational force. Additionally, without the knowledge that the iron-sphere on the balance is composed of pure-iron, it would not be easy to discern the true weight of the device being levitated, which is approximately 100 pounds. Kolber's team set the tape aside pending further information, and it subsequently became lost among the other materials that they frequently receive.

For the time being, Jonathan Kolber's group is actively looking for their copy of the De Aquino tape, which they believe is still archived somewhere onsite at SEAS. Perhaps within the next month, enough will be known about this experiment to either validate De Aquino's theory as being a fraud, or as the final crowning achievement of 20th century technology.
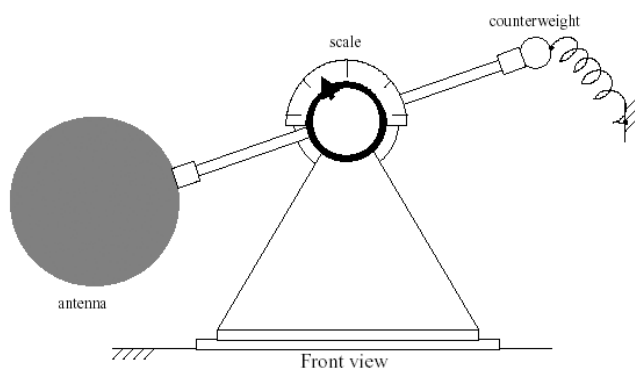
System-H Balance

This schematic shows the balance assembly used by Prof. De Aquino to test the forces generated during testing.
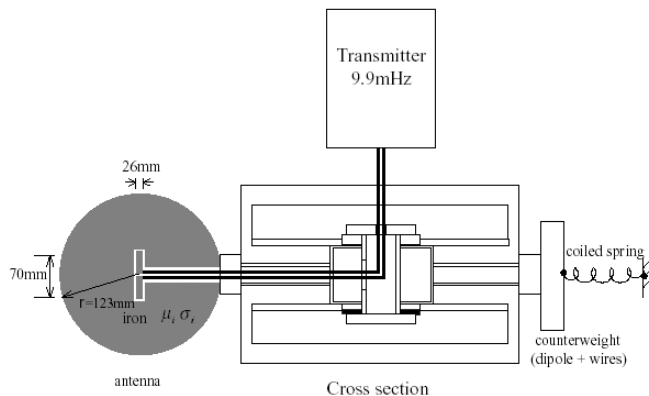
System-H Assembly

This schematic shows the System-H assembly to provide ELF wave signal to the interior of the 60kg iron-core transducer.

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Ferrites and Ferromagnetics Free Energy Generation

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There is proposed the way of ferrites and ferromagnetics free energy generation, which is based on the ability of inductance to exchange by temperature with medium.

For practical aims the quality of ferromagnetic as materials of inductive systems is assessed by specific loss (Wt/kg) appearing in the process of magnetic reversal at frequency ratio f and induction B=const. For example, if f=50 Hz there are 50 cycles of magnetic reversal and 100 cycles of magnetization-demagnetization (MD) for 1 second. In Electro-technological steel of 1100 type there is 7.5 Wt/kg loss if B=1.5 T, i.e. the specific loss of steel is 7.5 kWt/t, 64.5 kWt/m^3. One magnetic reversal takes 20 milliseconds and in this case temperature of steel heating is 36·10^{-6} °C higher for this period of time. Hysteresis loop is the integral power universal indicator of the sign reversal MD cycles. Its area is in proportion to the energy loss spent for Joulean heat, which is generated by whirling currents, by magnetic reversal, i.e. by the reversal of B$_r$ (residual induction) sign. The classical definition of magnetic permeability is following:

$$\mu = \frac{B}{\mu_0 \cdot H} \qquad (1)$$

where μ_0 is permeability of vacuum. Then we need just to change it:

$$\mu = \frac{B \cdot H}{\mu_0 \cdot H^2} \qquad (2)$$

and it becomes obvious that this equation is the quotient of magnetic energy to the energy inserted into inductance at magnetization. This energy is generated, induced by magnetic energy, and accompanied by heating. As usually $\mu >> 1$ then energy source

$$\left(\frac{B \cdot H}{2} - \frac{\mu_0 \cdot H^2}{2} \right)$$

is not the source of current but energy of magnetic itself. It becomes magnetic because of ferromagnetic ability to increase spontaneously the orientation ordering of electron (or domain) spins and to change simultaneously the heat capacity at formation of magnetization. Specific quantity of the appearing magnetic energy is

$$A_1 = \frac{B \cdot H}{2} - \frac{\mu_0 \cdot H^2}{2} = \frac{1}{2} \mu_0 \cdot H^2 (\mu - 1) \frac{J}{m^3} \qquad (3)$$

As the process of magnetization begins with $\mu_1 > 1$ (since the residual induction B$_r$ > 0) then the available for picking energy is equal to:

$$A_2 = \frac{1}{2} \mu_0 \cdot \mu_1 \cdot \left(\frac{\mu_{max}}{\mu_1} - 1 \right) \cdot H^2 \frac{J}{m^3} \qquad (4)$$

Its absolute value is

$$A_2 = \frac{1}{2} \mu_0 \cdot \mu_1 \cdot \left(\frac{\mu_{max}}{\mu_1} - 1 \right) \cdot V_0 \cdot \frac{\omega^4 \cdot i^2}{l^2} J \qquad (5)$$

if V_0 is the magnetic volume, ω is the number of turns of inductance winding and l is the average length of ferromagnet magnetic line. Obviously, $A_m > \frac{1}{2} H^2 \cdot \mu_0$ since magnetizing current spents part of its energy to Joulean heat Θ_J in such a way that

$$A_m = 0,5 \cdot \mu_0 \cdot H^2 \cdot V_0 + R \int_0^{t_m} i^2 dt \qquad (6)$$

where R is the resistance of circuit of magnetizing current i_m, and t_m is the magnetizing time. The efficiency of picking of available energy should be assessed as multiplying of A_m

$$\varphi = \frac{A_d}{A_m} = \frac{0,5 \cdot \mu_0 \cdot \mu_1 \cdot \left(\frac{\mu_{max}}{\mu_1} - 1 \right) \cdot V_e \cdot \frac{\omega^4 \cdot i^2}{l^2}}{0,5 \cdot \mu_0 \cdot \frac{\omega^4 \cdot i^2}{l^2} \cdot V_e + R \int_0^t i^2 \cdot dt + \Theta_F} \qquad (7)$$

where Θ_F is the loss of whirling currents. Only if $\Theta_J \to 0$, then $\Theta_F \to 0$

$$\varphi_{max} \cong \mu_1 \cdot \left(\frac{\mu_{max}}{\mu_1} - 1 \right)$$

(8)

μ_1 value is in the range of $\sim 100 \div 10000$, is nondescript. Since $\Theta_J >> 0$, then φ depends on 8 parameters in (7) and can have larger value. Geometric volume of magnetic V_0 is rarely used totally; effective volume $V_e = V_o \times \beta$, $\underline{\beta} < 1$. Since the power volume density of conversion cycles is assessed only by V_0, i.e. by

$$W_d = f \cdot \left(\frac{A_P - A_H}{V_0} \right)$$, then from (7) we can see the

ways to multiply this power.

Since "non-current-source" (which makes only H) is accepted then internal energy is generated by exterior forces, which make energy exchange with the magnetic. The following expression can be proposed [1] for the unit of isotropic dielectric volume, if designations are changed:

$$U = U_0(T) + \frac{1}{2}\mu_0\mu H^2 + \frac{1}{2} \cdot \left| \begin{matrix} \left[\frac{\mu_0 \cdot \partial \mu}{\partial T} H^2 \right] \cdot T \\ or \\ \mu_0 H^2 \left[\frac{\partial \mu}{\partial T} \cdot T \right] \end{matrix} \right| \quad (9)$$

The very last member shows that the energy type can be either thermal $\left[\frac{\mu_0 \cdot \partial \mu}{\partial T} H^2 \right] \cdot T$ or electric

$\mu_0 \cdot H^2 \left[\frac{\partial \mu}{\partial T} \cdot T \right]$. It is an extreme value, but in fact they

are mixed and represent a conglomerate. Inductance and medium are Opened Systems from the point of view of thermodynamics. It must be proved by the fact of their free energies generation.

Firstly it is necessary to choose "minimally" possible comparison energy A_I; which is $0.5 \cdot 10^{-6}$ sec., current and resistance choice depends on circumstances.

Choosing $t_i = 0.5 \cdot 10^{-6}$ sec. we have extremely minimized (A_I) without deterioration of measuring possibility. Secondly we need to interpret the response. The repeated impulse initiated by the initial one would be shown at the oscillograph screen as an exponential curve. It stops at zero scale division when kinetic energy changes into potential one. It is very important. We are not interested in their behavior any more: they can stop right here or make some damped oscillations. The energy of the repeated impulses can be described by the following expression:

$$A_{II} = \frac{\Delta t}{R_{II}^2} \sum_i U_i^2 \quad (10)$$

and energy of the initial impulses can be described by the following one:

$$A_I = a \cdot \frac{0.5 \cdot 10^{-6}}{r} U \quad (11)$$
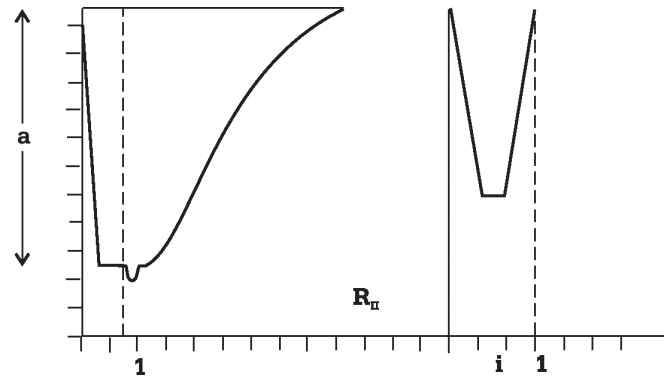
Fig.1

Circuits of the device are shown on the Fig.2. There are a double-beam oscillograph S1-96, a frequency generator G5-54, and a switch on a transistor 2T827A. Input capacitance is 25pF and resistance is 1m Ohm. All inductances are in the maximal magnetic permeability conditions. Measuring was made for the frequency of 30 kHz. The accuracy was about 8%. Free energy for this approach is true free and it is limited only by above Curie point. It is the same everywhere below the Curie point (i.e. in air, vacuum or space)

Example: Material is 65 NM, a=2V,

$$A_{II} = \frac{1 \cdot 10^{-6}}{11 \cdot 10^3} \cdot 15,33 = 1,3936 \cdot 10^{-9} J.$$

$$A_{II} = \frac{1 \cdot 10^{-6}}{11 \cdot 10^3} \cdot 15,33 = 1,3936 \cdot 10^{-9} J. \text{ i.e. } \lambda = 2.37.$$

Certainly, there is a question what is the value of cooling effect? From the example it is seen that 65 NM material shows $1.3936 \cdot 10^{-9} \cdot 30 \cdot 10^3 = 41.808 \cdot 10^{-6}$ J/sec, it is impossible to observe such a value experimentally.
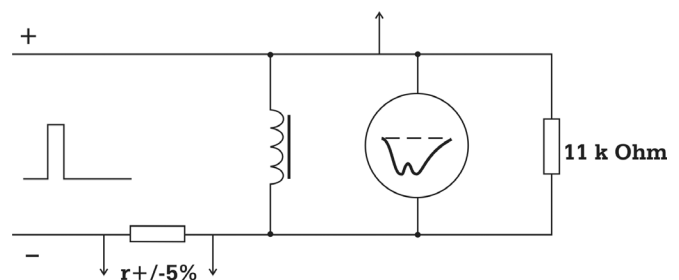
Fig.2

The results are shown in the Table 1:

Table 1

Material	H_c, A/m	L, Henry, 10^{-3}	R, Ohm	U, V	r, Ohm	$\dfrac{\mu_{min}}{\mu_{max}}$	V_0, cm³	λ	Curie point
81 NM	2.07	495	5.4	1.16	2200	$\dfrac{50000}{139\cdot10^3}$	6.15	16.3	260°C
79 NM	2.0	10.2	0.2	1.27	510	$\dfrac{30000}{130\cdot10^{-3}}$	17.9	2.96	430°C
65 NM	3.2	100	0.7	1.63	510	$\dfrac{1500}{150\cdot10^3}$	5.91	2.37	____
50 N	7.9	51.9	4.1	21	510	$\dfrac{3000}{45180}$	30	0.984	500°C
2500NSM-1	16	15	0.15	28.5	510	$\dfrac{2500}{4500}$	242	3.25	>200°C

These data are compared with those data, which were obtained before by another method. That method was a comparison of A_d ("demagnetization") and A_m ("magnetization") with the same materials. The experiment with 50Ncore was astonishing because it demonstrated nothing but ~1 magnetic generation index. It turned out that its λ is equal to ~1 too. The method of generation is closely connected with hysteresis loop that is the reason of magnetic energy.

The ratio $\varphi \approx \mu_1 \cdot \left(\dfrac{\mu_{max}}{\mu_1} - 1 \right)$ allows to rely on the increase of the coefficient of generation λ, for example $t_i << 0.5 \times 10^{-6}$sec., since value of μ_1 is still rather high.

Conclusions. The generation of the magnetics has been made:

81 NM	with the index	16.3
79 NM	with the index	2.96
65 NM	with the index	2.37
50 N	with the index	~1
2500NSM-1	with the index	3.25

Nature gives us an opportunity to solve the problems of power engineering. Will we use the opportunity?

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Key Concepts for the Conversion and Control of GRAVITATIONAL Energy

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PRESENTATION OF RESULTS of PRIVATE RESEARCH in MAGNETICS and ELECTROGRAVITCS, based on UNIVERSITY STUDIES in ELECTRICAL ENGINEERING, alternative studies, and God-given common sense

Introduction

A QUALITATIVE (NON-MATH) EXPLANATION, REVISED SINCE

Since I first wrote this article 5 years ago, I have gained a few further insights into the possible nature of the aberrant inventions of people like Edwin Gray, USA, pre-1975, whose motor ran cold under extensive testing over 200 hours (see end section).

The common feature of all similar inventions was that the device drew heat IN (cooled down) from its surface under load, and in many cases also grew lighter in weight. Though many different terms have been used by commentators in this field, the term "gravitational energy" stands out as the most suitable term to use. This is because such objects seem to lose some of their weight due to gravity under certain conditions, as yet generally unrecognised, implying that a shift in energy density has taken place. In connection with this, no-one has yet been able to explain EXACTLY what Landau (a Russian physicist, Nobel laureate, 1962) meant by the concise formula he derived for gravitational energy density, or for that matter exactly HOW we may engineer it to produce a new method of energy conversion, involving a change in the DIRECTION of heat energy flow within a local environment - i.e. Inwards, (endothermic) to the source of negative energy!

Paraphrasing from older preface

It has long been a practice for electrical engineers to design waveguides so that their geometry will allow electromagnetic waves to propagate in the correct mode and direction. Resonant cavities have also been in use, in which a high "quality factor" enables a large proportion of energy to be stored per cycle, compared with the amount dissipated. Devices like masers also allow coherent electromagnetic transmission of signals from one point to another with minimum attenuation and nearly no Faraday rotation. However, all these devices suffer losses and basically follow the principle of "energy in-energy out" with some left behind on the way through. A "new" type of device is needed for the super-efficient conversion of energy from potential to a useable form in a localized environment, but which is radically different from the classical transformer model.

The normal transformer model is here seen as part of the scheme of things, but only as a means of excitation of the locally contained body of GRAVITATIONal energy (explained later). Suffice it to say, that this gravitational energy density is distinct from (but related to) the "gravitational potential energy" discussed in most textbooks, and is totally independent of mass, thus is not "atomic" but is dependent on the local "g-force", thus called "g-strain energy" [1,2], according to Landau's equation.

$$\text{En. dens.} = - g^2/8\pi G$$

According to Seike/Landau, there are 4 states of energy, including the "occupied" and the "unoccupied" states of negative energy) - not an insignificant amount of energy when calculated out!

Fundamentally, according to this different viewpoint, the basic rules of Electrical Engineering are still to be kept, but are regarded as pointers to indicate what goes on inside the "black box" where measurements can only be made around it, but not inside. It should also be recognized that even a simple block of semiconductor material, "degenerate" or otherwise, can display all the properties of a conventionally wired circuit e.g. resistance, conductance, capacitance and inductance, when saturated by an E/M field. Its interaction with this field can be predicted if all these properties are known, and these can be determined by a variety of measurement techniques. Perhaps the most closely related phenomenon in connection with this is that called GYRO-MAGNETIC resonance.

With these things in mind, a better understanding of many physical effects can be reached, e.g. acoustic resonance in crystals, electrostriction, the HALL effect etc. In practical terms though, losses may be compensated for by applying principles of super-resonance and self-organization - the laws of conservation of energy, thermodynamics etc will still be intact, but energy, usually in heat, will be drawn from the local environment to the center of the system to account for work being done by a load linked around/across the semiconductor transformer block, which acts as an interface. All of its parameters can and should be predicted and controlled by the application of well-worn formulae, but seen and used from a different aspect, e.g. impedance matching.

As in gyromagnetic resonance, where the actual energy source is at the level of the electron and its gyroscopic spin, here the actual source is the all-pervading gravitational energy, whose density is greatest at ground level, for our purposes.

THE NEED FOR A SIMPLIFIED, YET "COMPLEXIFIED" PHYSICS

A typical textbook on semiconductor physics will contain many involved formulae dealing with aspects like dispersion, surface scattering and absorption, charge carrier densities and temperature considerations etc. All of these considerations are valid, but deal with things at the microscopic level. A "macroscopic" view of the semiconductor is needed, where its behaviour as a whole "block" is observed and calculated on. In this monologue, it is assumed that the system starts off at room temperature, while the only variables or "degrees of freedom" are frequency, area, length, angular measure, charge and/or flux. The first and second time derivatives of the last two produce voltages and currents, while all of the above combine to produce a variable impedance (Z). The four quantities mentioned earlier (R, L, C, G) are actually frequency-dependent as well, but at relatively lower frequencies, this fact can be neglected.

After some consideration of various similar happenings in physics, it can be suggested that the following terms are more or less synonymous:

"real/active/cosine/absorptive/longitudinal....

"imaginary/reactive/sine/virtual/dispersive/transverse...

Another way of interpreting this is to say that each quantity has both its own MAGNITUDE and associated PHASE angle, this being either negative or positive.

An extension of this view over all of physics would clarify many obscurities.

EXAMPLES of WELL-KNOWN ORTHOGONAL EFFECTS in PHYSICS

The term "orthogonal" is here used to describe a "complex" quantity, and simply means at "RIGHT ANGLES". High school students should be aware of the "right-hand rule" where a force is produced at right angles to both the direction of current in a conductor and the applied magnetic flux.

As an example, it has long been recognized that inductance and magnetic reluctance depend on the material's permeability to the magnetic field. This quantity is not only frequency-dependent and thus divided into two related vector components, called the "dispersive" and the "absorptive" parts, but also its real/dispersive component may become negative under certain conditions! [4] Following on from this, the well-known solenoid/coil (inductor) with its inductive reactance and series wire resistance combine to produce a vector sum called impedance, in the frequency domain, familiar to electrical engineers.

