Extraordinary Technology:

The

Ceire®

Device

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The Ceire Device

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Old Chinese proverb

"Down hill easy,

Uphill, much puffing."

Old Chinese curse:

"May you live in interesting times."

Contents

Foreword

Fundamentally, science must be a series of successive approximations to reality. It simply is not possible to arrive at absolute truth with a small number of investigations. Physics at the freshman level is a very straightforward subject. Facts are well known, relationships are stated in forthright terms without equivocation, and there is little room for doubt. It takes three years or more, and perhaps graduate school before it finally dawns on a budding scientist that the whole structure of science, so monumental when viewed from a distance, is a cracked and sagging edifice held together with masking tape and resting on the shifting sands of constantly changing theory. Very little is known with any real certainty. Some things are merely more probable than others. Well-known theories and even laws turn out to be only partially confirmed hypotheses, waiting to be replaced with somewhat better partially confirmed hypotheses. If there is one thing we know about every theory in modern physics as taught in public schools today, it is that it is wrong, or at least incomplete. Sooner or later somebody will come along with a more general theory of which the old theory is seen to be a special case, generally inaccurately stated.

That said, it is still true that many things are known sufficiently well that scientists and engineers have, in teamwork with other professions, created societies worldwide that can and have - despite those antisocial beings who have slowed things down for their own purposes - increased science and engineering dramatically since the last catastrophe that killed most of the population on this planet. We are now about to be assisted in rejoining the other civilizations in this galaxy. Interestingly enough we produce things they value also and for which they wish to trade.

The science that is known by secret, and non-secret, organizations in and out of the government is very different from that taught in schools available to the public today. There are individuals and small groups of people who have done their own independent investigations and experiments and found answers quite different from what is taught in public schools. Many of these inventors have been assassinated to prevent them from letting the public know that there is technology available that would obviate paying for fuel and electricity. As deep throat said, Follow the money!

One person, Patrick J Kelley, has accumulated gigabytes of data on unusual inventions. Some are what some call ZPE (Zero Point Energy) inventions. He offers a free ebook describing various inventions he has investigated. His free ebook can be downloaded. It is about forty eight gigabytes (GB). There are additional reference materials, patents, and ebooks on his website - another 60-75 GB of data. His website is: http://free-energy-info.com

Zero Point Energy (ZPE) is also known as Radiant energy. Tesla used a spark gap in a circuit carrying a direct current of electricity. The flow of the electric current in the wire produced a circular ring of magnetic energy surrounding the wire much like a ring fits around a finger. The spark also produced another energy phenomenon. This phenomenon was called Radiant energy as it emanated in a straight line from the wire like light. Radiant energy is very much like light. Like light it is not visible and is only detectable when it impinges on an object. The object or particle then becomes visible. If the object the radiant energy strikes is metal, it causes an electric current flow in the metal. Radiant energy is sometimes referred to as longitudinal energy flow.

Don Smith demonstrated this effect by constructing a capacitor consisting of layers of aluminum foil separated by layers of plastic sheets. The greater the number of layers, the greater the amount of electricity stored in the capacitor – with no increase in the wattage of the charging circuit.

Radiant energy is also known as cold energy. When radiant energy flows in a circuit, the circuit becomes cold. If radiant energy is used to power an electric motor and the motor is under heavy load, the motor will frost over. A resistor in the circuit gets cold. A person can hold a circuit conducting radiant energy under water without getting shocked.

Harold Aspen demonstrated that an electric motor that is run with radiant energy operates a bit differently. When the motor is first energized there is a surge of energy that may be ten times the running current. This surge only lasts a very brief time. If one lets the motor run for a few minutes then turns it off then restarts it within a few seconds, the initial starting surge is very small compared to the initial surge when the motor was first started. If one waits five or ten minutes to restart the motor, the large initial surge reappears.

Several people have reproduced Tesla's work and created devices that used spark gaps with direct current flows to produce electric flows in adjacent circuits. Peter Linderman has described such experiences. Thomas Henry Moray demonstrated radiant energy passing through glass to light an electric light bulb, much like Tesla did. Moray developed an electric motor powered by radiant energy produced by a spark gap that produced much more power than the electric current that produced the spark gap provided.

Magnetic fields can legitimately be called ZPE. The more the author has studied ZPE, electricity and magnetism, the more convinced he is that magnetism is a subset of ZPE. All ZPE devices the author has investigated operate on electrically energized coils of a conductor – wire. The amperage flow produces a magnetic field which does the work. The essence seems to be the frequency aspect in at least some cases. For

example, a Tesla coil "magnifies" voltage and in some configurations, amperage. When the input coil (C1) is properly placed along the longer magnifying coil (C2) the voltage/amperage of the input coil may produce amplified voltage or amplified voltage and amplified amperage. There is a difference depending on what the core material the coil is wound on and the frequency of the input voltage. The frequency can be up into the megahertz range when an air core coil is used. An iron core limits the frequency to about 400 Hz or less. The energy produced in the output coil at the radio frequency range (above 20 kilohertz) increases as the square of the frequency with the voltage/amperage of the input coil remaining fixed. No mystery there, it is common knowledge – at least among those who have investigated such phenomena.

Life itself is a neg-entropy operation. Living cells, be they vegetable or "higher" life forms, reverse entropy. That is, they create more complex compounds that "store" energy. A plant "eats" minerals and water and absorbs sunlight and carbon dioxide and produces much more complex compounds such as proteins, carbohydrates and fats – and gives off oxygen. Entities that eat these plants use these materials for energy and to reproduce DNA as these entities create new cells. This process is neg-entropy.

DNA structure results from an information field surrounding the cell. These information fields can be affected by magnetic fields. Information fields can be copied from physical, chemical and nutritional substances by serial dilution with water. This process is called homeopathy and has been known and practiced for a very long time. The information fields held by the water can be administered to a person and the information fields have a similar, but sometimes greater, effect on the organism than the original substance itself. https://en.wikipedia.org/wiki/Serial_dilution

Reforming and renewing DNA can be done using information field transfer from a young cell to an entire organ, resulting in regeneration of that organ - or for the whole body. This results in the body being regressed to the state of an earlier age, removing any damage or deterioration that occurred after that age. There is a substance, NMN, that facilitates renewal of DNA, even from radiation damage. Some benefit can be obtained by eating vegetables that contain NMN - veggies like broccoli, cabbage, cucumber and avocado. Nutritional products will be coming on the market utilizing NMN probably around fall of 2017.

Living systems and manufacturing systems have many similarities. They have three different inputs and three different outputs. The have a neg-entropy input, an average or base entropy input and a lowered entropy input. They output a neg-entropy product, a base entropy output and a lowered entropy output.

Consider a steel producing plant. It uses electricity, existing highly ordered devices and human labor as neg-entropy inputs. It uses some materials that are pretty much as

they are found in nature – wooden items, trenches in the ground that molten steel is poured into to cool. It uses iron ore, a mixture of iron, dirt and other disordered, low entropy substances. The plant outputs a much higher ordered version of steel – a neg-entropy process. Some items come out pretty much as they went in. And the debris from the iron ore has been degraded further.

A living body eats food (neg-en tropic) and minerals, breathes air and drinks water, as exists all around and sunlight (entropic items). The carbohydrates begin digesting in the mouth, the proteins begin digesting in the stomach and fat mixes with bile and begins digesting in the duodenum. As digestion proceeds, the released nutrients are absorbed by the villi in the small intestine. These elements are absorbed by the villi and put into the blood where it proceeds to the liver where they are reacted with oxygen absorbed into the blood from the lungs. Other organs get involved and refine the new substances and produce higher ordered products, such as new cells, bones, muscles, nerves, plus a higher levels of energy, such as magnetism and one of which is chi. Chi supports and improves mental, physical and other functions. Acupuncture is used on certain points on the body to restore the flow of chi. The lungs breath out carbon dioxide along with the nitrogen and other items in the air. The kidneys excrete urine and the colon excretes feces – degraded, entropic products. The sweat glands excrete water with dissolved substances in it.

City sewer and water supply systems typically recycle the water after treating it to remove poisonous substances, drugs, etc. However, the processing plants rarely treat the resulting water to be recirculated by removing the information fields. This results in the people drinking the recycled water being subjected to the information fields retained by the water as in homeopathy. The information fields can be cleared from the water by passing the water through a strong magnetic field. Placing strong magnets around a plastic section of pipe as the water enters the home or office can locally remove these information fields – and probably improve the health of people using that water. It also suspends the minerals in the water and thus decreases scale buildup in pipes and water heaters.

This same technology can be used to add the information fields from, for example, steel, to a nonferrous (plastic?) object and the object acquires the strength of the steel. Other civilizations in this galaxy use this technology to create space ships using thin very light weight materials to create the vehicle or portions of the vehicles. Then information fields are transferred to the ships giving them special characteristics.

The physical sciences do experiments on entropy systems and state “laws” based on that limited exclusionary environment. Then state the “laws” as if those “laws” applied to neg-entropy systems as well. Which, most often, they do not apply. At least not as stated in the “law”.

Another group does research on FE/OU (free energy/over unity) and has conferences annually in Idaho. See: http://energyscienceforum.com and http://emediapress.com.

Much as brakes on a car applied too continuously when going downhill will heat up and fail, those who have attempted to withhold technology from the public are rapidly failing - for whatever reason. As these restraints are bypassed more and more, this civilization will flourish and prosper much more rapidly. Poverty, disease and hunger will rapidly disappear as the technologies to accomplish this are already largely known and are becoming more widely available to the public. The potential downside, if any, will come from processes initiated by those who have been working at retarding humans survivability.

Buckminster Fuller coined a term – efemeralization. By this he meant science and technology are creating articles that have less mass, require less energy to operate, but provide the same, or even superior, functions as the articles they replace. This is an explanation of neg-entropic processes at work. There have been books written about this phenomenon by other authors. These companies build machines and materials that make the former articles obsolete, unless they retool and use the new technologies. Sometimes retooling means creating a whole new manufacturing process using new technology and new materials. If the article or the process is patented, it puts the former producers out of business, requires them to pay a use fee to the patent holder – or at least delays them while they improve their product.

Electric powered vehicles are currently a small portion of cars being manufactured. Tesla corporation, run by Elon Musk, is probably the best known. The state and federal governments get considerable revenues from gasoline taxes. As long as only a small number of electric vehicles are manufactured and are more or less restricted to local travel and are expensive, they do not pose much threat to government revenues. What do you think might happen if electric vehicles were competitively priced and recharge stations were everywhere and could recharge a vehicle in five to ten minutes? Even more drastic, what if electric vehicles never needed recharging and were 3D printed, reducing pollution and maintenance and travel costs even further?

The technology to produce a small unit that produces any desired amount of electricity and would last for a thousand years or longer already exists. The technology that precludes batteries from running down or becoming discharged is currently known but not permitted by the government just yet. However, this technology is available on the Internet – and elsewhere. Some say Nicola Tesla invented a system in early 1900's using four car batteries and used that device to operate his electric car for more than two years without ever needing to recharge the batteries. Others say it was not Tesla but another person. That device can be built by experimenters relatively inexpensively even today. See Tesla 4 battery system in the ebook http://free-energy-info.com.

The new technologies with little to no pollution, will replace oil and gas as a fuel in the near future - the next ten to thirty years will see great progress. Petroleum can be used to create other materials that will be in increasingly greater demand, so petroleum will be used for many decades even after it's use as a fuel declines precipitously. The products it will be used to produce will have higher neg-entropic value.

Alchemy has returned in modern scientific technology. The Russians have patented a system for transmutation of elements starting with uranium. The Russian patent RU 2563511 awarded to Mrs. Tamara Sahno and Mr. Victor Kurashov is available at Google Patent repository. http://myeclinik.com/russian-scientists-announce-historic-discovery-rendering-the-entire-system-obsolete/

One man, Dr. Stephen Greer, has inaugurated what he has named the Sirius Disclosure Project. He is raising funds to produce a movie disclosing information regarding UFOs and inventions that have been kept secret that could be used to clean up radiation and other pollution problems. His website is http://SiriusDisclosure.com and http://SiriusProject.com . To donate to his project Sirius Technology Advanced Research visit http://sirius-disclosure.myshopify.com/pages/donations-to-the-orion-project .

There is the story, perhaps fictional, about a young man in China long ago.

The young man heard that a master lived in the nearby village. He went to that village and knocked on the master's door. The master opened the door and asked the young man what he wanted. The young man said he wanted to learn. The master said, "Come back in one year."

One year later the young man returned and knocked on the master's door again. The master opened the door and asked, "What do you want?"

The young man said, "A year ago you told me to return in one year. Here I am."

"Come in." said the master.

"What do I do now?" asked the young man.

"The dishes are dirty. Wash them." said the master.

Every time the young man completed one task he was given another task. Finally, after about a month, the young man in exasperation stopped the master and demanded, "I have been here a month. When are you going to start teaching me?"

"Oh, you want a lesson. Follow me." replied the master. Then he led the young man to the bank of a nearby river and held his head under the water for what seemed to the young man a long time. The master released the young mans head and the young man sat up and gasped for breath. When he had recovered a bit, the master asked the young man, "What did you want most while I held your head under the water?"

The young man said, "I wanted a breath of air!"

The master then told the young man, "When you want to know as badly as you wanted that next breath of air, nobody can keep you from learning and knowing. So,

what is it you want to know?"

All educated people are self educated – whether they went to school or not. Sometimes there are no schools for what one wants to know. Sometimes, more frequently than not, a portion of what schools teach is incorrect or only partially correct information. What one learns in school is merely a starting point for a persons education – and may or may not be entirely correct.

One school had a delinquency (not coming to class, sometimes called "ditching") rate of nearly 30% for some classes. Then the school got computers. Immediately the delinquency rate dropped to zero. Now there are many excellent computer based courses available, some free, some very low priced. One can now get a college education without going to college. However, the communication a student gets in a school setting is in itself educational, socially, as well as academically.

One important thing: ALWAYS look up the definition of the words you are reading, even the one, two and three letter words. Make it a habit. As you gain certainty of understanding it in different contexts, you can stop looking up that word. Today, frequently initiated by young people, words start being used to mean the opposite or something other than that of their original meaning. In a big dictionary the word "run" takes up more than two pages. Learn grammar as well. If you do this for a few weeks your IQ will go up, some have reported as much as 20 points.

A magician was out of work so he took a job as a waiter in a restaurant. A man went into the restaurant and sat at that waiters table. The waiter approached and asked, "What would you like?" The man replied, "Make me a milkshake." The waiter/magician took out his wand and made the man into a milkshake.

It is useful to understand what words mean and how to construct sentences properly. Avoid pronouns where the noun they replace is not clear from the context. In the word pair "time flies", is time a noun and flies a verb? Is time an adverb and flies a noun?

Bill was working as an orderly in an 'insane' asylum, an eleemosynary institution. One day they brought a new patient in in a straight jacket and put him in a padded cell even though the patient was not violent or suicidal. Bill brought the patient breakfast the next morning and talked to him. Bill asked the patient why the patient was in the asylum. The patient told Bill he had been having dinner with some men and they told him they wanted to 'pick his brain' (about a subject in which Bill was competent). Bill asked the patient what he thought they meant by 'pick his brain'. The patient said they were going to operate on him and steal his brain. Bill got a dictionary and asked the patient to look up the phrase 'pick your brain'. The patient read it: "To ask a person what they know or think about a given subject matter." The patient looked a bit startled, then

looked around and asked where he was. Then the patient asked where his clothes were as he had things he needed to do. Bill notified the patients doctor. The doctor released the patient the next morning.

One day a farmer's wife looked out her kitchen window and saw her husband, the farmer, standing out in the field. Later, she saw him still standing there doing nothing. She called out to him and asked him what he was doing. He replied, "The county agricultural agent said he was going to give an award to a farmer who was outstanding in his field today."

Decades ago The Bell telephone researchers formulated a distinction between data and information. Signals over a phone line might be merely "noise", not information per se. Thus aaaabbbbccc is all data. However only a, b and c are information. Then further examination by semantic scholars further distinguished between information and knowledge.

Knowledge is unique to a single being in that that being has gained certainty and ability to apply. That certainty can only be "earned" by study and application and is thus not transferable in and of itself to another being. Only data and information are communicable. Thus symbols, words and pictures were created to transmit information from one being or group of beings to another being or group of beings.

A martial arts master can explain and show how to do the various actions, but only as information. The student must practice until they finally "know" the various movements. It is usual in Tai Chi that it may take a student months to master a particular movement or set of movements. Additionally, it may be a decade or two before a martial artist is introduced to the "internal arts". One particular such art was described as "one step, one touch, one kill". And the touch was a very light touch, not a strike. In one Asian martial art the practitioner only needed to touch a person and insert chi at that point and in one weeks time the person touched would suddenly fall over dead.

The ancient practice of apprenticeships grading into fellow craftsman and finally into master craftsman has been used for millennia to transmit information and convert it into knowledge.

This communication process is dramatically faster using telepathy – which can be learned by essentially everyone. There are people who teach pet owners to communicate with their cats, dogs, horses, birds, etc. The same techniques apply to human to human as well. Carol Gurney has taught people that skill for decades. http://www.gurneyinstitute.com/schedule_webinars.html There is another lady who teaches this technology that is a guest on George Noory's show on

CoasttoCoastAM.com from time to time. See also
http://www.psychic101.com/telepathy-beginner.html
http://uk.iacworld.org/learning-telepathy-for-beginners/

Telepathy and remote viewing only convey information, not knowledge, though they are much faster and do not depend on proximity of the bodies/masses involved. There are three types of telepathy. One can communicate to another person without anyone else being aware of it. The Russians used a "broadcast" type of telepathy and anyone "tuned in at the right broadcast time" could receive and understand it.

The US government developed electronic "amplifiers" so that a trained operator could direct a telepathic communication at a target individual. It was sometimes used to cause a target person to commit suicide. The patent was published in the 1960's. There have been improved devices since that time. See also
Nervous system manipulation by electromagnetic fields from monitors
Patent number US 6,506,148 B2 issued: Jan 14, 2003
US006506148B2 Hendricus G Loos, 3019 Cresta Way, Laguna Beach, CA 92651
See also Uri Geller's story at https://www.thesun.co.uk/news/2651690/uri-geller-tells-how-he-forced-russians-to-sign-nuclear-arms-treaty-using-his-telepathy-skills/

The Russians did research in placing a particular thought or feeling in an object. Then they invited several people to attend a meeting in that room and studied the attendees reactions. They were quite successful. A book was published a few decades ago describing their research programs. The author has communicated telepathically with people whose bodies were hundreds to thousands of miles away.
https://www.amazon.com/Homo-Sovieticus-Control-Telepathic-Destiny/dp/0262035693/ref=sr_1_1?s=books&ie=UTF8&qid=1491616777&sr=1-1&keywords=russian+telepathy
and other books and videos.

Information in the arts and sciences usually takes from one to three or four decades to become generally accepted and taught in a profession and in colleges and universities. This lag time resulted in certain university and college degrees initials being given alternative "interpretations". The letters for a bachelors degree in science is BS, for a masters degree is MS and for a doctor of philosophy is PhD. Certain cynics, understanding the lag in time before a scientific theory was generally accepted and taught in schools, referred to BS as "Bull Shit", MS as "More Shit" and PhD as "Piled higher and Deeper".

A technique one may find useful is viewing any situation from a minimum of three mutually independent viewpoints. Many people have become accustomed to viewing events and encounters from one, usually fixed, viewpoint, namely, their own viewpoint.

Once the author had an encounter with another person and became quite upset. Then he remembered to view the encounter from at least two other viewpoints than his own viewpoint. First, he struggled but finally managed to view the incident from the viewpoint of a teacher discussing what had happened from an observers point of view. The authors upset lessened. Next he considered the incident from the viewpoint of a judge. In this viewpoint the judge explained that the other party had only talked to the author but had not attacked the author, so legally, no damage was done. At this point the author's upset was totally gone.

The author now routinely views news reports, government policies, religions, political parties – in short, life, from at least three mutually exclusive viewpoints. Typically, one "pro" or causative or more inclusive viewpoint, one "con" or "at effect" or more local viewpoint and one neutral viewpoint. One might also consider whether the situation is a tactic or strategy on the parts of the participants. Neural linguistic programming is an example and is a form of hypnotism. Some people are more or less immune to it. As one man put it: "All of the people can be deceived some of the time. Some of the people can be deceived all of the time. But all of the people cannot be deceived all of the time."

It has been quite some time since the author became upset or stressed about life and what is happening. This allows the author a broader range of options to consider in relating to life circumstances. And a more inclusive, balanced viewpoint.

Some readers may wish to learn more about science and technology for one reason or another. Most readers probably know educational courses are offered online, some free. To assist the reader in this endeavor, take a look at courses at http://coursera.org and http://alison.com and https://www.khanacademy.org/ . They offer mathematics and science courses and courses in computer languages and programming among other subjects. Http://codecademy.com specializes in computer and software courses.

Massachusetts Institute of Technology (MIT) offers free university courses online. A student does not get credit for free courses but can pay a fee and audit a class for credit. MIT found that about some sixty percent of people taking their online courses are college students in other colleges and universities.

General

http://ocw.mit.edu/index.htm

Executive/management

http://cdn.executive.mit.edu/7b/80/8961135c458b961fbd482da1ff21/mit-sloan-executive-education-2015-16-program-guide.pdf.pdf?utm_source=BSI-NA&utm_medium=display-email&utm_content=NA-Gen-1-Oct15&utm_campaign=2016-Fall

Stanford University might offer an online course of interest as well. Inquire of the University you are interested in as to what online courses they may offer. For general university education, take a look at resources at http://edx.org.

There are something like 5,000 inventions patented that have been classified and made unavailable to the public. Those, and other, advanced technologies will probably become available to the public in the near future. See this YouTube video explaining anti-gravity vehicles, known since the 1950's. https://www.youtube.com/watch?v=LJ7qLSzWC2Y

Drivers of 18 wheel transport trucks and people who have been trained in steering large oceangoing vessels learn quickly that objects with large mass take longer to respond to controls than vehicles with much smaller mass. See the fourth law of motion (Appendix) and the proposed addition to the second law stated in Chapter 1. Understanding the time needed by a society to change and adjust to new conditions, will allow you to understand why changing the fuel systems, such as used in cars, boats and airplanes, will take some time. Billions of current devices will become obsolete and/or inoperable and need to be replaced by billions of devices not yet manufactured. This process will be accelerated pretty dramatically by the use of Additive Manufacturing aka 3D printing, which will dramatically reduce storage requirements and transportation time and costs. This will undoubtedly put many middlemen out of business along the way by adversely affecting product storage facilities and transportation requirements, thereby affecting the financial systems. The time is approaching where many products will be produced only as, where and when they are needed. This will affect material types availability, mining, agriculture, transportation, storage and distribution services, each of which have their own time to react and change.

