

# THERMODYNAMICS

The mainstream scientific community dismisses the idea of “Free Energy” or “Over-Unity” machines because they say that the behavior of such machines violates the “Second Law of Thermodynamics.” The purpose of this article is to squarely face this issue from an alternative science point of view. Many engineers and inventors, working in the alternative energy field, still mistakenly believe that the “Laws of Thermodynamics” are universally true. For them, the “free energy” machine can only be a clever scientific slight of hand where the machine becomes “outlaw”, breaking some fundamental universe law. For progress to be made in this field, the limitations and errors inherent in the “Laws of Thermodynamics” must be exposed. Only then will people realize that scientific experimentation is the only reliable tool for revealing the behavior of physical reality.

In order to bring this about, it will be helpful to quickly review some of the pivotal historical events which helped shape the modern scientific era with regards to thermodynamics. Before the year 1800, perpetual motion machines were considered possible and heat was not regarded as a form of energy. Both of these long standing assumptions, dating back thousands of years, were effectively toppled by the ideas of Hermann von Helmholtz in 1847 when he *postulated* that since no one had ever been able to build a working perpetual motion machine, that just probably, it was not possible. In order to deny the possibility of perpetual motion and hold the argument together, he had to assume that energy in the system was being **conserved**. It had long been observed that mechanical devices could not transfer energy perfectly. There was always some friction in the working parts. Friction was not only known to impede the transfer of energy in the machine, but it was known to produce heat. In order to simultaneously explain the work loss and the heat gain, so

# OF FREE ENERGY

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that **conservation** could be satisfied, Helmholtz postulated that heat was a form of energy consisting of a small, random motion in the molecules of matter. He went on to speculate that the loss of work in the machine as large scale motion was still present as heat in the small scale motion of the molecules in the material the machine was made of. He suggested from this that both the heat and work must be considered energy, and that it was the total that was **conserved**, rather than the heat or work separately.

By 1850, Rudolf Clausius was able to synthesize the work of Helmholtz, James Joule, Sadi Carnot and others to express a generalized statement that has become known as the “First Law of Thermodynamics.” It states that “energy can be changed from one form to another, but it is neither created nor destroyed.” By the time this thought became universally believed, it had totally transformed the intellectual landscape of mechanics, physics and energy dynamics. This was a clean break from the set of thoughts and assumptions that had come forward from antiquity. A new era in science had begun.

In understanding these historical developments, it is important to realize that besides the new theoretical explanation about the

nature of heat, all of the other data that led to the new theoretical generalizations was derived experimentally. This can be illustrated by an observation made by Sadi Carnot in his extensive work regarding the behavior of heat in machines. He states that “in all cases in which work is produced by the agency of heat, a quantity of heat is consumed that is proportional to the work done; and conversely, by the expenditure of an equal quantity of work, an equal quantity of heat is produced.” This statement by Carnot was based on hundreds of experimental measurements. After such convincing experimentation, it was not unreasonable for Clausius to conclude that heat could be converted into mechanical work. It was, however, a theoretical leap of logic to conclude that energy, in general, could be changed from one form to another.

Before we go on, it is important, for our purposes, to be reminded that this new idea expressed as the “First Law of Thermodynamics” consists of a number of overlapping ideas and assumptions that can be expressed as follows:

- 1) Perpetual motion machines are impossible
- 2) The nature of heat is reduced to the random motions of molecular matter
- 3) Energy can be changed from one form

to another without any explanation as to how this conversion is actually accomplished in any specific case

- 4) Energy is not created in or destroyed by its passage through a mechanism
- 5) All forms of energy behave the same way

All of these ideas are fundamentally inherent in "The First Law of Thermodynamics." From an alternative science point of view, the experimental work of Carnot and Joule will stand for all time. It is the *intellectual overlay* of Helmholtz and Clausius, on this experimental work, where the problems are introduced. The theory of **conversion** and the ideas about the nature of heat will be taken up again later in this article, after more ground work has been laid.

