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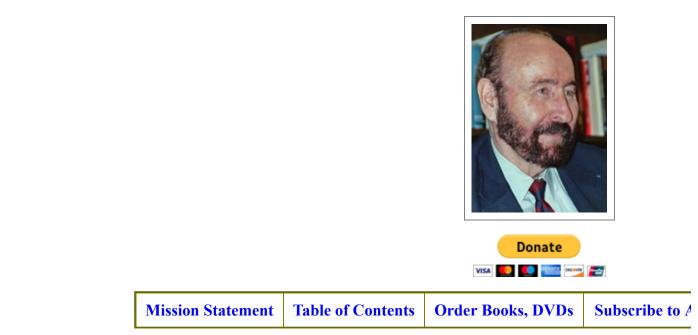**Mission Statement** | **Table of Contents** | **Order Books, DVDs** | **Subscribe to A**

Subject: RE: Re: MEG concept.
Date: Sun, 13 Apr 2003 13:48:47 -0500

Daniel,

Glad you're looking at the MEG.

It isn't just a regular transformer. Of course a "one-reservoir of energy" transformer, where one pays to input all the energy in the reservoir, will not produce COP>1.0. The transformer will inevitably have at least some losses, so one will get out less energy tha one inputs. A good transformer may have, e.g., an efficiency of 90%, as you are aware. A top-notch transformer might achieve 95%.

On the other hand, for the MEG, one must get out of the electrical engineering text and Maxwell-Heaviside electrodynamics and check out papers in the Aharonov-Bohm effect, later generalized to the Berry Phase (Michael Berry has a very nice website wher you can download lots of good papers), and then further generalized to geometric phase. There are more than 20,000 papers in hard physics literature on those areas of geometric phase, but it is not in electrical engineering. Nonetheless, it is solid physics, r well known and applied for several decades.

Or just check in Feynman's three volumes of physics for the Aharonov-Bohm effect (he spells Aharonov as "Aharanov", at least i the older editions). When one localizes the B-field flux in a local area (such as inside a good toroidal coil), then all the B-field flux held inside the coils themselves, and none spills into the space outside the coils. In short, one confines ALL the magnetic field flu one uses in a normal transformer (and one pays for) inside the toroid. When that is done, the outside spacetime is still curved general relativistically. So the curvature of spacetime itself produces an extra field-free (curl-free) A-potential in that space outside the coil. That is a SECOND energy reservoir, and one does not have to pay for it. It's provided freely by nature (by the environm i.e., the curved spacetime). That is the original Aharonov-Bohm effect, now completely proven and accepted. But no one though use it for power before.

So we found a transformer core material that does the same thing a good toroidal coil does. The core material localizes all the B-field flux inside the core material itself, and that gives us the same energy available in the core alone, that a normal excellent transformer could have in total. That is the FIRST energy reservoir in the MEG from which one can extract energy.

Simultaneously, the Aharonov-Bohm effect results in a FREE, SECOND energy reservoir outside the core, again in the form of a curl-free (field-free) A-potential in that outside space.

Using d for the partial differentiation symbol because of this E-mail medium: As is in all the text-books, $dA/dt = -E$, where the magnitude of the E-field depends on the *time rate of change* of the A-potential, NOT just on the *magnitude* of that A-potential. Voi By shaping the leading edge and trailing edge of the nearly rectangular input pulses we use to input to the primary coil around the

core, we can determine the magnitude of the produced E-fields in space surrounding the core. That's in addition to the NORMAL transformer functioning, using the B-flux inside the core material (now an H-flux because it's in physical material).

So from the core flux, we can have the performance of a normal transformer with an efficiency of, say, 90%. So from the FIRST energy reservoir (the core flux energy), we can take off 90% of the energy into the secondary and output from it, just like a norma transformer.

However, from the SECOND energy reservoir, we also simultaneously get an input E-field reaction directly from the surrounding space and into that secondary coil. In short, if we carefully time and phase everything by adroit switching, we can get more energy into that output coil from the E-field in surrounding space, than we get into it from the H-flux inside the core.