The author was contemplating applying for an executive position with a new company and discussed the situation with a friend, who was a very successful executive of a large enterprise. The author mentioned some negative experiences in his past. The friend replied, “I do not know how they might view your experiences but I personally am a bit skeptical about a person who claims to be a warrior and yet has no battle scars.”

If you wish to communicate with the author using encrypted email, you should set up an email account with Proton Mail in Switzerland. https://protonmail.com The author's email address is **eagleyes@protonmail.com** This email address accepts encrypted and non-encrypted messages.

PS: Ceire – CEntrifugal, Inertial, REactionless device

Chapter 1

Operational principles

Centrifugal
adjective
1. moving or directed outward from the center (opposed to centripetal).
2. pertaining to or operated by centrifugal force : a centrifugal pump.
3. Physiology, efferent.
noun
4. Centrifuge Machinery.
a. a machine for separating different materials by centrifugal force; a centrifuge.
b. a rotating, perforated drum holding the materials to be separated in such a machine.

Centripetal
adjective
1. directed toward the center (opposed to centrifugal).
2. operating by centripetal force.
3. Physiology, afferent.

From: http://dictionary.com

Abbreviations:
aka = also known as
multiply A times B = A * B or (A B)
divide A by B = A / B
foot/feet = ft
square = sq
miles per hour = mph
Hertz = Hz (cycles per second)
minute = min
second = sec
avoirdupois pounds = lb or lbs
revolutions per minute = rpm
gallon = gal (3.7854 liters)
F = force
M = mass (weight/inertia)
v = velocity
R or r = radius
D or d = diameter,

“ or ” = inch/inches or quotation mark
One Horsepower: mechanical = 550 ft lbs/sec or electrical = 745.7 watts

Metric conversions:
http://www.CalculatorSoup.com/
1 inch = 2.54 cm = 25.4 mm
1 meter = 39.37 inches = 3.28 feet = 100 cm = 1,000 mm
1 lb = 453.597 grams, 1,000 grams / 1 kg = 2.204.6 lbs
1 foot = 30.48 cm = 304.8 mm
1 avoirdupois ton = 2,205 lbs = 1 metric ton (1,000 kg, 1,000,000 grams)
meter = m
centimeter = cm – one hundredth of a meter
millimeter = mm – one thousandth of a meter
kilo = k (thousand)
kg = kilogram(s)
kilo Hertz = kHz
liter = 1,000 ml
milliliter = ml
cubic centimeter = cm^3

Newton's Three Laws of Motion
plus the new proposed Fourth Law
and the new proposed revision of the Second Law

First Law:
Every body tends to remain at rest or in motion in a straight line, unless acted upon by an outside force.

Note: The above First Law is not a precise definition. Everything is in constant motion in this universe, usually circular. It is at rest only with respect to it's local environment which is in motion as well, much as several airplanes flying in formation are “at rest” with respect to each other. You will notice that the first law dictates perpetual motion. The first law should probably be restated as: **A body in motion will continue in that motion unless acted on by an outside force.**

Second Law:
An unbalanced force acting on a body causes the body to accelerate in the direction of the force, and the acceleration is directly proportional to the unbalanced force and inversely proportional to the mass of the body.

Third Law:
For every action, there is an equal and opposite reaction.

Proposed Fourth Law:

(see Forth Law of Motion in Appendix)

The movement of an object to which a force is applied may not move instantaneously, as the accelerating force must first travel to the far end of the object and be reflected back to the point of impact before the object can begin its movement.

The time required for the accelerating force to reach the end of the object and reflect back is called the Critical Action Time (CAT).

The proposed fourth law appears to be either an addendum to or a modification of the second law.

Proposed revised second law of motion

An unbalanced force acting on a body causes the body to accelerate in the direction of the force, and the acceleration is directly proportional to the unbalanced force and inversely proportional to the mass of the body as modulated by the Critical Action Time of the body.

Critical Action Time: The movement of an object to which a force is applied may not move instantaneously, as the accelerating force must first travel to the far end of the object and be reflected back to the point of impact before the object can begin its movement.

In light of the proposed fourth law and the proposed revision of the second law, the third law might need to be revised as well. Consider an over unity device. In such a device, the reaction may considerably exceed the action, nullifying the "equal and opposite" phraseology. For instance, a solenoid can be surrounded by multiple additional solenoid receivers (like a radio frequency broadcast coil/antenna with multiple receiver coils/antennas) and each of the receiver solenoids/antennas may produce an equal amount of power compared with the transmitting solenoid, modified by the distance between the sender and receiver. A clear violation of the third law – unless you consider each output coil as a separate output. Even so, there would be multiple simultaneous outputs from a single source. A Tesla coil is another example. There are many such examples in mechanical applications as well as electrical applications. Any device that has an output smaller than the input required to produce that output would be a violation. Any device that has a larger output compared to the input required to produce that output is a violation of the third law. It would appear that the third law is not correct and is superfluous and could be eliminated with no loss of technology or understanding.

Inertia

A gyroscope, or a toy top, can be set spinning. As the device spins, there is a

centrifugal force and inertia created in the plane in which the mass is rotating. An attempt to tilt the plane of rotation (external force) is met with resistance (second law of motion). This resistance has been given the name inertia. Since all mass is in motion it has a resistance to any alteration in that motion by an outside force – inertia. Newton's second law of motion is an adequate explanation.

A gyroscope, toy top and the planet can also precess. Consider the South pole of the planet to be fixed in its location. Consider that the North pole of the planet is tilted 5 degrees off of the vertical from the South pole. As the planet spins, it's North pole rotates in a circle around the vertical line from the South pole. Viewed from a distance, it would appear that the planet is wobbling on it's South pole. In the case of a top, this happens as the rotation of the top slows down and at some point the top falls over due to gravity (second law). The precessing of the planet gives us winter, spring, summer and fall in the northern and southern hemispheres.

An unexpected example of the second law is the case of a toroid. A toroid is shaped like a doughnut. The particles or electromagnetic fields that make up the toroid are revolving around the center of the tube like structure in the shape of a doughnut, somewhat like a barrel rolling. This seems to isolate this toroid structure from it's local environment, both second law of motion wise and electromagnetically. In at least some cases, time wise as well. As a toroid moves through it's local external environment, a local environment of vacuum, air or liquid, the local environment acts as if the toroid were not present. The toroid has it's own continuum apart from it's environment.

The toroid has it's own, self contained, inertial environment. The toroid passes through the atmosphere and under water with little or no resistance and has only a small effect on the local environment. The inertia of a toroid is all internal to the toroid and has little interaction with it's local environment. This isolation from the local environment applies to gravity as well in Electrogravity vehicles. Since vehicles have been built that exhibit this property using an electromagnetic toroid, they are referred to as Electrogravity vehicles. Or in common parlance, UFO's – now IFO's, Identified Flying Objects, or flying saucers or spacecraft.

The magnetic fields of a magnet form a sort of spiraling toroid. When the magnetic flux lines from one end of the magnetic connects back to the other end of the magnet, the magnetic lines of force form a doughnut shape. The magnetic fields emanate from the North pole (positive source), are arrayed in a left hand or counter clockwise spin when viewed from above the North pole. As the magnetic spiral enters the South pole (negative sink or input) and viewed from the center of the magnet, the spiral is a right hand or clockwise spin. If one views the field from a point looking toward the South pol;e, the spin would be counterclockwise. The center of the magnet is neutral – like the center space of a toroid.

Place a sheet of paper over a bar magnet lying on a table. Sprinkle iron filings on the paper. The iron filings will form lines running from the North pole to the South pole of the magnet. Next, stand the bar magnet upright with the North pole pointed up. Place the stiff paper above the North pole. Sprinkle iron filings on the paper. The filings will aggregate in lines. Do these lines run straight out from the center or do they form a curved shape? Curved shape. To understand the structure and dynamics of atoms, planets and gravity, read Maurice Cottrell's work (Download from http://free-energy-info.com). Understanding how atoms are structured and how gravity works are not essential to understanding how the Ceire device works.

Even religions incorporate this paradigm as the law of three. The Christian religion formulates it as God the Father (positive), God the Son (negative) and God the Holy Ghost (neutral or reconciling). Other religions use Holy Affirming, Holy Denying and Holy Reconciling. This is reflected in societies. A male transmits the Holy Affirming, a female transmits the Holy Denying, and any children (physically male or female, but have not yet reached puberty) become the Holy Reconciling. In other situations two people may resort to a third party. In marriage this would be a marriage counselor, in law there is the accuser (affirming), the accused (denying) and the judge or jury (reconciling). In business it is called arbitration.

The drawing of the oriental yin-yang forces depict them as revolving around each other. What is usually not mentioned is that they are contained within a circular border, the reconciling force.

An atom is composed of a nucleus consisting of one or more protons and one or more neutrons. The nucleus is surrounded by one or more electrons circling the nucleus. As the proton(s), neutron(s) and electron(s) revolve, they set up the equivalent of a magnet or magnets all revolving in different planes. The inertia of this motion produces a resistance to any movement of that atom. The greater the number of protons, neutrons and electrons the greater the mass/inertia. There are exactly the same number of electrons as there are protons in an atom. There may be more neutrons than protons in an atom. A proton and a electron and one or more neutrons form an electromagnetic unit.

The greater the number of protons and neutrons in the nucleus the greater the apparency of the increase in mass/inertia as reflected by the specific gravity of the atom or group of atoms. Therefore, a piece of tungsten on a scale will weigh about 19.3 times as much as the same volume of water. Specific gravity is the term used to compare the relative weight (mass/inertia) of a substance compared to the same volume of water, which is defined as having a specific gravity of one – 1 gram per cm^3.

This book describes centrifugal force devices. It is clear that the centrifugal force can

easily exceed the power (work) needed to produce that centrifugal force - output is greater than input. The centrifugal force can be considered as potential energy unless and until it can be converted to kinetic energy.

Conservation of Momentum or First Law of Motion

When the author was a freshman in a university Physics class we did an experiment in the Physics laboratory. A person would sit on a small seat that would rotate 360 degrees (a complete circle) easily. The person would take a small, about 10 pounds, weight in one hand and hold it out at arms length. The person would then be given a push to start the person revolving. When the person would pull the weight in close to his/her body their rate of revolving would speed up. When he/she would extend their arm full length again, their rate of revolving would slow down again. The second law of motion initiated the motion, then the first law of motion may be stated as the Conservation of Momentum. The speed of the weight did not change much, that is, momentum (as reflected by velocity) was conserved, only the rate of revolving, angular velocity, changed.

In the above experiment the object continued to move at a slowly slowing velocity due to friction of the chair seat on it's base (unbalanced force). The speeding up and slowing down of angular velocity of rotation was due to the circumference that the smaller circle, holding the weight close to the body, was smaller than the circumference of the circle when the weight was held out at arms length. The velocity of the weight stayed relatively constant.

The physics equation is: force equals the mass (weight or inertia) times the acceleration (second derivative of position). Any unbalanced force acting on an object must result in the object accelerating. Or expressed as a formula: $F = MA$ For a mass traveling in a circle, the formula becomes Centrifugal Force equals Mass/inertia times the velocity of the mass squared divided by the radius of the circle or

$$F = MV^2 / R.$$

Look at the equation. What happens to F when V doubles? F quadruples. When M doubles, F doubles. When both double? F increases eight fold. The energy required to continue to move twice the weight at double the velocity does not increase eight fold (first law of motion). So the energy needed to maintain the increased weight/velocity is proportionally smaller compared to the resulting increase in the centrifugal force. A small increase in input energy results in a significantly larger increase in the centrifugal force. More bang for the buck, so to speak.

To recap the chair experiment: centripetal force equals the centrifugal force, linear velocity stays relatively the same, the angular velocity changes and the centrifugal force changes. The centrifugal force actually increases when the weight is held closer to the

persons body. The formula is

$F = (M V^2) / R$ or $F = (M / R) V^2$

where F is the centrifugal force. If the mass and the velocity stay the same and the radius decreases, the fraction M / R increases so that F increases.

Take a small weight and tie a string or small cord around it. Tie the other end of the cord to one end of a weight scale or force sensing device, such as a hand held weighing scale. Tie a second cord to the other end of the weighing scale or force sensing device. Tie the other end of the second cord to a mechanism that can rotate in a circle. Or hold it in your hand and swing it around you in a circle. The weighing device or force sensor should have a "lock" that does not allow the reading to automatically reset after it reaches the maximum weight or centrifugal force reading position achieved.

Now, swing the weight around in a circle at 14 revolutions per minute (rpm) and note the reading. Then repeat the experiment at 21 revolutions per minute. Note the difference in the force readings. You should discover that the centrifugal force approximately doubled with the 50 percent increase in speed of revolution. If you can, repeat the experiment at 28 rpm, you will see that the centrifugal force reading quadrupled as the speed doubled.

When an object is acted upon to deviate it from its current path the object resists the change in direction (second law of motion) and this resistance is called, in a circular motion, centrifugal force.

When a car makes a 90 degree turn to the left (or right) the centrifugal force acting to keep the car going straight quadruples as the speed of the car doubles. This is why the road construction crews bank a sharp turn from one freeway to another. The bank provides the necessary centripetal force to prevent the car from turning over or running off the road.

Sixty-five years or so ago there were carnivals and entertainment companies that traveled from town to town and set up their equipment. One "ride" was a device with a cylindrical drum about ten feet in diameter. People would come inside the cylinder and stand with their back to the cylinder. Then the cylinder would begin rotating. When the cylinder reached a certain rotational speed the floor would drop down a foot or so. The centrifugal force of the peoples bodies kept them "pinned" to the wall of the cylinder which provided the centripetal force. After a few minutes the floor would come back up and the cylinder would slowly stop rotating. The author took a ride in one of these devices. There were several versions of this setup, along with roller coasters and tilt-a-whirls and such.

On planets, gravity provides the centripetal force that keeps the items on the surface

from flying off into space due to the centrifugal force to which they are subject. At the equator, a mass on the surface of the planet has a velocity of about 1,050 miles per hour (approximately 1,690.8 km/hr).

$F = (M/R)\ V^2$ > M = 150 lbs (68.03 kg), r = 4,000 miles (6,441 kilometers) ---

F = (150 / 4,000) (1,050 * 1,050) = 41,344 pounds (18,745 kg)

Thus, a 150 pound (68.03 kg) person is subjected to about 41,344 pounds (18,745 kg) of centrifugal force, which is opposed by gravity called centripetal force.

Law of Gravity

$F = G\ (M1\ M2)/r^2$ where, on this planet:

F is the force between the masses

G is the gravitational constant ($6.674 \times 10{-}11\ N \cdot (m/kg)^2$) (on this planet)

M1 is the first mass (the planet)

M2 is the second mass (an object)

r is the distance between the centers of the masses

The product of the mass/inertia of M2, an object, and planets center of mass, M1, is divided by r^2. The fraction decreases in value non linearly as the square of r, the distance between them, increases.

Gravity could be said to occurs as waves, similar to an ocean wave, and these are standing waves. The orbits of planets circling the sun occupy the elliptical standing waves produced by the sun's gravitational waves and are fixed in those orbits. The gravity this planet produces also has standing waves, which means that there are areas outward from the earth where gravity "waves" are present. Would this provide convenient stable orbits for satellites? It has been suggested that if one drilled a hole to the center of the earth then dropped a rock down the hole, the rock would never reach the center of the earth. It would "float", stop falling and stay at a particular location, when it encountered a gravity wave "ring".

Maurice Cotterell wrote a paper on gravity, "How Gravity Works". This paper will take a bit of time to study and comprehend. Go to http://www.free-energy-info.com Then scroll down past the three Appendices and past the Health Problems in 2016 article to Free-energy ebooks. The authors are alphabetically listed. Scroll to Maurice Cotterell and download that ebook.

"How Gravity Works" explains how Electricity and Magnetism work together to produce the force of Gravity and in doing so, they reveal the underlying science behind Newton's equation which he tried in vain to uncover, namely, the reason why Gravity is proportional to the masses of two attracting objects, why it grows weaker in proportion to the square of the distance between them, and the nature of the "Gravitational Constant" which continues to perplex researchers to this day. It explains why all objects

accelerate to Earth at 32 feet per second every second. It explains why the atom is comprised of eight orbital shells and why those shells fill with electrons in the way that they do. It explains how permanent magnetism works at atomic level, the nature of so-called 'Dark Matter', the reason why spiral galaxies are spiral, why the center of the Earth is boiling hot and how the Earth's magnetic field is generated.

The artificially created satellite (moon) circling this planet does not follow these rules as it was placed in it's orbit by the entities who some reports say brought it from another solar system. Ham radio operators found, in the 1930's, and queried a small satellite in the forward Lagrange point, L4, that, when pinged, responded with a transmission that "painted" a map of stars in the night sky, but placed the star Sirius way at the bottom of the map. This has been interpreted as indicating that the satellite was placed there by beings from the Sirius star system – the bright star in the head of the dog in the "hunter and his dog" constellation.

Faraday's law

In this experiment, Faraday takes a magnet and a coil and connects a galvanometer across the coil. At starting, the magnet is at rest, so there is no deflection in the galvanometer i.e. needle of galvanometer is at the center or zero position. When the magnet is moved towards the coil, the needle of galvanometer deflects in one direction. When the magnet is held stationary at that position, the needle of the galvanometer returns back to the zero position. Now when the magnet is moved away from the coil, there is some deflection in the needle but in the opposite direction and again when the magnet becomes stationary, at that point with respect to the coil, the needle of the galvanometer returns back to the zero position. Similarly, if the magnet is held stationary and the coil is moved away and towards the magnet, the galvanometer shows deflection in similar manner. It is also seen that, the faster the change in the magnetic field, the greater will be the induced emf or voltage in the coil. **From: http://www.electrical4u.com/faraday-law-of-electromagnetic-induction/**

Faraday's law applies in electric circuits and in the motion of ionized fluids. Sea water is an example of an ionized fluid. When the ionized fluid is flowing in a tube and that tube is surrounded by a wire wound as a coil, called a solenoid, a current of electricity is caused to flow in the solenoid. Conversely, if an electric current is flowing in the solenoid, it will cause the ionized fluid in the tube to flow. The fluid flows in the direction of the north pole of the solenoid coil.

When Faraday's law is used in this manner, it is called magnetohydrodynamics (MHD).

Surface tension

Water is used in this Ceire device. One could use some other fluid. In some configurations it carries with it some metal powders. The Tesla pump and turbine utilize this surface tension property of water. As the disk of a Tesla pump revolves, the surface tension of the water causes a thin layer of water to adhere to the disk's surface, moving the water with the disk. Centrifugal force causes the water to move from the central orifice entry port of the disks outward toward the rim of the disks periphery, and the movement of the water (fluid) produces some inertial momentum. It might enhance the flow if the surface tension were reduced as it nears the periphery of the disk. In any case, once the fluid is in the semicircular pipe, it would definitely be advantageous if the surface tension of the fluid were decreased or eliminated.

When water flows, in a pipe for example, it's flow is not homogeneous but in layers. The layer adjacent to the surface of the disk or pipe move slower due to the surface tension causing adhesion to the surface of the disk or pipe. The center of the flowing fluid flows faster than the layer of fluid in contact with the disk or pipe.

Victor Shauberger studied these effects at great length. He found that as water flowed in a stream or river it set up whirlpools at intervals in it's contact with the bottom and sides of the river banks. This resulted in the water “curling” in it's flow. This curling resulted in the river changing the location and shape of the banks of the river bed, causing the river over a period of time to wander back and forth or meander.

He observed that a fish, when disturbed, always swam upstream. Investigating this further he found that small “whirlpools” were initiated at the fish's gills then traveled down the sides of the fish, reducing the friction between the fish's body and the surrounding water and acted as an accelerator. This acted somewhat like a lubricant and the effect was enhanced as the fish swam upstream, but was decreased as the fish swam with the flow of the water.

Certain irregularities in the surface of the banks of a river or a pipe that water flows in contact with created a similar effect. One scientist increased the efficiency of a Tesla pump by placing small indentations in the disks of a Tesla pump that noticeably improved the efficiency of the pump. These indentations were perhaps halfway between the center input orifice of the disk and the peripheral edge of the disk. Presumably, this allowed the surface tension closest to the center of the dish to help in accelerating the fluid flow between the disks but the indentations decreased the surface tension by initiating whirlpools as the flow of water neared the periphery of the disks reducing the adhesion of the water to the surface of the disk.

The surface tension of water flowing through a pipe can be mitigated by causing the

water to flow in a spiral through the pipe. Vicktor Schauberger created pipes that spiraled like a rams horn spirals and decreases in diameter as well. The resulting flow of water coming out of the small orifice end of the pipe produced a dramatic increase in velocity and force. And the flow was self sustaining!

Schauberger described two types of flows. One type was what he called a suction or centripetal flow. Looking at the flow from the source toward the destination or sink, the centripetal flow flows in a clockwise spiral. This reduces the fluid's contact force with the inside surface of the pipe and increases the velocity of the flow. The other flow he called the centrifugal flow. It spirals counterclockwise and increases the force of contact with the pipe's inner surface and thus slows the flow down. The centripetal flow requires about one third of the pumping energy to move the fluid that pumping the fluid with no spiraling effect at all requires.

Standard Coefficient of Performance Equation - SCOPE

SCOPE is defined as output power/work of a devise divided by the input power provided by the device. It is frequently abbreviated as COP – Coefficient Of Performance.

SCOPE is an equation designed to measure specific energy use in a specific type of device. Even though it has come to be used as a universal sort of equation, that basically is not the original usage. Many situations have multiple inputs and/or outputs, some of which are not included in the equation. Finally, the input or inputs may be in entirely different forms of energy or effort and the outputs may also be in different types of energy or effects.