This situation is duplicated regarding permittivity to an electric field, and its closely-related refractive index [5], and for many other quantities (if not all?) While this situation may at first seem very complicated, it is reflected at the macrocosmic "block" level as being simply "n" or "p" type behaviour, as exhibited by the Hall effect test (output voltage positive or negative) In a.c. theory, "complex numbers" are used to calculate total impedance and power in circuits in the frequency domain. Being much a misnomer, the term "complexify" is thus introduced here to describe the simple analysis of quantities into both their "real and imaginary" parts.

The "Hall effect" is another case, where an output voltage will result at right angles to both the applied field and an input current through a semiconductor. This behaviour is duplicated in plasmas used in the magnetohydrodynamic process, developed in the sixties for alternative power generation [3].

It appears though that this process has only been used in stead-state field applications, whereas pulsed field applications on plasmas, regarded as gaseous semiconductors (with parallel conductance// inductance), would yield different results [4,5].

CONSISTENCY of COMPARISON between MAGNETICS and ELECTROSTATICS

It has been stated that in electromagnetic transmissions, energy is being repeatedly shunted backwards and forwards between the magnetic and the electric fields. While this is fairly easy to visualize regarding transmissions of waves through air or solid media, it is harder to recognize in the standing wave, which will be vital to the subject here. However, using basic equations which form the keylinks between electromagnetism (E/M) and the visible world, a concise mathematical model can be built up - for e.g. with the time derivatives $d\Phi/dt$ and dQ/dt of flux and charge, producing voltage and current respectively. These then need to be converted to the "frequency domain" using the transform $d/dt = \omega$ (standing for frequency in rads/sec) What propagation theory does tell us is that the electric field is polarized at right angles to the "induction" or magnetic field. Taking this further, the E field existing between the plates of a capacitor would appear to be purely an electric (static) field, but in fact a component of magnetic field (H) exists at right angles to it. Likewise the field of a permanent magnet may manifest as being purely magnetic, but has an electric component as well!

Not only this, but both fields experience a complex impedance consisting of both real and virtual parts, combining to produce a complex flux/charge ratio (Z). The virtual part in magnets is due to the gyromagnetic tendency (frequency of precession) induced by the field's strength. By a close comparison between this and electrostatics, a GYRO-ELECTRIC frequency can also be predicted and calculated, based on the impedance of free space. These statements can be summed up thus:

- A magnet's equivalent internal "circuitry" tends to be that of a series R-L circuit

- A flat capacitor has an equivalent parallel G/C circuit (G: Conductance)

- Both aspects can be combined into one "monolithic" block

- All aspects can then be tuned to each other to provide a desired resonance for a signal, which is applied to excite an innate sink/source of potential energy.

This is based on a discovery by Faraday in 1831! (Are we really ahead of his times?) He found that a conductive magnetized disc while spinning creates a potential difference between its periphery and its center (see his diary, of Dec.16, 1831 [6]). This enhances the existing E-field, provided the direction of spin is correct.

Super-efficient generators have been built on this principle (B. de Palma) and sponsored at government level in India (P. Tewari) [7].

DISTINCTION BETWEEN ELECTROMAGNETIC AND 'WIRED' CIRCUITS

As indicated above, a "stationary" field experiences an impedance in solid materials polarized by this field, due to the internal structure of the material. This material is usually heterogeneous, consisting of elements which are either more conductive or more insulative to that field, but the macroscopic behaviour of this semiconductor material will tend to be just like that of a two-element wired circuit, with either a leading (capacitive) or a lagging (inductive) power factor (magnetic field lags electric field in the latter). The main distinction here is that the semiconductor block will become more or less a conductor of the FIELD, whereas the wired circuit conducts current.

THE NEED FOR INTERFACING

In order to provide a super-efficient device for transferring energy to/from potential form into useable form, in a predetermined direction, the need for a finely tuned interface arises, which will match the physical container of the source of negative gravitational energy to a conventionally wired circuit containing a load, to either dissipate or sink the energy, depending on whether heating or cooling is desired.

Synonyms for this interface in the relevant literature include:

Transformer/Gate/Impedance Matcher/"Crystal"/ Secondary Source/Collector... [9]

More familiar example of such interfaces includes the "balun" for matching between parallel and co-axial cables, with its semi-bifilar windings over a ferrite bead. It is said that this induces a transverse and a longitudinal component, which combine to produce an impedance match between the two designs. It has been found that ferrites also possess a very high dielectric constant, over 100,000 for Barium ferrite and 7,000,000 for Tin Ferrite! *(For a detailed discussion of this, see: [8]).* Because of this feature, a considerable capacitance is created inside the windings and it becomes possible to achieve a positive/negative/zero reactance in this type of device. A lesser-known type of interface is the "stub" transformer used for tuning transmission lines.

However, the type of transformer proposed here is an essentially wireLESS one, operating internally via E/M induction and its orthorotation. Synonyms for this term include:

"RIGHT Rotation/VIRTUAL Rotation/Translocation..."

Even in formal transmission theory [10], a transformer's impedance must be equal to the GEOMETRIC MEAN of the source impedance and the load impedance, thus the proposed "chip" must be engineered accordingly, by precise doping and shaping. Failure to do so will cause a noticeable loss of efficiency in energy transmission.

The BENEFIT of INTERFACING - SYNERGISM

The above term is taken to mean the "introduction of additional energy from another source". Not only does correct interfacing decimate power losses, but orthogonal interfacing allows for the introduction of a power gain derived from the stored energy of gravitons whose combined body of energy may be made to resonate, akin to "gyroscopic resonance interaction" - where it is due to the stored combined energy of unpaired electron axial spins. (Electrons are presented here as an analogy for the less familiar graviton.) It has been noted that the gyroscope has some anomalies such as weight loss [11] and this also applies to the gyroscopic spin of electrons when acted on by a "magnetic wind". Under the influence of such a strong magnetic field, the chaotic behaviour of "Brownian motion" also becomes more orderly, and the laws of thermodynamics appear to go into "remission". Such is also the case inside a superconductor, where dissipative resistance has approached zero. (In fact, a magnet has been described as a room-temperature superconductor in reverse, its magnetism causing cooling, using a type of electron spin resonance to 'tap' reluctance)[12].

Using modern ESR and NMR techniques, a gyromagnetic resonance is achievable, where energy is exchanged [13] between a source of transverse excitation and the crystal lattice of the material, usually a ferrite. Collier's Encyclopedia [14] described it thus: "phase relationships are established and the resultant magnetization will be found to process with the angular velocity of the individual components". An adaptation of this technique can allow the locally defined gravitational field to organize itself into a toroidal vortex, acting kinetically as a medium of synergetic exchange between two wells of potential energy - the outer and the inner.

THE NATURE of the INTERFACE

As stated, the interface block need only be a solid piece of material, preferably an unmagnetised ferrite, ceramic or cermet, possessing considerable resistivity, conductivity, permeability and permittivity. Its consistency and dimensions should be tailored so that its impedance approaches the geometric mean of source and load. It becomes a kind of negotiator between the ultimate insulator, represented by free space, and the ultimate conductor - the "superconductor". A cubic shape will certainly simplify calculations. Depending on whether it is pulsed with an electric or a magnetic excitation field, its internal structure will act either inductively or capacitively - one will predominate over the other, each aligning itself orthogonally to the other. The ideal interface will also have its longitudinal and transverse relaxation components set in balance with each other, allowing a harmonization of the corresponding relaxation time constants (generically described as: L/R and C/G) and the resonant frequencies thus allowed. *(I am indebted to Thomas Bearden for these concepts, though I do not agree with the final conclusions in his monologue "The Final Secret..." op.cit. as they did not stand up to closer analysis).* It may also bring in acoustic and/or mass-aggregate resonances. The result will be the tuning of the complex impedance (Z) and a complex "turns ratio" (n), the square of which transforms the load impedance, as sensed by the source.

PREPARATION AND EXCITATION OF THE INTERFACE

The preparation required involves the doping and shaping of the material block so as to harmonize its four electrical properties, and its pulsation with a vector-zero magnetic field, preferably via a bifilar winding. The frequency of such pulsation needs to also harmonize with both the internal relaxation frequencies, and also be related geometrically to the smallest dimension of the material block. The rationale behind such "vector-zero" stimulation is the mathematical work of E. M. Whitaker [15], involving partial differentiations, concluding that the summed result of two scalar functions becomes a resultant vector function. (It is interesting that even Brailsford, a classical physicist, discusses the "effective response of the ferrite to the two oppositely-rotating magnetic fields...in the medium!" [16] described as "vectors" (also called phasors in Elect.Eng).

Here, the applied bifilar pulsations will create "virtual pairs/phase conjugates" which will cancel each other's vector components out, allowing a scalar pulsation to pressurize the internal structure of the body of gravitational energy within, which itself is also normally a non-polarized scalar quantity. The pulsed pressurization of this scalar quantity (defined and delimited by its material boundaries) by the applied scalar excitation signal, will result in a polarizing and resonating of the said body of energy (production of a "potential gradient"), which may then be enabled to draw/dissipate local heat in/out through the conductance of the prepared load (heat may be dissipated out through the same load). Indeed both the magnitude and the direction of this energy flow may well be controlled by phase changes in the applied excitation signal(s).

Also, it will be appropriate for the system to be matched to the impedance of free space (Z = 377 Ohms) preferably via the golden mean ratio, so as to allow for better transfer of gravitational energy from "free space" to the defined space. Thus there will be a cascading of impedances from free space, via load, block and source. It has been suggested by Robert Adams, N.Z. that permanent magnets may act as "gates" between the reservoir of "space/negative" energy and a physical load - while this may be so, and while magnetic and static fields are both manifest aspects of the underlying aetheric energy field, their use should not be necessary when the nature and extent of the gravitational field is recognized - it will become possible to resonate this underlying field directly, without the intermediary action of a magnetic/electric field! However, if a magnetic field is used in the scheme of things, it will be necessary to know its energy density, so as to match it to the underlying field's energy, and to the intended amount of dissipated energy!

PRINCIPLES of INTERFACIAL CONVERSION

The interface may be used as a transformer or as a transducer. The former is defined as a device, which changes the DIRECTION of energy flow; the latter changes its FORM. In most observable cases, such an interface changes the direction of the apparent energy flow by 90 degrees, and directs it to a prepared load. However, if used as a transducer, the interface itself will have to be made into a loaded transformer, standing between two sources of potential energy, one being outer and one inner. In this case it must be physically separated into its capacitive and its inductive parts, in order to let off energy via one or the other. During the potential/kinetic energy flow in either half-cycle towards equilibrium, akin to expansion and contraction, energy may be dissipated or absorbed by the load. Such an arrangement is harder to visualize as it is less conventional, but both parts may be built concentrically into one cylindrical shape. Super-efficient static-to-current converters/transducers of this type have long since been made and used by the Christian Methernitha community in Switzerland (see for e.g. [17] and also: http://members.tripod.it/~testatikmachine/ introindex.htm).

SUCCESSFUL SYNERGETIC CONVERSIONS LAST CENTURY

Apart from the one mentioned above, other noticeable cases have included Tesla of Colorado Springs, who earlier this century transmitted large amounts of power through the ground! to distant locations from a tower on Long Island (see for e.g. [18]).

Incidentally, radio broadcasts were also sent sub-terrestrially around the end of WW1, as evidenced in

the 'Electrical Experimenter' (USA) June, 1919, p. 136, describing the patents of J.H. Rogers of the same year. Such transmissions were sent withOUT interference or fading, being far superior to today's techniques! (Why are still wasting so much energy?) T.H. Moray was an outstanding case of a maverick who repeatedly baffled authorities by drawing many KiloWatts of power out of the atmosphere in various deserted locations of Utah, USA, using only an aerial and earthing point AND a "black box" containing some high-grade germanium! [19,20].

Edwin B. Gray was another inventor whose electric/ magnetic motor broke some of the "rules" under test by engineers, running COLD and failing to discharge after 203 hours under load, while putting out 7460 KW (see patent extracts from US Patent no. 3,890,548, filed June 17th, 1975).

The ''Vacuum Triode Amplifier' was another well-documented achievement of the solid-state type. Built by an elect.eng. graduate of M.I.T. called Floyd Sweet, one version consists of 4"X 6"X 1" magnets with bifilar and monowound coils between the magnets, a video-taped test of 1987 has metering instruments showing up a 10 volt, 300 microwatt signal input producing a 120 volt, 600 watt output, synergistically!

Closer to home, the highly-qualified N.Z. engineer Robert Adams has built 'variable-reluctance pulsed magnetic' motors, one of which was tested by a Ph.D. systems engineering scientist in the USA showing a "VAX computer system analysis of 1,254% efficiency" - see Nexus, vol. 2, no. 19, p. 56 (April-May '94)

See also:
http://www.padrak.com/ine/NEN_4_8_1.html
http://www.aethmogen.com/pubs/app2001/19trans/01txt.shtml

The list could go on, but it is proposed here that a common thread runs through all these achievements, and is related to the paradigms explained above.

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OBJECTIVE:
A position in electrical engineering where my research & work in the conversion and control of gravitational energy can be effectively utilized to improve people's daily lives – see:
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1985-1987 Diploma in Biblical Studies, Baptist Theological College of Queensland, Brisbane, Australia,

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1997-2000 Self-employment with computer maintenance and reselling, and housewashing, in Kingaroy and Toowoomba, Queensland.

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1995 Tutoring in German and Physics in high-school context, Queensland

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Analysis of the Additional Energy in Vortices and Vortex Heat Generators

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Abstract

There was made the analysis of the additional energy formation processes in vortices and vortex heat generators from the viewpoint of new hypotheses of the matter structure and physics of vacuum. It is shown that additional energy release takes place due to the density change of vacuum-aether in the center of vortex that causes electron "emanation". It means that, being in vortex effective area, matter electrons release and absorb antineutrino.

There was discovered the optimum vortex structure of vortex heat generators, designed for water heating. The design of the test bench was developed to examine the hypotheses and to increase the effectiveness of vortex heat generators. The construction of the test bench is underway now.

The Analysis

Nowadays it is practically proved that in the vortices both of artificial origin (various vortex heat generators) and of natural origin (tornados, ball lightings, ocean waterspouts) there are physical processes, energy of which exceeds energy consumption, required for their creation. Sometimes effects of acceleration or deceleration of time course accompanies these processes, by teleportation etc.

In different types of vortex heat generators, for example in heat generators designed in the form of "Rank's tube", the effectiveness of conversion of electric energy into heat energy often exceeds 100%. It should be noted that the difference between the understanding of output and efficiency at the value above 100% consists in the fact that energy conservation law is valid in the second case, since the additional energy is released by energy source, which is unknown for modern science.

There are different theories, which try to explain this phenomenon [1]. In our own explanation of the processes we are developing new approaches to the matter structure and to the physics of vacuum [2,3].

To understand the processes, which take place in vortices and vortex heat generators, let us outline some of general aspects of the theory [2,3].

As distinct from the previous understanding of aether as purely material medium, aether-vacuum, which fills the whole Universe, represents a matter not in pure form but in the form of energy clots. These clots create elastic spatial lattice, which is like crystal one and which has the similar properties (see Fig.1, 2). Aether demonstrates the properties of the elastic lattice only at exitation time, i.e. at time of electromagnetic waves transmission through aether or at clotting of waves into matter (see Fig.3). Therefore aether is material only in the energetic sense, as if it has "pseudomass". Due to this fact we are able to move easily throughout the aether while the experiments to reveal an aether wind failed.

For any elastic medium there is a resonance frequency, which is defined by lattice spacing, i.e. there is a minimally possible wavelength for this elastic medium. If aether oscillations, caused by electromagnetic waves, have less wavelengths they will be unstable that some time or other will cause twisting of electromagnetic wave in the form of a stable "vortex", which is the very elementary particle of matter. As can be seen from the Fig.3, electron-positron pair is created here.

Energetic node

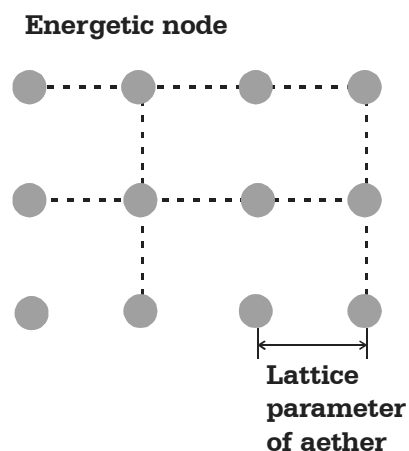

Lattice parameter of aether
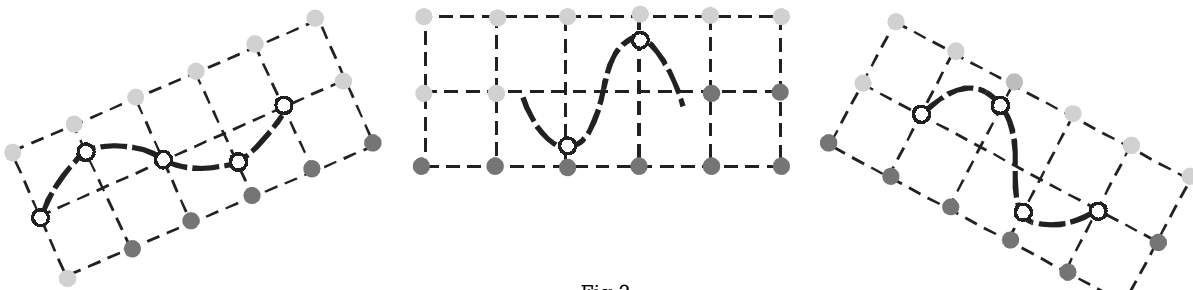
Fig.1
Energetic aether structure

Fig.2
Aether deformation at time of electromagnetic waves transmission. Energetic nodes of aether lattice are equipped only at time of transmission and in the direction of electromagnetic waves transmission
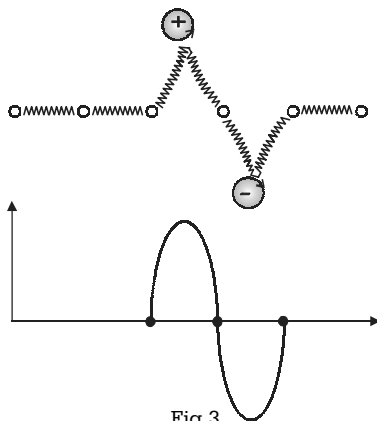

Fig.3
Creation of electron-positron pair from γ-quantum upon the critical deformation of aether

Using the notion of "resonance" of aether lattice and knowing the electron to be a minimal mass and the most lightweight matter particle, we can calculate the lattice parameter of aether lattice and its density. They are respectively equal to $6.06 \cdot 10^{-13}$ m and $1.14 \cdot 10^{36}$ MeV/m^3 ($2 \cdot 10^3$ g/cm^3).