In short, we have taken advantage of nature's kindness, where nature freely formed an EXTRA energy reservoir for us and made available if we wished to use it. We collected some of that EXTRA energy gratefully in the secondary, in addition to the energy collected in quite normal fashion from the FIRST energy reservoir.

So the total output energy is that 90% of the energy in the first reservoir, plus more than that from the second energy reservoir wh we make fairly large.

You are aware that, from any given E-field, one can collect as much emf as one has charge to intercept it -- that is the simple equation $F = Eq$. So we adjust the output coil so that it has a substantial surface charge --- more q. This means that, from that impinging E-field from the SECOND energy reservoir in space outside the core, we can collect just as much energy as we wish, subject only to the limitations of the amount of surface charge we arrange in the secondary. Let us say that we get twice as much energy in that output coil from the EXTRA, FREE external E-field reaction as we get from the internal H-flux and its reactions. Th using the 90% efficiency for the "normal transformer collection from the first reservoir only), we have (0.9 + 1.8) as much output energy in the secondary as we have available in the normal H-flux in the primary coil. That means we have 2.7 times as much output energy as is available in the input coil.

Now suppose our input efficiency (any switching circuit wastes some) is only 50% (we can actually do quite a bit better, but let's b very conservative). So we have to input and pay for twice as much energy as we get available in that input primary coil. This me that, in terms of "available energy W in the input coil), our input energy we pay for is 2W. The total output energy we get in the secondary is (2.7 W). The COP, defined as COP = (useful output)/(total paid input by the operator) is 2.7W divided by 2W, which equal to COP = 1.35. As we stated, we can then adjust the second reservoir's energy easily, increase efficiency of switching, etc. reasonable COP to shoot for is about COP = 5.0. By very special measures (not discussed yet; we still have to file additional patents) we can drive that to COP = 10.0 or so.

Note that none of this violates conservation of energy, and none of it violates the second law of thermodynamics. The overall efficiency Eff is still Eff < 100%, because some of the energy available in the first energy reservoir is wasted, and so is some of th energy in the second reservoir wasted. So the total input of available energy to the entire system is greater than the output of the system, even when COP = 10.0. It's just that MUCH of that input energy is freely furnished by nature, from the free second energy reservoir. This is analogous to a conventional heat pump, except instead of extracting some "heat" from the external environmen we trick the external environment into furnishing us a completely free uncurled A-potential energy reservoir, in space outside the core. Then we trick that free, second energy reservoir into turning its energy into E-field energy, for ease of collection and use.

The decisive signature is the deviation of the normal 90 degrees or so phase difference between output voltage and output curren We can produce a "supertransformer" where that phase difference may be as small as two degrees. So in another way, in that ca we have produced almost a totally ELECTRICAL transformer. Or said another way, the ELECTRICAL functioning of the MEG the becomes much more important than its MAGNETIC performance, as the primary energy-output reaction mechanism.

Hope this helps. It really cannot be explained any simpler than that. If you wish a very strong theoretical explanation of the MEG fundamental mechanism of operation, then check the following two papers:

M. W. Evans, P. K. Anastasovski, T. E. Bearden *et al*., "Explanation of the Motionless Electromagnetic Generator with O(3) Electrodynamics," Foundations of Physics Letters, 14(1), Feb. 2001, p. 87-94.

M. W. Evans, P. K. Anastasovski, T. E. Bearden et al., "Explanation of the Motionless Electromagnetic Generator by Sachs's The of Electrodynamics," Foundations of Physics Letters, 14(4), 2001, p. 387-393.