Scientists prefer to isolate an experiment from outside effects in order to study a particular concept. This results in creating a situation where entropy predominates. For instance, studies in gravity excluded air. If one drops a feather and a small lump of lead simultaneously in air, the feather's descent is affected by the air more than by gravity. Therefore, scientists develop equations in entropic environments. People not employing isolation procedures may get substantially different results as they did not exclude other variables. Thus both methods need to be investigated to arrive at a more complete understanding of a given phenomenon.

The use of the SCOPE equation is a case in point. When measuring the output of a device compared to the input, scientists use the entropic approach, whereas others may not exclude any elements and so get different results. Both may use the term COP and appear to be at odds as one excluded factors that the other party included. This leads to a bit of confusion in communicating what was discovered. Sometimes none of the parties could measure some input(s), even if they knew they were included. This is the

basis of the contentions among parties concerning "free" energy. It is primarily a semantic issue as all the terms and conditions have not been clearly defined by each party. Converting potential energy to kinetic energy is an example. Tesla was a master at this.

A solar cell has an input of sunlight and produces electricity as an output. Using the original sense, it had a SCOPE of X divided by zero. Any number divided by zero is uncalculatable, or infinity, take your pick. However, the efficiency of a solar cell can be about 15% or 0.15 of the input solar energy converted to electricity. So the COP would be 0.15 when considering all energy input, not just energy input by the device itself.

A windmill provides no energy in and of its self. The wind blowing (energy input) causes an output of perhaps megawatts of electricity. Therefore the SCOPE is not calculable or infinite. However, the efficiency of the windmill may be 10% when comparing the total energy input (wind) compared to the total energy output (electricity).

There seems to be some confusion between efficiency and COP. The author uses **SCOPE** in the original definition sense. That is, energy provided by the device itself compared to the output results. The Ceire device converts potential energy to kinetic energy.

Forth Law of Motion

Conventional physics usually only recognizes the first three laws of motion. The second law deals with mass as if it were a point mass with no dimensions. While this is adequate for small masses, it does not work the same way for larger masses.

When a rocket was launched at Cape Canaveral, Florida, to, supposedly, take the astronauts to the moon, millions of people watched on TV. They saw the rocket engines/jets fire and the rocket sat still for a brief time before it started to move. Why? As it started to move it gained speed rapidly, but not instantly. Actually it accelerated in jerks not visible to the viewers. These jerks resulted from the CAT of the rocket body. The third law is the rocket firing in the opposite direction of the intended direction of travel for the rocket or the force impinging on a body in the second law. The second law and proposed Fourth laws apply to the rocket itself, or the proposed revised second law. What is the Critical Action Time (CAT) for the mass of the rocket?

See the proposed Fourth law of Motion article from the 1962 article in Science Fiction and Science Fact magazine in the Appendix of this book. Everything in this universe is in motion and therefore resists any change in direction. This resistance to a change in speed or direction is usually called inertia (first and second law of motion). When an object is constrained to move in a circle, does the fourth law of motion CAT account for the centrifugal force and inertia? That is, are CAT and centrifugal force and inertia the

same thing in circular motions? The greater the mass, the greater is the CAT, centrifugal force and inertia. So, is CAT an explanation of inertia?

The author of the article "Fourth Law of Motion" describes a case called "surge", sometimes referred to as "jerk", and he says it is the 3rd derivative of position. Looking at it a bit differently, it is actually still a second derivative of position, a variation in acceleration.

The mathematics dealing with instances relating to position-motion relationships on a local environment scale have specific names. The first derivative of position is called velocity, and the second derivative of position is called acceleration. In "real life" the third derivative of position is separate from the moving body and acts on the body in motion. What has been referred to as surge or jerk is simply a usually, but not always, unexpected by the observing party, variation in acceleration of the body or particle. Mathematically, variations beyond the second derivative are not calculable. The calculus of the higher order derivatives can be calculated but are meaningless in practice. Control may be by a person, a computer system, or other external influences. Sometimes control is intentional by the controlling agent, or sometimes unknown to the party designated as the control agent. Sometimes unintended interruption of control is due to environmental circumstances sometimes by a "hidden", or unknown, third agent.

Newton's laws of motion type phenomenon occurs in social settings, financial systems and markets and in politics. In humans, sometimes the CAT is called emotions, customs, prejudices, policy, intentional interference, laws or fixed opinions.

The author has used Occam's Razor in this quest. Other explanations may be more elaborate, but the author chose the simplest.
https://en.wikipedia.org/wiki/Occam%27s_razor

The author was trained in Fire Direction Control (FDC) in artillery by the army in 1956. FDC were the guys who calculated the amount of gun powder to use, the elevation of the cannons barrel and the radial direction in which to fire the cannon. Map coordinates of the cannons and the target were given to the FDC group. An officer determined the type of ogive head (see below) to be used.

During World War II more than one type of cannon was used in battles, some with shorter range, some for longer range. The ammunition for a cannon was assembled each time the cannon was to be fired. The ammunition consisted of three separate parts. There was the casing that held the propellant. There was the propellant, usually called gun powder, though other substances can be employed. And finally there was the object intended to impact on the target. This object was once called a cannon ball, which was a round metal ball. In WWII it was more aerodynamically shaped and was called an ogive

(oh'-jive) head.

It was observed that an artillery ogive head hit its impact point, paused, another impact pulse occurred, another pause, then another impact pulse and so on until the ogive head came to a stop or exploded. Why? In the formula F = MA, what happens if the A drops to zero in less time than the CAT of the ogive head - M? The change in acceleration follows the proposed fourth law of motion. Therefore, the change in acceleration had to reach the far end of the ogive head and be reflected back before the mass could change its acceleration, resulting in the observed action. The pause between each pulse was the CAT of the ogive head. This is the opposite case in which the rocket jets fired full blast but the rocket body remained motionless for a brief period of time, the CAT of the rocket mass.

Many examples of this phenomenon are observed in every day life. One unique example is the destruction of the Twin Towers, actually three buildings, in New York City on September 11, 2001. Millions of people watched on TV as the event was played over and over. (Hypnotism involves fixating a persons attention, then giving the hypnotic suggestion. Does this sound like the mass killing events which fixate peoples attention for days, weeks or even years while news sources tell the listener a story to believe (hypnotic suggestion)? Ever hear of Psyops (psychological operations)? Astute observers knew that the buildings were imploded from inside from near bottom to the top of the buildings. Then the debris fell to the ground at free fall speeds, quite unlike a floor by floor collapse as the government panel reported. Most of the building was pulverized and dissipated as dust and left little debris on the ground. How could that happen when the supposed plane (holographic projection? Or per-recorded photo shot?) hit a section near the tops of two of the buildings, but not the third building? The twin towers had been designed and constructed to prevent such a collapse. (The twin towers had asbestos through out. It was going to be extremely expensive to remove and replace the asbestos which had been mandated by law. The towers were sold and heavily insured for such damage shortly prior to their destruction. There was a cache of gold stored under the buildings. The gold disappeared in the ensuing cleanup. The CIA had accumulated evidence of illegal activities and the evidence was stored in building 7. And stocks the airlines involved were shorted immediately prior to 9/11.) And other high rise buildings so designed have been hit by airplanes and none collapsed! Another way of saying it is the three buildings disintegrated in less than the CAT of the building as a whole mass and preplanning was involved.

People who have watched building destruction of large hotels in Las Vegas could recognize a building being dropped in its own space by explosives placed in the framework structure of the building to prevent collateral damage to adjacent property. The destruction of these hotels looked exactly like the destruction of the three buildings in NYC, but with less dust and more debris.

Related inventions

Over the past fifty years or so there have been numerous inventions to use centrifugal force as a propulsion force. Most of these produce very small results, usually insufficient to overcome gravity at the planets surface.

Probably the first and the best known is the Dean drive. A copy of his patent can be ordered from the patent office. See http://uspto.gov. See www.freshpatents.com to subscribe to Fresh Patents. This is a free service. The patent can be read online or downloaded. His invention was written up in the Analog Science Fiction and Science Fact magazine in the December 1960 issue and revisited in a later issue. Several other inventors patented similar operating devices but with different types of masses and mass motion mechanisms.

One of the best of these devices was invented by Robert Cook. He co-authored a book with Joel Dickinson about 1980. The book is titled The Death of Rocketry and is still available on Amazon.com. Cook had four physicists at Boeing Aircraft in Seattle, Washington, test his device. The physicists were astonished. One said, "If I had not tested this device myself I would not have believed it was possible." That attitude is courtesy the public school education system (and the CAT of the scientific establishment as a whole). Usually independent investigators aka inventors must compile a large body of experimental evidence (outside force) before the scientific community can begin movement in that direction (second law). This is sometimes compounded by intentional interference.

One of the tests they used was the 'hanging' test where the device is suspended by a single line to eliminate friction with the floor and the device is free to rotate or swing in any direction. Cook's device swung out in one direction as far as the rope holding it up would permit it to go and remained there. The device was placed on a small cart that had wheel assemblies that in addition to rolling would rotate in a complete circle, like the front wheels of a grocery shopping cart. After being activated, the device went in one direction at several feet per minute. His invention worked as claimed. He had converted potential energy to kinetic energy. Cook was more or less ignored, as he did not have an engineering degree. There is also some question as to whether there were parties that did not want the technology to succeed, as it would cost them in terms of lost sales of their products or permitted unwanted technology by certain entities.

The author has heard an unverified claim that the space station is currently being serviced by aircraft using advanced technology not available to the public yet. The service planes reportedly can travel at Mach 17 (about 12,750 mph), even in the atmosphere, without heating up. The current scene as portrayed to the public is a

charade. See also articles about technology using Electrogravity (UFO's) and/or high voltages on leading edges of wings to move a body through air, and water, without friction, by producing an electrical toroid effect:
https://www.youtube.com/watch?v=LJ7qLSzWC2Y

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Chapter 2

Calculating linear thrust

Some readers may not have studied the Physics, Algebra, Analytical Geometry, Trigonometry calculations used in this book. Some concepts and formulas and equations from these subjects are explained so the reader can understand the calculation without acquaintance with the particular subject as a whole. However, the author has avoided calculus so that nearly everyone can understand the calculations even though calculus gives a more precise answer. The calculations in this book should be viewed as reasonable estimates as exact results will depend on the construction of a specific device. The author used a 'successive approximation' technique in lieu of differential equations and integral calculus.

The author has provided references to websites concerning the Periodic Table of Elements, Trigonometry and beginning Physics concepts should the reader wish to explore these subjects further.

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Periodic Table of the Elements
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Vector definition

Mathematics.

1. a quantity possessing both magnitude and direction, represented by an arrow the direction of which indicates the direction of the quantity and the length of which is proportional to the magnitude.

   Compare scalar (def 4).

2. such a quantity with the additional requirement that such quantities obey the parallelogram law of addition.
3. such a quantity with the additional requirement that such quantities are to transform in a particular way under changes of the coordinate system.
4. any generalization of the above quantities

Solids versus liquids

Cook's device and other inventors used discrete masses. The dynamics change if one uses a liquid as the mass or multiple small masses simulating a liquid. When a liquid flows in a semi circle the (X) (horizontal) vector from zero to ninety degrees is equal and opposite of the X (horizontal) vector from ninety degrees to 180 degrees, canceling each other out and leaving only the Y (vertical) vector effective from zero degrees to 180 degrees (semicircle) – or twice the Y vector from 0 to 90 degrees. The centrifugal pumps nullify the Y vector from 180 degrees to 360 degrees (the other half of the circle). The result is a unidirectional centrifugal, or inertial, or reactionless force for the assembly and the object to which it is attached. This converts the potential energy of half the circle of flowing water/solution to kinetic energy.

Calculating unidirectional thrust

Advanced mathematics uses funny symbols and Greek letters - even imaginary numbers - but, to put it simply, even advanced mathematics boils down to add, subtract, multiply and divide. And since multiply is an addition shortcut, and divide is a subtraction shortcut, basically there is only add and subtract. Consider the Chinese abacus as an example. Or a Japanese soroban. The author used a slide rule in college. The slide rule is a portable mechanical device using a mathematical technique called Nomograms. For instance, add the logarithm_{10} of the number 2, to the logarithm_{10} of the number 4, and you get the logarithm_{10} of the number 8. You have just added two numbers in the logarithm number system and arrived at the multiplicand of 2 times 4 in the base 10 number system. Buckminster Fuller used a base 12 number system. Surprisingly enough, it eliminated the “fudge factor” constants in many scientific equations. Read his books Systematics and Systematics 2.

The binary system is the basis of current digital computers. Univac, IBM and other computer manufacturers originally used a 6 bit chip. Therefore, to print out a character in English, one had 64 (2^6) possible combinations of bits, so only capital letters were used, along with 0 thru 9, special characters and punctuation. The letter “A” took 6 bits. IBM then started using a chip with 8 bits. Four bits was called a nibble and eight bits was called a byte. Later, IBM increased the computer chip to 16 bits, two bytes, called a word, then later to 32 bits called a double word and now to 64 bits. This results in a letter, “A” for example, now requires 64 bits, 8 bytes, to represent it. It provides the capability of mathematical calculation of large numbers.

Then comes mathematics using different number bases such as binary where the number set is 0 and 1. In a computer circuit 0 is off and 1 is on. A byte is thus composed of 8 off or on states called bits. The octal number base uses 0 thru 7. Hexadecimal uses 0 thru 9 then A thru F, 16 “numbers”.

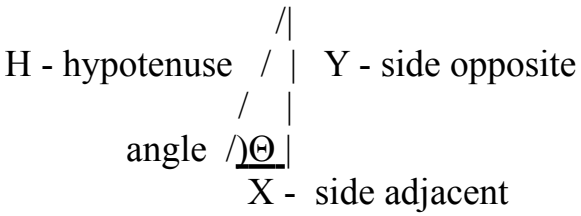
How large a number can one count to using the thumbs and fingers of both hands, 10 digits? Using binary numbers you can count from 0 to 1,023 in decimal equivalent.

The main memory address space was limited to 64,000 characters (64 Kb) in early computers. Now address spaces of 64 gigabytes (GB) are available, though most home computers are at 4 gigabytes (500,000,000 characters). Then, of course, there are super computers which have larger address spaces, multiple cores (parallel address spaces) and much faster speeds. Each core can run a totally separate application than another core is running. Four cores is the equivalent of four single core computers running simultaneously. However, they all are operated by a single "clock" so all four cores execute in parallel. Currently designs are being tested using "flashes" of light and three states, 0, 1 and 0-1 combined for computations. This is resulting in a whole new venue of computers and storage devices which are dramatically faster than previously.

The advanced version of mathematical magic, from down the rabbit hole wonderland, is brought to you by algebra, linear algebra, analytical geometry, solid geometry, plane geometry, spherical geometry, calculus (differential and integral), game theory (originally, theory of games of strategy), trigonometry, nomography, matrices and theory of equations, statistical analysis and other advanced mathematical calculation techniques.

In Algebra, multiplying or dividing one side of the equation by a number or expression and multiplying or dividing the other side of the equation by the same number or expression does not changed the value of the equation as a whole. For instance, multiply both sides of the equation X = ½ by 2. 2 * X = 2 * ½ which becomes 2 * X = 1 . Obviously, since X = ½ then two times ½ is 1. This type of operation is used often in algebra and advanced mathematics.

Trigonometry, the study of triangles, provides the formula for the Sine of an angle, Θ (Theta). Sine Θ, an angle between zero and ninety degrees in this analysis, is equal to the side opposite divided by the hypotenuse.



Each side of this right triangle can represent a vector quantity. The horizontal line will be X and the vertical line (side opposite) will be Y and the slanting line is the hypotenuse and will be **H**.

Analytical Geometry provides the formula relating the length of the three vectors. In a right triangle - one that has one angle of ninety degrees - the angle formed by X and Y - the vector relationships are $\mathbf{X^2 + Y^2 = H^2}$.

The following calculation is for a pipe that is 1.25" (3.175 cm) ID (internal diameter) and about 14" inches (35.56 cm) long. It is bent in a semicircle (180 degrees) - a semicircle diameter of about 9 inches (22.85 cm) down the center line of the pipe or 4.5 inches (11.43 cm) radius.

The term pi ($\boldsymbol{\pi}$) is defined as the circumference of the circle divided by the diameter of the circle. Pi ($\boldsymbol{\pi}$) is a constant value regardless of the size of the circle, and carried to 7 decimal places is 3.1415929. . ., usually rounded to 3.1416. The area of a circle is pi ($\boldsymbol{\pi}$) times the radius squared - $\mathbf{\pi r^2}$.

The volume of a cylinder segment is the radius of the pipe ID squared times the length of the pipe segment. The ID is divided by two to get the radius, then the cross sectional area of a circle is pi ($\boldsymbol{\pi}$) times radius squared. The angle between **X** and **H** is designated in this example, as well as the magnitude and direction, or angle, of **H.** The Trigonometry Sine Θ formula can be used to calculate Y. The formula is:

Sine Θ = Y/H > Sine Θ * H = Y/H * H > Sine Θ * H = Y * H/H (H/H = 1)
Cross section area of pipe = $\mathbf{\pi r^2}$ = 3.1416 * (0.625 * 0.625) = 1.2272 square inches
= 3.1416 * (1.5875 cm * 1.5875 cm) = 7.9173 sq cm

Total length of the pipe is approximately 14" (35.56 cm) . A semicircle of pipe with 9" (22.86 cm) center line diameter has a semicircular length of 14.137 inches (35.908 cm) . 180 degrees divided by 36 five degree segments gives the length of a five degree segment:

segment length = 14.137/36 = 0.3927 inches
= 35.908/36 = 0.9974 cm

The volume in a 5 degree segment of the pipe in this example is
segment volume = length * cross section area = 0.3927 * 1.277 = 0.4819 inches^3
= 0.9974 * 7.9173 = 7.8967 cm^3

Water weighs 8.33 pounds (3.78 kg) per gallon and a gallon is 230.31 cubic inches:

pounds/cubic inch = 8.33 / 230.31 = 0.0362 pounds per cubic inch
grams/cubic centimeter = 3.7795 / 1485.868 = 0.00254 kg (2.54 grams) per cm^3

Therefore, pounds per cubic inch (gm per cm^3) times cubic inches (cm^3) in 5° = weight per 5 degree segment.

Weight (W) in 5º = 0.0362 * 0.4819 = 0.0174 pounds
= 0.00254 * 7.8967 = 0.0079 kg (7.9 grams)

The pump is pumping water thru the pipe at a velocity of 170 gallons per minute or 643.52 liters per minute in this example, or 44.31' (13.516 meters) per second through the 1.25" (3.175 cm) internal diameter pipe.

Radius (R) of the semi-circle of pipe: R = 0.375' (4.5") = 11.43 cm

The weight in the formula $F = (W V^2) / R$ is the weight of the fluid in 5° of the pipe.

W **(mass) in 5º = 0.0174 pounds = 7.9 grams**

$H = M (V^2) / R)$ $V^2/R = (44.31*44.31)/.375 = 5,235.67$

H = 0.0174 * 5,235.67 = 91.27 pounds of force = 41.39 kilograms of force

H = F = Centrifugal Force for 5° segment of water

Θ	Sine Θ	H		Y
2.5°	0.044	91.27	=	3.98
7.5°	0.131	91.27	=	11.91
12.5	0.216	91.27	=	19.75
17.5°	0.301	91.27	=	27.44
22.5	0.383	91.27	=	34.93
27.5	0.462	91.27	=	42.14
32.5	0.537	91.27	=	49.04
37.5	0.609	91.27	=	55.56
42.5	0.676	91.27	=	61.66
47.5	0.737	91.27	=	67.29
52.5	0.793	91.27	=	72.41
57.5	0.843	91.27	=	76.97
62.5	0.887	91.27	=	80.95
67.5	0.924	91.27	=	84.32
72.5	0.954	91.27	=	87.04
77.5	0.976	91.27	=	89.1
82.5	0.991	91.27	=	90.49
87.5	0.999	91.27	=	91.18
	0° to 90º	subtotal		1046.16
	90° to 180°	subtotal		1046.16
		Total		2092

2,092 lbs = 948.75 kilograms

The diameter of the semicircle of pipe is irrelevant. The formula $F = W * V^2/R$ can equally well be written as $F = M/R\ V^2$ or $= (M\ V^2)/R$ Look at the ratio of M/R. As R increases, so does M, proportionately. That is, the 5° segment of liquid increases in length and weight as R increases. If you need convincing, set up a spreadsheet using the math shown above and vary R and observe the results.

Smaller size device – about 8" tall X 15" wide X 30" long

1/2 hp pump (or 2)	$ 486 ($972)	14 lbs	(or 28 lbs)	Grainger 2ZWY2 65 gpm
Neu motor + controller	$ 650	2	estimated cost	
78:22 tungsten fluid	$ 500	10		
Pipe, misc	$ 125	3		
	$2,254 ($2,740)	29 lbs (43 lbs)		
		13.15 kg (19.5 kg)		

About 1,274 lbs (578 kg) thrust for a single pump setup, about 2.3 hp output.
SCOPE = 4.6 Quadcopter lift capability – 5,046 lbs (2,289 kg)
About 2,548 lbs (1,156 kg) thrust for a "two pumps in parallel" setup, about 4.6 hp output. SCOPE = 4.6 Quad copter lift – 10,092 lbs (4,579 kg)

See the diagrams at the end of this chapter to see the device configurations mentioned in the following text. A setup using 1.25" (3.175 cm) ID pipe, and pumps rated as 2" (5.08 cm) input, 1.5" (3.81 cm) output, increases the fluid velocity by almost 50% at the same pump speed and power.

The preceding calculation is of a single pump or a two pumps in series setup. Water is used in the following examples unless otherwise specified. 2,092 pounds (948.75 kg) of thrust would move a vehicle at an adequate acceleration and speed for many purposes, such as small cars, golf carts, motorcycles, small airplanes and small boats. If one used the two pumps in parallel unit that would double the thrust to 4,184 pounds (1,897.5 kg).