As is well known, electromagnetic oscillations are transverse ones. *Editorial: In Tesla's conception it is longitudinal ones.* At these oscillations there is a shift removal of parallel planes relatively each other and lattice parameters do not change. At that, however, compression stress (along BD line) and tension stress (along AC line) simultaneously appear between these planes (Fig.4). These stresses finally give opposite direction of swirl of elementary vortices. By convention, there are positive directions at compression and negative at tension, that defines a charge of particle (Fig.4, 5).
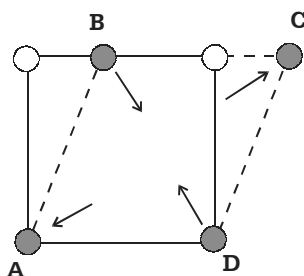

Fig.4
Appearance of tension and compression stresses at the transmission of quantum of electromagnetic wave through aether
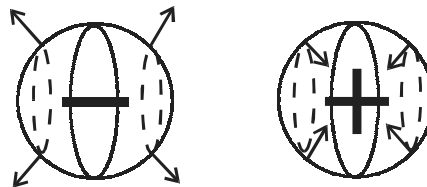

Fig.5
Creation of positive and negative charge of elementary particle

In aether with the given energetic density and lattice parameter the only stable vortex is that, which has energy equal to the energy of creation of electron (Fig.6). For example, if we examine muon, which has the similar to electron type of structure, then changing into electron, muon vortex will liberate the excess of energy in the form of muon neutrino and electron antineutrino. If the energetic parameter of aether lattice were 207 times less than in our case, i.e. aether density were more, then vortex-muon will be stable [2].
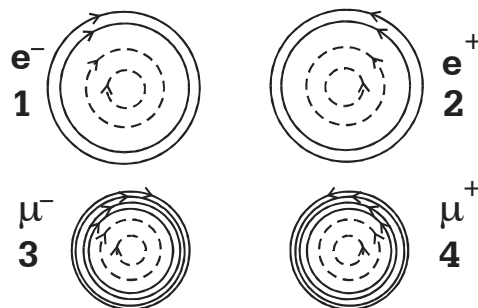

Fig.6
Scheme-structure of elementary vortex-particles: 1 – electron (e^-); 2 – positron (e^+); 3 – muon (μ^-); 4 – antimuon (μ^+)

In aether, which has the given energetic density, electron, i.e. elementary vortex is in equilibrium state. If electron gets into the aether of less density (for example, such aether can be created in the center of artificial vortex), then it will turn into the non-equilibrium state (swirl degree of vortex-electron is too big for aether of less density). Since electron is a stable charged particle and since without means of antiparticle it cannot decay spontaneously with total turn into energy, then to obtain the equilibrium state electron has to give its energy excess to aether. This energy is output as electron antineutrino ($\bar{v}_e$), after that the intensity of swirl degree of vortex-electron is decreased (Fig.7a).
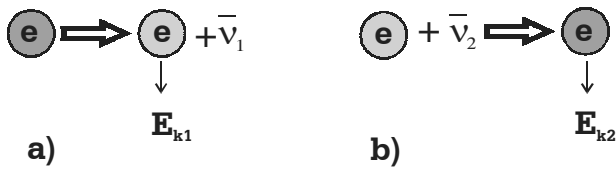
Fig. 7
Emanation and absorption of antineutrino by electron at changing of aether density:
a – at decrease of aether density; b – at increase of aether density

Changing of muon in electron can be considered as the analogues process. Muon has the similar to electron structure and it is stable in aether of bigger density. This process is accompanied by the emanation of quite a series of neutrinos and antineutrinos. There were the similar processes at the Big Bang, while at the abrupt expanding of the Universe and correspondingly at decrease of aether density, elementary particles (muon in this case) liberated the excess of energy in the form of neutrino and antineutrino [4]. The structure of neutrino and the processes of emanation and absorption of neutrino are described in more detail in [3].

It is well known from nuclear physics that at the processes, accompanied with neutrino creation, the elementary particle, which emanates neutrino, gets an impulse. If we assume the well-known process of β-decay as a basis (at which electron, departing from nuclear, gives the excess of mass (energy) in the form of electron antineutrino and as kinetic energy, caused by the impulse), then approximately 30% of energy of the whole process falls at the impulse. Thus, in this case at coming of electron in aether of less density, part of energy is taken away along with antineutrino and another part transfers into the kinetic energy of electron. Aether rarefication is obtained, for example, in vortex of heat vortex generator, in which kinetic energy, acquired by electron, causes the increase of water temperature. Schematically this process is shown in Fig. 7a, Fig. 8a.
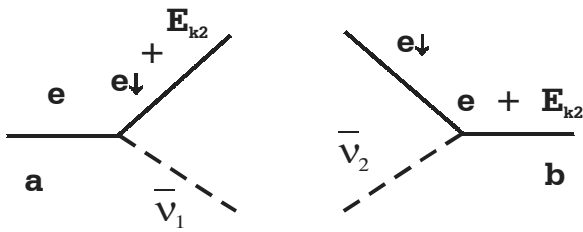

Fig.8

Diagram of the process of emanation (a) and absorption (b) of antineutrino, along with liberation of the additional kinetic energy

When electron returns into aether of normal density, then according to the compensation principle, it absorbs the additional mass in the form of antineutrino. This process provides electron stability as a true elementary particle (electron cannot decay spontaneously). Electron again obtains the impulse from antineutrino, i.e. kinetic energy, which is required for heating of water

(see Fig. 7b, 8b). Thus as a result of the coming of electron in aether of less density and backwards, along with the process of emanation and absorption of antineutrino there is a process of irreversible absorption of antineutrino in the Universe. The total energy of these antineutrino is equal to $\sim 10^{69}$ Joule [3].

There is the similar process in vortices and vortex creations. Due to centrifugal acceleration, at rotary motion there should be the changing of energetic state of the rotate system and, as the consequence, there should be exchange between peripheral and central areas. At that there is aether rarefication in the center of the rotate system. However, the maximum effect is obtained only in the case if rotary motion is balanced, i.e. periphery is hold not mechanically, as in flywheels, disks etc, but by gravitational or the similar forces. Therefore at the creation of "optimal" vortex, it should close on itself and should not touch the walls.

To all appearances this very optimal structure of vortex is created in vortex heat generators with the form of "Rank's Tube". This structure should have the form of swirling thin spiral (toroid) by the periphery of the tube and with rarefication at the center of the tube (Fig. 9). The very spiral should have the form of toroid. Then vortex in the form of spiral (1) will be hold by the rarefication inside the tube (2), where the contraflow is created, and the maximal stretching and rarefication of aether is obtained inside the thin thread of toroid, at periphery wall (3). As the radius of toroid is very small, then rates of water movement, which are inversely proportional to the radius (to the distance from the center), are very big and aether rarefication, which appears in the toroid thread, is maximum. Therefore electrons emanate antineutrinos in this part of the vortex (3) and, hence, there is maximum water heating. At the thickening of the toroid thread in the end of the tube (4), there is a decreasing of aether rarefication and of thermal effect. This decreasing is caused by friction on walls and by the reduction of water peripheral velocity. Such vortex structure allows to explain the appearance of contraflow, which comes from the peripheral layers of the toroid in the end of the tube.
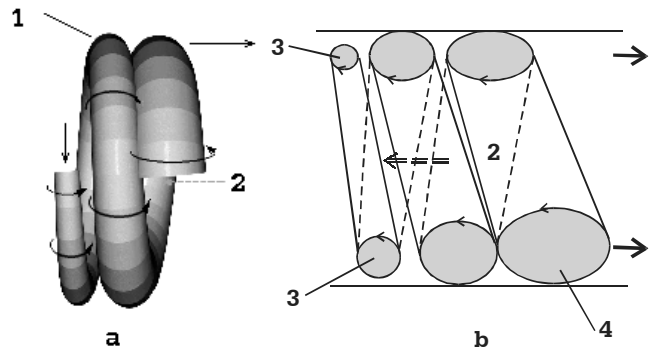

Fig.9

Creation of toroid vortex inside the vortex tube of the heat generator;
a) vortex structure and creation of the contraflow;
b) vortex section in the tube

Vortices effectiveness, first of all effectiveness of vortex heat generators, depends on the portion of energy, which is transferred to water as kinetic energy of electron and which portion of energy is taken away by antineutrino irreversibly. It can be supposed that the correlation in favor of kinetic energy is increased:

- with the increase of difference in aether densities (with degree of aether rarefication);

- with the increase of velocity of transfer from aether of normal density to aether of less density and backwards, i.e. this depends on output and intensity of the process.

As a result there is the biggest input of additional energy at the transfer in aether of less density in the beginning of the tube, i.e. in 1-2 toroid rings of vortex "Rank's tube".

In the outlet of "Rank's tube" speed of return to aether of the normal density is lower, therefore input of additional energy, required for water heating, is rather less. By the calculations this input must be realized as after-effect, i.e. as heat release in pipes and heaters. Moreover due to low speed this process is rather slow and lasting a long time. If water amount in the closed system is not big and if water frequently passes through vortex generator, then one cycle is not enough for water to return to aether of normal density. Then the additional difference between aether densities rises in the vortex and effectiveness of the vortex generator (i.e. emanation of additional heat) can be increased.

The proposed hypotheses explain the additional input of energy, by means of emanation and absorption of electron antineutrinos at changing of aether density in vortices and vortex creations. These hypotheses are based on the well-known physical processes and experimental facts, and they do not contradict to the fundamental aspects of traditional classical physics.

To check these and similar hypotheses and to confirm scientifically the appearance of the unknown type of additional energy appearing in vortex creations, there was developed a test-bench design on the basis of vortex generator NTK-3, produced by the firm "NOTEKA". *(Editorial: see p.76.)* The test-bench is supplied with all devices and sensors, required for researches. The mounting of the test-bench is started. It is planned:

- to research the processes, which take place in the vortex tube at different, including steady-state, conditions, and after-effects (energy liberation in the pipes), which were suggested by the theory;

- to research the influence of design approaches (such as changing of the vortex form, speed of water contraflow etc) on the working effectiveness of the vortex heat generator;

- to research the influence of the composition of the heat-carrier with different additions, which can change the energy of hydrogen bonds, electroconductivity, heat conductivity and other chemical and physical properties of water and also to use electrolytic solutions;

- to research the influence of electric, magnetic and electromagnetic fields of the different intensity on parameters and working effectiveness of the vortex heat generator;

- to research chemical and bacteriological properties of water at different parameters and modes of the test-bench operation.

It is supposed to increase the working effectiveness of the vortex generator up to 300% and to enclose the cycle.

The processes of increasing and decreasing of aether density also occurs in Nature and can be induced by living organisms. These processes are accompanied by the acceleration of time course and by the increase of entropy of the system [4]. The latter raises the possibility to set the research on the right track, since any system always tends to use the minimum of free energy and to increase entropy.

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KULDOSHIN'S TRANSFORMER

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Orenburg, 460019, Russia

Information by I.P. Kuldoshin about this interesting invention was published in "Orenburgsky reporter" (#38(183), September, 18 of 2002). NET readers have already known Kuldoshin's works (see his article on Unified Gravitational Theory in issue #3(6).

Some years ago Nikolay S., a power engineering specialist, worked at Orenburg oil-processing industry. The factory, where he worked, had a lack of electric power and it was necessary to find some solution of the problem immediately. Having been informed with an article about Nicola Tesla's resonant transformer, Nikolay S. improved standard industrial transformers according to Tesla's ideas. Thanks to it he obtained 1000% output, i.e. the output energy was ten times more! As a result the electric power demand of the factory became ten times less and, in accordance with it, the electric power financial expenses were cut down as well. When the stuff of the power supply company got ten times less money they were staggered. No breaches were revealed in the factory work, however its power consumption was declined. After interference of authorities, administration of the factory was made to discharge Nikolay S. The modernized by Nikolay S. electromagnetic transformers were utilized and replaced by standard ones, which consumed as much of the electric power as before. After this event Nikolay S. disappeared without a trace.

At first Igor Kuldoshin had doubts in this story and decided to assemble Tesla's resonant transformer by himself. His knowledge at the field of electrotechnology was rather poor that time; therefore he studied thoroughly the structure of the standard transformers. Then, one and a half months later, he succeeded to make a functioning pattern of Tesla's transformer, which output was 300%.

The inventor said that it was much easier to remake an ordinary transformer than to make a new device. It was necessary to remove its external winding and replace it by a brass, copper or bronze belt as the design section allowed. Nikolay S. couldn't obtain the 1000% output at once; only the third his attempt was successful. However, now as the resonant transformer structure is exactly known so every competent electrician can make it. In case of need it will be possible to improve all transformers of any factory, making them work with tenfold output at off-line mode of operation.

In his article "Free Energy" Alexander Frolov (the head of Saint-Petersburg laboratory "Faraday Lab" and the editor-in-chief of "New Energy Technologies" magazine) writes: "The innovation of free energy technologies helps a person as well as an industrial or farm production to become less depended on the central-based system of energy resource distribution and, therefore, be more independent from the central authority influence. It is difficult to say if the concept of "authority" will remain valid in its common meaning or how the concept of "government" will be changed if alternative power engineering is able to force to the market eliminating the fuel and energy corporation monopoly. Perhaps, it is modern Russia where there will appear a new political power, which is actually able to change the present situation for better".

Scheme of 40-kilowatt Transformer Modernization
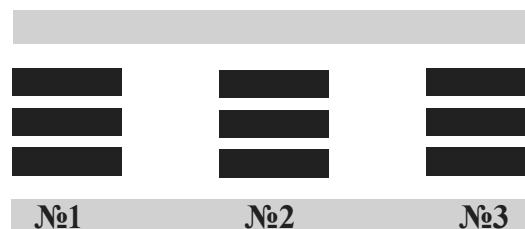
(by Igor P. Kuldoshin)

Fig. 1

The transformer has three column of magnetic circuit (#1, #2, and #3) made for wrapping of 3-phase 400-milimeter-high metallic (brass or aluminum) windings with 36-square-cm section. The primary windings consist of 2500 turns of 0.9-milimeter-section wire. The secondary winding totally covers the primary one and consists of 106 turns and copper "tie" with 32-square-cm section. Knowing about Nicola Tesla's invention, the power engineering specialist from Orenburg Nikolay S., in his own transformer removed all the secondary winding, and covered the primary winding with three spirals of the metallic belt of 120-milimeter width and 0.3-milimeter thickness. Then the spirals were sequentially joined. While the power input was only 4 kWt then this transformer had 40 kWt output.

About the Inventor

Igor P. Kuldoshin is a veteran of the Orenburg geological organizaton ("Orenburggeology"). At the beginning of his career he worked as a drill operator's assistant, then he became a foreman. After getting a diploma of an engineer of gas and oil wells drilling he was mining oil in Sakhalin for a long time and then moved to Ural. Since 1960 Kuldoshin has worked at the Orenburg geological union.

The last forty years Kuldoshin has been taking a great interest in amateur creative technical work and made more than twenty different aggregates. Among his inventions there are seven snowmobiles of different types and a two-screwed helicopter. In 1987, when he was pensioned off, the engineer began to design landrovers. Except the amateur technical works Igor Kuldoshin has made lots of different inventions, which are successfully used in industry.

Disappearance of Inertia Force
Mechanical Resonances and Free Energy Work

Arkady P. Kuligin

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Editorial: What's a strange idea! Is it possible at all?

I am very thankful to that person who derived the formula of mechanical work, i.e. multiplied force by traversed path. Energy is just the extent of momentum mV, integration of which gives $mV^2/2$, i.e. kinetic energy. Two solid bodies, making alternating motion on each other or rotating in opposite directions, can compress air or generate electric energy (compressors, generators).

Faat A. Miftahov and me were the first to make swing cylinders with drifting conrod-free piston inside. The cylinder was made to do alternating motion on microrails, and the piston after coming into antiphase with set of consecutive resonance impacts, compressed air up to 3 atmospheres. Load current decreases from 6 to 0 amperes, i.e. inertia force of the cylinder disappeared: it was balanced with the inertia of the piston. According to vector algebra, two oppositely directed and equal in module force vectors make zero. Actuating motor (it is not shown on the Fig.1) feeds itself as if it works idle. However, there is useful work inside the cylinder: air is compressed in the receiver, and as a result a turbine can be rotated to generate some power.
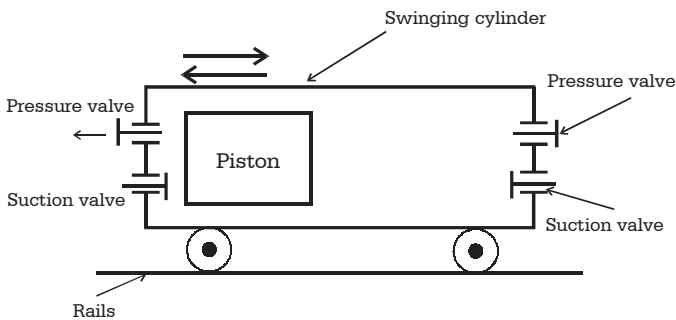

Fig.1

By means of a rheostat I increased the vibration frequency of the cylinder. According to the diagram, $E_{Kin} \rightarrow \infty$. Theoretically, there is no contradiction here.

Then physical pendulum was investigated. I diverted a steel sphere with 25mm diameter and a suspension L=2m, (derivation from the midpoint was 0,1 meter) and then released it. After 200 oscillations the pendulum began to decrease its amplitude because of frictional force and mass attraction. I clearly saw that **the useful work of the pendulum was much more than my own work spent on diverting of the pendulum from the midpoint**. I.e. I have replaced   the   formula   of
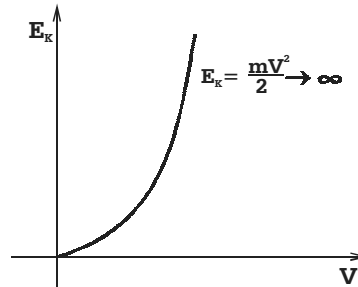

Fig. 2

$E_{kin} + E_{pot} =$ const by $A = F \cdot S$ and neglected radius of curvature.

Energy conservation law founders such as, Mayer, Joule and Helmholtz proved that one kind of energy changes into another one in equal quantity, however, I can't agree with this statement. In my opinion, free energy work appears in near-Earth space and in vacuum. Equal change of E_{pot} into E_{kin} is always applied. For example, in glycerin or machine oil, the pendulum, which is diverted in a viscid liquid, reverts to the midpoint without crossing it. In this case the 3d Newton's law is valid: act is equal to counteract, but in air the useful work is always more than supplied work. Nevertheless, people have not been able to extract this useful work with maximal degree of efficiency.

As it has been already mentioned, the amplitude goes to infinity in the resonant pendulum. Theoretically, very cheap or even free electric energy can be obtained by using of the equalization of two opposite forces of pendulum.

I hope to make two-rotor generator of alternating current, in which two disks rotate towards each other or oscillate in mechanical resonance.

Thus there is revealed the essence of two discoveries, made by the author in mechanics:

1.   Disappearence of inertia force in case, when one body slides inside another one at alternating motion, which is made in longitudinal direction;

2.   Free energy or free mechanical work is obtained at physical pendulum oscilations.

The swinging cylinder with drifting conrod-free piston inside was registered by "Sibcopyright" firm in 1996 as a copyright.