Another good reference is: M. W. Evans, T. E. Bearden, and A. Labounsky, "The Most General Form of the Vector Potential in Electrodynamics," Foundations of Physics Letters, 15(3), June 2002, p. 245-261. Abstract: "The most general form of the vector potential is deduced in curved spacetime using general relativity. It is shown that the longitudinal and timelike components of the vector potential exist in general and are richly structured. Electromagnetic energy from the vacuum is given by the quaternion valu canonical energy-momentum. It is argued that a dipole intercepts such energy and uses it for the generation of electromotive forc Whittaker's $U(1)$ decomposition of the scalar potential applied to the potential between the poles of a dipole, shows that the dipole continuously receives electromagnetic energy from the complex plane and emits it in real space. The known broken 3-symmetry the dipole results in a relaxation from 3-flow symmetry to 4-flow symmetry. Considered with its clustering virtual charges of oppos sign, an isolated charge becomes a set of composite dipoles, each having a potential between its poles that, in $U(1)$ electrodynamics, is composed of the Whittaker structure and dynamics. Thus the source charge continuously emits energy in all directions in 3-space while obeying 4-space energy conservation. This resolves the long vexing problem of the association of the "source" charge and its fields and potentials. In initiating 4-flow symmetry while breaking 3-flow symmetry, the charge, as a set of dipoles, initiates a reordering of a fraction of the surrounding vacuum energy, with the reordering spreading in all directions at the speed of light and involving canonical determinism between time currents and spacial energy currents. This constitutes a giant, spreading negentropy which continues as long as the dipole (or charge) is intact. Some implications of this previously unsuspecte giant negentropy are pointed out for the Poynting energy flow theory, and as to how electrical circuits and loads are powered."

Giant negative entropy lies hidden in electrical engineering and the Maxwell-Heaviside electrodynamics, but it has been ignored f
more than a century. All the energy in every EM circuit or EM device comes directly from the local vacuum, via the source charge
and NOT from cranking the shaft of a generator, etc. Even in staid old classical Maxwell-Heaviside theory and electrical engineer
every EM field and EM potential and joule of EM energy is modeled as coming from the associated source charges. However, in
assuming an inert vacuum and a flat spacetime (both long since falsified completely in particle physics), those classical models ar
terribly deficient, and are only approximations good for situations with not much ST curvature and where one rather inanely uses
the energy collected in the system to destroy the source dipolarity in the external power source (which is what the standard closed
loop circuit is designed to do).

In other words, you can indeed make an "electromagnetic wind" at will, or use those free EM winds that already ceaselessly pour
from every source charge in the universe. One can indeed make an EM circuit or system analogous to a windmill turning in a win
 If the environment can be tricked or urged into furnishing us with a free energy flow, then the only thing necessary to extract ener
from it is to work out how to do it and NOT destroy the ability of the windmill blades to extract energy from the wind. In electrical
circuits, it is standard to use the closed current loop circuit, which fiendishly destroys the source dipolarity (and its asymmetry of
opposite charges) faster than it powers the load. In short, the standard circuit ruthlessly enforces COP<1.0. That is also what
Lorentz's arbitrary symmetrical regauging does to the basic Maxwell-Heaviside equations. The basic equations do indeed prescri
systems that exhibit COP>1.0. The symmetrically regauged equations select and retain only that subset of the M-H theory that
consists of COP<1.0 systems or at best COP = 1.0 resistance-free (superconducting) circuits.

Even by conventional EM theory and by electrical engineering, the Poynting theory tells one that simply laying a charged capacito
on a permanent magnet, so that the E-field of the capacitor is at right angles to the H-field of the magnet, will optimize EXH, whic
optimizing a continuous, steady outpouring of EM energy. But the conventional theory totally ignores any input energy, because t
input energy from the vacuum is in virtual photon form. The broken symmetry of any dipole or dipolarity guarantees that the
dipolarity freely absorbs virtual photon energy from the vacuum, and outputs real, observable EM energy (real observable photon
thereby establishing and continuously replenishing the steady-state (static) EM fields and potentials associated with that dipole.
"isolated charge", once its surrounding cluster of virtual charges of opposite sign is considered, is a fundamental dipolarity and
therefore does extract otherwise unusable EM energy from the vacuum and output usable, real, observable EM energy. Nature h
been most kind, and has given us incredible numbers of freely gushing EM energy producers called "source charges". That the
problem of the source charge and its output of observable energy --- without any input of OBSERVABLE energy input --- continue
be ignored and suppressed from electrical engineering and classical M-H theory, is an intellectual crime, since the basis for all tha
has been solidly proven in particle physics since 1957.