Continuing the example of a 1.25" (3.175 cm) ID semicircular pipe in the single pump or two pumps in series with a Tungsten powder in water mix and a fluid flow rate of 170 gpm (gallons per minute) (643.52 liters per minute). This example uses 3.25 pounds (1.4736 kg or 1,4736 cm^3) of water. A 78% of tungsten by weight mixture would be 11.6 pounds (5.2608 kg or 304.1 cm^3) of tungsten in 3.25 pounds of water (1.4736 kg). Tungsten's specific gravity is 19.3, therefore the 78%-22% mix by weight or about 6.43%-93.57% by volume of tungsten to water would have a specific gravity of 15.1. This unit using 78%-22% by weight tungsten water mix will produce about 31,500 pounds (14,059 kg) of centrifugal thrust. The two pumps in parallel

configuration would be double that to 63,000 pounds (28,571 kg) of centrifugal thrust.

The caution here is what material and what wall thickness and what semicircle diameter would the semicircular pipe need to be to handle this pressure? The pressure in a 9 inch (22.98 cm) diameter semicircle at 170 gpm (643.52 liters per minute) would be 2,748 pounds per square inch (1,246.8 kg per 6.4516 cm^2 or 103.45 kg per cm^2) on the leading edge of the semicircle of pipe in the above tungsten example.

Centrifugal pumps that can operate at that flow rate are readily available off the shelf from companies like Grainger and DiscFlo. These sized pumps operate at about 3 hp and 3,500 rpm. This application needs a motor with a speed controller that can operate at variable speeds. There are motor controllers available for this application. Small Neu motors from Neu Motors or Castle Creations of up to about 13 hp and with up to 8,000 rpm are available.
80XX Outrunner Motors for Giant Scale Models - $259
http://neumotors.cartloom.com/shop/item/126891
Flier model SHV BLDC motor controller - $289
http://neumotors.cartloom.com/shop/category/1289/bldc-motor-controllers
See also http://castlecreations.com

More expensive variable speed motors setup that has higher horsepower are also available from other sources.

The electric power supply of an electric car could be used to power the motor(s) of the Ceire unit. The power available in a current electric car far exceeds the power required to operate the Ceire device in this example. The electric power source of the current electric cars powering the Ceire device would greatly extend the driving range of the car. A Tesla Motors car would really excel.

DiskFlo Inc produces a glass lined centrifugal pump similar to Tesla's original design that should work optimally. Standard off the shelf centrifugal pumps use a different impeller design that works well for water but not very well for slurrys and small solids.

Stavatti, a fighter airplane manufacturer, also produces Tesla style pumps. Stavatti has been involved in steam driven turbines as well.

Tesla's design used parallel disks that permit efficient pumping of water and slurrys including such things as flour. Many pumping applications will work only with Tesla style pumps. Tesla was the first on record to invent the centrifugal pump and turbine. His turbine, powered by steam, was significantly more efficient than an electric motor for powering an electric generator. Among other things, it has no back electromotive force to contend with and it is easier to vary the velocity. A Tesla turbine with about 19”

diameter runners can produce more horsepower than any other engine type with the same size, volume and weight.

The above two pumps in series setup using water in a 1.25" (3.175 cm) ID pipe would provide 4 * 2,092 = 8,368 pounds (3,795.01 kg) of lift force for a quad copter. Double these values to 16,736 lbs (7,590.02 kg) for two pumps in parallel units. A quad copter using the two pumps in parallel units would be adequate to carry 8 or 10 (or more) passengers, with luggage, plus a ground vehicle. Multiply times 8 if the 88:22 tungsten mix fluid is used.

Current quad copters use four "lifters" - four motor driven propellers at each corner of the quad copter. This necessitates lowering the side of the quad copter in the desired direction of travel. To achieve level flight of the quad copter, use four Ceire units for lift and two units, one above the other, facing opposite directions in front and two units, one above the other, facing opposite directions in back. These two units provide 4,184 pounds (1,897.51 kg) forward thrust and 4,184 pounds (1.897.51 kg) stopping or reverse thrust. Double that for a two pumps in parallel system. Alternatively, one could use one forward propulsion unit and put it in a swivel frame and rotate the unit appropriately. A two pumps in series device in a swivel housing would provide 2,092 pounds (948.75 kg) of thrust. However, one unit in front and one unit in back gives more thrust and better overall control and redundancy to increase reliability. Arrange the forward and reverse thrust Ceire devices to swivel 90° to the left and 90° to the right for directional control. Double the above figure for a two pumps in parallel setup. Multiply these figures by the specific gravity of the fluid being used in a percentage by weight fluid for fluids other than pure water. Multiply times 8 for the 88:22 tungsten water mix.

Four lifter thrusters using a 50% by weight tungsten mix in a single pump or two pumps in series (1.25" (3.125 cm) ID at 170 gpm (644 liters)) would produce about 80,720 pounds (36,608 kg), 40 avoirdupois (18.14 metric) tons , of thrust for lifting. Double these figures for the two pumps in parallel setup which would produce 161,440 pounds (73,214 kg) of lifting thrust for the quad copter. Tungsten powder sells for $70 per pound (0.4537 kg), but costs $52 per pound (0.453 kg) if at least 10 pounds (4.5351 kg) are purchased, and one serial flow setup requires about 3.25 pounds (1.4339 kg) - about $169 at $52 per pound (0.4535 kg) for a single pump or two pumps in series unit. The tungsten would cost about $676 for the quad copter. A two pumps in parallel unit would cost $338 per unit or $1,352 per quad copter for the tungsten. This is an order of magnitude estimate only, a ballpark figure, not a quote – prices change constantly and different pumps have different volumes of fluid capacity and a different diameter and/or different ID of semicircular pipe might be used.

Four lifter thrusters using the 78% tungsten by weight mix in a single pump or two

pumps in series (1.25” (3.175 cm) ID at 170 gpm (643.52 liters per minute)) would produce about 125,992 pounds (57,139 kg), 63 avoirdupois (28.57 metric) tons, of thrust for lifting. Double these figures for the two pumps in parallel setup which would produce 251,984 pounds (114,278 kg) of lifting thrust (458 hp) for the quad copter, 125,992 avoirdupois tons (57,139.23 metric tons). One serial flow setup requires about 11.6 pounds (5.2608 kg) of tungsten powder - about $598 for a single pump or two pumps in series unit. The tungsten would cost about $2,392 for the quad copter. A two pumps in parallel unit would cost about $1,196 per unit or $4,784 per quad copter for the tungsten.

For comparison, a Boeing 747 jet aircraft has four jet engines, each of which produce 44,700 pounds (20,272 kg) of thrust – a total of 176,000 pounds (79,819 kg) of thrust. Each of the two pumps in parallel units using 78% by weight tungsten-water fluid produce 63,000 pounds (28,571 kg) of thrust each or 256,000 pounds (114,285 kg) of thrust for all four units. Each of these units is about 1' X 2' X3' to 4' (31 cm X 61 cm X 920 cm or .92 m to 1.22 m) in size and weighs about 160 pounds (73 kg) each. Each of these four Ceire units uses about 6 to 8 horsepower for a total of 24 to 32 horsepower. 32 horsepower is about 24 kilowatts. And since they are electrically operated they produce no air pollution.

Mercury is approximately 13 times heaver than water. Therefore, if we used mercury as the fluid in a two pumps in series flow system described above, the vector thrust force would be about 27,200 pounds (12,336 kg) of thrust per unit and require about 42.3 pounds (19 kg) of mercury, $10,360 worth. Four lifter thrusters would produce about 108,800 pounds (49,342 kg) of thrust for lifting. This was calculated using a 1.25” (3.175 cm) ID pipe. A two pumps in parallel flow system using the 1.25” (3.175 cm) pipe would produce about 54,400 pounds (24,671.2 kg) of thrust per unit. Four units, a quad copter, would produce about 217,600 pounds (98,684.8 kg) of thrust. The cost of the mercury for one quad copter would be considerably more expensive, of course.

The equipment in the two pumps in series system can be as small as 12” tall by 20” to 24” wide and about 36” to 42” long (31 cm tall X 50 to 61 cm wide X about 92 cm to 107 cm long) and will weigh about 175 pounds (79.37 kg) using mercury as the fluid. Mercury is currently selling for about $235 per pound ($518 / kg). The two pump single flow unit uses about 42.3 pounds (19 kg) (1.25 inch (3.175 cm) ID unit) 42.3 * 235 = 9,940.5

. 2 * $9,941 = $19,881 for 2 pumps in parallel unit

4 * $19,881 = $79,524 for four 2 pumps in parallel units for a quad copter

The two pumps in parallel system would be on the order of 12” X 24” X 36” to 42” (30 cm tall X 50 to 61 cm wide X about 92 cm to 107 cm long), using one or two Neu

Motor motors. See the two pumps in parallel with one motor diagram at the end of this chapter. It would require about 23 pounds (10.43 kg) of tungsten in a 78% mix and weigh about 120 pounds (54.42 kg). However, it would produce on the order of 63,000 pounds (28,571.4 kg) of thrust (114 hp). Imagine this unit powering a motorcycle or small airplane. If the aircraft were designed similar to an anti-gravity plane or have a high voltage leading edge wings, it could fly at supersonic speeds without heating up. Putting high voltage on the leading edge of an aircraft wing avoids the Mach 1 boom and heating of an aircraft according to some sources. The Air force B2 bomber uses that technology. It uses a high voltage leading edge that produces a toroid effect moving through the atmosphere.

Flying saucer's use very high voltages to produce a toroid that is both anti-gravity and reduces inertia internal to the craft – and has the effect of canceling the mass of the craft. The effect reduces the apparent mass of the crew as well, permitting right angle turns without damaging the crew due to the centrifugal force of the turn.

Quad copters are maneuvered by altering the speed of the individual motors. There are software programs available to control the altitude and flight path of a quad copter using only four units. If one used that software, one would need only four thrusters total for near earth operation. See the software published in The MagPi magazine, Issue 19, Dec 2013 and Issue 20, Jan 2014. Free download at http://raspberrypi.org/magpi

Current quad copters have propellers on four corners. Using the technology described in this book, the propelling units can be inside the vehicle, improving aerodynamics. A properly designed and constructed vehicle could maneuver in space and under water as well as on land.

Using four lifter thrusters and one rotatable thruster for forward and reverse would be adequate for many purposes. Four lifter thrusters plus one or two propulsion thrusters would permit more precise maneuvering and can keep the load and quad copter level.

One would need more thruster units (or thrusters in gimbles) for out of the gravity well use such as going to the moon or launching and servicing satellites – or visiting asteroids. The vehicle would need to be radiation proof especially if a crew was involved. The author prefers fewer moving parts, more units versus using gimbles, decreasing the possibility and liability of catastrophic failure.

To use the Ceire device one will probably want to enclose the semicircular pipe in something like micro-reinforced ultra-high-performance concrete to reinforce the pipe and provide a broader contact area for the force. The concrete could be anchored to the enclosure the unit is enclosed in to relieve some stress on the pumps and their connections to the semicircular pipe(s). Experimenting will tell if this is useful or not

for some given application.
https://www.structuraltechnologies.com/product/ducon-micro-reinforced-concrete
http://www.fibermesh.com/product.aspx?ID=2341
https://www.youtube.com/watch?v=5HbsmFgdz0g
https://www.youtube.com/watch?v=z56HzSLZTXU

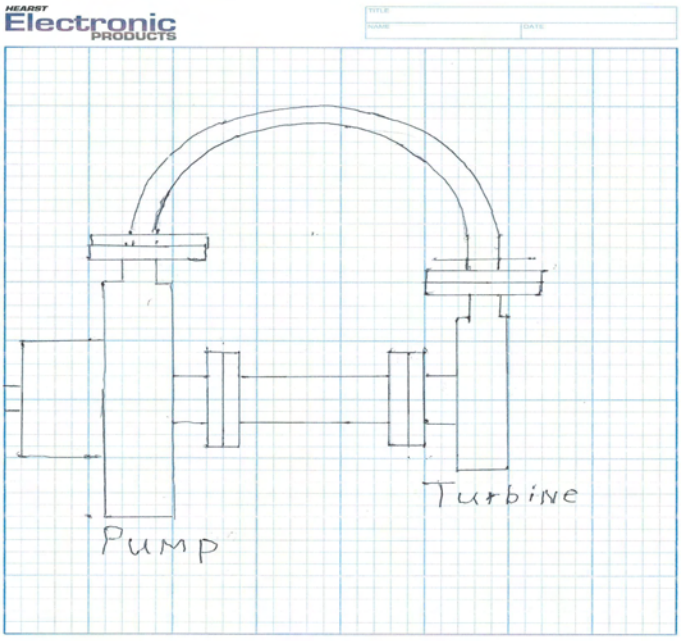
Setting the calculations up in a spread sheet will permit quick and easy varying pipe internal diameter, semicircular diameter, flow rate and liquids of different specific gravity and calculating the fluids pressure on the leading surface of the semicircular pipe(s). The author used the word processor, spreadsheet and other useful tools from Apache Open Office. The package is free - download it from http://openoffice.org .

Most liquids, other than water, generally are toxic or too expensive. For instance, gallium, specific gravity of about 6, which is liquid from about 84° Fahrenheit and warmer, is relatively rare and would cost hundreds of thousands of dollars, if you could get enough of it at all, for the required amount in these examples. Mercury can be toxic if not handled properly, but is readily available. It is substantially more expensive than powdered metals in water mixes. Powdered metals can be used in a liquid carrier that would provide a solution with a specific gravity greater than that of mercury.

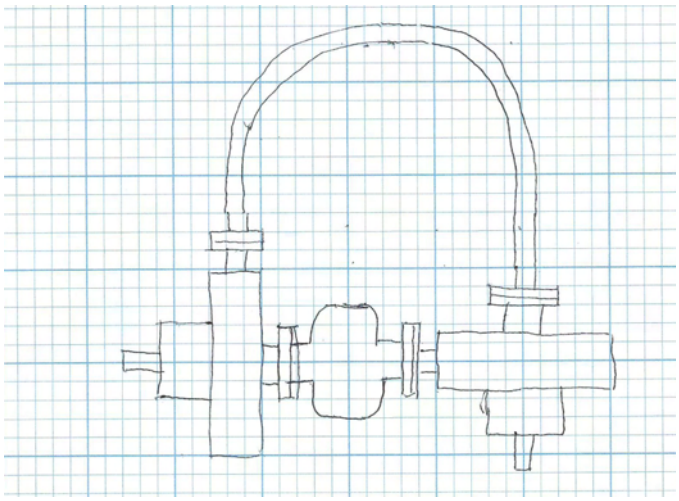
It would be a good idea to coat the inside of the pumps and tubes using pyrolytic chromium carbide coating or tungsten carbide coating for wear protection. Some automobile manufacturers used it to coat the cylinder walls of their engines back in the 1950's. Jaguar was one of them. Pyrolytic chromium carbide coating (PCC) is a technology for protection and reworking of rapidly wearing parts of manufacturing equipment working in extreme conditions.
https://en.wikipedia.org/wiki/Pyrolytic_chromium_carbide_coating
Tungsten carbide
https://en.wikipedia.org/wiki/Tungsten_carbide

Diagrams of various configurations of the device (not to scale)

Single pump system

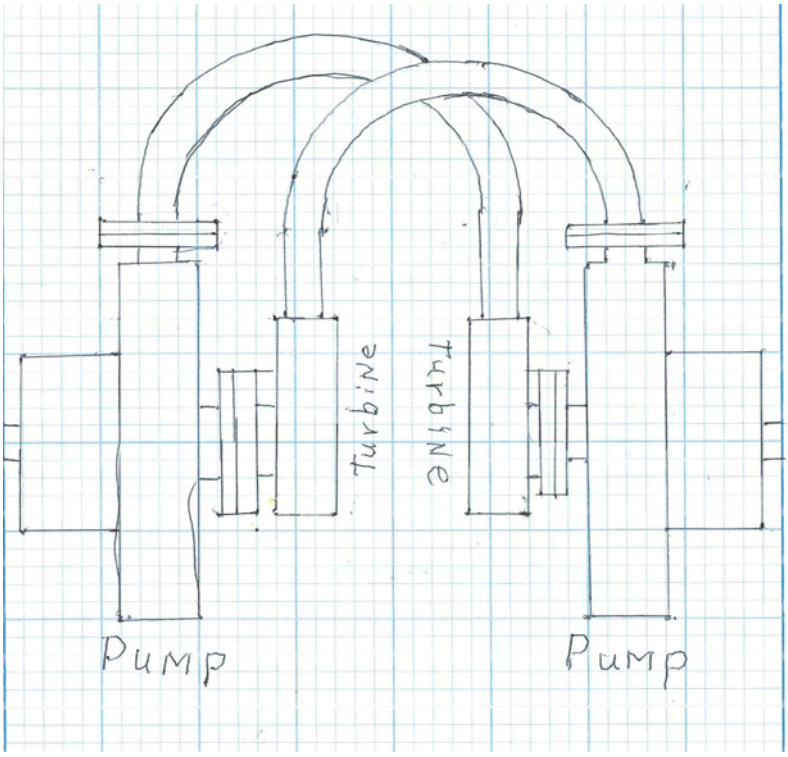


Two pumps in series

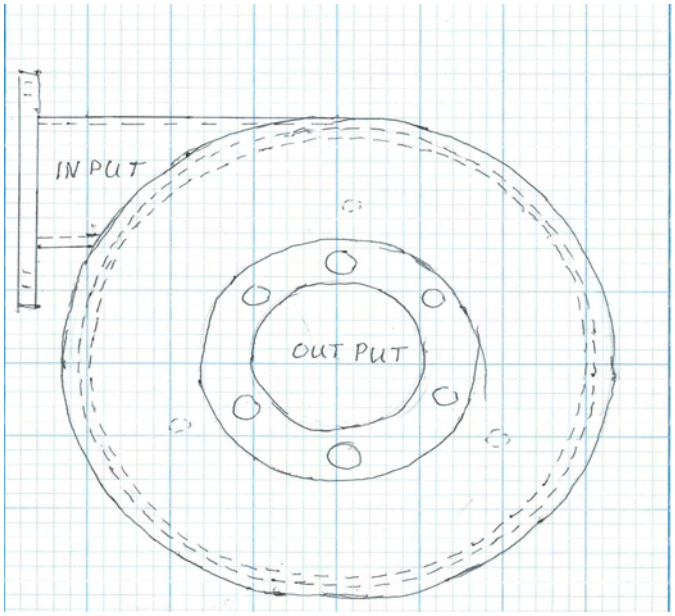


Two pumps with attached turbines in parallel with two motors

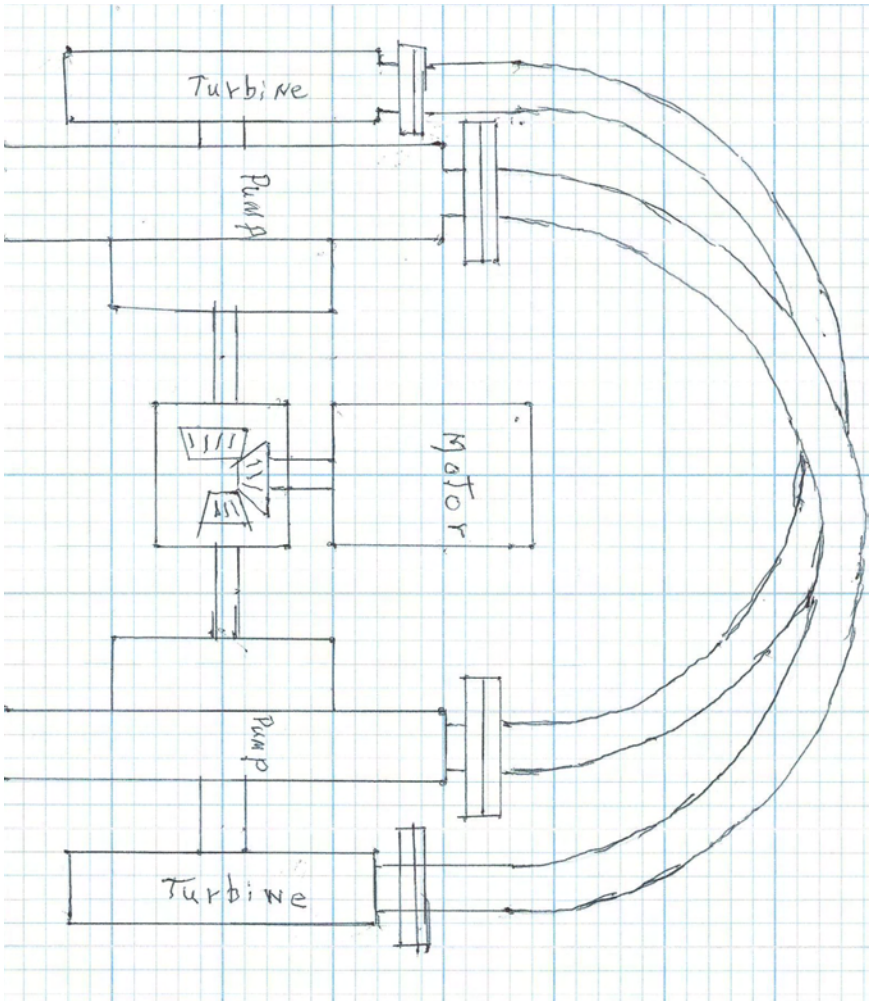
Top view



Turbine without a motor



2 pumps with turbines in parallel with one motor (or multiple motors)



Chapter 3

Canceling reverse thrust

Principles involved

Go to one end of a pool table and have a person ready to roll a pool ball. Stand on one side about the middle of the pool table. Have the first person roll the pool ball down the center of the table. As the first ball rolls down the center, roll the second ball, at a right angle to the path of the first ball, so as to strike the first ball perpendicular to its line of travel. The first ball will deviate its path to track in the opposite direction from which it received the impact - second law of motion. The degree of the change of direction will depend on several factors: the force with which the impact occurred, which is composed of mass and acceleration of the impacting mass being primary (F = MA).

Pool is a game where third derivative of position (control) is routinely demonstrated. Watch a pool player propel the cue ball to strike the target ball then stop in the spot it struck the target ball or change its line of travel as the pool player planned.