Ф-MACHINE

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spin@i.com.ua

Editorial: The author is developing Frolov's idea, which is known as Ф-machine.

To make load balanced the first version of Ф-machine has two serially connected secondary windings. However, in the consequent experiments I have ascertained that there is no need to load both windings since one of them can be shorted out. Certainly, there should be placed an air gap between the core of primary coils and ring core of secondary coils. There could be used another material in this gap, which magnetic permeability is much less than the permeability of the cores. It is explicated by the fact that the back induction magnetic field of the secondary coils is maximal in those parts of the core, which have maximal magnetic permeability.

If there was no gap then the magnetic field maximum of back induction would have been in the central core (of the primary coil), and it would have resulted in bad operation of the machine.

Principle of Ф-machine operation is rather easy to explain. The alternating magnetic field of the primary coil comes to the secondary core **through the gap** and causes electro motive force (e.m.f.) in the secondary coils. If there is load then every coil makes contra e.m.f. which coincides in its direction with the e.m.f. of the opposite coil.

The **first version** of the Ф-machine works rather good but I have made few experiments. (Fig.1)
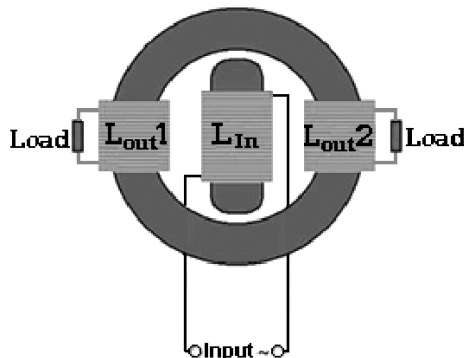

Fig. 1
I Version

The **second version** of the Ф-machine is more interesting and productive. (Fig.2) To increase output I connected a capacitor to the primary winding. (Thus I obtained an oscillatory circuit). *Editorial: Sure, it is necessary.*
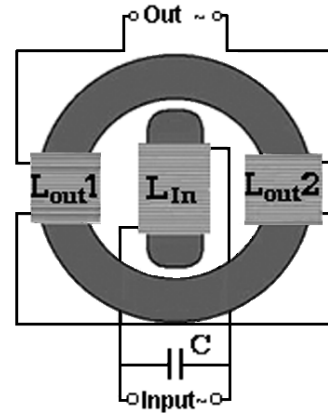

Fig.2
II Version

If we adjust the system for resonance then we get amazing results:

Oscillation period (T) is 15.8 microseconds

U of the primary winding (without load)	30 Volt

A resistor is connected to $Lout_2$ 330 Ohm:

U_{Lout_2} (R_{Lout_1} = ∞ Ohm)	13.0 Volt
U_{Lout_2} (R_{Lout_1} =0 Ohm)	27.5 Volt
U_{Lout_2} (R_{Lout_1} =330 Ohm)	14.5 Volt

Another interesting experimental observations:

Oscillation period (T) is 12.7 microseconds

1.	U_{Lin}	27 Volt
	$U_{Lout_1} + U_{Lout_2}$ (R_H = ∞ Ohm)	25 Volt
2.	$U_{Lout_1} + U_{Lout_2}$	17 Volt
	$U_{Lout_1} + U_{Lout_2}$ (R_H =20 Ohm)	7.2 Volt
3.	U_{Lin}	30 Volt
	$U_{Lout_1} + U_{Lout_2}$ (R_H =0.2 Ohm)	0.16 Volt

Comparing the first and the second cases of U_{Lin} we can make a conclusion that **Ф-machine output depends on load! The more power, the more efficiency!**

The following experiments were also made by the author:

1. The experiment with **Avramenko's plug**
2. T-transformer (half of the Ф-machine)
3. III-type Ф-machine
4. Vortex transfer of energy (like Tesla's one)
5. High-frequency plasma

as at 1st October 2002

from **Lutec Australia PTY LTD**

Last month we reported that we were endeavouring to perfect our method of delivering the pulsed electric input to our motor section, and the problem being encountered was mainly a timing issue. Our challenge was to control and contain, or redirect the voltage and current spikes that were being generated at sporadic, yet regular and occasionally overlapping intervals.

To more clearly clarify the issue we will use water as an example for simplicity of explanation. What we were trying to do was comparable to attempting to squeeze four gallons of liquid into a one gallon capacity container. What we need to do is to regulate the flow and spread the dumping of the four gallons across a number of containers. These can be designed and controlled to immediately dump what they receive in a particular sequence down a specified path, without ever becoming over filled.

Sounds simple enough doesn't it? We have tried several dozen different ways of addressing the problem electronically to no avail. The decision was taken to go back to the actual point of generation of the spikes and to attempt means of synchronising and controlling them at source, rather than spending more time attempting to control what was being generated.

Accordingly we have since performed major remedial surgery to the motor section. This entailed the re-alignment of the permanent magnets relative to one another on the motor drum. Theoretically this should result in the pulse spikes created by the collapsing magnetic fields being able to be more readily controlled than with the previous configuration. This is mainly because the sporadic nature of the spikes has been eliminated and although the spikes are no smaller they are regular and even, and so we hope more controllable.

At the time of writing the motor section has been reassembled, the coils are yet to be reinstalled; the integrated circuit boards have been prepared. This means we should be ready in the next week or so to wire it all up and see what happens.

BY KOROTKOV CO.

Tel: (7-812) 232-8602, Fax: (7-812) 164-8369, 275-6159, E-mail: korotkov@mail.admiral.ru

* GDV INSTRUMENTS *

1. GDV CAMERA PRO

The "GDV Camera Pro" complex consists of hardware and software for the direct computer registration and processing of a subject's energy field. GDV pictures are created by a unique patented optical system and CCD camera in daylight conditions with real-time processing.

Features and Conditions

The "GDV Camera Pro" is:

- **Portable.**
- **Battery operated.**
- **Safe for both patient and operator.**

The GDV Software is:

- **Oriented on un-qualified user.**
- **Has a friendly state-of-the-art graphic interface.**
- **Provided with manuals and help.**
- Registration of the GDV-grams can be done in either still or dynamic ("real time") forms
- One-year international guarantee on all parts and labor from date of purchase.
- 1 month money back guarantee.

Now new exclusive model!!!

Fig.1

GDV Camera Pro

The GDV Camera includes:

1. "GDV Camera Pro" instrument
2. Package of cables: USB cable; Power cord
3. GDV Starting device: Com-port cable or PS/2 mouse or USB mouse
4. Camera holder
5. Test-subject
6. Test-subject holder
7. GDV lens cover with finger device or GDV sleeve
8. Reference electrode
9. Philips USB Camera installation CD
10. CD with GDV Software 2002: GDV Capture; GDV Aura; GDV Diagram; GDV Printing Box; GDV Chakra; GDV Processor; GDV Stress. USB and LPT software security locks.
11. Technical, service and warranty manual
12. GDV Step-by-Step Guide for GDV Camera Pro
13. GDV filters (100 pieces)
14. Fuses (2 pcs.)
15. Bag

2. GDV COMPACT

The "GDV Compact" complex consists of hardware and software for the direct computer registration and processing of a subject's energy field. GDV pictures are created by a unique patented optical system and CCD camera in daylight conditions with real-time processing.
"GDV Compact" is a GDV Camera designed specifically for **taking BEO-grams of human fingers**.

Specific features:

1. 40 mm diameter optical lens, which enables to strongly decrease the incoming power of electromagnetic field.

2. The above feature gave an opportunity to decrease power consumption and make the "GDV Compact" **12 V battery operated**. A rechargeable battery is installed inside the instrument and provides operation for 3-4 hours. Charging device is included with the GDV Compact.

3. 1 mode only for taking BEO-grams of human fingers.

4. Overall computer control.

5. Possibility to work with the whole package of GDV Software. "GDV Capture" and "GDV Aura" programs are included with the "GDV Compact" by default. Other programs are supplied on demand.

6. Low price.

"GDV Compact" is an instrument developed in response to many requests of practical physicians and individual users. It is compact, user-friendly, easy operable, convenient for traveling and working in different locations. GDV Compact enables to carry out complete cycle of analysis of human energy field state.

For the analysis of liquids, animals and for connecting additional external devices (GDV Acu-Scanner, GDV +) use "GDV Camera Pro".

"GDV Compact" includes:
1. "GDV Compact" instrument
2. 12 V charging device
3. USB cable
4. GDV Starting device: Com-port cable or PS/2 mouse or USB mouse
5. Compact holder
6. Test-subject
7. Test-subject holder
8. GDV lens cover with finger device
9. Reference electrode
10. Philips USB Camera installation CD
11. CD with GDV Software: GDV Capture, GDV Aura, GDV Printing Box programs
12. Technical, service and warranty manual
13. GDV Step-by-Step Guide
14. GDV filters (10 pcs.)
15. Bag

Fig.2
GDV Compact

3. GDV +

This device is designed to be used with the "GDV Camera Pro" complex for the registration of GDV-grams of toes, ears, noses and other organs of both humans

and *ESPECIALLY* animals. It connects to the GDV by a 2 m cable.

Special characteristics:
1. "GDV +" gives you an opportunity to take GDV-grams of feet in a convenient way and thus use the GDV Camera for the investigation of energy circulation along the body (for example, according to Esogetics system by Peter Mandel).

2. "GDV +" is very convenient for taking BEO-grams of fingers of disabled and elderly people.

3. The enclosed special film enables you to take GDV-grams of animals without the black fabric cover. Noses, ears, tails, feet, etc. of animals can be taken.

4. "GDV +" gives you an opportunity to take dynamic ("real time") GDV-grams. It attaches to any of the GDV Camera models.

5. You can shoot 2 samples of liquids or materials simultaneously (by using the "GDV Camera Pro" and the "GDV +".)

"GDV +" includes*:*
1. "GDV +" instrument
2. Package of cables: USB cable, GDV cable
3. Test-subject
4. Reference electrode
5. Black cover with a hole
6. Philips USB Camera installation CD
7. Black film (4 pieces)
8. User manual, warranty
9. Bag

Now you can test your animals easily and comfortably!!!

Fig. 3
GDV+

4. GDV ACU-SCANNER

This device can be used with the GDV Camera instrument. It is designed for the GDV scanning and observing the glow in particular areas of the body such as, acupuncture points, toes, ears, etc., parts of animal body.

A unique opportunity to observe and record fluorescence of acupuncture points and other areas of the skin!

While scanning along the body you can see a live picture of a glow on the computer screen, which you can capture and process in the GDV software.

"GDV Acu-Scanner" includes:
"GDV Acu-Scanner" instrument
Reference electrode
Philips USB Camera installation CD
Film (2 pcs.)
User manual, warranty
Bag

Fig. 4
GDV ACU-Scanner

5. GDV MATERIAL TESTING KIT

The "GDV Material testing Kit" is a set of devices complimentary to the GDV Camera designed for testing water, liquids, seeds, plants, stones, and much more.

The "GDV Material Testing Kit" includes:

1. User manual, warranty – 1 pc;
2. "GDV Compare" program installation CD–1 pc;
3. Key ¹7 – 1 pc;
4. Screwdriver – 1 pc;
5. Syringe – 3 pcs;
6. Device for taking GDV-grams of big subjects – 1 pc;
7. Plug for GDV lens cover – 1 pc;
8. Metal holder for glass cans – 1 pc;
9. Isolation plate for big flat subjects – 1 pc;
10. GDV lens cover – 1 pc;
11. Calibration glass – 1 pc;
12. Glass with an opening – 3 pcs;
13. Syringe holder – 1 pc;
14. Syringe holder cover – 1 pc;
15. Small glass can – 3 pcs;
16. Electrode – 1 pc;
17. Electrode – 1 pc;
18. Electrode – 1 pc.

Fig. 5
GDV Material Testing Kit

6. GDV STARTER

The "GDV Starter" serves for the start of any GDV Camera model by a standard computer mouse. It allows the operator to start and operate the GDV camera. It connects to the computer com-port. Software included. *"GDV Starter" is needed only for the "GDV Cameras Pro", purchased before 01.01.02*

Now you can operate "GDV Camera Pro" by simple click of your mouse left button!!!

Absolute synchronization of "GDV Camera Pro" and computer operation and perfect comfort.

"GDV Starter" includes:

1. GDV Starting device box with 3 connected cables
2. Floppy disk with GDV Capture program
3. Installation instruction

7. GDV FILTERS

Special filters for the separation of the psychological and physical energy fields (sympathetic and parasympathetic nervous systems).
1 package of GDV filters includes 100 pieces.

korotkov@mail.admiral.ru

Books

New book by Dr. Korotkov "Human Energy Field: study with GDV bioelectrography" (in English)

This book is dedicated to the presentation of the scientific foundations and practical applications of the Gas Discharge Visualization (GDV) technique. The following topics are discussed:

- Health assessment and the various types of human energy fields
- Medical applications to acupuncture and other medical modalities
- Altered states of consciousness such as meditation and intense concentration
- Training and improved performance of healers, psychics, and athletes
- Distinguishing psychological from physical energy fields
- Recent studies on telepathy
- Measurements on direct vision phenomena to help blind children see
- Material testing of charged water, blood, and gems.

2002, Backbone Publishing Company, NJ, USA. 360 pp.

K. Korotkov. "Aura and Consciousness: New stage of scientific understanding".

Ideas, experiments, concepts on GDV, Consciousness, Healing, Structured Water, New approaches in Biophysics (in English). 1999, Second Revised Edition. St. Petersburg division of Russian Ministry of Culture, State Publishing Unit "Kultura". 302p. 76 charts, 16 col. ill., bibl.

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K.Korotkov. "Basics of GDV Bioelectrography"

(in Russian), 2001, St.Petersburg, State Technical University "SPIFMO", 360 pp.

Proceedings
(in Russian and English)

Proceedings of the III International Congress "Science. Information. Spirit" 1999. St. Petersburg, Russia.

Proceedings of the IV International Congress "Science. Information. Spirit" ("Energies of Humans and Earth") 2000. St. Petersburg, Russia.
Proceedings of the V International Congress "Science. Information. Spirit." 2001. St. Petersburg. Russia.
Proceedings of VI International Congress "Science. Information. Spirit." 2002. St. Petersburg. Russia.

Journals

Journal "Consciousness and Physical Reality" (in English). 4 issues per year. Folium publishing company, Moscow.

CDs

NEW!!! "GDV in CONSCIOUSNESS Studies "
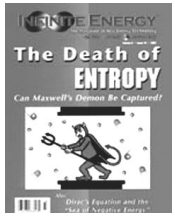CD-ROM with presentation of Dr. Korotkov at "Science and Consciousness" conference, Albuquerque, USA, April 2002 (in English).

CD-ROM with video film **"Live Light"** (overview of the GDV results and research programs. 1999. 20 min. English).

CD-ROM with video film **"Late Late Show"** (presentation by Dr. K.Korotkov at Irish Television. 1998. 20 min. English) and GDV information package.

HOW TO BUILD SOLIDmSTATE ELECTRICAL OVER UNITY DEVICES

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ABSTRACT

Electrical coil based devices that use Free Energy or Over Unity effects require a unique understanding when determining their "correct" operation.

These devices can be placed into three unique categories. The first category are classic coils that use ferromagnetic (iron alloy) core material. These devices typically have a COP (Coefficient Of Performance) less than unity. The second category are coils that use ferromagnetic cores and opposing and/or orthogonal magnetic fields applied by permanent magnets (pms). These devices typically have a COP close to, but NOT greater than unity. The third category are coils that use ferromagnetic cores and/or pms in a special configuration, and have unique operating requirements. These devices have a COP greater than unity.

The purpose of this paper is to present the "hidden" mechanism that is at work in these devices which causes them to produce excess electrical energy.

THE DEFINITION OF COP

The Coefficient of Performance, or COP, is a unit-less number, and is expressed as a ratio of the energy out divided by the energy in.

$$COP = \frac{E_{OUT}}{E_{IN}} \quad \text{or}$$

$$COP = \frac{\int P_{OUT} dt}{\int P_{IN} dt}$$

FERROMAGNETIC DOMAINS

A ferromagnetic domain of iron alloy core materials can be modeled as an **ideal "unity gain" solenoid.** The key words here are unity gain, meaning that the domains are in electromagnetic equilibrium with the thermal environment. External coils can mutually couple to these domains, thereby increasing its' inductance, and as a consequence, its' energy (Fig. 1).
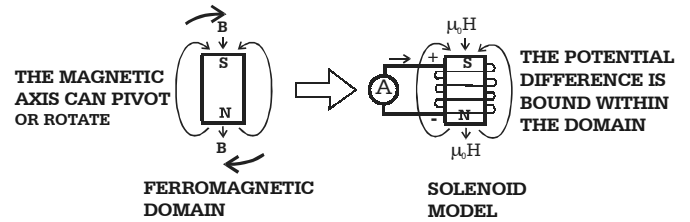

THE MAGNETIC AXIS CAN PIVOT OR ROTATE

FERROMAGNETIC DOMAIN

SOLENOID MODEL

THE POTENTIAL DIFFERENCE IS BOUND WITHIN THE DOMAIN

Fig.1

ORTHOGONAL MAGNETIC FIELDS

Magnetic fields are represented as vectors. Adding orthogonal magnetic fields using permanent magnets will **"increase the permeability** g" of the ferromagnetic core material. As a consequence, the inductance and the energy of the coil increases. The results are a higher COP value (Fig.2).
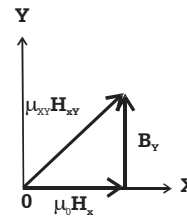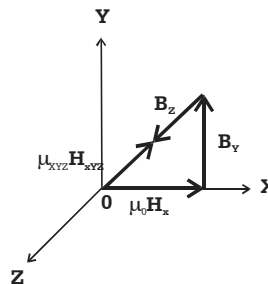

INCREASING PERMEABILITY: $\mu_{XY} > \mu_0$

INCREASES INDUCTANCE: $L_{XY} > L_{IN}$

INCREASES OUTPUT ENERGY: $E_{XY} > E_{IN}$

INCREASING PERMEABILITY: $\mu_{XYZ} > \mu_0$

INCREASES INDUCTANCE: $L_{XYZ} > L_{IN}$

INCREASES OUTPUT ENERGY: $E_{XYZ} > E_{IN}$

Fig.2

PERFORMANCE METHODS

CATEGORY	DESCRIPTION
1	**Under Unity Devices, COP << 1.00**
	Coil/Core Classic Devices
	Classic use of magnetic fields applied to ferromagnetic (iron alloy) core materials.
2	**Near Unity Devices, COP < 1.00**
	Coil/Core/Magnet SmartPAK POD, POD
	Opposing/orthogonal magnetic fields applied to ferromagnetic materials.
3	**Over Unity Devices, COP > 1.00**
A	Coil/Core SmartPAK ZPOD
	Electrostriction/magnetostriction phenomena of ferromagnetic materials. Cooling of ferromagnetic material is observed. A "negative" Carnot cycle is occurring within the material
B	Coil/Core/Magnet Smart.MEG, MEG, PP
	Full flux transfer magnetic core anomaly. This phenomena is related to the nature of flux flowing within the magnetic material.
C	Coil/Core/Magnet H. Kunel, Adams Motor
	A variable reluctance control of magnet in a Category 2 Near Unity device.