The "Second Law of Thermodynamics" evolved out of further studies of the behavior of heat in closed systems. Remarkably, there is no one statement that is universally recognized as the definitive expression of this so called "Law." Among the more popular statements which reflect the general understanding of the "Second Law of Thermodynamics" are the following: "In a closed system, entropy does not decrease", "The state of order in a closed system does not spontaneously increase without the application of work", "Among all the allowed states of a system with given values of energy, number of particles and constraints, one and only one is a stable equilibrium state", and "It is impossible to construct a device that operates in a cycle and produces no other effect than the production of work and exchange of heat with a single reservoir." For those who can fathom the language, these statements clearly do not all express the same idea. Some have broad ramifications while others are more narrowly defined. All of these statements grew out of the idea, expressed fairly well as the last statement in the series, that a perpetual motion machine could not be made that operated on the principle of a work/heat exchange when this process was limited to a known quantity of heat at the start. After that amount of heat was **converted** to work and the tempera-

ture of the reservoir was reduced to the ambient temperature outside, no further work could be expected to be produced. This is not only reasonable, but it is backed up by thousands of experiments. As long as the "Law" is clearly and narrowly defined as a statement that reflects upon the behavior of heat in closed systems, this author has no problem with agreeing completely.

Problems arise, however, with some of the more generalized interpretations of the "Law" such as "the state of order in a closed system does not spontaneously increase without the application of work." In order to

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understand why this statement is not universally true, it is important to clearly define our terms. We must understand what is meant by the "state of order" in a system, and we must define the boundaries of the "closure" of that system. In the first case, the "state of order" in the system is generally regarded as the temperature.

Understanding this, we can rephrase this statement to say, that in a thermally isolated enclosure, the temperature will not increase unless work or energy is added to the system. Here again, by clearly defining our terms, and limiting the discussion to heat and work, we have a universally true statement backed up by mountains of experimental data. If, however, we define the "state of order" as a generalized "quantity of energy", and we further define the "closed system" as the Universe, we are led to believe that under no circumstance is it

possible to create a condition where the concentration of energy will increase spontaneously. This is not true!

While it should be understood that most known chemical processes, standard electrical equipment and heat generally do behave this way, the Etheric Energy Field of the planet does not. The Etheric Energy Field behaves in direct opposition to the more generalized understandings of the "Second Law of Thermodynamics" and this fact is backed up by considerable experimental data. One of the best documented examples of this is the spontaneous temperature rise observed in the "orgone accumulator", invented by Dr. Wilhelm Reich in 1940. Here, a simple enclosure made of alternating layers of organic and inorganic material, allows the ambient density of the Etheric Energy Field to become more concentrated in the local area, *without* the application of work. This new and higher energy concentration is then reflected as a spontaneous rise in temperature. This situation does not break the "Second Law" in the narrow case, because we admit that new energy is entering the system. It does break the "Second Law" in the general case because this energy is entering without the appli-

cation of external work. Reich's accumulator was designed as an attempt to shield and isolate this energy from its presence in the environment. His data clearly showed, however, that he was not able to isolate the energy effects inside the accumulator because the Etheric Energy Field easily penetrated the walls of the enclosure. He eventually realized that with regard to Etheric Energy Fields, it was impossible to "close the system" in the local sense. This is important to understand because it directly refutes the assumption that the universe consists only of closed systems at all levels of activity.

Here then is a major problem with how the scientific community regards the "Laws of Thermodynamics." When the discussion is limited to the behavior of heat in closed systems, the "Second Law of Thermodynamics" is a well tested and accurate description of what happens under those

circumstances. It is when it is incorrectly assumed that all forms of energy behave this way and that enclosure of the system is possible at all levels, that grossly false conclusions can be drawn from what started out as experimentally derived observations. The scientific community-at-large obviates these problems simply by denying the existence of the Etheric Energy Field because it doesn't fit within their intellectual model. Unfortunately for them, the mounting experimental evidence is making this increasingly hard to do.

Certainly, the best evidence to date of the existence of the Etheric Energy Field and its capability of being drawn to high concentrations without the application of work is demonstrated by the Etheric Weather Engineering techniques developed by Trevor James Constable and his Atmos Engineering group. As a member of this group, I have personally seen how simple Etheric Energy projectors, that do no work in the classical sense, can cause the etheric potentials in the atmosphere to rise to such high concentrations that millions of gallons of water will precipitate from the air for hours at a time.

When these Etheric Energy projectors are motorized, they draw a few hundred watts of electric energy. If the rain produced is dropped behind a dam and then released through a hydroelectric turbine, the electrical energy gain in the system can be enormous, on the order of 100,000 to 1. This method of creating "free energy" is a practical reality today. While I know of no community using this method for supplying its energy needs, it is eminently practicable. This example is theoretical in the sense that it has never been done, but it is a good model of other "free energy" systems under development around the world today.