John Campbell, editor of the Science Fiction and Science Fact magazine, May 1962 issue, published the 4th law of motion article. Read the fourth law of motion article in the Appendix of this book. Campbell commented, ***"You can get away with anything provided you don't get caught while you're doing it, and you leave the system immediately thereafter!"*** ***https://www.analogsf.com***

Have you ever seen a fight on TV where one person head butted another person in that persons head and dazed or knocked out the second person - but the first person walked away unscathed? How did he do that? He disconnected from the second persons head before the reaction occurred, i.e. he didn't get caught while doing it and left the area immediately thereafter. Martial arts uses this technique in more than one way. This example may be considered an example of the third derivative of position, i.e. control, as well as the fourth law of motion.

Another example. Have two people, preferable about the same height and weight, stand about a foot and a half apart facing each other. Have them bend their arms at the elbow so that their hands are overlapping. Place a rod, such as a broom handle or piece of pipe on their hands and have each of them grasp the rod. One may have his hands palm up. Instruct person one to exert a steady horizontal force to try to push person two backwards. Use a constant force, no jerking or twisting. Have person two exert a vertical upward force as person one tries to push them backward. The person instructed to exert the horizontal force will not be able to push the other person backwards. Since

the person pushing horizontally did not leave the system before the reaction arrived that person is subject to the reaction force and all their force will be directed downward, not horizontally.

Take a yardstick and place it on a table with half of the yardstick on the table and half extending off the table. Then place 3 or 4 sheets of a newspaper unfolded out to maximum size over the yardstick on the table and smooth it out flat. Now slowly press down on the end of the yardstick extending out from the table. It will slowly go down and the other end will lift the newspaper up off the table. Reset the yardstick and newspaper. Now strike the extended end of the yardstick forcefully and rapidly. The yardstick will break and the newspaper will not move. This is an example of the fourth law of motion. More specifically, the CAT of the mass of air on the newspaper.

If you are not familiar with a centrifugal pump take a look at one for sale on the Internet. See http://www.grainger.com/product/DAYTON-Pedestal-Pump-2ZWX9. Notice that the input port is on the same axis as the drive shaft of the pump but the output port is at a right angle to the input port. The fluid being pumped does a right angle turn from the input direction to the output direction. If you feed the output of pump one into the input of pump two, the fluid output flow of the second pump now travels in the opposite direction of the input flow to the first pump (both pumps must be positioned so the output of both pumps is directed to the right (or left) when you are facing the input side of the pumps). The pumps remain stationary but are usually bolted to a base so vibration and environmental influences do not affect its orientation or operation.

Canceling reverse thrust

The two pumps in series has the second pump's output connected to the first pumps input via the semicircular pipe. The fluid is flowing in a semi-circle from the second pump to the first pump exerting a unidirectional centrifugal force in the semicircular pipe. Pump one's output is connected to pump two's input in a straight line. This eliminates the 180 to 360 degree Y vector centrifugal counter force.

The two pumps in parallel system avoids any reverse thrust by a different design, and produces twice the force as the two pumps in series system. The output of pump one goes via a semicircular pipe to the input of the turbine connected to pump two's input and the output of pump two goes through a semicircular pipe to the input of the turbine connected to pump one. This design closely parallels Robert Cook's design, but uses fluids in lieu of solids.

Assuming that this apparatus is anchored to a vehicle that is movable, a sufficient centrifugal, inertial, reactionless (kinetic) force exerted by this device will move the

vehicle proportionately to the centrifugal (kinetic) force applied, as the device is attached in the vehicle. The centrifugal (kinetic) force is proportional to the velocity and weight (inertia - specific gravity and volume) of the circulating fluid so acceleration and braking are controlled by controlling the speed of the motors driving the pumps. The variability of the speed of the pumps provide the third derivative of position, control.

The system can use larger or smaller pump setups to achieve different centrifugal forces to accommodate a specific objective. Multiple units can be used to give flexibility and/or redundancy. This system does not rely on contact (friction) with any other object, nor throwing a mass in the opposite direction of travel, a jet. This is advantageous in many situations. Emergency rescue becomes possible in cases very difficult or not possible otherwise. One or more units can be used to drive an electric generator. Since the COP of the Ceire device is greater than one, producing electricity in this manner would be more economical than the system in current use. There is a less expensive, smaller and more efficient means of generating electricity. See Don Smith's devices.

Chapter 4

Implementations

The four battery system is an alternative electric power source. This is a technique for causing two DC sources of electricity to act similar to AC electricity, except it provides two positive pulses instead of one positive and one negative pulse. This is accomplished by flowing electricity from 2 batteries in series through a load to two batteries in parallel then reversing the configuration and the flow. Some people have substituted capacitors for two of the batteries by using the batteries to charge the capacitors then letting the capacitors return the flow. The capacitors are charged in parallel then put in series to return the flow to the batteries which are now in parallel. The batteries or batteries-capacitors alternately charge each other. Certain frequencies en train power from "the vacuum" (or zero point) and this permits the system to "top off" any degradation that occurs as the batteries charge each other. So the batteries never become discharged. Interestingly enough, when a battery has been charged with this entrained electricity enough times the battery can be completely discharged and then be completely recharges in about a minute or so. One might experiment with charging four capacitors and using them in lieu of batteries, but capacitors typically convert cold electricity to hot electricity. Therefore, capacitors alone probably will not work well. Capacitors supplemented by a small battery might provide a COP greater than one.

Battery chargers for this purpose can be ordered from
http://teslachargers.com/2016/04/19/free-download-tesla-chargers-book/ The Tesla battery chargers use pulsed charging. UFOpolitics has demonstrated that using pulsed DC flow of electricity en trains free energy in the off cycle to operate lights and other devices. Tesla used spark gaps to produce pulsed electric flows. See also
http://www.free-energy-info.com/Chapt6.html
https://www.pinterest.com/pin/387942955377708780/
http://batteryuniversity.com/learn/article/sulfation_and_how_to_prevent_it
Fly-back diode
https://en.wikipedia.org/wiki/Flyback_diode
Compare the fly-back diode circuit to that of the Cold Electricity Coil of 'UFOpolitics'

http://ufopolitics.com/
http://www.energeticforum.com/renewable-energy/10529-my-motors-got-me-tap-into-radiant-energy-1.html

When an electric motor is started, an ammeter (instrument for measuring amperage) will momentarily, a fraction of a second, register perhaps three times the normal running amps for the motor. If a battery is being activated instead of an electric motor, and the turn on spike is activated repeatedly the battery receives an inflow of current that is over

and above the current provided by the charging circuit. This has been referred to as "free" energy, zero point energy, etc. If the battery is discharged and recharged this way several times, the charging time decreases with each recharge time. After several episodes the battery can be completely discharged and then recharged in about one minute. This is what happens with the devices cited in the preceding paragraph.

See Don Smiths devices in his ebook downloadable from Patrick J Kelly's website http://free-energy-info.com And watch the Don Smith YouTube videos at
https://www.youtube.com/results?search_query=don+smith+device
https://www.youtube.com/watch?v=Mnoy2D4wuf8
https://www.youtube.com/watch?v=uJV-zOtfpaw

Books describing how to design a Tesla style disk impeller centrifugal pump (or turbine) can be ordered from: Eagle Research website:
http://www.eagle-research.com/cms/resources/tesla-disk-technology-reference and
http://www.eagle-research.com/cms/resources/tesla-pump-comments

MHD is the use of Faraday's law to propel an ionized fluid or use an ionized fluid flow to produce an electric current. The faster the flow of ionized fluid the more electricity produced. MHD is significantly less efficient than, for instance, a motor driven generator of standard off the shelf units. Some reports indicate that MHD units have up to 30% efficiency as opposed to up to 40 to 70% efficiency for current electricity generating plants. Thus the use of MHD is economically questionable in those configurations.

Stanley Meyer patented an MHD system that had good efficiency but has been neglected. Patent CA 1,213,671 4th February 1983 Inventor: Stanley A. Meyer. Meyer's design was based on T. Townsend Brown's work. For more details see Patrick J Kelley's ebook V30.6 (or the latest edition), pg 3-194, downloadable from http://free-energy-info.com

The power companies have a "secret" of which they do not want the public to become aware. The power produced by their generator(s) powers a step up transformer to magnetically produce a higher voltage for transmission lines as in a Tesla coil. Increasing the voltage decreases the amperage and when the voltage is stepped down at the other end, the amperage is almost as great as the power originated by the generator. This increases the efficiency of transmission. Then there is a step down set of transformers magnetically feeding local power distribution circuits. The power generated by the electric generators never leaves the plant. Power is induced into the distribution lines magnetically then the power in the transmission lines is magnetically induced into the local distribution lines but the power in the long lines never leaves that system either. The transformers in the local distribution systems likewise magnetically induces power into those lines but never leaves those circuits. The final step down

transformer magnetically induces electricity into the circuits available to homes and offices but never leaves that circuit. Therefore, the electricity coming to a home or office was NOT the power created by the power company generators.

The power companies transformers could be bifilar wound coils that would increase efficiency. If the input coils were bifilar wound coils, the power from the generator could power multiple input transformer coils, multiplying the power produced and raising the COP to greater than one. This would permit the voltage step up coils to be "magnetically connected" to multiple high voltage output coils powering the multiple high voltage long transmission lines.

The final bifilar wound step down transformers could have several magnetically coupled output coils each of which provides the same amount of output power as the input to the step down transformer. In other words the input coil of the transformer could easily supply several times more power in the multiple output circuits as the input power to the transformer. These multiple output coils that provide multiple times the power in the distribution transformer circuits in no way affect the power provided in the high voltage distribution transformer circuits. To put it another way, the power company's generator might produce 10 megawatts of power, but the end users could receive, for example, 1,000 megawatts of power with no affect on the generator. Thus the cost of electricity to the end customer could be a small fraction of present prices. Bet that pulled your cork under, as the fishermen say.

One man who lived in a recreational vehicle understood this fact. He carried a wire "antenna" that he would uncoil directly underneath a local electricity distribution line. The power line was the transmitter "antenna" and his "antenna" acted as an output or receiver coil of a transformer and provided him all the electricity he needed. When the power company found out what he was doing, they sued him for "stealing" electricity. Of course that was not true. The power company could not measure any drop in the amount of power in their distribution system when he was actively using electricity in his camping vehicle. Even if there has been 1,000 people doing the same thing on the same transmission line, the power company could not have detected any loss in the power in their transmission line. He was not using any of their electricity. It was analogous to a radio receiver tuned to a radio station stealing power from the radio station. The station has, for example, a 10 kw power signal. If ten million radios were tuned to that frequency there would be no effect on the transmitters power usage. The electromagnetic waves transmitted by the broadcast antenna are not affected by the the number of receivers tuned to that frequency.

Likewise, if one surrounded the output (transmitter) power coil of an MHD device powered by an ionized fluid flow, with, say, six receiver coils, the total output power available from the receiver coils would be six times the power produced by the MHD

output coil. Likewise, if the input power coil to activate a MHD device used to produce a flow of ionized fluid was surrounded by six, or more or less, power transmitter coils to power the MHD device, the device would produce a significantly increased flow rate of the ionized fluid. The six coils powering the MHD coil could be powered by one input power coil surrounded by six output coils powering the six power coils powering the MHD coil. Thus the increased 6 fold increase in speed of output flow of ionized fluid could be powered by one sixth the power otherwise required.

If the MHD generator produced 1 kw of power and it was surrounded by six pickup output coils (receiving antennas) the total power available for use would be upwards of 6 kw. Can you spell over unity?

The present power system feeds both inductive (motors) and non-inductive (light bulbs and resistors) end user devices. The inductive devices can cause a phase shift between the voltage and the amperage in the transmission lines. Other end use customers may be using a phase shifted power supply.

Mnemonics are often used in teaching students. For electricity, some use the mnemonic "ELI the ICE man". Inductance uses the symbol L, capacitance is C, voltage is E and current is I. So ELI means that in an inductive circuit, the voltage leads the current causing a phase shift between the voltage and the current. In a capacitative circuit, the current leads the voltage. Therefore, one can bring the phase angle between the voltage and current to cos = 1, that is, they are in sync, by inserting the proper sized capacitor in an inductive circuit. That is how a radio is tuned to a particular radio station frequency as well. One shifts the inductance or capacitance as needed to select the frequency. In radio terminology this is a "tank" circuit.

An end user of electricity might need to insert a capacitor to bring the voltage and current into sync for the end users home or office. Frequently the voltage and current are out of phase. The alternating electricity equation is Power (watts) = volts * Amps * Cos Θ. Cos Θ is the phase angle between the voltage and the current. As long as Cos Θ is 1, that is the voltage and current are in sync, the power you are paying for is correct, but over lines and circuits supplying offices and factories, many of the loads are motors rather than purely resistive loads so the voltage and current are out of phase coming into your home or office causing the end user to pay for power they are not receiving. The power company charges for volts * amps with no power factor correction as they have no way of knowing, that is they have not installed detection sensors, what it is for any given meter. If a properly sized capacitor is inserted between the meter and the breaker box that will correct the power factor so the voltage and amperage are in sync, that will reduce your electric bill.

Forty years or so ago there was one company that manufactured and sold units to

insert between the utility meter and the primary breaker box that corrected the phase angle. A commercial company, such as a grocery store, could save very significant sums of money on their electric bill using that device.

MHD for electricity production

Thomas Townsend Brown invented a method of producing electricity by letting the ocean tide flow in and out through a tube that had a coil of wire, a solenoid, around it. This has the name magnetohydrodynamics (MHD). Taking the tide example, if one pumped an ionized fluid through a pipe with a solenoid around it, you create a flow of electricity in the solenoid coil. Ideally, the solenoid coil would be a bifilar wound coil.

MHD for propulsion

MHD technology has been known and used for many years. About 1997 AD the Japanese used MHD to propel a boat. They placed a tube lengthwise down the center of the boat below the water line. The tube was surrounded by a solenoid coil. Sea water is ionized so when the solenoid coil was powered by electricity it pushed the seawater out the back of the tube in the boat, which pulled seawater in the front of the tube. The seawater, flowing out the back of the boat like a jet engine, propelled the boat. A solenoid coil has a North pole and a South pole, so the North South orientation controls the direction of flow of the ionized fluid.

MHD Generators
https://en.wikipedia.org/wiki/Magnetohydrodynamic_generator

Uranium has a specific gravity of almost 19 - 19 times as heavy as water. If uranium were in a powder form it could be transported by the fluid increasing the specific gravity of the fluid as well. The pump motors plus MHD can control the velocity of the fluid flow. Experiments would need to be done to arrive at the optimum ratio of uranium to fluid volume versus flow rate.

It has already been discovered that the use of Brown's gas (HHO) can be used in an oxyacetylene torch to make uranium, or any other radioactive element, non-radioactive within a few minutes. The Atomic Energy Commission (AEC) threatened one group who approached an atomic electric generating plant with an offer to remove the radiation from their spent fuel so the spent fuel could be disposed of as any other trash is disposed of. The now non-radioactive powder could be used in the Ceire device to provide a high specific gravity fluid mixture. If you cancel it's radioactivity, it ceases to be useful in an MHD capacity and tungsten has a slightly higher specific gravity.

Cesium-137 has both beta and gamma radiation. It is used commercially for several purposes as a radioactive source. A solution of Cesium-137 could be circulated in a system set up as an MHD electric generator that could supply electricity to operate the CF device. Radium, Uranium and Cobalt-60 would be possibilities, but Cesium-137 would be preferable. Radium, uranium. cobalt-6o and cesium-137 could all be used in a Tesla type electric generator to produce electricity cheaply – orders of magnitude cheaper than is now done. Since Cesium-137 is radioactive, experiments along this line would need to be conducted by people with training in handling radio active materials.

Tesla designed Radium electricity generators. There were cities that have, or had, the Tesla Radium electric generators that provided the cities with their electric power source. There is a picture of this generator in Kelly's ebook. Http://free-energy-info.com Radium has a half life of more than a thousand years.

The use of Radium has largely been replaced with cobalt-60 and cesium-137, as these are safer as their half life is dramatically shorter. Cesium-137 is probably preferable and has several commercial applications. It has a half-life of about 30 years. Being radioactive, it must be stored and handled carefully. If cesium-137 is ingested, Prussian Blue can be administered as it reacts with cesium-137 and the resulting product is non-radioactive and non toxic and is eliminated from the body in about 30 days or so. This aspect of electricity generation is clearly not for experimentation by anyone not trained in radiation technology.

Thorium only produces alpha radiation which can be blocked rather easily – with a paper bag, for instance. Thorium is very plentiful. It could be used in a Tesla type electric generator instead of radium, which is much less plentiful. There are people currently experimenting with equipment to use Thorium to produce electricity. Some of these people have sites on the Internet.

Currently, thorium is used in breeder reactors to produce uranium which is then used to produce electric power. Again, for use by trained nuclear technology professionals. The use of radioactive material requires expertise and considerable expense.

Non-radioactive systems

Use Tungsten rather than a radioactive material. Tungsten specific gravity is 19.3. A 50% by weight in water mixture would have a specific gravity of about 9.65. 50% tungsten by weight in water can be mixed economically. Tungsten's specific gravity of 19.3 requires only a small amount of tungsten for a 50-50 by weight mix since it is19.3 times heavier than water. More than 50% by weight of tungsten would increase the specific gravity without making the mix too thick to pump.

If one used a bifilar coil between the primary electrical source and the pump motor(s), that would decrease the power needed from the primary power source, in some cases up to 80%. There are vendors on the Internet selling instructions on constructing bifilar wound pancake coils for this purpose.

In his patent #512,340, Nicola Tesla explains that a standard coil of 1,000 turns with a potential of 100 volts across it will have a difference of 0.1 volt between turns. A similar bifilar wound coil will have 50 volts between turns. In that the stored energy is a square of the voltages, the bifilar will be 50 squared / by 0.1 squared = 2,500 / by 0.1 = 25,000 times greater than the standard solenoid coil. The greater charge difference between turns utilizes the C (capacitance) component of the coil and represents a higher energy storage within the coil itself. The C component also nulls the self-inductance of the coil, the coils natural resistance to current flow (also known as Lenz's law or back electromotive force), leaving the R (resistance) of the copper wire as the dominant factor. From: http://freeenergylt.narod.ru/index/0-10 Scroll about ¾ down the page of this website. See also http://www.zpenergy.com/modules.php?name=News&file=print&sid=1928

Element	Sp Gr	Magnetic	Radioactive
. bismuth	9.8	no	no
cesium-137	6.77		Beta and gamma
cobalt-60	8.9		Beta and gamma
copper	8.96	no	no
gold	19.32	no	no
Iron	7.86	no	no
inconel	8.9	no	copper/nickel alloy
lead	11.34	no	no
nickel	8.9	no	no
radium	5.0	no	beta
thallium	18.5	no	no
Thorium	11.72	no	alpha
Titanium	4.2	no	no
tungsten	19.3	paramagnetic	no
Uranium	18.95	no	beta, gamma

Consider iron powder in a water-ethylene glycol mix for use with this device. Ethylene glycol-water mix (40% water, 60% ethylene glycol), anti-freeze, is suggested to prevent the water from freezing at low temperatures. Glycerol (aka glycerin) is a possible substitute for ethylene glycol and is less corrosive. To prevent the iron from rusting, use pure ethylene glycol or glycerol. Rusted iron powder would not decrease the specific gravity of the mixture. A 50% by weight iron powder and water-ethylene glycol mixture would have about a 3.84 specific gravity. A 1.25" (3.175 cm) ID pipe using water produces about 2,092 pounds (948.75 kg) force. The force for the iron mix would be about 3.84 * 2,092 = 8,033 pounds (3,643.1 kg) of force. This would require about 3.25 pounds (1.474 kg) of iron powder that would probably cost about $98. A two pumps in parallel unit would cost twice that for the iron powder but would double the CF to 16,066 pounds (7,286 kg) of force. More than 50% by weight of iron powder would increase the specific gravity and electric potential.

Lead has a specific gravity of 11.34. A 50% solution by weight of lead powder would have a specific gravity of 5.67. A 170 gpm (643.5 l/min) in a 1.25" (3.175 cm) pipe in a two pumps in series system would produce about 11,860 pounds (5,378.7 kg) of CF. About 3.25 pounds (1.4739 kg) of lead powder at a cost of about $2,600 would be required. A two pumps in parallel system would produce 23,720 pounds (10,757.4 kg) of thrust.

Estimate the maximum pressure per square inch exerted by the centrifugal force. Using tungsten 78% mixture as the fluid flowing at 170 gpm (643.52 l/min) , a 1.25" (3.175 cm) ID pipe with an semicircular diameter of 9" (22.5 cm) would have a force of 2,748 pounds (1,246.48 kg) per square inch (19.55 kg per cm^2) at the leading edge of the semicircle. Steel home water pipe has a rupture strength of about 3,000 pounds (1,360.5 kg) per square inch (210.88 kg per cm^2), so a minimum of a 9" (22.5 cm) diameter semicircle would be required for a unit using tungsten 78% mixture. Additionally, the speed of flow could not safely exceed 170 gallons per minute at the 9" (22.5 cm) semicircular diameter. As stated earlier, changing the diameter of the semicircle of pipe does not affect the CF produced, but the larger the semicircle of pipe the lower the psi (kg/cm^2) in the pipe.

A friend of the author told the author of an experiment a group made with cars. They outfitted a device alongside the struts of the vehicle so that when the brakes were activated, the device rapidly and repeatedly applied a force to move that wheel downward giving the vehicle a greater apparent weight. The device instigated the downward force for a length of time greater than the fourth law of motion Critical Action Time (CAT) for the wheel assembly but shorter than the CAT with respect to the mass of the vehicle body. The increase in the apparent weight of the vehicle assisted in decelerating the velocity of the vehicle faster than with the brakes alone.

This same group did some other interesting experiments as well. One experiment used a device that expels liquids (will work for a gas as well) in a toroid configuration to transport the liquids long distances through the air. To their amazement when the toroid was propelled across part of the ocean it picked up oil from the ocean and arrived with more oil than it started with. There are toy toroidal "guns" that propel a toroidal puff of air across a room. See http://www.abc.net.au/science/articles/2012/07/17/3546850.htm

In conclusion, there are a variety of fluid mixtures that can be employed to provide a desired centrifugal force.

Tungsten Heavy Powder
http://www.tungstenheavypowder.com/technon-325-mesh-product-data-sheet/
Retail price – US$79/pound (0.4535 /kg) for up to 9 pounds (4.08 kg) of powder
10 lb (4.535 kg) & above – US$52 Note that the cost of 6.5 pounds (2.95 kg) at $79 = 10 pounds (4.535 kg) at $52.