A SYSTEM REQUIREMENT:
THE "SOURCE DIPOLE"

The source dipole, defined as a forced separation of electric charges, serves as a "starting engine" for all these devices. A source dipole may be a battery, a charged capacitor, or any stored electrical medium. A CATEGORY 1 Under Unity device or a CATEGORY 2 Near Unity device will eventually deplete, or collapse its' source dipole over time. However, a CATEGORY 3 Over Unity device can be configured to maintain, or replenish its' dipole.
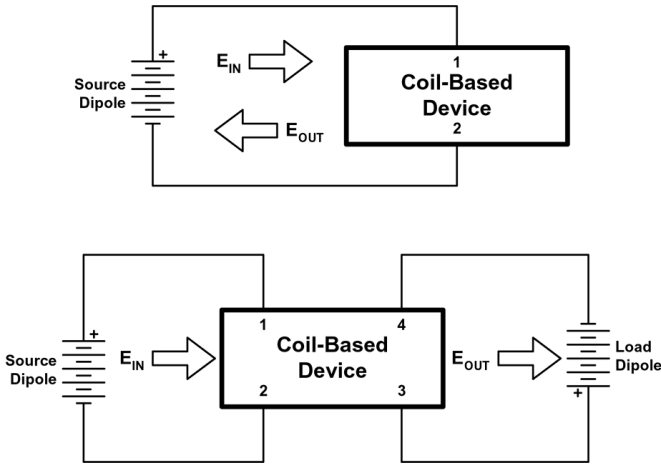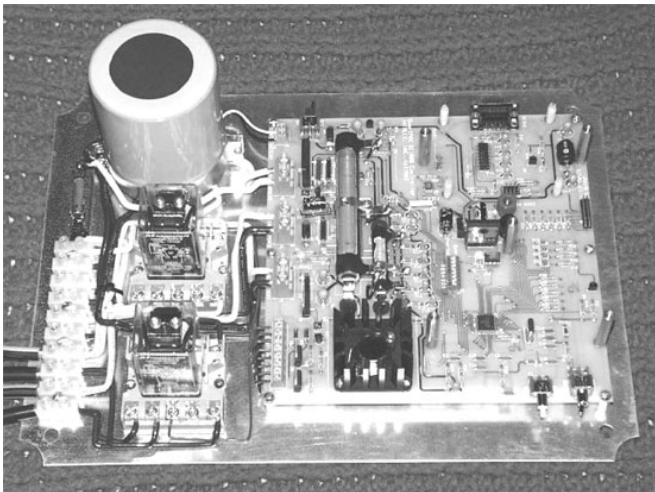
TWO AND FOUR TERMINAL DEVICES

Fig.3

R&D PLATFORM:
THE SmartPAK_{TM} CONTROLLER

DESCRIPTION

SmartPAK_{TM} is the world's first all solid state FREE ENERGY or OVER UNITY power management system that transforms ambient thermal environmental energy to excess electrical energy. It provides a "standard" platform for experimenters, researchers, and developers to do energy related practical applications, experiments, and perform exploration of the OVER UNITY phenomena.

The theory of operation is based on the difference of energy between magnetization/de magnetization cycles of ferromagnetic materials utilizing a coil/ core or coil/core/magnet Head assembly. It has been discovered that EXCESS energy is released during the de magnetization portion of the cycle using a suitable core assembly. The SmartPAK_{TM} system is specially designed to measure, collect, and store this excess energy for later use.

The SmartPAK_{TM} system is controlled by a Motorola 68HC908GP32 microcontroller programmed to measure input/output voltages and currents, calculate COP, and contains software algorithms for a complete "turn key" power management system. The system features a "standard" user interface, which allows the user to design their own custom coil/core/magnet "head assemblies", and immediately test and display in real time its' performance.

FUNCTIONAL BLOCK DIAGRAM
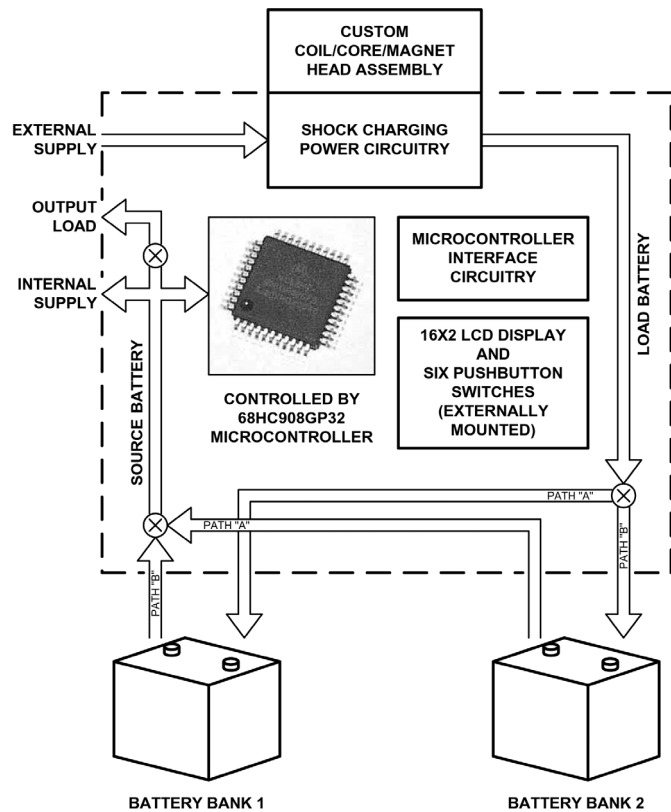
Fig.4

SmartPAK XX10 XX Coil Driver
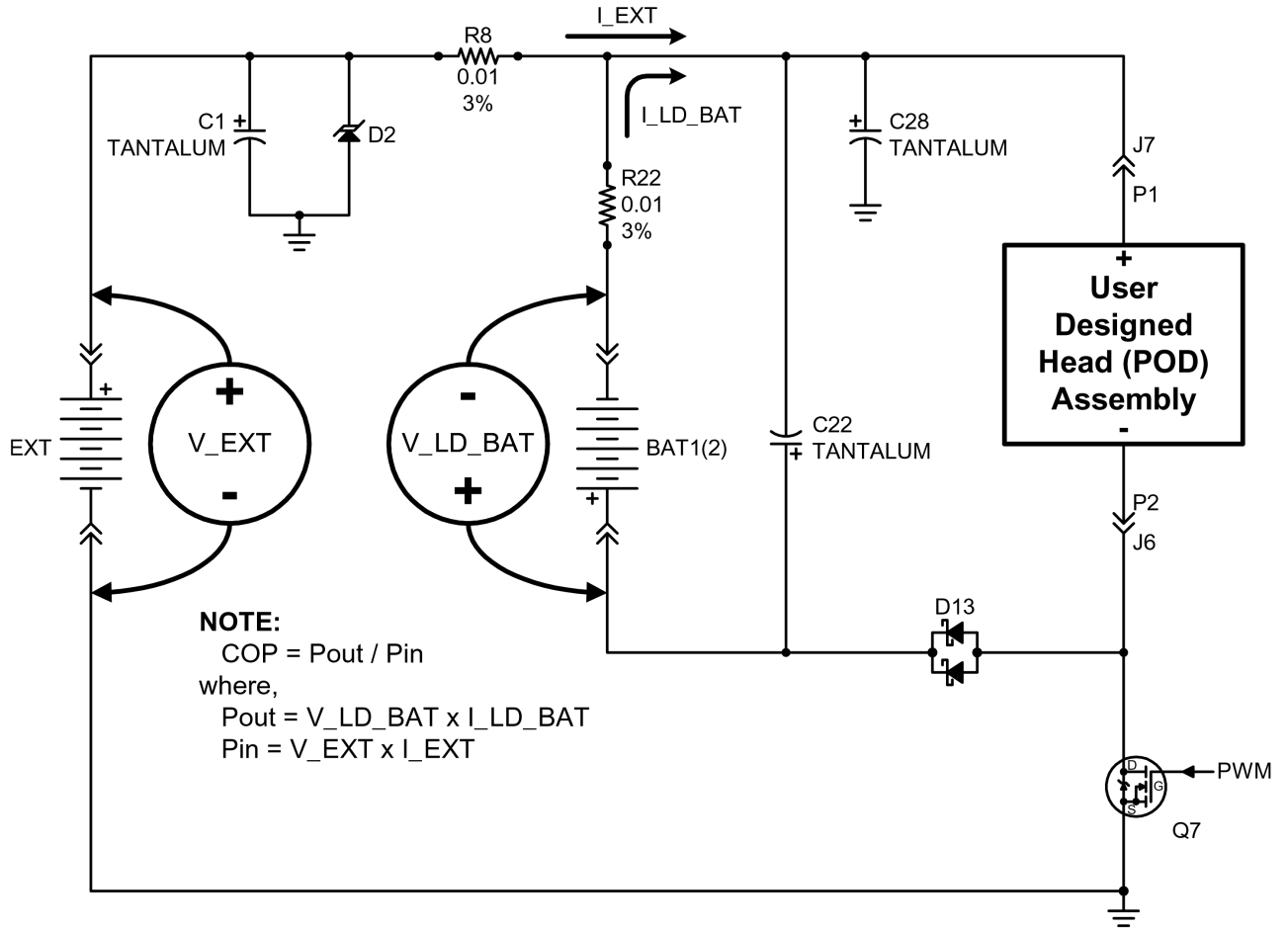
Fig.5

ELECTRICAL DIAGRAM

NOTE:
VOLTAGES AVAILABLE:
12V, 24V, 36V, and 48V

THE SmartPAK POD
NEAR UNITY DEVICE
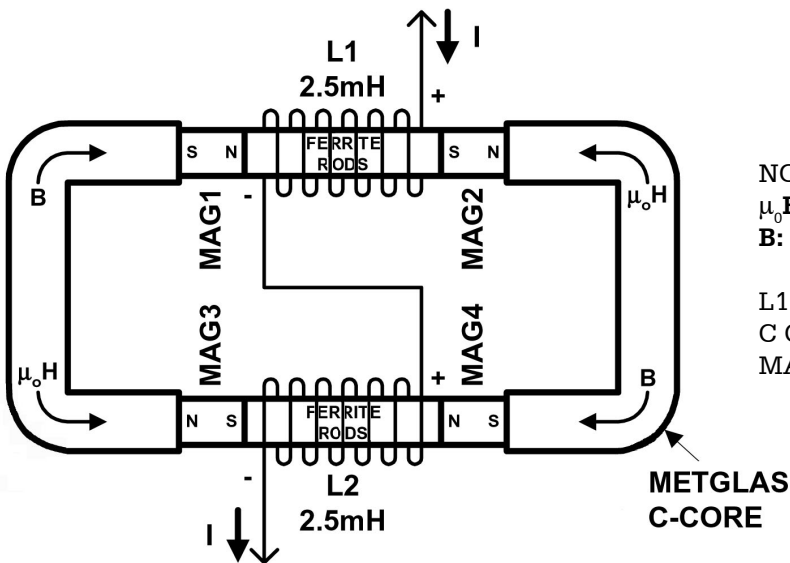
NOTE 1:
μ_0**H:** Produced by coil L1 and L2.
B: Produced by magnet MAG1   MAG4.

L1 and L2 use 50ft of 16AWG magnet wire each.
C Core: METGLAS, AMCC 500.
MAG1   4 are NIB type magnets.

Fig.6

ELECTRICAL DIAGRAM

The SmartPAK POD (see colour photo on the cover page) is classified as a CATEGORY 2 Near Unity Device. The coil L1 and L2 fields are mutually coupled to the ferrite rods' magnetic domains, which are magnetized in an opposing direction by permanent magnets.

THE NEAR UNITY MODEL
OF THE SmartPAK POD

With switch S1 closed, the current (i_{BAT1}) flows from the source battery (BAT1) and magnetizes coil L. This action transfers or discharges energy from the source battery (BAT1) and stores it in L.
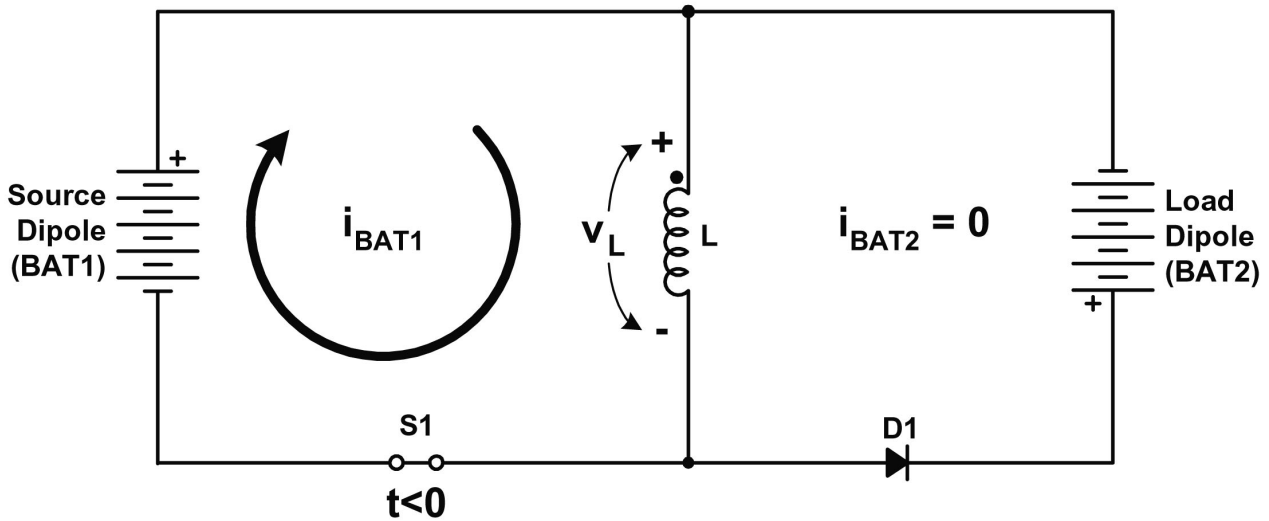
Fig.7

MAGNETIZATION PHASE OF CYCLE

When switch S1 opens, the voltage (V_L) across the coil L reverses (Lenz's Law) and the energy stored in L flows out as a high current impulse (i_{BAT2}). Energy is transferred from L to the load battery (BAT2).
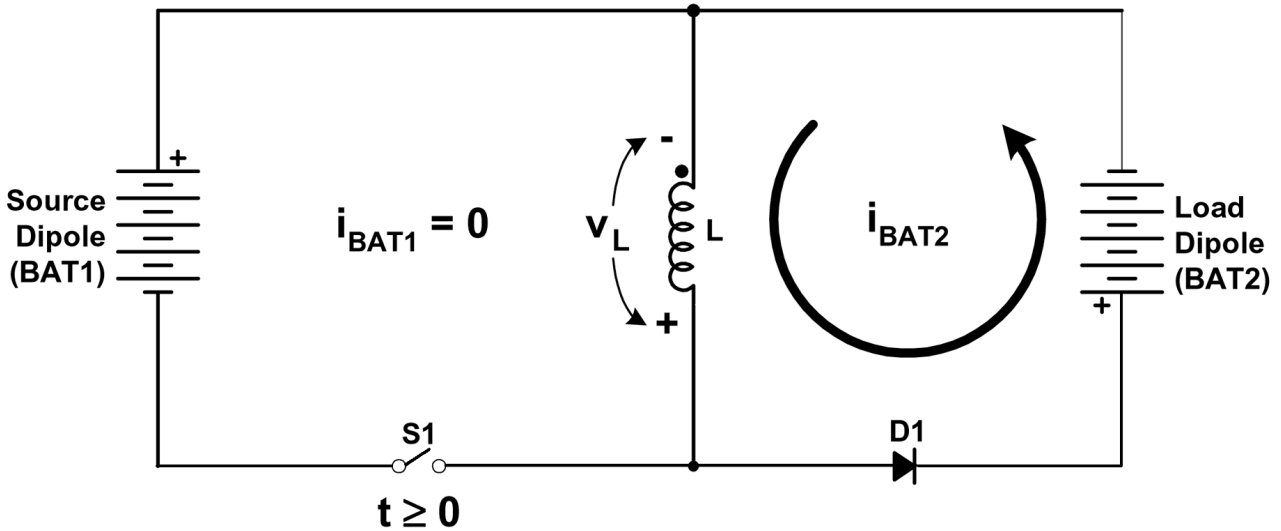
Fig.8

DEMAGNETIZATION PHASE OF CYCLE

THE ENERGETICS OF FERROMAGNETISM

Fig.9
CLASSIC TRANSFORMER ANALYSIS

The total field energy of the system is,

$$E_{SYS} = E_M + E_C - E_{MUTUAL} \qquad (1)$$

where, E_{SYS} is total field energy
E_M is energy of permanent magnet (pm)
E_C is energy of coil
E_{MUTUAL} is mutual energy between coil and ferromagnetic core coupled to a pm.

Differentiating E_{SYS} with respect to time is the total instantaneous power, P_{SYS} or,

$$\dot{E}_{SYS} = P_{SYS} \qquad (2)$$

Because E_M is conserved and does NOT change over time,
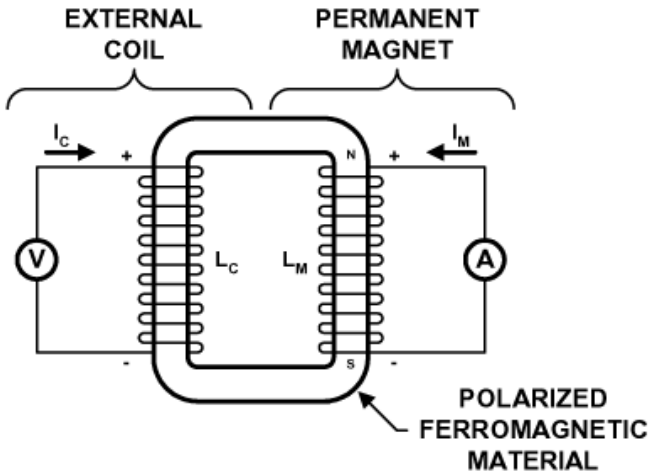
$$\dot{E}_M = P_M = L_M I_M \dot{I}_M = 0 \text{ Watts} \qquad (3)$$

Now, rewriting P_{SYS},

$$P_{SYS} = P_C - P_{MUTUAL} \qquad (4)$$

So,

$$P_{SYS} = \underbrace{L_C I_C \dot{I}_C}_{\substack{\text{FLUX} \\ \text{COUPLING} \\ \text{TERM}}} + \underbrace{I_{C^2} \dot{L}_C}_{\substack{\text{PARAMETRIC} \\ \text{COUPLING} \\ \text{TERM}}} - \underbrace{M I_M \dot{I}_C}_{} \qquad (5)$$

$$\underbrace{\qquad\qquad\qquad}_{P_C} \quad \underbrace{\qquad}_{P_{MUTUAL}}$$

Now, of particular interest is $\dot{L}_C$ of $I_{C^2}\dot{L}_C$. For classic CATEGORY 1 Under Unity devices,

$$\dot{L}_C = 0\Omega \qquad (6)$$

However, by "strategically" polarizing the ferromagnetic material, this increases the permeability μ, and increases the inductance L_C, This reveals the "hidden" mechanism that makes these CATEGORY 3 Over Unity devices,

$$\dot{L}_C \neq 0\Omega \qquad (7)$$

Since the coil dissipates power, the instantaneous power P_{SYS} equates to,

$$P_{SYS} = R I_{C^2} + L_C I_C \dot{I}_C + I_{C^2} \dot{L}_C - M I_M \dot{I}_C \qquad (8)$$

Since $\dot{L}_C$ has the same units as resistance Ω, this resistance may be positive or negative depending upon the slope of $\dot{L}_C$. For example, if is $\dot{L}_C$ **"engineered"** to be positive, then the power is positive, however, if is **"engineered"** to be negative, then the power is negative.

