# BEARDEN

## ENERGY FROM

## THE VACUUM

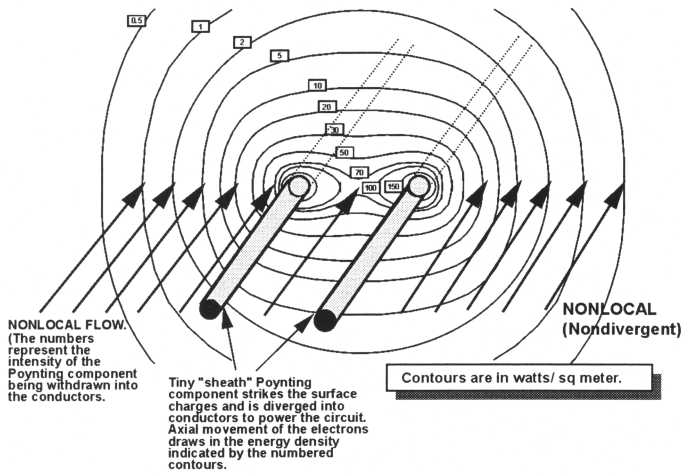### Concepts & Principles

**NONLOCAL FLOW.**
(The numbers represent the intensity of the Poynting component being withdrawn into the conductors.)

**NONLOCAL**
(Nondivergent)

Tiny "sheath" Poynting component strikes the surface charges and is diverged into conductors to power the circuit. Axial movement of the electrons draws in the energy density indicated by the numbered contours.

Contours are in watts/sq meter.

**Figure 1-1  Poynting (caught energy) flow contours surrounding a transmission line.**

Most of the available energy flow misses the circuit and is not drawn into the conductors. However, that large component is not shown by Kraus, and Poynting did not consider it. Heaviside {5c} pointed out that the remaining flow component is hardly reduced (hardly changes direction) from the entire flow component before the extraction of the small Poynting component. Given sufficient intercepting charges outside the wires in separate receiving circuits, the total remaining energy flow that could potentially be intercepted is enormous — far more than the feeble amount of energy that is input to the generator shaft or that is in the chemical energy of a battery.

This is easily established by actual experiments placing intercepting charges in separate "receiving" circuits in the otherwise nondivergent energy flow outside the conductors, or one may show it with Bohren's experiment {24}. Collecting additional energy completely outside conductors is one part of the COP>1.0 operation of the motionless electromagnetic generator (MEG) {37}, to be discussed later in this book. The Sweet device {29a} established sustaining self-oscillation of the

well?" In philosophy that is still known as the unresolved "problem of change". It has no resolution in Aristotelian logic, but can be resolved in an extended logic we shall advance. The solution to Heraclitus' problem of change is the nature of observation, as advanced in this book.

We now critique Aristotelian logic, by observing a simple Venn diagram of the type used in "proving" logic theorems in axiomatic logic. See Figure 1-2.

| A | $\bar{A}$ |
|---|---|
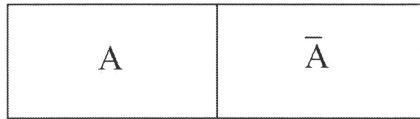
1-2a. Usual Venn diagram of A and A.

| (A???) | ($\bar{A}$???) |
|---|---|
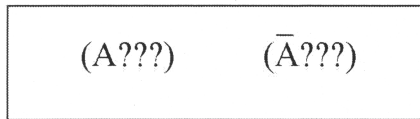
1-2b. Applying second and third laws to divider.

| ??? | NOTHING | ??? |
|---|---|---|

1-2c. Applying second and third laws to divider and outer boundary.