Lead powder costs about $800 per pound ($1,764 per kilo).

Commercial Tesla turbines and pumps
http://peswiki.com/index.php/Directory:Tesla_Turbines

http://www.animatedsoftware.com/pumpglos/teslapum.htm

https://www.youtube.com/watch?v=9PdzaYwgQBE
https://en.wikipedia.org/wiki/Tesla_turbine

On Amazon.com
Tesla turbines, pumps
http://www.amazon.com/Building-Tesla-Turbine-Vincent-Gingery-ebook/dp/B008EK3K6Y/ref=sr_1_6?s=books&ie=UTF8&qid=1457725307&sr=1-6&keywords=tesla+pump

http://www.amazon.com/exec/obidos/ASIN/0953652327/teslatechnolo-20?creative=327641&camp=14573&adid=0TE8K5GCDG5ZVR1Z8J63&link_code=as1

http://www.amazon.com/exec/obidos/ASIN/188491733X/teslatechnolo-20?creative=327641&camp=14573&adid=0B9NSMFK8DA00ESCZ9C5&link_code=as1

Tesla pump manufacturers
Discflo Corporation
1817 John Towers Ave
El Cajon, CA 92020, USA
Phone: (619) 596 3181
Toll-free: 1-800-DISCFLO
http://discflo.com
http://discflo.com/discflo-glass-lined-pumps/

Stavatti
http://stavatti.com
Although Stavatti manufactures fighter planes, they are involved in geothermal work as well. In their geothermal work they use Tesla centrifugal pumps and Stavatti designed turbines to produce electricity. Stavatti produces both pumps and turbines.

Chapter 5

Applications

Thoughts on an endless power supply

Don Smith's device. A battery is used to power an inverter that powers a neon power supply. The neon power supply (output at radio frequency - above 20 kHz) is used as input to a Tesla coil amplifier that has an output of about 16 kilowatts (kw). This powers multiple 120 V AC sockets at 30 amps. (See Don Smith's work on how to construct such a power supply – found on P J Kelley's website..)

While the 16 kw power supply is operational, a Tesla charger can recharge the battery that starts the 16 kw power supply. Or, as Don Smith does, a coil powered by the 16 kw power supply can be used to keep the battery charged.

3D printing

3D printing is close to the end of phase one in its development. Phase one uses deposition of minute specs of material to build an object, hence is called Additive Manufacturing. There are 3D printers for using many substances: plastics, composites, crystalline materials, glass, wood and metals, even food stuff, chocolate being very popular. If you would like to explore current events you can get on the email list to receive the 3D Printing Industry newsletter free at http://3dprintingindustry.com. They have references to courses, manufacturers, and supplies and what is going on in the 3D printing industry worldwide. Companies are 3D printing cars, houses, tools, clothes, food and metals, especially parts for commercial airplanes and spacecraft.

Phase two will use liquefied materials and form the product as the liquid material is solidified continuously as the object being created is lifted from the liquid or adding more liquid to the previously deposited liquid, now solidifying. This is a much faster process and has other benefits as well. This phase is in its infancy at this time.

The device described in this book could be 3D printed for the structure as the industry evolves. The circulating fluid and the pump motor to run it would be extra at this time as well as the electric power supply.

Amazon is applying for government approval to equip delivery trucks with 3D printers so they can 3D print items at the customers site. And use quad copters.

3D printing is now being taught in high schools, colleges and universities as well in industrial training centers. 3D printing software is readily available on the Internet. There are 3D printers for producing clothes, food, furniture, tools, guns, cars, houses and computer assemblies and parts. The space station has 3D printers and NASA has 'emailed' software to the space station to produce some tools the space station needed.

3D printing will dramatically alter our civilization on this planet. Aside from 3D printing, several countries have skipped building wire lines for phones and gone directly to cell phones. The same is happening to many types of products. Companies in nearly every country are setting up 3D printer facilities to rent time to people and companies to print the customers own custom designed products as well as providing standard software for standard items such as wrenches, hammers, and such.

You can buy a report on the 3D printing industry at:
http://www.idtechex.com/research/reports/3d-printing-materials-2015-2025-status-opportunities-market-forecasts-000416.asp

Land and water vehicles

A land vehicle or a boat can be powered by two Ceire devices, one for forward motion and one for slowing, stopping and to reverse direction. Again, for redundancy and/or to conserve energy one could use multiple smaller devices. It takes much more energy to get a vehicle moving (Newton's second laws of motion) than it does to keep it moving at a steady speed (first law of motion). The advantage of the Ceire device is that it does not require traction with the ground (or water or air) to move the vehicle. It can move, or stop, on snow or ice or in space as well as it can on dry ground or pavement.

The Ceire device described in this book requires much less energy, less material, and is easier and less costly to manufacture and to operate than a gas or jet engine requires to produce the same motive force. And it is essentially pollution free. The Ceire device could be used in a vehicle with a high voltage “leading edge”, like the B2 bomber does, allowing it to operate at supersonic speeds without heating up.

Gasoline engines have a maximum RPM. Electric cars have a wider range but also a maximum velocity also. Jet engines have a wider range as they are not dependent on RPM per se but do have a thrust limit for any given size. Centrifugal force thrust can be varied and has thrust limits depending on design but that only applies tangentially to maximum velocity. Maximum velocity on the ground is only limited by the environment. Other factors, such as air density, also apply. However, in space even a small thrust continuously applied can cause the vehicle to reach high velocities. A jet engine could also do this, if it had an inexhaustible supply of fuel. Jets/rockets are obsolete. The CAT of current technology modulates the available of new propulsion

technology availability.

Airplanes

Airplanes of current design could have their propeller or jet engine replaced with minimal structural alteration. This would reduce fuel expenses and also facilitate reducing air pollution. Couple that with existing technology allowing quiet efficient supersonic flight and travel times will decrease dramatically.

Alternatively, one could use four (or more) Ceire units for lift. Then, for propulsion, four units in the center line, two up front and two in back. Each of the two pairs would have one unit facing forward and one unit facing rearward. Both the rear facing units and the forward facing unit would rotate from forward to ninety degrees to the left and also from forward to ninety degrees to the right, providing maneuverability. The forward facing units propel the vehicle forward and provide steering and the rearward facing units provide steering, braking and reverse thrust for slowing, stopping or reverse motion. Thus eight instead of sixteen units. If one used four units in swivel fittings, one could probably do fine with only four units and navigate like a quad copter for smaller aircraft.

An airliner might use multiple forward propulsion and lift units for redundancy and/or increased thrust. One could go to the moon if such a craft were designed for this purpose, assuming one could get authorization to do so for commercial purposes. Or place and retrieve satellites. Or mine asteroids.
Radiation is another factor. A plane that flies at 25,000 feet exposes passengers to dose rates ~10x higher than sea level. At 40,000 feet, the multiplier is closer to 50x. This data is from: **http://spaceweather.com/**

Quad copters would replace helicopters and speed up transportation of goods and materials. However, 3D printing will gradually eliminate the shipment of many goods and materials.

Aerospace

Consider satellites. If a satellite were equipped with Ceire devices it would not require a rocket to put the satellite into orbit, dramatically reducing launch costs. Since it can be powered by a device such as one invented by Don Smith or even a Tesla 4 battery system or a radium type generator (Navy Aircraft carriers, submarines etc use uranium powered units now) that simplifies the power requirements. Radium, thorium, cobalt-60 or cesium-137 units would be smaller and cheaper.

There are something like 5,600 to 6,000 objects in orbit circling the planet. Counting

small items like paint chips, there are a million or more. Of these, something like 1,000 are active and in use. The rest form a space junk yard. Many of the non-functional satellites contain substantial amounts of gold. Imagine a space junk "wrecker" service to recover the space junk. The maritime law states that if a vessel is abandoned, anyone can claim it as salvage. Perhaps the same would apply to abandoned satellites. Could be a profitable business. And, it would clean up junk making that area of space less hazardous for other traffic. A huge quantity of fragments and debris, from screwdrivers to fuel tanks, orbit this planet. Imagine four ships towing a "net" between them to capture small items.

NASA has a space debris remediation unit, Satellite Servicing Capabilities Office (SSCO), based in Greenbelt, Maryland, whose function is studying remediation measures. There are several companies working on this issue with SSCO as well.

List of space debris websites
https://search.yahoo.com/yhs/search?p=space+debris+images&intl=us&type=default&hspart=mozilla&hsimp=yhs-008

37 pictures of space debris
http://www.space.com/12860-photos-space-debris-images-cleanup-concepts.html

Space debris royalty free stock images
http://www.dreamstime.com/royalty-free-stock-images-space-debris-image27822209

If you are not familiar with the work that has been and is being done in the 'free' energy field you will be surprised. Physicists in general will tell you vehemently that over unity is impossible. They maintain that it is impossible to get more work out of a system than is put into it. However, additional energy can be en trained from or provided by the environment that adds to the input or output of the device – at no extra cost. And "leverage" can be used. Also potential energy can be generated and then converted to kinetic energy.

Consider for instance a windmill which has no input energy in and of itself but is powered by wind (free energy) blowing its fan like apparatus so that it pumps water (does work) or drives an electric generator, and a solar cell that converts sunlight (free energy) into electricity. Both are over unity devices by the standard Coefficient of Performance (SCOPE) equation – SCOPE = output/input, where input is specified as power provided by the device driver built into the device.

Hoover dam has electricity generators that are powered by the water flowing from the lake (free energy – potential energy) through the generators as it flows downstream. Other than the cost of the dam and equipment, this is free energy powering the

generators. The cost of the equipment is not considered in calculating SCOPE.

The cost of constructing an atomic electric power plant is quite expensive, but the radiation provides the heat to produce steam to drive the turbines that drive the electric generators to produce electricity for the company to sell. The uranium is not free but the radiation it produces does not cost any extra. Likewise, a windmill is not free, but it's pumping of water does work at no additional cost. Therefore, by the definition of SCOPE the output work is greater than the input power provided by the device itself to do the work. People do not think of an atomic power plant as a free energy device, but by the definition of SCOPE it really is a free energy device. The uranium costs but its radiation is a "free" energy source. The used uranium, or other radioactive material, can be made non radioactive in a few minutes using Brown's gas in an oxyacetylene torch.

Tesla utilized that fact to produce free energy in a very inexpensive device. He simply used the radiation "flow" provided by radium through a coil or pair of electrodes to produce electricity (Faraday's law or MHD) in the same manner that an MHD device uses ionized fluid flow to produce electricity. He did that much less cumbersome and dramatically less expensive, not to mention safer and with no disposal of waste problems.

Those who state a COP greater than one is not possible ignore even simple systems such as a block and tackle system whereby one can pull on the rope (input energy) coming from the upper block using a few pounds of force to lift an object weighing several hundred pounds (output results) that is attached to the hook on the lower block. Here the use of COP is used in a universal sense – all input from whatever source – and all output results. In the scientific SCOPE usage, the output is uncalculatable, as the device itself provides no input power.

One can use a lever placed across a fulcrum to raise a large weight on the short end of the fulcrum by applying a few pounds of force at the end of the long end of the fulcrum. Or you can use a hydraulic jack to lift a car by pumping the lever handle of the jack using a few pounds force to lift the heavy vehicle on top of the jack. Weight or force 1 * distance 1 = weight or force 2 * distance 2. One might question whether these are over unity devices or not, but the work done exceeds the input energy required to do the output work. Again SCOPE is uncalculatable as the lever provides no power in and of itself.

Nicola Tesla described a discovery he made when he was a young man. He was high on a mountain covered with snow. He picked up some snow and made a snowball and pitched it down a steep slope. To his surprise it did not stop but began rolling down the steep slope getting bigger and bigger, then it precipitated an avalanche. Gravity pulled

the snowball and the additional accumulated snow as the snowball grew in size and as the mass increased so did the velocity. When the mass reached the bottom it almost caused great damage to the town in which he lived. Fortunately, it missed the town.

He contemplated that experience and concluded that there might be other situations where, if a trigger force is applied, it will produce an effect much larger than the trigger force. He later applied that in some of his inventions, electricity being one of them. He converted potential energy to kinetic energy.

A Tesla Coil is one example. His Tesla coil system does the same thing. A small voltage at small amperage is applied to a small coil, C1, that is around a second longer coil, C2, and the voltage out of C2 can be many times the input voltage of C1. The Tesla coil can be configured to multiply voltage but not amperage or both voltage and amperage depending on where the C1 coil is placed on the C2 coil and how the C1 coil is configured.

Don Smith found that if the frequency of the C1 coil is increased, with the voltage and current held constant, it produces a larger output from the C2 coil as the square of the frequency. A small very high frequency input to C1 can produce megawatt outputs from C2, and the input power might be only a few watts. He placed the C1 coil in the center of the C2 coil to magnify the amperage as well as the voltage. The coil is like a permanent bar magnet. The center of the bar magnet is neutral. The south pole of a Tesla coil produces voltage while the north pole produces amperage. Placing coil C1 at the south pole of the coil produces high voltages but very low amperage, while placing the C1 coil near the center produces high amperage as well as higher voltage.

The output coil can be surrounded by multiple pickup (receiver) coils and each receiver coil will produce an output power corresponding to it's relative length and to its distance from the transmitter coil. If three output coils of the same size as the broadcasting coil are placed close to the broadcast coil, each output coil can produce essentially the same power that the broadcast coil transmitted. The output power would be three times the input power – COP of 3. The Tesla coil has an output coil longer than the input coil, so has a SCOPE greater than one. The Tesla output can be multiple output coils and can be arranged like a transformer (without a metal core for radio frequency applications) with three (or more) output coils also with no metal core. Current flow is “hot” current and follows the entropy cycle. Magnetic fields, which are energy and contain no mass, are not subject to the same entropy cycle. This is sometimes called neg-entropy. It could also be called “cold” energy, though it is temperature independent.

One time Tesla built a small vibrator and attached it to a support beam in the tall building where he had his laboratory. A few minutes later he realized it was producing a

resonant frequency that was adversely affecting the building, so he picked up a sledge hammer and smashed the vibrator - just as the police burst into his lab to find out what he was doing that was adversely affecting the buildings in the neighborhood. Again, a small trigger force was producing a SCOPE much greater than one.

Modern pianos take advantage of this also. A metal 'string' tuned to the vibration rate of a particular note can be amplified by putting two more identical strings close beside the original string on each side of it. The pianist can strike a piano key while press on a pedal that mutes the two additional strings to lower the volume of sound produced when the pianist strikes the key on the keyboard. So even here SCOPE greater than one can be achieved.

Later, when taking classes in electronics at the University of Houston, the author learned about amplifiers and back electromotive force (BEMF) in coils, such as transformers and motors – Lenz's law. The texts assure the student BEMF always prevents a SCOPE greater than one. Now there are several inventions that prevent BEMF, one of which is the bifilar wound coil. When the BEMF is eliminated, one can get more power out than is put in. SCOPE greater than one. Some of these techniques are discussed later.

By passing AC power through a diode that clips off the negative portion on the cycle and letting the BEMF charge a capacitor during that off period the BEMF can be used as well to do work making the output (positive half of the AC cycle plus the capacitor output) greater than one. The positive half of the AC cycle provides 0.707 of the peak voltage times the current and the capacitor accepts the peak voltage and current. By using two diodes and two capacitors a setup can be configured to provide twice the peak AC voltage and all the current in a DC circuit. A 120 V AC source at 10 amps could provide 316 V DC at 10 amps – 1,200 watts AC vs 3,160 watts DC.

A Japanese inventor developed a motor whose output power was greater than the input power required to run it. The US government refused to allow it to be imported into the United States by the manufacturer. Volkswagen produced a car that gets about 65 miles per gallon of gas. The United States government prohibits it from being imported into the United States by the manufacturer.

A reporter was in a Ford motor company factory one day and wandered into a test lab. He observed a miles per gallon (MPG) test being done on a test vehicle. The vehicle was getting about 200 MPG. The reporter asked the engineer when that technology would be used in new cars. The engineer said the public would never see that technology.

The government relies heavily on the taxes it gets from gasoline sales. The

government makes a public show pretending it is forcing car manufacturers to improve gas mileage in cars, so car manufacturers improve mileage in low end cars a little bit but overall the gas consumption of their entire line remains relatively constant. That seems to be changing. There is a new law in the United States Inc democracy country, but not in the 50 states of the Republic, that requires cars to have an average of about 50 mpg by 2025. Contrary to public announcements, the automobile companies already have technology to implement that requirement. The automobile companies are currently focusing on autonomous (driver less) vehicles. There will be an accelerating focus on flying vehicles, cars, buses, etc, that require the autonomous technology to deliver passengers and freight by air. Amazon is a leader in the arena of freight delivery using drones and the FFA is working with companies to implement autonomous air transport.

Two inventors worked together and developed an electric motor design that eliminates BEMF. See Advanced Motor Secrets at http://whitedragonpress.com/ and Bedeni SG at the same website.

Elevators

Elevators currently use steel cables. As a result there is a limit to how many floors an elevator can service. If the steel cables were replaced with a Ceire unit it would be possible to decrease the number of elevators in very tall buildings and probably reduce the power required to operate them. One gold mining company in South Africa has a mine shaft more than two miles deep. Their elevators use very large, heavy cables. Using a Ceire device could be used there advantageously, for elevators, clearing debris after blasting a rock face and transporting the rock/ore to an elevator.

Building construction

The construction of tall buildings normally employs one or more cranes. A specially constructed Quad copter could do the job cheaper and quicker and probably speed up the construction.

Rescue operations

A vehicle powered by a Ceire device could dock at a fire escape exit – or window – to rescue people otherwise cut off from escape from a burning high rise building. Or rescue people lost in the country side or stranded on a mountain side. Perhaps even people in a ship emergency at sea. A Ceire powered life raft might be advantageous.

Moving residences

R. Buckminster Fuller designed a residential building (house) that is self-contained

and can be moved from place to place using a helicopter. A Quad copter could be used, or Ceire devices could be built into the residence. That would give new meaning to 'mobile home' or perhaps Recreational Vehicle. And one could hover in the air or park almost anywhere without needing a road. Buckminster Fuller's description of such a house is in the last book he personally published, “Critical Path”.
http://www.amazon.com/Critical-Path-Kiyoshi-Kuromiya/dp/0312174918/ref=sr_1_sc_1?s=books&ie=UTF8&qid=1448411912&sr=1-1-spell&keywords=criticle+path
https://www.amazon.com/Critical-Path-R-Buckminster-Fuller-ebook/dp/B015GEOKMS/ref=sr_1_2?s=books&ie=UTF8&qid=1467238064&sr=1-2&keywords=critical+path+buckminster+fuller#nav-subnav

Electric Generators

An electric generator head can be purchased without a motor or engine to drive it. Turn the generator so that the shaft points upward. Connect one or more Ceire drives rotating horizontally around the generator so that it/they drive the generator. One can use multiple Ceire drives to drive one generator. Since the Ceire device has a SCOPE greater than one, it would improve the efficiency of electricity generation. And reduce pollution.

The Ceire device described in this book, when using a tungsten solution, will take only a few HP to operate. The Ceire devices discussed in Chapter 2 requires on the order of 10 horsepower to operate, but can produce 63,000 pounds of force per unit, about 115 horsepower – COP of 11.5. The propulsive force it generates can power a generator head that produces electricity. This results in an over unity situation. Couple that with generator heads that are designed to cancel out the BEMF, which have been demonstrated, and you have a winner. Then use the generator to power a transmitter coil surrounded by 6 receiver coils and away we go!!

Since the generator head with no BEMP can produce more power than is required to run it, one could power the Ceire unit(s) from the generator output and have a generator that could run indefinitely – without fuel. Use that setup to power the electric power that propels a vehicle. No charging stations needed.

Alternatively, use the electric generator designed by Don Smith. This electric power unit is much simpler and cheaper and, since it is solid state, requires much less maintenance and is more reliable and smaller in size. Or, use a Tesla 4 battery system or two batteries and two capacitors or a Tesla MHD electric power unit.

Shipping containers

Shipping containers come in different lengths from 20' to 58'. The maximum allowable load on the highways is about 66,000 pounds per container. A two pump in parallel Ceire device quad copter with 50% tungsten mix can lift 80,000 pounds. A single quad copter could be used for stacking containers, moving them within storage facilities and transporting them from source to destination rapidly. Multiple Ceire devices in a quad copter like unit could carry multiple shipping containers. This could relieve congestion on highways, highway maintenance costs, and dramatically reduce shipping transit costs and time. This type of transportation would greatly speed up shipments from continent to continent also.

References

Patents

Robert Cook's patent
Device for conversion of centrifugal force to linear force and motion
Patent number 4,238,968 Dec 16, 1980
Cook's book, The Death of Rocketry (Amazon.com) lists 2 or 3 dozen patents on inertial/centrifugal propulsion or reactionless propulsion devices.

Dean, N L
System for converting rotary motion into unidirectional motion
Patent number 2,886,976 May 19, 1959
also Patent number 3,182,517 May 11, 1963

Recent (2015-2017) centrifugal/inertial/reactionless propulsion patents
http://www.freshpatents.com/-dt20150611ptan20150159637.php
http://images1.freshpatents.com/imageviewer/20150316036-p20150316036
http://www.freshpatents.com/-dt20151203ptan20150345478.php
http://www.freshpatents.com/-dt20170302ptan20170058873.php?id=fpkwm

Seventy nine Inertial, centrifugal, reactionless propulsion device patents
http://rexresearch.com/inertial/inertial.htm

Lenz's Law
http://www.electrical4u.com/lenz-law-of-electromagnetic-induction/

Faraday's Law of electromagnetic induction
http://www.electrical4u.com/faraday-law-of-electromagnetic-induction/

Electromagnetism and left hand rule
https://www.youtube.com/watch?v=bht9AJ1eNYc
Left hand rule: When fingers wrap in the direction of the spiraling magnetic field., the Thumb points in direction of current flow – the North pole. What we call the north pole of this planet is actually the magnetic south pole. That is why a magnetic compass needle's north pole points towards the arctic pole.
https://www.youtube.com/watch?v=Dc8Vay7mRss

Lagrange points

https://en.wikipedia.org/wiki/Lagrangian_point

In celestial mechanics, the **Lagrangian points** (/ləˈgrɑːndʒiən/; also **Lagrange points**, **L-points**, or libration **points**) are positions in an orbital configuration of two large bodies where a small object affected only by gravity can maintain a stable position relative to the two large bodies. The Lagrange points mark positions where the combined gravitational pull of the two large masses provides precisely the centripetal force required to orbit with them. There are five such points, labeled L1 to L5, all in the orbital plane of the two large bodies. The first three are on the line connecting the two large bodies; the last two, L4 and L5, each form an equilateral triangle with the two large bodies. The two latter points are stable, which implies that objects can orbit around them in a rotating coordinate system tied to the two large bodies.

