The Philadelphia Experiment: Moving In Space/Time

7 March 2024

USS Eldridge Specifications

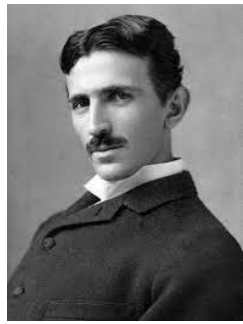
- DE-173 GENERAL SPECIFICATIONS
- Class: Cannon-class destroyer escort
- Named for: John Eldridge
- Complement: 15 Officers and 201 Enlisted
- Displacement: 1240 tons
- Length: 306 feet
- Beam: 36 feet 10 inches
- Flank Speed: 21 knots
- Range: 10 800 Nautical Miles

USS Eldridge Deployments

- DE-173 DEPLOYMENTS - MAJOR EVENTS
- Add a DE-173 Shellback Initiation — Add a DE-173 Deployment - Major Event

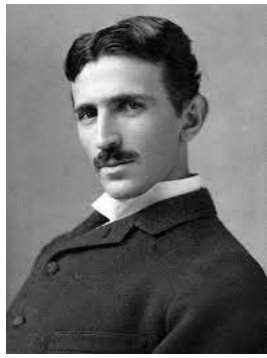
Month	Year		to Month	Year	Deployment / Event
FEB	1943	-			Keel Date: 22 FEB 1943 at Federal Shipbuilding and Drydock Company
JUL	1943	-			Launch Date: 25 JUL 1943
JUL	1943	-	DEC	1943	Project Rainbow - cloaking device
AUG	1943	-			Commissioned: 27 AUG 1943
JUN	1946	-			Decommissioned: 17 JUN 1946

Nikola Tesla 1917 Interview



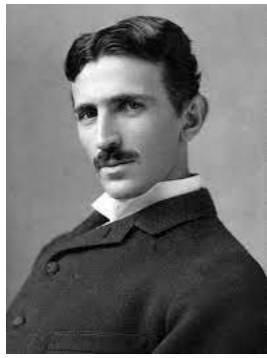
- Just after receiving the AIEE's Edison medal (May 18, 1917), Nikola Tesla granted an interview to H. W. Secor of the Electrical Experimenter magazine. (Secor's article was published in August of 1917.) The topic of discussion turned to the detection of German U-boats (U-boat = Unterseeboot = submarine), which had caused so much distress to the allies. The United States had entered the war in April of 1917. Tesla's concerns centered around the detection of submarines, in particular the possibility of non-ferrous hull detection. Listen as, filtered by the pen of a journalist, Tesla narrates the electrical preparation of the ship:
- "Now, suppose that we erect on a vessel, a large rectangular helix or an inductance coil of insulated wire. Actual experiments in my laboratory at Houston Street (New York City), have proven that the presence of a local iron mass, such as the ship's hull, would not interfere with the actions of this device. To this coil of wire, measuring perhaps 400 feet in length by 70 feet in width (the length and breadth of the ship*) we connect a source of extremely high frequency and very powerful oscillating current."

Nikola Tesla Background



- We think that Vannevar Bush was aware of this suggestion, and it is our thesis that these words are the seed that later blossomed as the "Philadelphia Experiment". The article then goes on to describe an RF technique, which subsequently became quite popular (though not on such a grand scale) for metal detectors and for tuning the reactance of RF coils in transmitters and receivers. Upon further prodding by Secor, Tesla discussed a high peak power microwave radar for operation at wavelengths" ... of but a few millimeters". (X-Band radar at 10 GHz has a wavelength of 30 mm.)
- Tesla desired that the ship be able to provide sufficient electrical power, and he states this in the interview;
  - "The average ship has available from say 10,000 to 15,000 HP.... The electric energy would be taken from the ship's plant for a fraction of a minute only, being absorbed at a tremendous rate by suitable condensers and other apparatus, from which it could be liberated at any rate desired."
- *The language used to describe the staking effect his 1892 lecture-demonstration had on the Royal Institution in Londor4 was, "The scientists simply did not know where they were when they saw it." (Anderson, 1992, pg. 95)
- Note that Tesla has recognized that he can characterize different spinning eggs with certain gyromagnetic resonance frequencies!! This was in 1887. Clearly, Tesla was contemplating the use of pulsed currents* in the coils around the ship. Remarkably, vessels wrapped in coils were observed during WW-II (perhaps for mine sweeping or even degaussing studies).

Nikola Tesla Background



- It seems to be broadly recognized that, although Heinrich Hertz bad observed RF standing waves resulting from metallic reflections, it was Nikola Tesla, in 1900, who was the first to propose the concept of radar. (34) According to NRL radar pioneer R. M. Page, it was Tesla who first "... suggested the use of electromagnetic waves to determine the relative position, speed, and course of a moving object." (35)
- The earliest patent issuing for radar appears to have been the British patent granted to German engineer Christian Hulsmeyer. (36)
- Certainly, Tesla's interview with H. W. Secor appears as an added note in the radar lore. (37) The acronym radar was an official code word adopted by the US Navy in November of 1940, the same month that the MIT Radiation Laboratory was organized for the exploitation of the microwave region for radar.

The Problem: Nazi Mines
The Solution: DeGaussing

The Nazi mines detected the increase in the magnetic field when the steel in a ship concentrated the Earth's magnetic field over it. British Admiralty scientists developed a number of systems to induce a small "N-pole up" field into the ship to offset this effect, meaning that the net field was the same as the background.