**Figure 1-2  Applying Aristotle's laws to Venn diagram used to prove logic theorems destroys the entire diagram.**

In Figure 1-2 a, we have introduced a dividing boundary line between A and $\bar{A}$. *Unfortunately that dividing line belongs entirely to both A and $\bar{A}$.* So it violates all three Aristotelian laws, and must be removed.[31] Therefore, we remove it in Figure 1-2 b. Now we have neither a discernible A or a discernible $\bar{A}$, but we have removed naught but the boundary separating them, so we may argue that they are both still there although not discernible. However, if they are not discernible, we cannot distinguish what A is or what $\bar{A}$ is, and so we cannot discern whether they

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[31] A clever fellow once proposed regarding the boundary as a total discontinuity, being neither A nor $\bar{A}$. However, in that case A and $\bar{A}$ could never meet, so there could not be a cause interacting with not-cause to produce an effect. So that suggestion as to how to "fix" Aristotelian logic does not hold.
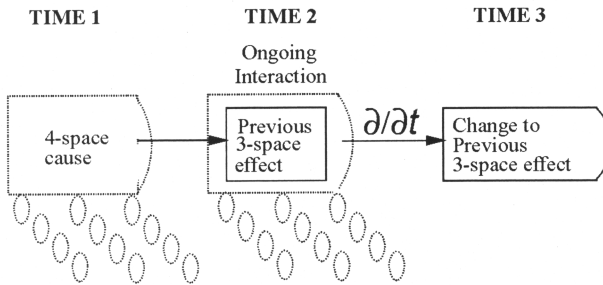
**Figure 1-3  Mechanism for observation of change to a previous observation.**

See Figure 1-3. We now add the notion that a thing is a perceived, thought, or observed thing. So let us use the symbol ↑ to mean *explicit*, i.e., *output* by a given perception, thought, or observation process as the result of a $\partial/\partial t$ operator having been applied to whatever exists prior to perception, thought, or observation. The symbol ↓ is used to mean *implicit*, e.g., when one observes an observation "Y" at time two, and later is deciding in time three whether or not that observation "Y" in time two is identical to a previous observation "X" made during time one, then *memories* of the observations of X and Y are involved in time three rather than the observations X and Y themselves, and so the observations of X at time one and Y at time two — by whatever manner they were observed and according to whatever decision algorithm is used — is said to be "implicit".

We note that we can know nothing about the so-called "thing in itself" *without* thought, perception, observation, or other process involving $\partial/\partial t$. Further, at the moment the $\partial/\partial t$ operator is applied, time momentarily ceases. The resulting perception, thought, or observation exists therefore as a "frozen output" at that single moment in time. To have it "persist" or exist a moment later, we have to apply the $\partial/\partial t$ operator *again*, and stop time again, so that we again perceive, think, or observe.

But at any moment later than when we made a particular perception, thought, or observation of "A", *that* specific "perceived A" no longer exists, except in our memory as a recording of "observed A" that we can *continually recall*. Our conscious mind is a very fast serial processor, with only one "perception" or "thought" at each fleeting moment — only one

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### 1.5.2 An Example of a Ubiquitous Error

One of the rather horrid "bad examples" of ubiquitous errors in electrodynamics is the conventional illustration of a so-called planar EM wavefront moving through space, as shown in Figure 1-4.

A succinct evaluation of that diagram and notion is given by Evans {83}, one of the great electrodynamic theoreticians of our times:

> *"I broadly agree ... that the transverse plane wave view of vacuum electrodynamics is the biggest blunder of twentieth century science."*
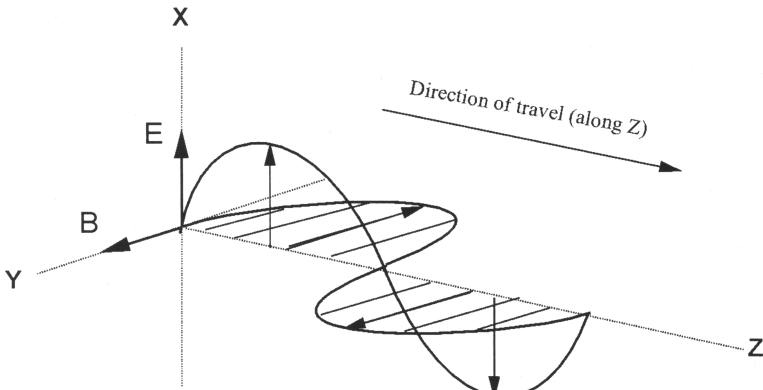