Lagrange point L4 is about 23 degrees ahead of the moon and L5 trails the moon by about 23 degrees in its orbit.

Miscellaneous

Flying saucer technology explained
https://www.youtube.com/watch?v=LJ7qLSzWC2Y

Flying saucer Blueprint – how Flying saucer's operate
https://www.youtube.com/watch?v=CsCgYIVRnzA

Electrogravity – flying saucer propulsion
https://www.youtube.com/watch?v=VXRa-S0xCxI
http://www.amazing1.com/

German company power unit to propel an aircraft without propellers or jets
http://evert.de/buchf.htm In German – use a plug in app to translate

Minto wheel – Energy device powered by a small temperature difference
https://en.wikipedia.org/wiki/Minto_wheel also,
http://www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Dstripbooks&field-keywords=minto+wheel

Eagle Research's version of an energy device similar to the Minto wheel
http://eagle-research.com

1929 Snowmobile http://flixxy.com/snow-vehicle-concept.htm

Radiation information

There is much to understand about radiation. It can be hazardous to your health in some instances, but everyone has radiation effects in their body pretty much throughout their life. There is atomic radiation, x-ray radiation, solar radiation,

electric power radiation and cellphone radiation. To learn more about how to protect yourself from, and remedy the effects of, radiation start by reading the following books. It could prove to be very useful information for you and your family, friends and associates.

"The nuclear scare scam"
https://youtu.be/rMqHTbXm3rs

How to make a radioactive substance non-radioactive
http://www.eagle-research.com/cms/store/browns-gas/neutralize-radio-active-waste-download

"All About Radiation" and "Cellphone Radiation"
https://www.amazon.com/s/ref=nb_sb_noss/160-7364182-3868627?url=search-alias%3Dstripbooks&field-keywords=All+about+radiation

"Clear Body Clear Mind" - How to remove toxins and radiation from your body
https://www.amazon.com/s/ref=nb_sb_ss_i_2_21?url=search-alias%3Dstripbooks&field-keywords=clear+body+clear+mind+ron+hubbard&sprefix=clear+body+clear+mind%2Cstripbooks%2C186&crid=2K7WPQCB78IRR&rh=n%3A283155%2Ck%3Aclear+body+clear+mind+ron+hubbard

2017 Extra Ordinary Technology Conference
July 26 – 29, 2017

http://teslatech.info/ttevents/prgframe.htm

Topics Featured:

Tesla Technology • Magnetic Motors • Zero-Point Energy
Energy Saving Devices • Cosmic/Radiant Energy • Brown's Gas
Low Temperature Plasma • GEET • ElectroGravitation
ElectroMedicine • Magnetic Healing

THE ENERGY MACHINE OF JOSEPH NEWMAN

https://www.youtube.com/watch?v=RMYo1QlvK5g
http://www.youtube.com/user/kmarinas86

Don Smith technology – an advancement on Tesla's technology

Don Smith, now deceased, improved on Tesla's technology and developed several devices that would sit on a card table. One produced 16 KW of power another produced 2 megawatts of power. Most of Don's work is included in an ebook created and maintained by Patrick J Kelly. It can be accessed and downloaded, for free, from: http://free-energy-info.tuks.nl This ebook is about 48 GB in size and there is another 50 or more GB of patents, ebooks and references that can also be downloaded.

There is a separate ebook on this website, a book about Don Smith detailing his system.
http://free-energy-info.tuks.nl/DonSmith.pdf
https://www.youtube.com/watch?v=cQkYAh8Qgb4
https://www.youtube.com/results?search_query=don+smith+device
https://www.youtube.com/watch?v=Mnoy2D4wuf8
https://www.youtube.com/watch?v=uJV-zOtfpaw

Parallel Path Magnetic Technology for High Efficiency Power Generators and Motor Drives

Patents & Copyright - Flynn Research, Greenwood MO, 64034
http://www.flynnresearch.net/

UFOpolitics design

The Cold Electricity Coil of 'UFOpolitics'
http://free-energy-info.tuks.nl Version 27-7 page 3 – 182
http://ufopolitics.com/
http://www.energeticforum.com/renewable-energy/10529-my-motors-got-me-tap-into-radiant-energy-1.html

Lawrence Tseung's Magnetic Frame.

http://free-energy-info.tuks.nl Version 27-7 Page 2- 52

Thane Heins' dual toroidal magnetic frame

http://free-energy-info.tuks.nl Version 27-7 page 3 - 3

Nikola Tesla's 4-Battery Switch
http://free-energy-info.com

Tesla MHD drive for spacecraft
Patrick J Kelly's http://free-energy-info.com ebook

Appendix

The following article was found on the Internet and copied. The author is unknown to the author of this book, but was included as the data was pertinent to the subject matter of this book. See also **https://www3.nd.edu/~pantsakl/Publications/348A-EEHandbook05.pdf** Control theory is called feedback in automated control systems. However, control is not limited to automated systems. Humans control systems, gravity exerts control in some instances, centrifugal force is sometimes used as a control mechanism. Automated control systems form only a portion of the subject of control as a whole.

Control - The Third Derivative of Position

In the fields of Aerodynamics, Hydrodynamics, and Electrodynamics, only Position (statics) and it's first two derivatives, Velocity and Acceleration, are used in current science. All objects are in motion. The cup of coffee on your desk appears to be motionless. However it is in motion traveling in a circle as the earth spins and as the earth circles the sun and so forth. Since everything is in motion, changing an objects trajectory must of necessity involve acceleration first. That is, a force is applied to it, a la second law of motion, resulting in acceleration, though it already has velocity and acceleration. However, it's current motion is ignored by the calculations involved in the calculations of velocity and acceleration, even though physically you cannot avoid acceleration before the new velocity (Newton's second law). And the object may never experience a new velocity per se as it may persist in acceleration-deceleration mode.

Even Newton stated that Position MUST have 3 derivatives to completely define motion. The missing 3d derivative in science are for variations in Acceleration. Newton knew that it took position, and 3 derivatives, and 4 equations to define the 3 dimensional world, and now you know it too.

Why doesn't Physics use these Control Field sets in the branches of dynamics? Obviously, masses, molecules, atoms, and particles have motions and relationships that are variations in Acceleration Fields, the definition of the Control Field being variations of acceleration, and the results, from elementary particles to stellar bodies.

Newton provided the necessary formal expression in the calculus, where he defined velocity as the rate of change of position with respect to time, and acceleration as the rate of change of velocity with respect to time.

Velocity is known as the first derivative (of position), acceleration as the second

derivative. These two expressions laid the basis for the theory of gravitation.

While Newton mentioned a third derivative, he made no attempt to give it a physical meaning. What is it? Since each derivative is the rate of change of the quantity derived (i.e., velocity is the rate of change of position, acceleration the rate of change of velocity), we may conclude that the third derivative is the rate of change of acceleration.

Every automobile driver has direct experience with the third derivative, for in controlling the car by pushing the accelerator, applying the brake, or changing its direction with the steering wheel, he is changing its acceleration.

For example, a a number of years ago, engineers at General Motors were trying to find the analytical foundations for what passengers considered a comfortable ride in a vehicle. They assumed that minimizing vertical acceleration was the key, but road testing said otherwise. They found that the rate of change of acceleration, or the third derivative of position, was the key factor. This was new mathematical ground, and GM didn't know what to call the derivative of acceleration.

This, in fact, is control.

The existence of the fourth EM field for a patterned or cyclical hydrodynamic Control EM field is both a logical and physical necessity following the natural pattern of the 3 known fields.

The Electrodynamic Control field is totally predictable when deliberately generated, and the constraints of the design elements make a generated Control EM usable by man.

Basically, in the case of the Alexander Motor / Generator Patent, these Control EM fields are generated by superimposing or heterodyning a Velocity EM (a generator rotor motion) and an Acceleration EM motion (transformer) together, instantaneously in a common element.(stator magnetic field)

Maxwell and Einstein USED ONLY VELOCITY & ACCELERATION, in formulating current electromagnetic theory and relativity theory, NEVER considering Control, or the third derivative of position L, expressed mathematically as L/T^3.

Here is a direct quote from Albert Einstein that proves this point:
" THE SPECIAL THEORY OF RELATIVITY OWES ITS ORIGINS TO MAXWELL'S EQUATIONS OF THE ELECTROMAGNETIC FIELD "
ALBERT EINSTEIN
(ed. Schilpp; Albert Einstein, Philosopher-Scientist, Library of living Authors, 1949,

p62.)
This poses the question: Was Maxwell stupid or cunning?

So we can say, just as acceleration is change of velocity, so control is change of acceleration and is the third derivative, and hence has status. The neglect of the third derivative by classical physics is traceable to the fact that it cannot be used for prediction. We may, of course, as in a guided missile, lock the controls to home in on a target and hence render control determinate, and this is the special case covered by cybernetics. But in the general case, we must go a step further and recognize that control is "outside the system."

It is indeterminate--the driver is free to steer the car where he wishes. This does not deny its existence as a factor in evolution. We can diagrammatically represent the derivatives by a circle on which position is shown at the right and its three derivatives in sequence clockwise.

Such a circle is also representative of the cycle of action, and applies to any repeating cycle, such as the swing of a pendulum.

Here, however, we are interested in the fact that the representation implies that derivation returns to itself after four applications. Is this the case? Does the fourth derivative reduce to a position? Yes. For example, when you're driving a car, your control of the car is governed by position, for that is what your destination is, a position in space. Or again, the control of a guided missile is directed by the position of the target. Therefore, the fourth derivative is position. In other words, if we divide by T four times, we are back at the start: 1/T4 = 360 degrees = O degrees. (Standing still, known as the identity operator in science.)

We propose to make control a criterion for the description of entities on the right-hand side of the arc .

Our right to do this stems from the fact that control can be identified with the third derivative and is therefore equal in status with other derivatives (velocity and acceleration). Or, again, control is evident to observation: an automobile, a paramecium, a Flying Saucer can be observed to be under control or not under control. And control is evidence of life. The definition of motion is Complete, as explained below.

What these generated control fields do is increase or decrease all of the binding forces of Nature, with their vortex radiated actions, the most stable, natural form of the Control Electromagnetic / Dynamic field is the binding energy in the nuclei of all atomic elements, the so-called strong nuclear force.

The field due to the orbital motion of the electron, and proton charges vary inversely as the square of the distance, the same as gravity.

The field produced by the translational motion of these charges vary inversely as the cube of the distance.

These observations will totally unite electromagnetic and gravitational field theorys and account for the strong and weak forces in the atom.

Both the strong and weak nuclear forces are products of Control Field actions. In the nuclei of atoms; the motions of the protons and neutrons produce a very strong, local control field binding energy.

All the forces of nature are part of the REAL electromagnetic, dynamic system

The photon got into the wave / particle dispute because it is a Control Field product, mismeasured as an acceleration product. This is why the famous "light slit' test results in classical physics led to the speculations in the nature of light as a particle, and a wave, or wavicle, and the electromagnetic spectrum.

Thus, the famous Quantum Energy-Electron-Volt scale is in error with respect to Nature's energy levels.

Although we get results, using 3 out of the basic 4 fields, or 75% : Planck's constant and the photoelectric effect are both guesses, why higher frequency photons have more power than lower frequency ones.

The nature of the photon as a control field, patterned particle exactly explains what and why these phenomena exist.

The Wave-Mechanics of de Broglie applied to atomic electron orbitals is easily seen as yet another acceleration patch, where the Control Field Should Have Been Used. The using of only part of a particles natural motion would introduce the alleged uncertainty principle in Wave-Mechanics.

The motional field errors in quantum levels, wave-mechanics, etc. are the result of particles (electrons, etc) using Control Field orbits, that are mistakenly taken for acceleration fields.

The deliberately overlooked / ignored higher motional component will cause the "smearing" or "energy gaps" claimed by Classical Physics. From these sorts of mistakes Lorentz derived a batch of equations. He ran time thru a variation system, shortened

dimensions in the direction of motion , and increased mass of a body , which would be infinite at light velocity.

If you start with invalid assumptions, putting them into equations does not improve the situation.

When a particle or group of particles is accelerated, it sets up a magnetic braking field to oppose the driving field, hence more and more power is needed to increase the acceleration of the particle group. There is no increase in mass, only an increase in needed driving force, and the results are made to fit invalid theory, with all the bewildering fudge factor phantom particles that comprise it. (As mentioned before, Maxwell's theories use/cover only 2 of the basic 3 derivatives, upon which Einstein developed his incomplete theories.)

To obtain Control Field motions and effects in Hydrodynamics we must have variations in hydrodynamic acceleration flows. Thus we must accelerate the liquid and vary that acceleration to achieve Control Field effects in Hydrodynamics.

In nature, certain types of water flows have varying acceleration flows that are Control Fields. One example is the rapid flow (acceleration) of water to a waterfall, from a lake (Position) and the sudden release (variation), velocity plus gravity acceleration, at very low natural conversion levels, ($L/T + L/T^2 = L/T^3$), that allows, and helps fish to "climb" up the waterfall, (a slight anti-gravity effect).

Another is the steep gradient stream flow in which the stream bed shape rolls or coils the waters acceleration flow. This rolling / coiling motion heterodynes with the acceleration flow to create control Field effects as the "Rhinegold" or floating (levitating) clicking / sparkling rocks effect as an example.

The Schauberger logging flume is a designed version of utilizing the Hydrodynamic Control Field Effect. The flumes trough design and his "waterbodies" (motion directing fins) recreated the Control type steams. He then floated (levitated) very heavy logs in shallow water within these flumes. The water temperature / purity are critical factors as Shauberger noted.

The Shauberger implosion water turbine was a direct result of his intuitive knowledge of the Hydrodynamic Control Field, as the accelerating water spiral flow tubes "corkscrew" the water flow in a contracting downward spiral with the tube wall shapes in a hyperbolic ratio curl. The principal design problem, then as now is that the exact ratio of acceleration spiral to "curl" (corkscrew) must be held or the vector forces in the flow tube explode violently outward.

The current spiral design shape arguments of cycloid, hyperbolic, or phi ratio hide the critical design reality of force vectors of spiral to curl ratio.

GEOMETRICAL BALANCE OF VECTOR FORCE / MOTION FIELDS IS THE SECRET IN ANY CONTROL FIELD DESIGN.

You could make any of them function by matching the spiral to curl ratio, but they all have their design trade-offs, like less levitation for wider water temperature range, etc.

Viktor Schauberger, forced into the German V-7 (circular flying objects) program in WW11, while a German prisoner of war matched the water tube spiral (cycloid) to curl ratio in his turbines for radiated levitation. This field stops electrical conduction in remote objects. Control Fields of this type will register as ultra-powerful magnetic fields on standard Gauss meters / magnetometer.

Shauberger's bio-technical submarine design has a movable bow, that gives the conical / teardrop shaped hull the flexibility of a fish. The rifled, water-intake (velocity) in the front, center of the sub, between the movable bow, permits a variable step-up, (acceleration) creating a strong torque on the water which after entering the implosion turbine is intensified to such a pitch,(Control) that it's resonance is driving it instead of initial start up motor to get the flow started.

The water exits the corkscrew, rifled, tubes at top and bottom behind the movable bow, at the highest point in the taper, outwards, creating a propelling vortex thru which the sub is guided with a properly designed guidance fin at the pointed rear taper of the conical vessel; thus there is little outside resistance to flow, and no propellers, as in conventional designs of the present.

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The Fourth Law of Motion

William O. Davis

You can get away with anything provided you don't get caught while you're doing it, and you leave the system immediately thereafter! --- J. Campbell

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[*Author Biography*: --- Dr. William O. Davis is Director of Research of the Huyck Corporation of New York City. He was born in Buffalo, New York on November 11, 1919. He received his A.B. degree from New York University in 1939, with study at Cambridge University, England, on a Carnegie Scholarship from 1937 to 1938. He received his PhD. in physics from New York University in 1950.

In 1940 Dr. Davis joined what was then the Army Air Corps as a flying Cadet. At the close of World War II he was commanding the 824th Bombardment Squadron (B-24s) of the Fifteenth Air Force.

After completion of his graduate training in 1950 he became a member of the staff of the Los Alamos Scientific Laboratory as an Air Force Officer, where he worked on nuclear weapons development. From 1953 to 1957 he was Chief of Scientific Research, Headquarters, Air Research and Development Command and from 1955 to 1957 Deputy Commander of the Air Force Office of Scientific Research. It while in this post that Col. Davis initiated the Project Farside program discussed in the article "Pie in the Sky" in the August, 1961 ANALOG, the first U.S. Space probe program to get instruments out into the van Allen radiation belt. And the one U.S. Space program to get there ahead of the Russians.

His last assignment in the Air Force, from 1957 to 1958, as Assistant to the Director of Laboratories, Wright Air Development Center. He resigned as Colonel from the Air Force in 1958.

In 1958-59 he was Vice President for Research, Executive Vice President and President, in succession, of the Turbo Dynamics Corporation. His research activities have covered the fields of cosmic ray neutrons, special weapons development, and the management of government and industrial research programs.]

Fundamentally, science must be a series of successive approximations to reality. It simply is not possible to arrive at absolute truth with a finite number of investigations. Physics at the Freshman level is a very straightforward subject. Facts are well known, relationships are stated in forthright terms without equivocation, and there is little room for doubt. It takes three years or more of graduate school before it finally dawns on a budding scientist that the whole structure of science, so monumental when

viewed from a distance, is a cracked and sagging edifice held together with masking tape and resting on the shifting sands of constantly changing theory. Nothing is known with any real certainty. Some things are merely more probable than others. Well-known theories and even laws turn out to be only partially confirmed hypotheses, waiting to be replaced with somewhat better partially confirmed hypotheses. If there is one thing we know about every theory in modern physics, it is that it is wrong, or at least incomplete. Sooner or later somebody will come along with a more general theory of which the old theory is seen to be a special case.

This is not a criticism of science, but merely a description of the scientific method. Like democratic processes in general--for science is necessarily a democratic process -- this method may seem a bit sloppy, and even bog down from time to time with authoritarian red tape, but it's the only method we know at the moment, and its results have been spectacular.

Progress tends to take place by a more or less random series of spurts in different fields at different times. The Laws in a given field of science will appear adequate for many years and little attention will be paid. The glamour is all in another field. Then little anomalies start showing up in engineering or scientific applications of the Laws which are accounted for by engineers through "Finagle Factors" and explained by scientists as "second-order effects." Usually, it takes a really major anomaly to generate the necessary speculation to derive a new and improved theory.

The field of Mechanics is a case in point. Euler, Lagrange, Hamilton, and Newton did such a beautiful job of synthesizing a workable theory that no further attention was paid to Mechanics for many years. Certain anomalies in astronomical data led Einstein to the Theory of Relativity, and the study of atomic physics led to the development of Quantum Theory, but the mechanics of simple everyday systems is still founded squarely on the cornerstone of the three Laws of Motion of Newton.

These Laws are usually stated in the elementary textbooks as:

First Law: Every body tends to remain at rest or in uniform motion in a straight line, unless acted upon by an outside force.

Second Law: An unbalanced force acting on a body causes the body to accelerate in the direction of the force, and the acceleration is directly proportional to the unbalanced force and inversely proportional to the mass of the body.

Third Law: For every action, there is an equal and opposite reaction.

By and large, the Laws of Motion have stood the test of time remarkably well. In spite of the newer concepts of Relativity and Quantum Mechanics, the basic meaning of the Laws has merely been interpreted, not challenged. Even then, interpretation has only been required in the case of very small or very large systems and in everyday life Newton still reigns supreme, much the distress of a host of would-be inventors.

There have been anomalies from time to time, of course, but it has normally been possible to attribute these to lack of sufficient information or understanding.

For a number of years, the author has been intrigued with a group of anomalies having to do essentially with rate of strain in materials and mechanical systems. It is well known, for example, that the strength of many materials is a function of the rate of strain. Some materials such as silicone putty, display this characteristic to a marked extent. The field of terminal ballistics is replete with odd rate of strain effects such as the tendency of long projectiles to penetrate targets by means of a series of hammer blows. There are many other examples which come to mind from almost every field of science and engineering. Generally speaking, it is very difficult to explain such effects in terms of Newtonian physics, although it has been done.

Several years ago, the importance of rate-of-onset effects in general was highlighted for the author by studies of the dynamics of the high speed pressing of paper and textiles in the laboratories of Huyck Corporation based on a theoretical study by E.L. Victory. The need to solve certain problems relating to very high speed paper machines led to the creation of a small research program involving both theory and experiment.

Interest in this field was further heightened by the discussions of the Dean Drive started by John W. Campbell in these pages in 1960. Our earlier investigations led the author to the hypotheses that the Drive, if it worked, might be explained in some way by rate-of-onset effects.

This article is a preliminary report on findings of general interest which have resulted from this research program. It is not primarily designed to explain ‘reaction less’ drives, but certain conclusions will certainly have a bearing on the evaluation of those devices. Because this is a preliminary report, there will be no attempt to offer proof of assertions as such, although it is believed that existing data will tend to confirm theoretical predictions in the areas that have been investigated after the analysis has been completed.

A speculative theory will be proposed which has been logically and mathematically explored to some extent and checked against known data in various areas of science and engineering. No claim is made that this theory has been ‘proven’ any more than any theory is ‘proven’. We do believe that this approach will shed some light on certain problems.

Let us take a moment to review the meaning of the terms describing a body in motion. First of all, a body has a position, described in terms of its distance and direction from some arbitrary point or origin. To this distance we assign the letter, s. If the body is in motion it will move a very small distance, ds, in a very short time, dt, so that its instantaneous velocity will be given by v = ds /dt .