However, the conventional EM model used by electrical power engineers --- in not modeling the input energy to the source charge
from the vacuum or from curved spacetime --- is guilty of a heinous assumption: It assumes that every EM field, EM potential, and
joule of EM energy in the universe is and has been freely created by nothing at all, by the associated source charges.

Its artificial and erroneous restriction of the vacuum to an inert space, and the restriction of spacetime to a flat spacetime, is why
electrical engineering alone cannot and does not explain the operation of the MEG. Far better systems of electrodynamics have l
been developed in particle physics. Using one of the higher group symmetry electrodynamics --- such as in Sachs' unified field
theory or in O(3) electrodynamics founded by Evans and Vigier --- one can indeed model all the required energy reservoirs and
inputs.

The world will have a breathtaking new electrical power system theory and technology whenever the electrical engineering
departments will simply travel across their university campuses to the physics departments and discover broken symmetry of
opposite charges and its implications, proven in 1957 and part of the reason a Nobel Prize was so quickly awarded to Lee and Ya
in the very same year (1957). Meanwhile, in the nearly half century since that discovery and proof, the information has not migrate
across the university campus and caused any change at all in the staid electrical engineering departments, or in the electrical
engineering textbooks. Considering the state of suffering in the poor populations of the Earth, very much due to the lack of cheap
clean electrical energy, such a half century of benign scientific neglect would seem inexcusable. In my view, science cannot and
must not divorce itself from ethics and from the human species. When it does, and when it deliberately continues to suppress an
extended electrical power system technology that could revolutionize the energy resources of the planet, and help clean up the
biosphere, then science itself is guilty of highly unethical standards and conduct. There is just too great a human need for such
power systems --- and as you can see in my new book, such systems have long been built by inventors and suppressed, sometin
quite ruthlessly.

The argument goes well beyond our little group and the MEG, and it involves the welfare (or lack thereof) of all humankind. There
are at least 8 or 10 other inventors right now who have legitimate COP>1.0 electrical systems. Yet so far as I can establish, there
no single well-funded project in COP>1.0 vacuum-powered electrical power systems, in the entire scientific community, from the
National Academy of Sciences on down. And after nearly a half century since the discovery and proof of broken symmetry, that is
very sad commentary on the U.S. scientific community as a whole.

As another example of well-known COP>1.0 EM effects, just check out "resonance absorption of the medium", for a widely used
phenomenon whereby one gets about 18 times as much energy (in the IR or UV) out of a medium as one pays to input to it. A ve
good little article on that effect is Craig F. Bohren, "How can a particle absorb more than the light incident on it?" American Journa
of Physics, 51(4), Apr. 1983, p. 323-327. Under nonlinear conditions, a particle can absorb more energy than is in the light inciden
on it. Metallic particles at ultraviolet frequencies are one class of such particles and insulating particles at infrared frequencies are
another. See also H. Paul and R. Fischer, {Comment on "How can a particle absorb more than the light incident on it?'}," Am. J.
Phys., 51(4), Apr. 1983, p. 327. The Bohren experiment is repeatable and produces COP = 18. In nonlinear optics departments,
done at universities many times every year.

Best wishes in your research, and we wish you good results!

Tom Bearden

Thank you for replying to my email.

I am a Professional Electronics Engineer living in Sydney, Australia.

I have 12 years experience in High Frequency Power Electronics, particularly magnetics design, and have accesses to reasonabl
test equipment such as the Tektronix 730 mentioned in the patent.

From my perspective the MEG looks like a classical transformer in which the voltage/current on the output winding is induced by
flux variation produced by the control winding and the permanent magnet just provides a constant magnetic bias.

Have you tried to replace the permanent magnet by core material ? if so what were the output waveforms and powers in that case

If the core does not saturate why do you reckon that there is a significant change in reluctance ?

Why do you use such a high turns ratio, which produces an output voltage that is very hard to convert down with high efficiency s
that the empirical proof, only one that really counts, - closing the loop - could be readily implemented ?

Having said all the above I still will try and test the MEG concept but with a lower turns ratio where measurement should not only
easier but also more accurate.

Please let me know if there is any non-financial assistance I can provide.

Best Regards

Daniel