Because the input to motorize the Etheric Energy projectors is electric and the output from the hydroelectric generators is electric, many people might mistake this for a so-called "over-unity" system. There is nothing "over-unity" about this situation. Each and every component of the machinery used in this system has operational and frictional losses. The energy tapped by the system is the atmospheric ether and all of the energy gain in the system occurs outside of the equipment. The fact that a small electric input yields a huge electric output does not mean the system is operating "over-unity."

The problem with the "over-unity" concept goes back to the "First Law of Thermodynamics" and its inherent idea about the ability to **convert** one form of energy into another. This assumption includes the idea that these various **conversions** are accomplished at known and accepted rates of exchange. The idea of *efficiency* of conversion requires that the various rates of exchange are fixed and act as an upper limit for the calculation of a ratio that approaches one (100%) where the numerator of this fraction is the "output" and the denominator is the "input." Since it is generally agreed that every machine experiences so-called losses, the idea that this ratio could be greater than one is, of course, ridiculous. This, coupled with the assumption in the "Second Law" that all energy systems are closed, (meaning that no new energy can enter the system in-between the "input" and the "output") makes the idea of an "over-unity" system even more impossible than a mere perpetual motion machine. The line of logic embodied in the "Laws of Thermodynamics" is flawless. The problem doesn't exist in the logic, but it does illustrate that logic alone is not enough to reveal the truth. The problem exists in certain interpretations of these "Laws." Let's go back and look at the "First Law" again in light of our "over-unity" discussion. "Energy can be changed from one form to another, but it is neither created nor destroyed." This seems simple enough to understand. Underneath the surface, however, there is an assumption that this also means that energy will not spontaneously appear or disappear from the system. This is also a necessary condition if **conservation** of energy is to be satisfied **LOCALLY** as well as **UNIVERSALLY**.

This discussion becomes relevant, for instance, in describing the operation of the rotating magnet generator, the so called N-machine or Space Power Generator (SPG). Most of the important work in this field has been done by Bruce DePalma and Paramahansa Tewari. The following is a brief summary. The rotation of the magnet sets up two force fields that act at right angles to each other. These two force fields are the radially distributed inertial frame of space (centrifugal force) and the intersecting axially distributed magnetic field of the rotating magnet. The area of magnetized, polarized, inertial space appears to open up a region through which new energy can enter the

system. When careful measurements are taken of current flows in the generator and in the external circuit, evidence suggests that electric charges are appearing at the periphery of the generator and disappearing at the center of the generator that do not actually *pass through* the generator. This experimental finding may explain why this configuration of electric generator experiences less mechanical drag than standard generator designs for each unit of electrical output produced. While energy is probably not being created or destroyed in the universal context, it is apparently appearing and disappearing from the machine during operation in the local space. This extra energy can be used to produce useful work in external circuits. Tewari has shown that twice as much hydrogen can be generated from an electrolysis cell run from the output of a SPG than if the cell is run directly. It is impossible to rationalize the behavior of this style of electric generator with the ideas of simple **conversion** and local **conservation** as they are postulated in the "First Law of Thermodynamics."

In a standard generator, if all losses are ignored for the moment, conventional theory says if 550 Ft-Lbs of work are applied to the input shaft in one second, 746 Watts will be delivered at the output. If I blindly believe that the generator simply has the mysterious ability to **convert** the mechanical energy into electrical energy, I don't ask the following questions: what is the mechanism of this conversion?, where does the torque go?, and where does the electrical energy come from? The apparent observation that the generated current produces a motoring effect that opposes the input torque should not be interpreted as a vindication of the conservation rule, but as an admission that this is an inefficient way to generate electricity. The Space Power Generator experiences far less drag per unit of electrical output than a standard generator.

This opens up a much larger discussion about the validity of the **conversion** idea all together. Are there actual and universal equivalents between the various forms of heat, mechanical work, and electricity? At this point, all we know for sure are the various measurements that have been taken from the devices that demonstrate these energy translations. For instance, in 1845, James Joule found that if he placed a small paddle wheel in a bucket of water, he had to

apply 772.5 foot-pounds of mechanical work to spin the paddle wheel to raise the temperature of one pound of water, one degree Fahrenheit. This has led to very careful calculations that now set this "universal conversion" between mechanical work and heat at 778.26 FT-Lbs = 1 BTU. For paddle wheels in water, this is no doubt true. But what happens if paddle wheels are not used? Is there another method that does not use paddle wheels in water to **convert** mechanical work to heat that does the job better, with less expenditure of work for the same heat gained? The answer is yes. In fact, there are numerous patents on record to accomplish this. One uses rotating parallel disks, not unlike the design of Tesla's turbine, to heat water with less than half the mechanical expenditure.