Note that the body might move in such a way that its distance from the origin remained constant and only the angle or direction changed; it might move directly away from the origin in a straight line so that only its distance changed; or it might move in some intermediate way so that both its distance and direction change at the same time. Thus, in general v must represent a rate of change of position in any of these ways. It represents not only a speed, but a speed in a certain direction, and therefore, like the displacement, it is called a 'vector'.

If now, we make a small change in the velocity, dv, in a small period of time, dt, the body will have an instantaneous acceleration vector given by:

a = dv/dt (1)

But, v = ds/dt, so that we can also say a = d(ds)/dt(dt), which is normally written:

a = d²s/dt² (2)

An expression like ds/dt or dv/dt is called a "derivative," and therefore v is called the "first derivative" of the displacement with respect to time. Since the derivative must be taken twice to get it, we say that a is the "second derivative" of the displacement. Thus, Newton's Second Law could be written (and frequently is),

F = Md²s/dt² (3)

Let us now go one step further and assume that the acceleration is not constant. In other words, if we make a small change in acceleration, da, in a short time, dt, the body will have an instantaneous "surge" given by:

å = da/dt = d²v/dt² = d^3s/dt^3 (4)

Surge is thus the "third derivative" of displacement. This quantity has previously been referred to as "rate of onset," "jerk," "kick," and a number of other terms. We use "surge" because it seems more appropriate to describe an action that may be repetitive or even continuous in some systems. We use the symbol å because it is conventionally used an an abbreviation for da/dt.

It is possible to continue indefinitely to define fourth, fifth, and higher derivatives of displacement with respect to time. In some cases, such as very high speed impact, this may prove later to be worthwhile. In most cases, higher derivatives will probably shed little light on the problem and in the case of cyclic or oscillating motion, it can be shown that a dynamic system can be completely described with not more than three derivatives. Higher orders may be present, but can always be expressed in terms of combinations of the first three.

The class of anomalous behavior which we wish to study involves in every case the presence of surge as we have just defined it. Under conditions of constant or zero acceleration mechanical bodies or systems of bodies obey Newton's Laws reasonably well. It is under conditions of changing acceleration that difficulties arise.

The key word in our analysis of dynamic systems will be "simultaneity." The Laws of Motion presuppose exact simultaneity of action and reaction. In other words, if the force exerted by Mass #1 on Mass #2 is suddenly changed, the force exerted by Mass #2 on Mass #1 must change in the same instant to satisfy Newton's image of the universe. Einstein recognized that this condition would not be met in the case of bodies separated by astronomical distances since the change in gravitational field would have to be propagated at some finite velocity, presumably that of light, but he did not carry his investigations into the simpler field of everyday mechanics.

If it is true that two stars cannot act as a Newtonian system in less time than it takes gravity to propagate from one to the other and back, it is equally true that any real body or system of bodies suffers to a greater or lesser extent from the same problem. Newton's Laws, strictly speaking, apply only to mathematically infinitesimal particles or perfectly rigid bodies, neither of which exists in the real world.

Consider, for example, a simple steel rod one meter long which I wish to move by applying a force to one end. The instant I start to apply the force a message leaves the end of the rod as a plastic or elastic compressive wave which travels at a speed of approximately 5,000 meters/second. The compressive wave travels to the far end of the rod where it is reflected as a rarefaction and returns to the point of application of force at the same speed.

Until the wave returns, 4/10,000 of a second later <i>the rod as a whole cannot move according to the Second Law! No matter how much force is applied, the center of gravity of the rod cannot obey F = Ma in less than this time. It would be oversimplifying to say that the rod acts as though it had infinite mass during this time, since the center of gravity will be moved somewhat by compression, but for all practical purposes, the rod acts as though it had a much larger mass than it actually has.

This phenomenon is observed with all real mechanical systems to a greater or lesser extent and is normally described in the engineering textbooks as the "starting transient." Although engineers must concern themselves with starting transients in such matters as determining peak power requirements for motors, science has devoted relatively little attention to study of this phenomena, preferring, in general, to consider steady-state conditions where the Laws of Motion and the Laws of Thermodynamics may be more comfortably applied. Therefore, it is precisely with the starting transient that we will begin our investigation of the dynamic behavior of real bodies.

We have concluded that all real bodies or systems of bodies experience a starting transient when a force is applied. The particular behavior of a given system will depend on: (a) how rapidly the force is applied and, (b) the built-in delay time, or "critical action time" of the system. More exactly, we have found that the behavior depends upon how rapidly one attempts to *change the acceleration* applied to the body. The ultimate acceleration of the body, the "a" of F = Ma, is not what is critical; it is the *rate of onset* or "surge" of the acceleration which is vital.

Colonel John Paul Stapp, the USAF Flight Surgeon who subjected himself to crushing accelerations to investigate the hazards of seat ejection and airplane crashes, observed that the extent of damage to personnel and equipment depended in an important way on surge as well as the acceleration itself. In fact, today the USAF specifies limiting rates of onset as well as limiting accelerations for men and equipment. On one case, Col. Stapp estimated that the effect of a given acceleration on his body was over twice as great if applied at very high rate, than would be predicted by F = Ma !

Thus, it is not wholly illogical to attempt to solve the puzzle of high rate-of-onset anomalies by postulating that there is a force proportional to the rate of change of acceleration as well as Newton's force proportional to acceleration itself. There is no conflict here with Newton, for Newton considered only systems where either velocity or acceleration were constant. Since his data inputs were from astronomy and since he had no instruments capable of investigating effects of changing acceleration --- effects that may occupy milliseconds or less --- this is not particularly surprising.

What form should the Equation of Motion now take if we assume a force proportional to the surge as well as a force proportional to acceleration? The simplest assumption, and one which seems to be supported by preliminary data, is that the new force is additive, in the same way that forces due to viscous drag and displacement are additive. In other words, we now write the equation of Motion:

F = Ma + Aa(superdot) (5)

Where A is a new term which we have labeled 'intractance' and which has units of mass-seconds. Because the solutions of the equation in some cases yield the ratio A/M as the critical action time (CAT) of the system, we have in those cases assumed that the intractance is the product of the mass and the CAT:

A = DM (6)

Let us now see how this equation of motion can be used to analyze and predict the anomalous behavior of a simple system. Starting transients normally are considered only in connection with the beginning or the end of a motion and hence are accorded no particular attention. However, there are certain types of cyclic motion where the transient behavior is continuous, or repetitive and we will see later that even certain single transients may have critical importance in understanding natural events.

First consider the simple case of a real body subjected to harmonic oscillation. To make matters easier, we will assume that there is no restoring force proportional to displacement present and no viscous damping in the system. If the applied force is simple harmonic in nature it may be expressed in the form:

$$F = F_0 \cos 2\pi ft \qquad (7)$$ (7)

where *f* is the frequency of the vibration in cycles per second, and *t* is the time in seconds after the beginning of the motion. The Newtonian equation for vibration in one dimension would be:

$$F_0 \cos 2\pi ft = Ma = \frac{Md^2x}{dt^2} \qquad (8)$$ (8)

and the displacement of the driven body would be:

$$x = x_0 \cos 2\pi ft = \frac{-F_0}{4\pi^2 f^2 M} \cos 2\pi ft \qquad (9)$$ (9)

In other words, the displacement will obey Newton's Second Law and will be exactly opposite in phase to the driving force, thus also satisfying the Third law.

However, if the body to be oscillated is real, it will not respond instantaneously, so that the rate of onset must be considered. The equation of motion then assumes the form:

$$F_0 \cos 2\pi ft = Ma + DM\frac{da}{dt} = M\frac{d^2x}{dt^2} + DM\frac{d^3x}{dt^3} \qquad (10)$$

(10)

where D is the delay time, or CAT of the body and da / dt is the surge. D is assumed to be constant.

This equation has the solution:

$$X = X_0 \cos(2\pi ft - \phi) \qquad (11)$$

(11)

where

$$\tan\phi = 2\pi fD \qquad (12)$$

(12)

and

$$X_0 = -\frac{F_0}{4\pi^2 f^2 MZ} \qquad (13)$$

(13)

where Z is a sort of complex impedance and

$$Z = \sqrt{1 + 4\pi^2 f^2 D^2} \qquad (14)$$

(14)

The important feature to note in this solution is that the amplitude of the oscillation is less than predicted by the Newtonian equation and even more important, there is a phase angle between the driving force and the displacement, even in the absence of viscous damping. This solution demonstrates

the most significant characteristic of real bodies, to wit: not only is displacement somewhat less than Newton would predict for a given force, leading to an increased apparent mass, but reaction is no longer exactly opposite to the applied force: there is a phase angle which will be larger the longer the CAT of the system! Action and reaction are not simultaneous!

A technical paper will be published in the near future which will present a more general discussion of solutions to the equations of motion. The solution presented here will serve only to show the effect of CAT in a system under the simplest situation. The disastrous effect on the theory of mechanics of the existence of CAT in real bodies may be realized at once when we consider a system so arranged that the CAT is not the same in all directions.

If, for example, we build a mechanical oscillator such that the CAT is short compared to the period of oscillation in one direction, the mass will appear to be approximately Newtonian and the phase angle of reaction will be negligible when the oscillator is moving in that direction, If we now change the system to make the CAT much longer during the time the oscillator is moving in the opposite direction, the mass will appear to be greater and the phase angle larger, even though the total applied force is exactly the same I the two directions. Thus there will be a net unidirectional acceleration of the driven mass in the direction of the least apparent mass even though the applied force is balanced!

This conclusion is merely a logical consequence of the existence of a force proportional to the third derivative. We have not yet, of course, considered how such a behavior could be possible in terms of physical reality.

In recent years a number of ‘reaction less’ drives have been proposed and some demonstrated, including the controversial Dean Drive. To the extent that any of these devices have produced useful thrust, they presumably have embodied this principle. It is not the purpose of this article to attempt to explain the operation of these systems as such, nor to claim that any of them are practical devices. However, an analysis of the possible compatibility of some form of mechanically reaction less drive with the body of known data from the past may help shed some light on deficiencies in present theory and, hopefully, lead to some useful applications.

If a device of this kind operates, what has happened to the Laws of Conservation of Momentum and Energy? Actually, the situation is no worse than it once was in the field of electricity. It was sincerely believed a century or so ago that it would be impossible to do work with alternating current without violating the Conservation of momentum, since the average current was zero. Although the current in one direction is balanced by an equal flow in the opposite direction, the flows are not equal and opposite simultaneously and thus work can be done. Furthermore, when all else failed, radiation was invoked to preserve the Conservation of Momentum.

We are going to try the same approach. Let us again consider the case of a real body, having mass M and constant CAT D, moving in one dimension, and let us calculate the kinetic energy of the body. If the force is applied over the distance between two positions X_0 and Z_1, during a corresponding time interval, t_0 to t_1, then it can be shown that:

$$\int_{x_0}^{x_1} F dx = \left[\frac{Mv^2}{2}\right]_{t_0}^{t_1} + D\left[\frac{d}{dt}\left(\frac{Mv^2}{2}\right)\right]_{t_0}^{t_1} - DM\int_{t_0}^{t_1} a^2 dt \quad (15)$$

where v is the velocity and a the acceleration in the x-direction.

It will not be necessary to go into the calculus involved. The important point is that only the first term on the right-hand side is Newtonian. The second two terms represent the portion of the energy that has not been converted to kinetic energy because of third derivative effects. This portion of the energy, in keeping with the terminology applied in modern nuclear physics to particles which exist in the nucleus for too short a time to violate the law of the Conservation of Energy, we have called the 'virtual energy'. Thus this equation expresses an amendment to the Energy Conservation Law by a new 'Principle of Virtual Energy'. If a force proportional to surge exists, then a logical consequence is the existence of such 'virtual energy. We will continue to explore the question of whether this makes sense in terms of the real world.

Let us see what the presence of virtual energy in a system implies. First of all, if the acceleration is constant the sum of the virtual energy terms is zero and the equation becomes Newtonian. The equation is not readily soluble for an arbitrary variation of acceleration with time but a simple example will demonstrate the principle. Let us assume a constant surge as such that the acceleration varies according to:

$$a = a_0 t \quad (16) \quad (16)$$

For the sake of simplicity let us assume that we are describing a rocket during takeoff so that the initial displacement, velocity, and acceleration are all zero and $t_0 = 0$. We will also ignore the presence of the earth's gravitational field, since the conclusions will not be affected. One can then find the solution that at time t, the virtual energy is given by:

$$N = \frac{DMa_0^2 t_1^3}{6} \quad (17) \quad (17)$$

This means that the kinetic energy at t1 will be too small by this amount. The rocket will have acted as though it were heavier than its true weight! What has happened to the energy that has been lost?

Now it is necessary to go back and make some postulates. A moving electrical charge creates a magnetic field. Einstein, in his general Field Equations assumes that a moving gravitational 'charge' or mass will also produce a field. The predicted strength of such a field is extremely small for any reasonable velocity, smaller in general than the gravitational field due to the mass alone. Any radiation resulting from the interaction of the gravitational and 'inertial' field --- in the same way that electromagnetic radiation results from the interaction of the electric and magnetic fields --- is thus so small as to be negligible in any practical system.

Although all of the reasons cannot be developed here, I believe it is more reasonable to postulate an 'inertial' field due to acceleration of a mass rather than simply due to its velocity. It is as though the fundamental 'charge' were momentum, Mc, instead of simply the mass, M.

It is possible in this light to point immediately to the gyroscope as a well-known example of an inertial field. Mathematically, the 'angular momentum' of a gyroscope is calculated from the motion of the mass in the wheel in exactly the same way as the magnetic field of a solenoid is calculated from the flow of current. Mathematically, then, 'angular momentum' may be said to be identical with 'inertial field' in this case, and we will prefer the latter terminology. Anyone who has felt the resistance of a gyroscope to precession will know that this type of 'inertial field', if that is what it turns out to be, is far from negligible. The forces involved may be very large with a heavy wheel rotating at high speeds. Since there exists a constant centrifugal acceleration in a gyroscope running at constant speed, any attempt to precess the device must automatically result in a 'third derivative' reaction force, since the acceleration is being changed.

Based on this example it can now be seen that the coefficient of the third derivative or surge term in the Equation of Motion must represent the resistance of the system to a change of inertial field, in the same sense that self-inductance represents the resistance of a coil to a change of magnetic field. We have discussed a case where we assumed that this coefficient was the product of the mass and the CAT of the system. This is not necessarily true of all systems, so that we choose to define this coefficient more generally in relation to the inertial field as 'interactance' of a system. Thus the force due to rate of onset may be defined as the product of the intractance and the surge.

The well-known concept of a limiting velocity of propagation for energy in any form established by Einstein is a direct embodiment of the intractance of real systems. In fact, viewed from another point of view, it is precisely the intractance of a system which requires that propagation velocity be limited. If energy could propagate at infinite speed, then it would be possible to change the energy of a system in zero time.

Now it is possible to visualize a completely new type of radiation resulting from the existence of this type of inertial field. If an electron radiates electromagnetic radiation when it is accelerated, then clearly we will now expect a mass having intractance to radiate gravitational-inertial radiation when it is subjected to surge. It is in fact my postulate that the flux of such radiation from a system is proportional to the rate of change of virtual energy. Based on this assumption, the energy which has failed to appear as kinetic energy or potential energy in the example of the rocket we discussed, has left the mechanical system in the form of gravitational-inertial radiation, as we have defined it.

For obvious reasons it will not be practical to go into the mathematical steps taken to arrive at this conclusion, but once again we have followed a logical course starting from the assumption of a third derivative force. It is interesting to note that the new radiation, if it exists, will have radically different characteristics than electromagnetic radiation, at least as it is now described. First of all, it is not dipole radiation, but more like the radiation from an 'end-fire' antenna. Secondly, each period of changing acceleration produces a 'quantum' of radiation equal to the change of virtual energy, so that the emission is not continuous.

The consequences of this behavior will have to be explored in more detail in the future. It is even possible that this approach may shed some light on the quantum nature of electromagnetic radiation. For example, we have considered the hydrogen atom in an excited state. By writing the equations of motion for an orbiting body with intractance, it can be shown that when third derivative effects are considered the angular momentum is not initially constant! In fact the equations show that a body first placed in orbit contains a significant transient term in the expression for its angular momentum which ultimately decays to a constant with time.

Furthermore, the energy lost during this decay disappears entirely from the mechanical system and can only be accounted for by some form of radiation! Thus if the electron of a hydrogen atom were excited with additional kinetic energy, out theory would predict the radiation of a quantum of energy during this decay time. It is therefore possible that the quantum condition is a perfectly logical consequence of thee existence of intractance in real systems, and that thus quantum theory can be derived from Newtonian physics!

During this brief discussion of the application of our theory of real dynamic systems to nuclear physics some reference should be made to the upwards of 40 new nuclear particles which have been postulated in recent years. Since many of these particles have been postulated to explain an apparent violation of the Conservation of Momentum during some very brief time period --- brief even by nuclear standards --- it is possible that the Principle of Virtual Energy may offer an alternative explanation in many cases.

Quite apart from the possibility of inertial radiation, several conclusions may now be drawn, at least on a tentative basis. When computed including intractance, the solutions to the equation of motion indicate that very large systems should tend to be unstable, unless the mass in the system is very large. This conclusion, for example, may have a bearing on the theory of the expanding universe. Furthermore, it suggests that the application of thermodynamic analysis to large systems should be re-examined. Thermodynamics relates to systems in equilibrium and simultaneity is obviously important. If gravitational waves propagate at the velocity of light, which is by no means certain yet, then the CAT of the observable universe is roughly 12 billion years and simultaneity cannot be defined for the complete system in less than that time. Thus it should be perfectly possible to reverse entropy in a local area and not have to pay the piper for a very long time!

We come now to a consideration of what must be the Fourth Law of Motion. There will obviously be several alternative expressions. Mathematically, what seems to be critical in systems with intractance is the rate of change of energy, so that the Law is perhaps best expressed in these terms: The energy of a given system can only be changed in some finite length of time depending n the system, and never in zero time.

Similarly, one can suggest an expression for the Fourth law of Thermodynamics, to wit: Systems can only be considered to be thermodynamic in nature of time periods large in comparison to their CAT. In other words: You can violate the first three Laws, providing you don't get caught while you're doing it!

At this point, it is proper to ask the question: Is there any real evidence for this theory, and if it is true, why haven't these phenomena been obvious for some time?

First of all, rate of onset effects per se are well-known and their existence is hardly controversial. The entire field of shock and vibration gives signs of supporting our conclusions. In general, mechanical systems do not possess the simple resonance characteristics that Newtonian theory would predict. The existence of intractance permits many more modes of resonance since there are now four terms of interaction in the equation of motion for a system restoring force instead of three. This permits a much greater number and variety of resonances to occur.

The discovery of the existence of 'virtual particles' in the atomic nucleus, which appear to violate the Conservation of Energy, is an important addition to the list of anomalies which suggest the validity of the theory. Under the assumption that the theory is correct, it is possible to derive the quantum condition from the planetary model of the atom. In short, wherever the theory would predict certain behavior, there are indications that the behavior is present. Obviously, the mere fact that an equation gives correct results does not mean the theory is correct. The model must also make sense.

Most obvious embodiments of third derivative theory are associated with high rates of onset, impact, or strong vibrations. Under these conditions, it is very hard to make measurements. It is hard to find accelerometers, for example, which have response times sufficiently short to permit proper observation. For another thing, a system running in a continuous or intermittent transient mode tends to create very large internal forces which are very destructive. It is hard to maintain a system at its proper operating point for a long enough time to make observation. It is highly probable that most data of this type of behavior consisted of observations of the type, 'Then the machine broke down for no known reason', or 'Witnesses stated that the wing suddenly broke off the airplane'.

Evidence for the existence of inertial radiation is not quite as plentiful. The concept of gravitational waves is not a new one, and in fact is implicit in the weak-field solutions of the Einstein General Field Equations, known for 40 years. On the other hand, the type of gravitational-inertial radiation predicted by our theory is quite new since it is presumed to be a consequence of surge rather than simple acceleration. The magnitude of the Einstein radiation is predicted to be so small as to defy detection, but the radiation described here should be clearly observable under the right conditions.

For example, the success of one of the proposed ‘reaction less’ drives would strongly tend to confirm the existence of the radiation. At the same time, if the radiation is generated it should be detectable, and sooner or later a ‘Hertzian’ experiment will have to be performed. A number of experiments are now underway in our laboratories at Huyck Corporation which we hope will provide confirmation in the near future. Preliminary tests have produced favorable qualitative results, but data has not been sufficiently accurate to permit a proper statistical correlation. We hope to correct this situation with new instrumentation by the time this article appears.

In addition to the author, a number of individuals have played key roles in the Huyck Dynamic Systems Project. The experimental work was performed at the Huyck Research Center at Milford, CT, under the direction of Mr G. Henry Stine who also contributed a number of concepts to the theory. Theoretical calculations and analytical studies were performed by Mr E.L. Victory. Certain specialized instrumentation and general consultation were provided by John W. Campbell, under a consulting agreement, and overall professional review of the theoretical and experimental programs has been given by Prof. Serge A. Korff, of the Physics Department at New York University. We are also deeply indebted to Dr O.G. Haywood, Vice president of Huyck Corporation, for technical and moral support.

Obviously, there are an almost unlimited number of fields where the consequences of this theory might be explored. Validation, if ever, will probably result from may experiments in many fields. We cannot perform them all. We intend to continue our own research program and will be interested to hear of the results produced by other groups.

Science, as we said, is a series of successive approximations to reality. Here is another approach. Let’s find out if it’s a better approximation.

***Analog* (October 1962): ‘Brass Tacks’**

Dear John [Campbell]:

Dr Davis and I were finally able to settle our arguments over the equation that appears in Figure 4 of our article entitled ‘The Fourth Law of motion’ in the May issue of Analog only after I studied the equations --- which are incidentally the Lagrangian form of the third derivative Law and the differential equation of the angular motion of an orbiting body --- as they were recorded by the camera.

After noticing the missing dot that was not on top of the O on the second term of the differential equation, we realized who was right.

May I also correct equation 17 by squaring the term a(dot)o ---

E.L. Victory, Huyck Corporation, NY.