So, integrating P_{SYS} with respect to time is the total energy, E_{SYS} or,

$$E_{SYS} = \int P_{SYS} dt \qquad (9)$$

In conclusion, given special operating conditions, the ferromagnetic domain can serve as a "hidden" source of energy simply by mutually coupling it to a coil. **The energy is in the form of excess electrical energy, and the domains transforms this energy from the ambient thermal environment.** This causes an observable cooling effect in the domains.

THE FREE ENERGY "Alek Effect"
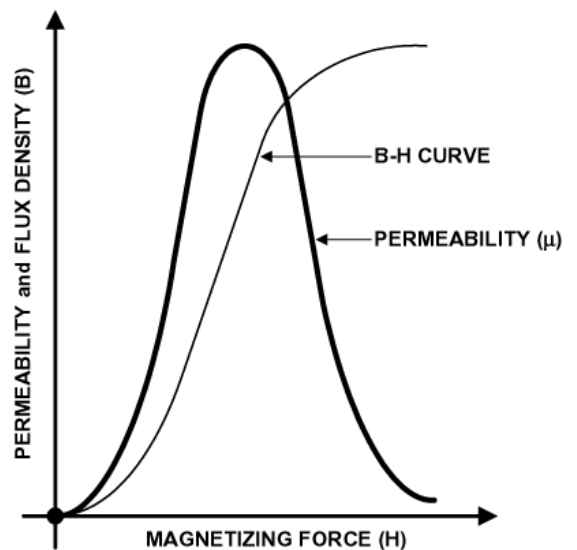
Fig.10
NORMAL VARIATION OF μ ALONG MAGNETIZATION CURVE

Fig.11

MODIFIED VARIATION OF μ ALONG
MAGNETIZATION CURVE

DYNAMIC B-H LOOP TEST FIXTURE

Fig.12

Engineering $\overset{\bullet}{L_C}$ will shift the BH curve either left or right.

The SmartPAK ZPOD
OVER UNITY DEVICE

One of the ZPOD Coil/Cores

The ZPOD is a CAT 3A Over-Unity Device

Fig.13
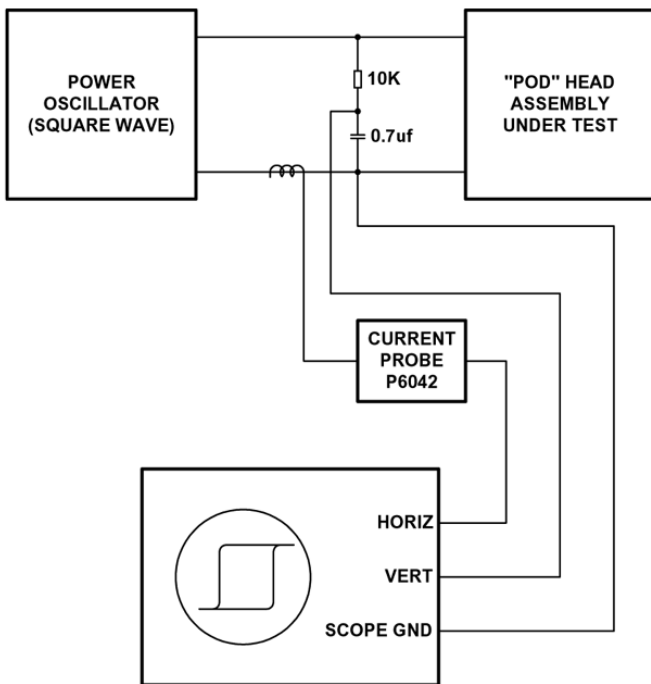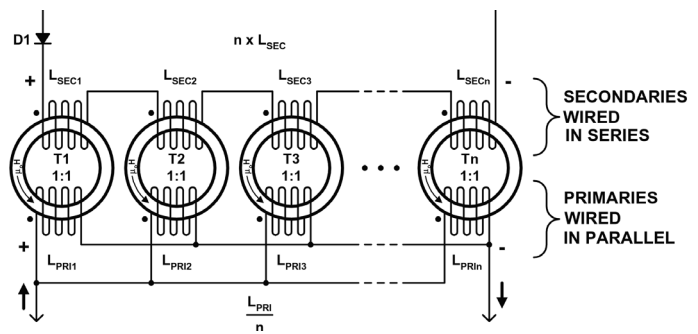
Fig.14

ELECTRICAL DIAGRAM

The SmartPAK ZPOD is considered to be a Thompson Plank PERPETUAL MOTION MACHINE, and is classified as a CATEGORY 3A Over Unity Device.

THE OVER UNITY MODEL OF THE SmartPAK ZIPOD

With switch S1 closed, the current (i_{BAT1}) flows from the source battery (BAT1) and magnetizes coil L_0. This action transfers or discharges energy from the source battery (BAT1) and stores it in L_0.

Fig.15

MAGNETIZATION PHASE OF CYCLE

When switch S1 opens, the voltage (V_L) across the coil L reverses (Lenz's Law) and the energy stored in L (increased permeability μ, of L_O) flows out as a high current impulse (i_{BAT2}). Excess energy is transferred from L to the load battery (BAT2).
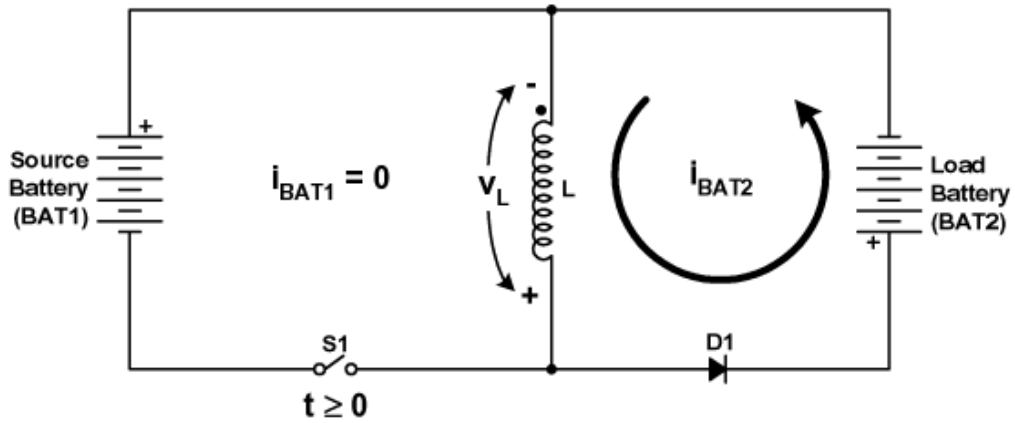
Fig.16

DEMAGNETIZATION PHASE OF CYCLE

THE MAGNETIZATION/DEMAGNETIZATION CYCLE
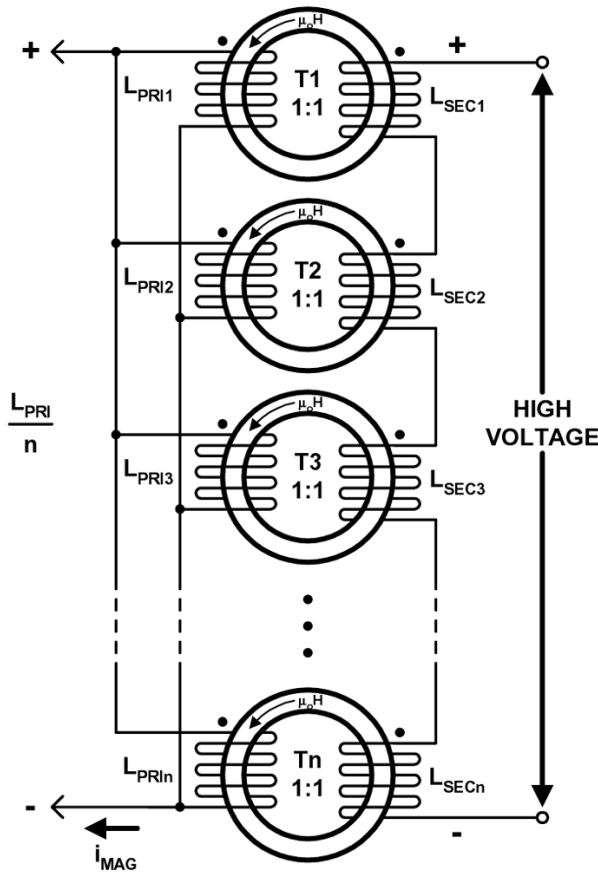
Fig.17

MAGNETIZATION PHASE OF CYCLE
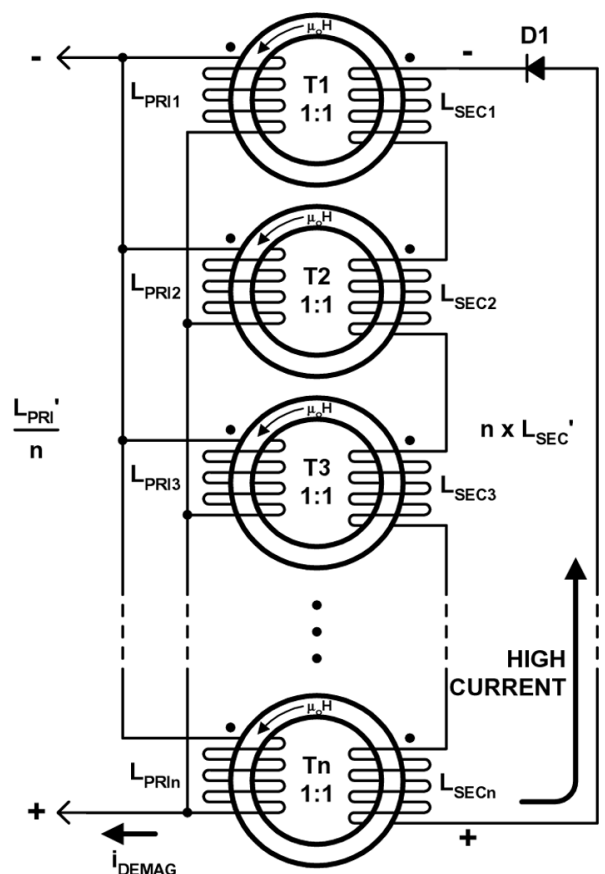
Fig.18

DEMAGNETIZATION PHASE OF CYCLE

Excess electrical energy is released from the device during the demagnetization phase of a magnetization/demagnetization cycle. As a consequence of releasing this excess electrical energy, the device transforms it from the ambient thermal environment, thereby cooling itself.

SHOCK CHARGING SYSTEM BY STEFAN HARTMANN

I used a 12 Volts relay (not shown here) in selfrunning vibrator mode for mechanically toggling the S1 switch on and off with a frequency of about 15 to 20 Hz. The fl tube was lit to about half its brightness and the battery did not discharge, but seemed to charge up a bit. More and longer tests are still needed!

Fluorescent tube 8 Watts

1 N4007

S1

secondary 220 Volts 240 Ohm

Battery 12 Volts + −

selfrunning vibrator Relay switch

primary: 30 Volts 5.7 Ohm DC resis.

transformer 220 Volts to 30 Volts type 0.4 Amp ca. 5 Watts type used backwards

efficient spark gap driven fluorescent lamp driver version 1.1, idea based on Konzen's spark gap effects and Newman technology, battery recharging effect! released and tested on 21 st of June 2001 by Stefan Hartmann for www.overunity.com

Fig.19

ELECTRICAL DIAGRAM

The Shock Charging System presented by Stefan Hartmann is classified as a CATEGORY 3A Over--Unity Device. The excess electrical energy appears in the secondary coil of the transformer during the demagnetization phase of a magnetization/ demagnetization cycle.

The magnetization phase of the cycle is initiated by closing switch S1. The fluroescent tube functions as current limiting resistor. Bruce Perreault and Osmond Callahan have a provisional patent on a special glo-regulator tube that outputs excess energy.

COMPARISON BETWEEN T. BEARDEN'S MEG AND J. FLYNN'S PP
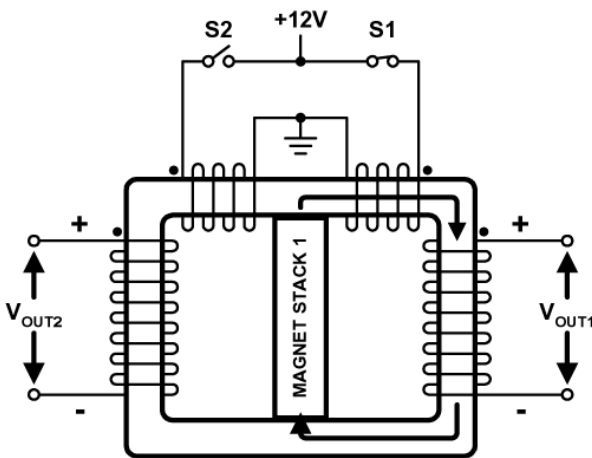
Fig.20

T. BEARDEN'S MEG DESIGN
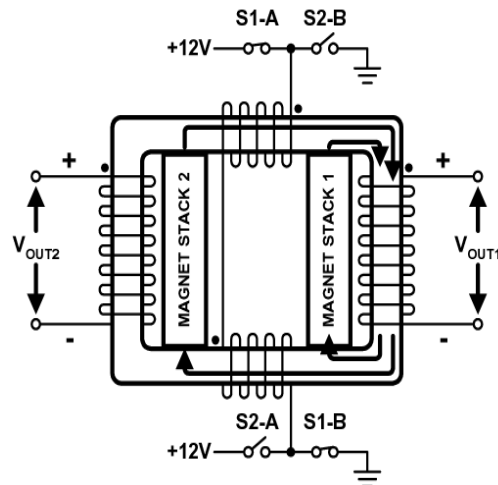
Fig.21

FLYNN'S PARALLEL PATH DESIGN

BOTH DESIGNS HAVE IDENTICAL SWITCH STATES
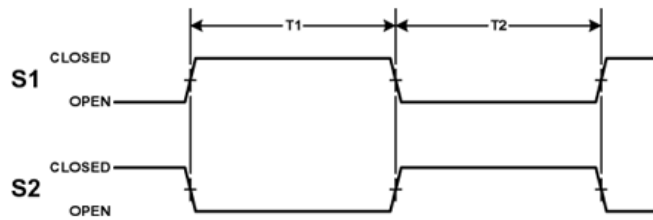
Fig.22

SWITCHING CHARACTERISTICS

The Flynn design has a more efficient input switching scheme than the Bearden design.

THE SmartMEG OVER UNITY DEVICE

The SmartMEG is classified as a CATEGORY 3B Over Unity Device.

The design implements the efficient Flynn input scheme. This device uses the series wired control coils and a double magnet stack.
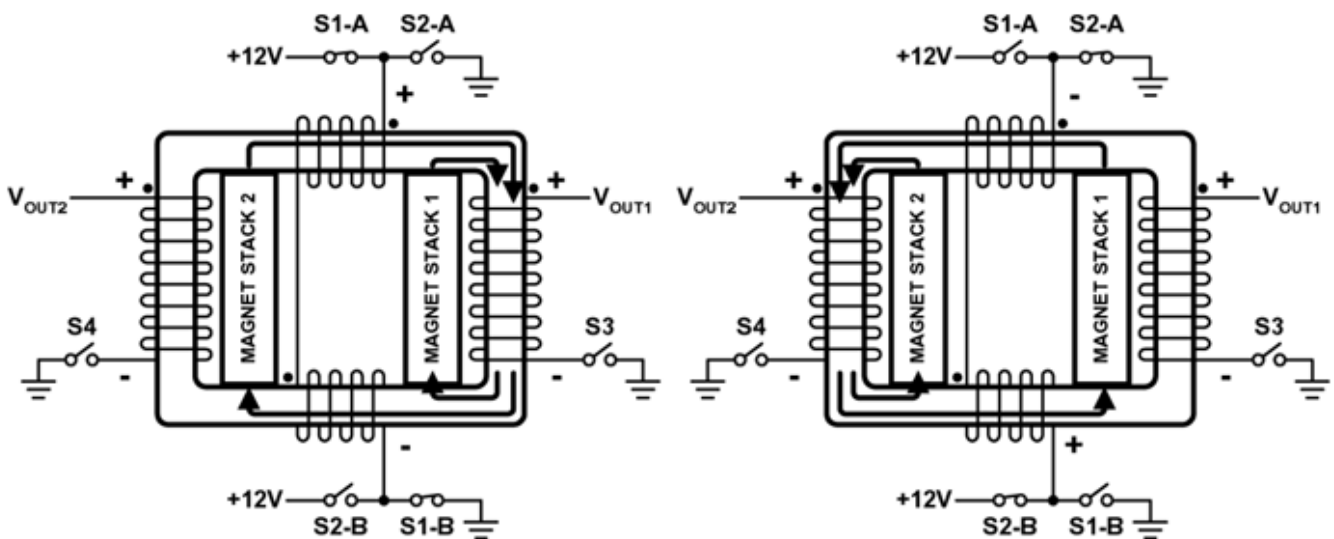
Fig.23

ELECTRICAL DIAGRAM
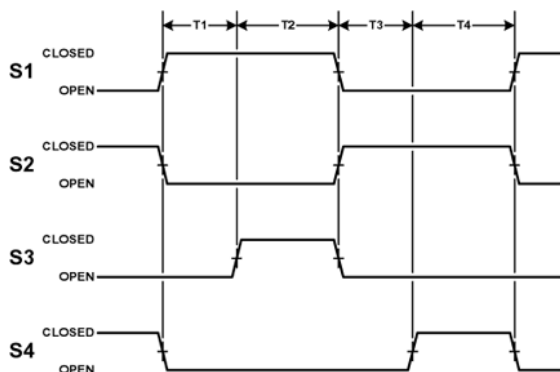
Fig.24

SWITCHING CHARACTERISTICS

T1&T3: Wait for full flux transfer.
T2&t4: Activate output switches. Collect excess energy.