**Figure 1-4** The erroneous but ubiquitous supposed illustration of the transverse EM wave in 3-space.

Dr. Robert H. Romer, former Editor of the *American Journal of Physics*, also chastised the horrid diagram shown in Figure 1-4, purporting to illustrate the transverse plane wave traveling through 3-space. In endnote 24 of his noteworthy editorial, Dr. Romer {84} takes that diagram to task as follows:

> *"...that dreadful diagram purporting to show the electric and magnetic fields of a plane wave, as a function of position (and/or time?) that besmirch the pages of almost every introductory book. ...it is a horrible diagram. 'Misleading' would be too kind a word; 'wrong' is more accurate." "...perhaps then, for historical interest, [we*

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incoming longitudinal wave — a "time-polarized" EM wave {90a-90c} — in the time domain, perfectly correlated with an emitted longitudinal EM wave in 3-space. See Figure 1-5. This multiwave structuring and dynamics in both the time domain and in 3-space simultaneously *comprises* the scalar potential.
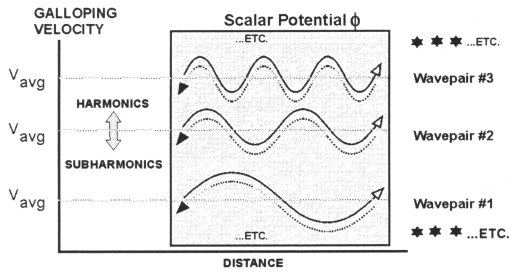


**The Structure Is:**

- A harmonic set of longitudinal phase conjugate wavepairs.
- In each wavepair the two waves superpose spatially after detection, but travel in opposite directions.
- Prior to detection, the convergent wave set is in the imaginary plane, and hence is not observable. It is EM energy incoming to the potential (dipolarity) from the time domain.
- The charges receive the complex convergent EM energy, transduce it into real EM energy, and emit enormous energy at the speed of light in all directions -- which includes bidirectional pairs in 3-space (after the reaction, being after "observation").
- This produces the fields and potentials from the "source charge or dipole."
- Mandl and Shaw argue that the scalar (time-polarized) photon and longitudinal photon are observable only in similar pairs, which then makes the instantaneous scalar potential. Thus quantum field theory work strongly supports the "negative resistor" interpretation of the scalar potential and our solution to the source charge and source dipole problem.

**Figure 1-5  The scalar potential is a harmonic set of phase conjugate longitudinal EM wavepairs.**

We specifically stress that the dynamics occur in the *time* domain (in its specific structuring, propagation pace, etc.) as well as in 3-space.

Deliberately changing the internal longitudinal EM wave structuring produces precise energetics (both energy and dynamics) in spacetime itself. This is a special form of "spacetime curvature structure and dynamics" which we call a *spacetime curvature engine* or *vacuum engine*. Together with superpotential theory in the original form initiated by Whittaker {91a} and extended by others {91b, 91c, 91d}, this internal electrodynamics — together with scalar potential interferometry {92} — creates all ordinary EM fields and waves {79}. Superluminal communication is possible using the internal longitudinal EM wave structure of the EM fields, potentials, and waves {93a, 93b}.

# ENERGY FROM THE VACUUM

## Concepts & Principles

<u>Energy from the Vacuum</u> is the culmination of 30 years of original thinking and looking with fresh eyes at concepts that are presently considered to be foundations of science, a process of on-going analysis recommended long ago by Albert Einstein.

Dr. Bearden's findings are good news, for his theories point the way to the extraction and harnessing of inexhaustible clean energy from the vacuum.

With the development and ubiquitous deployment of free-energy mechanisms, the strategic vulnerabilities of centralized power systems can be eradicated, and the run-away degradation of the biosphere reversed. And there is suddenly a viable antidote for the perpetual poverty of under-developed nations.

Also contained in this book are the true stories of inventors who, over the past 150 years, have pioneered some of these processes and their secrets. Dr. Bearden rigorously analyzes more than 40 embodiments that can produce this free energy, including some capable of investigation at the high-school level.

Lt. Col. Thomas E. Bearden (U.S. Army, retd.) has a Ph.D. in science, an M.S. in nuclear engineering, and a B.S. in mathematics.

**Lt. Col. Thomas E. Bearden, Ph.D.
(U.S. Army, Retired)**

The definitive energy book of the 21st century.