Once again, we have entered a new scientific era where the exact equivalence between mechanical work as foot-pounds, electrical work as watt-hours, and heat work as BTU's **is not known!** A wide variety of physical experiments have demonstrated a broad range of differing energy translation effects. The intellectual edifice of Clausius' **conversion** idea is crumbling, and no one should allow their thinking to be constrained by it any longer. The results of physical experiments have all but disproved it. The "First Law of Thermodynamics" should be seen only as an outmoded, intellectual MODEL that is not supported by all of the experimental data. Likewise, the idea of "over-unity" should be abandoned by those working on "free energy" systems as it is an intellectual contradiction based both on the belief in **conversion** and the ability to circumvent it. "Over-unity" is an oxymoron that should be removed from the vocabulary of the alternative science community.

This brings me back to the other problem presented earlier, namely, the nature of heat itself. Is heat, as Hermann von Helmholtz suggests, simply the random motion of molecular matter, or is it something completely different, whose presence causes molecular matter to exhibit random motion? This is a very long and involved exploration that has already been handled masterfully by Rudolf Steiner in March of 1920 and published as his *Warmth Course*. I will summarize some of these ideas briefly.

The ancient's believed that there were four "elements" that all physical reality was

composed of. These were Earth, Water, Air and Fire. In modern language, we can restate this as follows. There are four "states" that all matter appears as. These are solid, liquid, gas and heat. From an etheric science point of view, heat is the fourth state of matter and the transition state between matter and ether. Here is why. The only difference between the appearance of ice, water, or steam, for example, is its temperature or internal heat condition. Heat is absolutely fundamental in all considerations regarding matter because a change in heat

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is the only element required to bring about a change of state from solid to liquid or from liquid to gas. In solid matter, the "atoms" are very close together and they bind each other in a way that allows them to hold their shape without being in a container. Heat can be added to the solid and its temperature will rise, correspondingly, until the melting point is reached. At this point, adding more heat does not raise its temperature, but rather causes the material to change state as the solid melts into a liquid. Once all of the material is liquefied, adding more heat once again causes the temperature to rise. In liquid matter, the "atoms" are less close together and they bind each other in a way that allows the liquid to take the shape of whatever open topped container it is put in. As more heat is added to the liquid, the "atoms" move farther apart until the boiling

point is reached. At this point, once again, adding more heat does not raise its temperature, but rather causes the material to change state as the liquid boils into a gas. Once all of the material is gaseous, adding more heat once again causes the temperature to rise. In gaseous matter, the "atoms" are so far apart that they will hold no shape at all and can only be contained by a complete enclosure. As more heat is added to the gas, the "atoms" become so dispersed that eventually, all that is left is the heat. The relationships between heat, temperature, matter and state are quite complex and cannot easily be reduced to simple explanations. Steiner's explorations of these relationships go into great detail, forming a seamless line of logic, backed up by a great deal of experimental data. Anyone interested in the nature of heat should study Rudolf Steiner's *Warmth Course*.

While this may make no sense to people trained in mechanistic thought processes, it is much closer to the truth about heat than the ideas of Helmholtz, with which Steiner was completely familiar. Helmholtz's idea that the nature of heat can be fully described by the random motions of molecular matter is far too simplistic. It ignores many of the well known behaviors of heat and matter as well as the existence of the Etheric Energy Field. It should be considered an "interesting" historical attempt to describe heat that is not supported by all of the experimental data.

For those who are not familiar with etheric science, it might be useful to review some of the characteristics of the Etheric Energy Field at this time. The Etheric Energy Field is made up of an extremely fine, mass-free fluid. Its activity can be divided into four main levels. These different aspects of the Ether have been called: the Warmth Ether, the Light Ether, the Tone (or Chemical) Ether, and the Life Ether. The Etheric Energy Field, as a whole, penetrates all matter, flows around and through the planet in well defined ways, exhibits elastic characteristics, and spontaneously moves from low concentrations to high concentrations before discharging. Understanding all of these factors has made engineering the weather a practical reality today. Many other amazing technologies also become possible when the ether is fully understood. Likewise, many aspects of today's science that are still confusing eventually become clear.