When S3 and S4 are open, the intended secondary coil has a voltage bounded by Faraday's Law to the total flux flowing through its' core. This flux is the sum total of the two magnet stacks flux and the control coils flux.
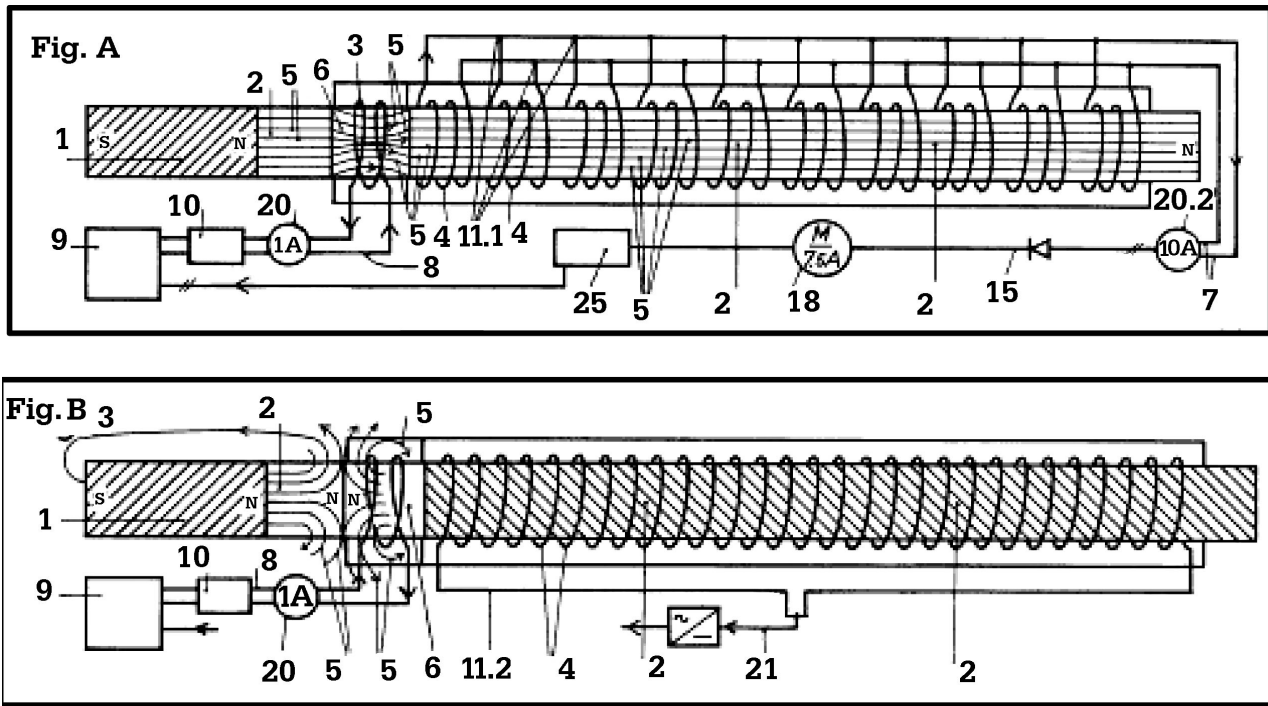
Fig.25

The Heinrich Kunel patent is classified as a CATEGORY 3C Over Unity Device, but NOT as shown in the patent.

The "correct" operation of this device appears to be a combination of the SmartMEG and the Adams Motor. The magnetization of the control coil cancels the field flowing through the flux gate. Then, reverse magnetization of the same causes flux from the control coil plus the flux from the magnet to magnetize the core. An output delay turn on circuit may be required as a caveat to ensure magnet flux transport across the air gap. Excess energy can then be collected in the output coil.

THE SmartPAK KPOD OVER UNITY DEVICE
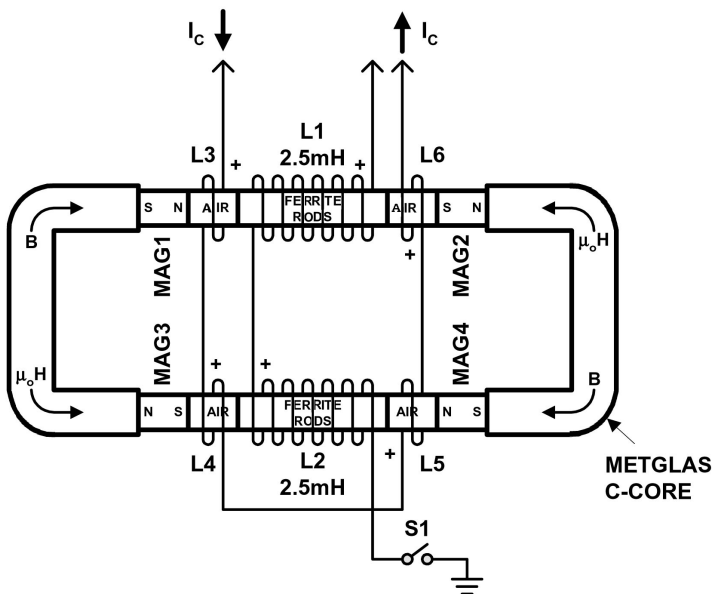
Fig.26

ELECTRICAL DIAGRAM

NOTE 1:
μ_0**H:** Produced by coil L1 and L2.
B: Produced by magnet MAG1   MAG4.

L1 and L2 use 50ft of 16AWG magnet wire each.
 C Core: METGLAS, AMCC 500.
MAG1   4 are NIB type magnets.

The SmartPAK KPOD is classified as a CATEGORY 3C Over Unity Device.

The coils L3   L6 are the flux control gates, and are operated bi-directionally (AC). The actual operation is very similar to the Flynn input design. Output delay turn on is provided by switch S1. This will ensure the magnet flux is transported across the air gap.

Excess energy is collected in output coils L1 and L2.

THE Adams MOTOR
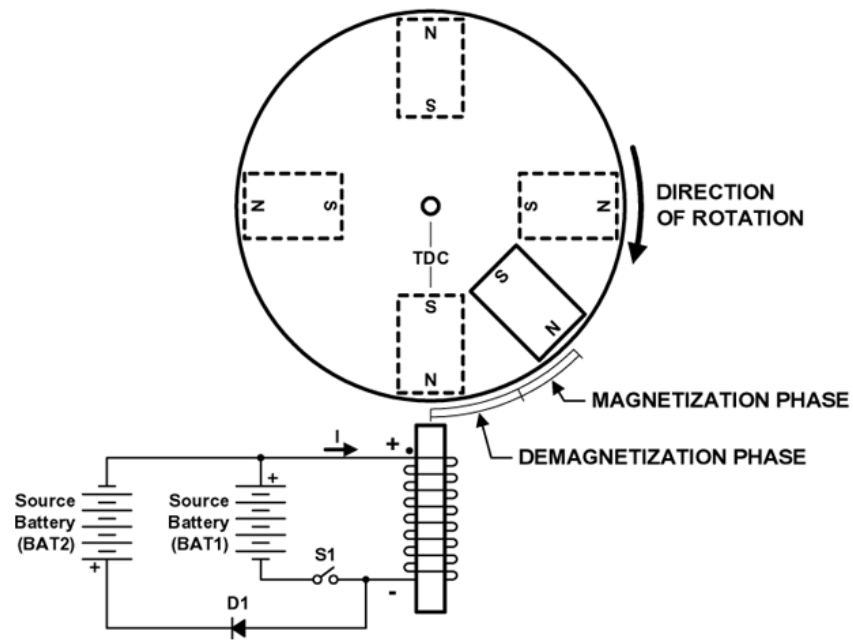
Fig.27

ELECTRICAL DIAGRAM

NOTE:
S1 is closed during the magnetization phase of a magnetization/demagnetization cycle.

The Adams Motor is classified as a CATEGORY 3C Over Unity Device.

As the magnet approaches Top Dead Center (TDC), maximum influence of the magnet flux with the coil/core demagnetization phase is obtained. Hence, the coil/core demagnetization energy is greater than the magnetization energy.

As the magnet moves past TDC, the influence of its flux with the coil/core decreases.

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18. C. Flynn, "Methods for Controlling the Path of Magnetic Flux from a Permanent Magnet and Devices Incorporating the Same", US Patent 6,246,561, June 12, 2001.
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DISPROOF

We have to claim that Dr. Alexander Petrovich Levich, Moscow State University is not a member of the organizing committee of the congress "The Time Machine", planned by Faraday Lab Ltd in April of 2003.

The previous publications in "New Energy Technologies" magazine #3(6) 2002, p. 16 and #4(7) 2002, p.76 are mistaken.

We have to state our apologies to Dr. Alexander P. Levich for this non-coordination.

RUSSIAN INTERDISCIPLINARY TEMPOROLOGY SEMINAR.

MOSCOW STATE UNIVERSITY under the **MOSCOW GOVERNMENT** support is continuing a work of the Russian Interdisciplinary Temporology Seminar. During the autumn semester of 2002, sessions are held in the P6 lecture hall of the 2nd Academic Building of the Moscow State University at Sparrow Hills (the corner of Lebedev street and Lomonosovsky avenue) every Tuesday. The sessions start at 6:00 p.m. Entrance is according to the list.

See the Seminar program in the current semester at http://www.chronos.msu.ru/seminar/rprogram.html.

Seminar problems:

- *Could you offer "construction" (model) of time?*
- *Are existing tools of time description in your science area entirely sufficient?*
- *How do you think, whether new essences for understanding of a phenomenon of time are necessary or necessity of their generation has not come yet?*
- *Is it necessary to introduce specific time in your specific field of research or it is enough to use universal scientific ideas about time?*
- *If specific time in your specific field of research exists, how it is measured?*
- *Is time the necessary element of being? (I.e. does natural referents of time exist or time is only construct of human thinking? Is time phenomenon or noumenon?)*

The purposes of the Seminar are:

- *To present the review of existing tendencies of thinking in space of modern culture.*
- *To help the researchers to penetrate into intuitive and explicitive ideas about time which are inherent usual to the experts of various scientific disciplines.*
- *To create conditions, forms of activity and stimuli for professional study of time.*
- *To create conditions for consolidation of the time researchers; owing to establishment of contacts to create a "critical mass" of the actively working specialists; to create a scientific medium stimulating research.*
- *To promote socialization of new scientific ideas.*

Basic tendencies of research are:

- *Creation of obvious constructions (models) of time in various areas of scientific knowledge.*
- *Comprehension of the World nature variability and development of adequate methods of variability measurement.*
- *Application of time constructions for searching for the laws of variability (equations of generalized motion) in specific science fields.*
- *Searching for and experimental study of the natural referents of time.*
- *Coordination of the created time constructions with conceptual base of natural sciences.*

Seminar is continuing the work on a project of the virtual Institute of Time Nature Explorations (http://www.chronos.msu.ru). *The Institute includes: laboratories-divisions conducting scientific and educational activities; an electronic library; an electronic dictionary of temporology; an electronic biographic reference book of researchers of time, and other subdivisions.*

Questions on the activities of the Temporology Seminar could be addressed to:

Alexander Petrovich Levich: levich@chronos.msu.ru

COMPANY ANNOUNCES $1 MILLION ENERGY PRIZE

Apply at http://www.SeasPower.com/zprizeannounced.htm

Space Energy Access Systems, Inc. (SEAS) has announced the one million dollar **"Z Prize"** for an energy invention that would dramatically decrease the need for fossil fuels.

The Charlottesville, VA based energy company will provide the $1 million prize to the inventor or inventors who provide a testable prototype of an invention that can serve to either replace current internal combustion energy systems or greatly increase their efficiency. The **Z Prize** is named after the so-called zero point energy field that many physicists claim is a vast field of energy that can be tapped from the space around an object.

Specifically, the company is looking for new energy systems that could allow each home or business to have its own energy generation capability without the use of fossil fuels and a system for greatly increasing the fuel efficiency of motor vehicles. The winning invention must be reproducible, economically viable and suitable to widespread acceptance.

Steven M. Greer MD, the CEO of SEAS states that: "We know such breakthroughs in energy generation have occurred in the past, only to be suppressed by a number of questionable means. This time, we are committed to identifying and bringing to the public the most advanced systems to replace our addiction to oil and fossil fuels."

SEAS has a Technical Advisory Board comprised of prominent scientists and engineers. Inventors may visit the SEAS Inc. website at: **http://www.SeasPower.com/zprizeannounced.htm** and complete an application. Submissions must be received by December 1, 2002 and the prize will be determined by December 31, 2002, unless the company determines that the contest needs to be extended.

NEW BOOK!!!

Mysteries of Electromagnetism and Free energy

Gennady V. Nikolaev

General manager of Scientific and Technical Center of Nontraditional Electrodynamics.

Kuleva st. 25-25, Tomsk, Russia, 634034, Tel./fax. 41-87-95, 48-15-53,
E-mail: nikolaev@mail.tomsknet.ru, ntcned@mail.tomsknet.ru

In the new book written in an easily understood, popular manner, there is the review of the serious crisis of modern fundamental physics. This very crisis of fundamental physics, and especially of our knowledge about electromagnetism laws of the environment, has caused the situation when the most of electromagnetism phenomena of our reality seem to be strange.

The limited nature of our knowledge about the reality becomes obvious when we face with so-called anomalous phenomena. Moreover, some representatives of the official science declared this field of knowledge about anomalous phenomena to be a pseudo-science.

To make this actual problem clear, the second part of the book is devoted to such things as free energy generators, perpetual motion machines, antigravitation, and the official academic science attitude to the problem.

The author makes an attempt to give the theoretic explanation of the phenomena and prove the baselessness of the conclusion made by modern science about the impossibility of the already existent free energy generators, antigravitation systems, perpetual motion machines and other similar things. All these and similar to them energy systems and generators, as well as anomalous phenomena and UFO, have all rights to exist both from the philosophy and science points of view.

To show the possibility to realize these still fantastic for the mankind projects, the author offers vivid descriptions of just the small part of all existent devices *(in the review there are devices and designs of nearly 70 authors and inventors from all over the world!)*. Actually the number of the devices is much more. Authors and inventors of different ages and professions continue to make new experiments contrary to the official academic science prohibition in order to penetrate into the unexplored mysteries of the environment.

VORTEX DC MOTOR

From Rick Harrison

http://www.fuellesspower.com/vortex.htm

"I have discovered something NEW! No other research group in the world has ever seen anything like this! "

Rick

There I was one morning at my desk playing with a small coil of copper coated wire   and a small ceramic magnet, I have many odd things laying around on my deskand one of them was   an aluminum configuration made up of many small disks from an earlier project. I picked it up and attached it to both ends of the wire; I discovered it produced a strange electrical reaction! I was very excited! My heart was beating very fast! I played with it some more and found it to be some sort of electrical vortex, pulling and collecting free copper electrons from the coil of wire .

Some how I stumbled upon some sort of **new way to generate electricity!** Some type of electrical vacuum vortex generator! I do not know how to explain it! I can now take any size of copper coated wire (coated or uncoated) and produce high efficiency free energy from it, just enough energy to stay at 100% with or without a soft iron   core.

With this new technology you can make any DC motor Run with less amperage. **Great for electric cars,** which will allow the user to get far better mileage from a fully charged battery bank. **Build a DC Motor** using my new technology, and use it to run a 12 -14 vdc car alternator generator which are already designed for very high efficiency's, and keep 412 vdc deep cycle marine batteries fully charged. The batteries are connected to our 5,000 Watt inverter which steps up the incoming 12 volts dc to 120 volts dc and then alternates the incoming 120 vdc to 120 AC, to run your entire home! (You can buy these inverters from online, solar panel comp anies or build one yourself from our 5,000-watt inverter plans) The Special DC Motor that will be using my new discovery will not need to run all the time only when the batteries get below 12 volts dc. This is great for replacing expensive solar electric systems found   in millions of home all over the world! Our system is far cheaper to build! And will give you hours of fun and enjoyment for years to come!

Rick

Science Jokes (from Internet sources)

- Answer to author from editor: "The article, we have received from you, contains much that is new and much that is true. Unfortunately, that which is true is not new and that which is new is not true".

- When a schoolboy was asked to cite Newton's first law, he said, "Bodies in motion remain in motion, and bodies at rest stay in bed unless their mothers call them to get up."

- Question: What do physicists enjoy doing the most at football games?
  Answer: The "wave".

- Q: Why are quantum physicists so poor at sex?
  A: Because when they find the position, they can't find the momentum, and when they have the momentum, they can't find the position.

- A neutron walked into a bar and asked, "How much for a drink?" The reply: "For you, no charge."

- Q: What is the simplest way to observe the optical Doppler effect?
  A: Go out at and look at cars. The lights of the ones approaching you are white, while the lights of the ones moving away from you are red.

Scientists attempt to measure speed of gravity

UNIVERSITY OF MISSOURI NEWS RELEASE

According to http://www.spaceflightnow.com/news/

Ever since Albert Einstein proposed the general theory of relativity in 1916, physicists worldwide have tested the theory's underlying principles. While some principles - such as the speed of light is a constant - have been proven, others have not. Now, through a combination of modern technology, the alignment of a unique group of celestial bodies on Sept. 8, and an experiment conceived by a University of Missouri-Columbia physicist, one more of those principles might soon be proven.

"According to Einstein's theory, the speed of gravity is assumed to be equal to the speed of light," said Sergei Kopeikin, MU associate professor of physics and astronomy. "While there is indirect evidence this is true, the speed has never been measured directly, and that's what we're attempting to do in an experiment that will not be possible again for another decade".

The experiment will involve precisely measuring the angular distances between several quasars, celestial objects in distant galaxies that resemble stars. On Sept. 8, Jupiter will pass very close to the primary quasar. When it does, its gravity will cause the quasar's position in the sky to shift by a distance that depends on the speed of gravity. Kopeikin and Ed Fomalont, a radio astronomer with the National Science Foundation's National Radio Astronomy Observatory (NRAO), will use an observational technique they developed to compare the position of the primary quasar to the position of other quasars unaffected by Jupiter. Using their data, they hope to confirm the accuracy of Einstein's theory further.

Measurements will be made using the NRAO's Very Long Baseline Array (VLBA), a series of 10, 25-meter radio telescopes located from the Virgin Islands to Hawaii, and the 100-meter radio telescope in Effelsberg, Germany, which is operated by the Max Planck Institute for Radio Astronomy. "Results from recent VLBA test observations indicate we can reach the accuracy necessary to determine the speed of gravity if the experiment goes well," Fomalont said.

"Japanese and NASA scientists also will conduct the experiment independently using other telescopes around the world, so we'll be able to compare our findings," Kopeikin said. "We believe the general theory of relativity is correct and that the speed of gravity is equal to the speed of light."

"The techniques we've employed for this experiment can also be used to more precisely determine the position of other objects in space," Fomalont said. "With more exact positioning of satellites, we could improve telecommunications. Unmanned space navigation could also be improved, allowing us to explore the solar system more deliberately".

The scientists said final results from the experiment should be available in mid-November.

First Running on Air Car is created in Great Britain

According to the information of Ross Business Consulting
http://www.cnews.ru/topnews/2002/09/06/content5.shtml

The first in the world car, which runs on air, was represented in London. The car of the future was designed by **Gay Negre**, an engineer of French company "Moteur Development International" (MDI).

The innovation is set in motion by power air. The creators say that the car can make 102 km/h maximal speed and after total refueling run a distance of 186 kilometers.

The principle of the car operation is following: power air is injected into airproof reservoirs, and its pressure sets in motion the pistons of the engine. The only by-product of the engine work is air, which comes to the air-conditioning system of the car.

Development International Company is going to produce three test models: minivan, five-seat taxi, and pick-up. The producer affirms, that they have signed an agreement about pollution-free cars producing with 50 factories located in Europe, America and Asia. The price of the car is considered to come to 5500 pounds sterling.

INVESTIGATION
Valerian Sobolev's Discovery

Editorial: This story began on 12.07.01 with TV announcement of the following content: "The head of the group of authors, the Academician of Russian Academy of Natural Science, Leninist and State prize laureate, Doctor of Technical Science, Professor **Valerian Sobolev** informed that Russian scientists made the series of sensational and fundamental discoveries, which can make a revolution in industry and power engineering."

Seven fundamental scientific discoveries were made, namely:

- The process of depletion, a particular electrochemical selective process;

- New state of matter;

- New class of materials;

- Magnetic charge;

- New energy source;

- The method of low-temperature plasma generation;

- Superconductor.

The process of depletion has been experimentally discovered. It is the basic discovery, which was followed by all the others. This process is similar to the process of electrolysis and easy as well. However, **the products** of the process are metals and monolithic multiple-unit chemical compounds **such as quartz glass**. The composition of the materials corresponds to such matters as titanium diboride, silicon, ferric, aluminum, and titanium oxides. Melting temperature value of these matters lies in the interval from 1500°C and more than 3000°C.

It is declared to be technically easy to create a current source, i.e. a Self-contained Unit, which is a source of electro motive force (EMF) (the observed value is nearly 1500 Volt for 100 cm of matter volume).

It is planned to design such a self-contained device as a safe self-governing electric power station for common and industry usage. This device could be made as a current source, which has 3 kWt power and is able to produce energy in any climate condition of the Earth.

A United States Patent (#5,964,913, Titov , et al., October 12, 1999) describes the essential principles of this technology.

United States Patent *5,964,913*
Titov, et al. October 12, 1999
Method of making a vitreous material

Abstract

The invention relates to a single phase vitreous material and to its production from a melt of a glass-forming multi-component feed mix. The process includes the preparation of a single phase melt in which there are mobile cations from a glass forming feed mix. The melt in passed in contacting relationship with and sequentially between devices made of low electrical resistance material from device to device. These devices are in and complete with the melt and a direct current voltage source an electric circuit. A voltage is regulated in the electrical circuit so that a direct electrical current is created in it and the concentration of the mobile cations in the melt is lowered thereby with reduction on the cathode of the metals of the same kind as the mobile cations. The melt, lowered concentration of the mobile cations, is cooled to produce the material as a structural article. In another embodiment, the anode is separated from the melt by a medium, which is substantially inert with respect to the melt. A voltage in this electric circuit is regulated to create an electrostatic field between the cathode and anode so that a direct electrical current is created, and thus the concentration of mobile cations in the melt is lowered with reduction on the cathode of the metals of the same kind. This melt similarly is cooled to produce the material as a structural article. In another embodiment, the embodiments of both the electric circuit with the anode contacting with the melt and the electric circuit with the anode not contacting the melt are practiced simultaneously.

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Assignee:	**Dynelec Corporation** (Columbus, OH)
Appl. No.:	**934410**
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Intern'l Class:	C03C 015/00; C03B 005/02; C03B 005/027
Field of Search:	65/30.1,135.6,135.7 205/769,358

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CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of application Ser. No. 08/617,620 filed Mar. 18, 1996, now abandoned, the disclosure of which is expressly incorporated herein by reference.

Claims

We claim:

1. A method of producing a single phase vitreous material from a melt of a glass-forming multi-component feed mix which comprises the steps of:

(a) preparing a single phase melt in which there are mobile cations from a glass forming feed mix, components of which feed mix are chemical compounds selected from the group consisting of a chemical compound which includes a univalent metal which in the melt is a mobile cation, a chemical compound including a divalent metal which in the melt is a mobile cation, and mixtures thereof, and

chemical compounds selected from the group consisting of a chemical compound which includes a trivalent metal, a chemical compound which includes a metal with a valence higher than three (3), and mixtures thereof;

(b) passing said melt in contacting relationship with and sequentially between devices made of low electrical resistance material from device to device, said devices in and completing with the melt and a direct current voltage source an electric circuit in which circuit there is a said device serving as an anode and there is a said device serving as the cathode;

(c) regulating a voltage in said electrical circuit so that a direct electrical current is created in it and the concentration of the mobile cations in said melt is lowered thereby with reduction on the cathode of the metals of the same kind as the mobile cations; and

(d) cooling said melt which has the lowered concentration of said mobile cations to produce the material as a structural article.

2. The method of claim 1 wherein the glass forming feed mix melt having a lowered concentration of said mobile cations is cooled in the range of the temperatures of crystallization of this melt at a rate so as to obtain a material from this melt in the amorphous state, this material being in the form of a structural article.

3. The method of claim 1 wherein the melt of the glass forming feed mix having a lowered concentration of said mobile cations is maintained in the range of the temperatures of crystallization of this melt in such a way so as to obtain a material from this melt in the crystalline state, this material being in the form of a structural article.

4. The method of claim 1 wherein said components are in the form of compounds selected from the group consisting of oxides, fluorides, bromides, carbonates, sulfates, nitrates, phosphates, and mixtures thereof.

5. The method of claim 1 wherein said components in the form of compounds selected from the group consisting of carbonates, sulfates, nitrates, phosphates, and mixtures thereof, are transformed in step (a) into components of the feed mix.

6. The method of claim 1 wherein said components comprise the chemical compound the carbonate Na_2CO_3, which in step (a) is transformed into the starting component Na_2O, which includes the univalent metal sodium, and the chemical compound the oxide SiO_2, which includes metal silicon with a valence higher than three (3).

7. The method of claim 1 wherein said components comprise the chemical compound Na_2CO_3 and the chemical compound SiO_2 and in which the concentration of the cations of the univalent metal sodium (Na) is lowered in order to obtain a single phase material of fused oxide of the higher valent metal silicon (Si) having a valence higher than three (3) in the form of quartz glass (SiO_2).

Editorial: We will inform our readers about news on the topic.

***

To: **Dr. Yu.N. Ivanov**, Academician of Russian
Academy of Natural Sciences, Moscow, Russia

From: **James W. Black**
E-Mail: Genesis8888@sympatico.ca

Dear Dr. Ivanov,

I am reading your article, "Action without Reaction", in the recent issue of "New Energy Technologies" which I received earlier today. You have some very interesting observations and points for discussion regarding the two, oppositely directed streams of water, one of which is supporting the ball or object without connection to the source.

Of course, this is particular to the case wherein one of two oppositely directed streams, e.g., of water, is directed in an opposite direction to the forces of gravity. On a parallel or horizontal plane, i.e., to the surface of the Earth, the forces of the kinetic energy and linear momentum of the flowing or jet stream would be impressed upon and transferred to the ball, thereby increasing its kinetic energy and linear momentum. I would like to give some further thoughts to your unique observations and I also would like to compliment you for your unique and original thought processes and observations! The scientist, J. Robert Openheimer, once said that the scientist (or anyone!), essentially, must be free to challenge any scientific opinion, dogmas, principles and established theories or otherwise freedom and truth will perish altogether in our world. I believe that this also applies to philosophies, religions and to political systems, etc.

In the 1990s I received a U.S. Patent for my invention of an Internal Momentum Engine (Impulse Drive, Non-Linear Propulsion and Energy Conversion System). Testing was successfully conducted which was paid for by the Canadian Space Agency and the new invention was endorsed by Dr. Harold Aspden of the University in Southampton, U.K., one of the world's leading experts in advanced energy and propulsion systems. The new invention also captured the attention and interest of U.S. Admiral Warren Aut, the former Chief of Staff of the Allied Forces in Europe, i.e. N.A.T.O.. During the testing at ORTECH International (now, BODYCOTE ORTECH, or BODYCOTE Materials Testing Canada Inc., part of a conglomerate purchased by a company listed on the stock market in the U.K.), a suspended platform (held by wires from a framework) was placed between two force transducers and impulses were measured. I placed two carts on the top of the platform, the second of which also comprised a flywheel. The first cart was initially accelerated by a magnetic impulse from one end of the suspended platform and then impacted a second cart in the centre of the back. The second cart then traveled along the tracks to impact with the end of the suspended platform. The initial impulse of magnetic acceleration of the first cart and the final impulse of the impact of the second cart at the end of the suspended platform were measured by the two force transducers mounted against both ends of the suspended platform.

In one interaction, the first case, direct linear interactions and impacts occurred between the two carts.

The second case involved a partial rotational and partial linear interaction in which the first cart was magnetically and equally initially accelerated, as in the first case, and then magnetically braked by magnets on the rim of a balanced flywheel located on the top of the second cart, thereby imparting both linear and rotational motion, momenta and kinetic energy to the second cart. In both the first and second cases, the first cart was completed braked by its interaction with the second cart and came to a complete stop. In the second case involving the partial rotation interaction, the second cart went down along the tracks, was linearly braked at the end of the suspended platform, and thereby imparted an impulse to the suspended platform which was measured and recorded by the force transducer in a similar fashion to the first case involving only linear interactions between the two carts and the opposite ends of the suspended platform.

After a series of tests, we determined a 5.24% reduction in linear momentum in Case 2 involving a transfer of the linear momentum of the first cart to impart both rotational momentum to the flywheel and a linear acceleration and momentum to the second cart compared with Case 1, which involved only the linear interactions and transfers of linear momentum. The force transducers were connected to a computer and integrated to give the sum of the impulse and provide graphs of the force over time curves imparted to both the first and second force transducers located at opposite ends of the suspended base platform comprising tracks or rails, etc.

Of course, this may appear to be and is considered contrary to the Law of Conservation of Linear Momentum and contrary to Newton's Laws by conventional engineering and physics textbooks and schools of thought. However, in the original Principia, Newton himself stated that he only measured linear interactions in his experiments and that interactions

between two bodies involving partial rotation interactions were not considered or measured. U.S. Admiral Warren Aut once commented to one of my partners at the time that one would be surprised at what the U.S. Navy has that isn't supposed to work according to the laws of physics!

The Canadian government and ORTECH altered the report, which I was supposed to receive when testing was completed in May 1993. I did not see or receive a final copy of the report until January 1994. By then, we had lost the interest of some investors.

I have also previously established facilities in the United States of America and in Canada and directed advanced research projects. One of the projects involved the John Hutchison Lift Induction Device and Antigravity Technology and we are planning on filing and winning a lawsuit against the governments of Canada and the United States of America, the U.S. Los Alamos National Laboratory, U.S. Army Intelligence and the Director of the U.S. Pentagon-C.I.A. Non-Lethal Weapons Programs, along with a number of American corporations, for stealing the technology and disrupting (shutting down) our projects and several of our advanced research facilities.

However, I also wish to proceed to establish new research projects and facilities concurrently and in the meantime.

I would be happy to keep in contact with you and you should feel free at any time to contact me directly by e-mail or by phone.

Thank you once again for challenging conventional thought and "established" theories!

With best wishes,
Sincerely,

James W. Black

P.S. With an internal reduction of even one half of one percent, you can create an advanced propulsion system and drive system for marine vessels, automobiles and for use in space, i.e., Saucer Programs. The five percent internal reduction in linear momentum may comprise a rotary drive system or engine. Impulse is equal to the change in linear momentum and yet impulse equals Force times Time, i.e., the sum of the applied force over the time interval. As the time interval in minimized and approaches zero in an Internal Momentum and Rotary Engine, the Force is maximized and approaches infinity. Relatively early in this curve, the constant force applied exceeds the forces impressed upon a mass or vehicle, e.g., a Saucer or Advanced Aircraft, by the forces of gravity. The device would be safe for human use up to 1 to 2.0 gs. However, unmanned devices could potentially have a rate of linear acceleration of up to and over 100gs...

Another MEG Gem of a Story!

Hello all,

Check this story out:

http://www.sciam.com/article.cfm?articleID=00034DF5-683F-1D7E-90FB809EC5880000&catID=2

When one reviews the Bearden's MEG patent, there's ONLY one place in the whole document where the excess energy manifests itself, and thats on page 4 of this pdf document: http://groups.yahoo.com/group/smartmeg/files/Patents/06362718_001.pdf

It shows up as excess voltage produced by the magnet flux under NO LOAD! That's very very important - under NO LOAD. The magnetic flux anomaly can ONLY manifest itself under a NO LOAD condition.

Now, the story makes a JOKE out of the MEG simply because the author and Bearden and co. are ignorant of the magnetic anomaly involved. Bearden seems to know there's something there, however, he's LOST in his scalar wave nonsense theory. The anomaly wasn't sufficiently addressed in his patent.

Now, I ask, how many people in the whole world know about this anomaly? You can probably count them on one hand.

William S. Alek, INTALEK, INC.

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Review on the Tilley Electric Car Recharger Promotion

Update on Carl Tilley's Device

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"Free Energy" Car Suffers Mechanical Breakdown

The potential record-breaking event by an electric vehicle at the Nashville SuperSpeedway this Saturday morning (9/7/02) disappointed Tennessee inventor Carl Tilley, his associates, and about a hundred other people attending the admission-free gathering, when a wheel bearing failed. See www.tilleyfoundation.com for the company's promotional material and information. The Tilley Foundation had rented the new SuperSpeedway for an expected all-day run to crush, with a margin of hundreds of miles, the world record for an EV of 220 miles. The group had rented the SuperSpeedway at a reported rental cost of about $5,000.

Tilley claims to have invented a device that re-charges batteries on-the-fly in automobiles and in fixed installations, using no evident fuel or power source (except whatever energy may be accessible from the space vacuum). Photos of this device that are circulating show what looks like a very small electric motor with its output shaft penetrating an approximately one cubic foot metal box. Independent observers who have been to Tilley's lab say that this is the device that Tilley claims is also powering his building.

Tilley's 1981 DeLorean, retrofit with a conventional electric motor and controller (purchased, we confirmed, from EV America of Wolfboro, New Hampshire), had to stop its planned multi-hundred mile demonstration after only about 18 miles of high speed driving (moving in the 70-90 mph range, estimated by observers). Its left rear wheel bearing failed, making the car inoperable for any more laps. An independent engineer from New York, who had driven to Nashville in HIS unconverted DeLorean, confirmed to the attendees that DeLorean vehicles are particularly prone to such bearing failures his own vehicle had had several such bearing failures in the past.

Our colleague, engineer Jan Roos, who witnessed Saturday's demonstration relates that Tilley and his associates promise another public demonstration soon, which will involve TWO vehicles the DeLorean with new bearing replacements on all wheels, and a retrofit SUV of some kind. By doing this they hope to insure a successful demonstration. They have privately promised also a public demonstration of an electric-powered single-engine piloted aircraft, to be flown from Florida to somewhere in New England! Prior to the mechanical failure Saturday, the airplane flight was to have occurred before the end of October. Douglas Littlefield of Vermont, Tilley's spokesman, told me that they have obtained FAA approval for such a test flight.

Jan Roos told me this evening that he inspected the vehicle as closely as possible, with the various compartments open, and there was no evidence of any kind of auxilliary batteries or another concealed engine. It is an electric vehicle, period. Two of the compact Tilley devices, with drive belts attached, appeared to be near the engine, Roos said. In the rush to start the early morning, all-day run on Saturday, Roos was not able to measure the initial 12, 12-Volt Wal-Mart battery pack voltage. However, the voltage reading immediately after the car stopped was 137 V, measured by Roos' DVM. The pack recovered to 144.8V within about 20 minutes after this. Chemical recovery of storage battery potential is a known phenomenon, of course. Tilley understands this, but noted to Roos that his device continues*some* of its recharge functioning after vehicle motor shut down. It is not clear what the average voltage of the battery pack would be during high-speed travel — assuming the recharging claims are valid.

Tilley and his associates claimed to Roos and others that the DeLorean had been driven 202 miles on a drive to Kentucky in the few weeks preceding the 9/7 public test, which if true would be remarkable. (The world record for a capable EV was by a Geo-Metro that went 220 miles.) Despite these dramatic claims, at this time it is not possible to draw conclusions about any anomalous performance of the vehicle. This must await further public demonstrations. It is noteworthy, however, that despite the embarrassing mechanical failure, there seemed to be no reluctance by the inventor and his business associates (many evidently from Vermont) to promise further demonstrations soon. This is a positive development.

Prior to the 9/7/02 test, I had called Bob Batson, who runs EV America in Wolfboro, NH. I asked him how far a 3,000 lb De Lorean equipped with 12, 12-Volt (130-A-hr) batteries would be expected to travel, at say 60 mph, before stopping due to battery exhaustion. He ran his calculation and said that at 60 mph the car would travel at maximum 52 miles, but the average stopping distance would be 37 miles. This should put past and future claims by Carl Tilley and his associates in proper perspective.

Roos said he learned that the Tilley Foundation's plan is to sell the rights to the technology as soon as possible. There have been many interested parties, it is said. One non-negotiable requirement, Roos learned, is that the purchasing entity must agree to put the technology into the marketplace within three years, or the rights revert back to the Tilley Fundation.

In closing let me note the location of a few reports by others, before and after the Sept. 7th event:
http://www.greaterthings.com/news/tilley/press releases/020908 demo report.htm

http://www.tennessean.com/business/archives/02/09/22041880.shtml?Element ID=22041880

NOTEKA-S

ECOLOGY, ENERGY-SAVING
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e-mail: ntk@pt.comcor.ru

Environmentally appropriate production of heat!

HEAT GENERATORS "NTK"

The generators can be applied for the heating and hot water supply of apartment houses and production areas. "NTK" units work without firing and they are environmentally appropriate. Effectiveness of the unit is not less than 100%.

The principle of operation of these units is based on the heat energy recovery from the moving liquid using the developments and discoveries of Russian scientists. The unmanned cantilever pumps of KM type with end seals are used in these units.

Technical characteristics of heat generators "NTK" ("YUSMAR" type)
Russian Certificate of State standard # ROSS RU.MX03.A00237 from 19.01.2001

"NTK" ("YUSMAR" type)	11 (1)	22 (2)	37 (3)	55 (4)	75 (*)
Nominal power of the unit (kWt)	7,5-11	22	37	55	75
Power consumption of the unit (kWt)	7,5	17	32	54	75
Frequency of rotation of the electric motor (rpm)	2900	2900	2900	2900	2900
Voltage of the circuit (V)	380	380	380	380	380
Heating volume (cubic meters)	Up to 350	Up to 700	Up to 1500	Up to 2500	Up to 3500
Temperature of the heat carrier (C)	Up to 115	Up to 115	Up to 115	Up to 115	Up to 115
Heat productivity (kkal per hour)	7600	17000	35000	55700	72000
Mass of the unit (kg)	Up to 130	250	400	550	700
Overall dimensions: length (m)	1,3	1,3	1,5	1,8	2,0
width (m)	0,5	0,8	0,8	0,8	0,9
height (m)	1,3	1,8	1,9	1,7	1,8
Operating mode	Automat	Automat	Automat	Automat	Automat

(*) Model is under development, term of production is up to 4 months.

Set of delivery includes automatics, which provide:
- Regulation of the heat mode of the unit;
- Protection of electric motor from all kinds of overload.