One area of the greatest confusion lies in

the field of electrical science. The entire study of what has been called "static electricity" is just a confusing encounter with the Light Ether as it behaves under certain circumstances. When fully understood, so-called "static electricity" will be seen to be neither static nor electricity. Normal electricity always flows from high potential to low potential and usually requires metallic conductors to flow along. On the other hand, "static electricity" does not discharge in the same way, and readily moves and collects on both conductors and insulators. Because "static electricity" behaves more like ether than electricity, I am going coin a term for this form of energy when it is present in wires and circuits. I call it "ETHERICITY", to distinguish it from electricity all together.

In some ways, ethericity behaves like electricity and in some ways it behaves differently. This has been the source of confusion. Up until now, most people have thought that there was only one kind of energy moving in electrical style circuits. This can now change. Electric appliances are designed to run on the discharge of electric potential from high to low, as in the draining of a battery to power a load. Properly designed circuits employing ethericity run the appliance on the charging phase, as the energy spontaneously moves from low potential to high. Once the behaviors of ethericity are clearly understood, it will be just as easy to run motors and lights from this source as we now do on electricity. In the 1940's, Dr. Wilhelm Reich demonstrated both lighting and motoring effects running on the Etheric Energy Field that he tapped using his "orgone accumulators" and special circuitry. But many other ways have been discovered to harness ethericity. The patent office has many designs of so-called "electrostatic" motors on file that work quite well. They all run on ethericity, including some powered by circuits set up between the ground and a wire suspended high in the air. Many types of capacitors will spontaneously charge up on days with low relative humidity. This, too, is the classic appearance of ethericity. I have seen how an "electrostatic" generator failed to do anything, one humid morning, until the moment that sunlight fell on the metallic surfaces. It then jumped to life. This was one of the most convincing demonstrations I have ever seen that "static electricity" (ethericity) is related to light (the Light Ether).

Here then are some of the known characteristics of ethericity that engineers and inventors should understand

- 1) Ethericity can be accumulated from the ground or the air at almost any location
- 2) It can be "reflected" down wires (this is *not* conduction)
- 3) Flows of ethericity can be interrupted by diodes and Mosfet type devices
- 4) Its potential can be raised or lowered in air core transformers
- 5) It can be stored in capacitors
- 6) It will operate neon style lighting, when the potential is high enough
- 7) It can create fields of opposing forces in coils and motor windings

"Free energy" is here in the Etheric Energy Field. Etheric Energy can be accumulated without the expenditure of work, and then released in controlled ways to perform work, in properly engineered systems. Understanding this fact presents engineers and inventors the most direct and clear path to follow. Systems that precipitate heat directly from the ether have already been demonstrated in Dr. Reich's accumulator. Placing one of these accumulators over a moving body of water increases the precipitation of heat dramatically. This is a rich vane of truth waiting to reveal its secrets to the systematic researcher. Likewise, power circuits that run on ethericity for lighting and motive power are waiting to be perfected.

Researchers in the "free energy" field should not concern themselves with the ideas presented as the so-called "Laws of Thermodynamics". The "First Law", with its ideas of conversion and conservation, is essentially incorrect. There is no way to convert mechanical energy into etheric energy, actually make one into the other. This one example is enough to disprove the universal interpretation of the conversion idea all together. Beyond this, the energy forms that can be transmuted by the action of certain kinds of machines, apparently do so within a wide range of activity, depending on the geometry of the machine. This throws into question the idea of conservation, especially local conservation. These experimental findings render the "First Law" without any basis in fact. The real universe does not behave in accordance with these ideas.

In the narrow case, the "Second Law" is really only a statement which describes the behavior of heat under certain circumstances. This much is basically true, as it is founded

on experimental observation. In the general case, however, the "Second Law" is an intellectual extrapolation that does not accurately describe the behavior of physical reality under all circumstances. It embodies an erroneous concept of a mechanical universe which mysteriously burst forth (Big Bang) as a fully wound spring that has been unwinding ever since ("in a closed system, entropy does not decrease"). It is a lifeless, empty vision that ignores the Source of the energy it started with and closes the minds of its adherents to the solutions at hand.

Learning how to tap the non-thermodynamic forces in nature is the hope of the future. A modern society needs light, heat, and motive power, all of which can be derived directly from the Etheric Energy Field without consuming limited physical resources owned by monopoly interests.

In this society, theoretical science has been elevated to a very high level of prestige. Under this system of belief, the real needs of humanity have not been well served. It is time that these incorrect theories be carefully examined and discarded, so that experimental science can once again take the leading role in defining the nature of physical reality. Only then will Etheric Science be free to offer its bounty of solutions to a desperate and waiting world.

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