Since the Germans used the gauss as the unit of the strength of the magnetic field in their mines' triggers (not yet a standard measure), referred to the various processes to counter the mines as "degaussing". Commander Charles F. Goodeve, Royal Canadian Naval Volunteer Reserve, during World War II used the term **degauss**, which became a common word.

The original method of degaussing was to install electromagnetic coils into the ships, known as coiling. In addition to being able to bias the ship continually, coiling also allowed the bias field to be reversed in the southern hemisphere, where the mines were set to detect "S-pole down" fields. British ships, notably cruisers and battleships, were well protected by about 1943.

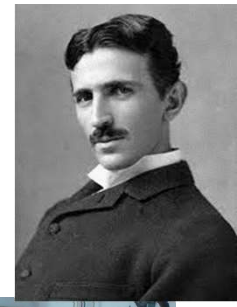
The Philadelphia Experiment

- On October 26, 1943, the USS Eldridge was moored in US Navy Philadelphia shipyard
- Heavy duty electrical cables encircled the ship, and the ship had electric power generators capable of generating five megawatts of electric power
- Evidently the electrical power generator was hooked up to the cables via a controller, and when it started up, the USS Eldridge disappeared for roughly two hours, and then reappared
- Twenty minutes **before** the USS Eldridge disappeared in Phialdelphia it appeared in the Norfollk Virginia US Navy shipyard and after a few minutes it disappeared from Norfolk Virginia shipyard
- There are unconfirmed reports of a similar type of event occurring in the Kiel shipyards in Germany in 1943

Key Individuals Associated with Philadelphia Experiment

- Albert Einstein (1879-1955)
- Rudolph Ladenburg (1882-1952)
- John Von Neumann (1903-1957)
- David Hilbert (1862-1943), (John Von Neumann’s dissertation advisor)
- Nikola Tesla (1856-January 7, 1943),
- Oswald Veblin (1880-1960),
- Bertrand Russell (1872-1970),
- Gabriel Kron (1901-1968),
- Vannevar Bush (1890-1974)

Electric Power Controller for Philadelphia Experiment



Eye Witness Accounts of Philadelphia Experiment

- "The experimental ship also somehow mysteriously disappeared from its Philadelphia dock and showed up only minutes later/earlier in the Norfolk area. It then subsequently vanished again only to reappear at its Philadelphia dock. Total elapsed time - a mater of minutes. " (p. 89).
- "Suddenly, the deep fog “flashed off”, leaving Silverman in a very confused state and wondering, “what in the world I was doing in Norfolk.” He said he had recognized the place as Norfolk “because I had been there before to the ship’s other dock there.” Then just as suddenly, the green fog returned; it lifted again and Silverman found himself back at dockside in the Philadelphia Navy Yard " (p. 249).
- "One day, looking at the harbor from the dock, [five British merchant seamen in Norfolk, VA] were understandahly amazed to see a sea-level cloud suddenly form in the harbor, and almost immediately dissipate,, leaving a destroyer escort in full view, which stayed but a few moments before it was covered by a cloud and vanished again. " (p. 250)

First Hand Observations

- Green fog and mist;
- "After a time the central ship, a destroyer, disappeared slowly into a transparent fog until all that could be seen was an imprint of that ship in the water. Then, when the field, or whatever it was, was turned off, the ship reappeared slowly old of thin fog." (p. 240).
- "I saw, after a few minutes, a foggy green mist arise like a thin cloud. " (p. 110).
- "suddenly, the green fog returned… " (p. 249).

First Hand Observations

- A cavity in the water;
- "The men on the ship were apparently able to see one another vaguely, but all that could be seen by anyone outside of the field was 'the clearly defined shape of the ship’s hull in the water " (p. 88).
- "I watched as the DE 173 became rapidly invisible to human eyes. And yet, the precise shape of the keel and underhull of the ship remained impressed into the ocean water as it and my own ship sped along somewhat side by side and close to inboards. " (p. 110-111).
- " The field was effective in an oblate spheroidal shape, extending one hundred yards out from each beam* of the ship… Any person outside that could see nothing save the clearly defined shape of the ship's hull in the water." (p. 41).

Egg of Columbus

- a time varying magnetic field, via Faraday's law, generates eddy currents in salt water, which in turn react back on the magnetic source opposing any changes in the source field. Consider the following description due to Feynman.
- "If we have a sheet of a perfect conductor and put an electromagnet next to it, when we turn on the current in the magnet, currents called 'eddy currents' appear in the sheet, so that no magnetic flux enters. The same thing happens if we bring a bar magnet near a perfect conductor. This makes it possible to suspend a bar magnet in air above a sheet of perfect conductor… If the conductor is not quite perfect there will be some resistance to flow of the eddy currents. The currents will tend to die out and the magnet will slowly settle down. The eddy currents in an imperfect conductor need an EMF to keep them going, and to have an EMF the flux must keep changing. The flux of the magnetic field gradually penetrates the conductor… In a normal conductor, there are not only repulsive forces from eddy currents, but there can also be sideways [drag] forces [which prevent lateral motion]."

Egg of Columbus

- The circulating AC eddy currents would agitate the sea water, at acoustical frequencies, (pumping the salt water, making steam, mist, and fog) and, in all probability, hollow out a cavity under the magnet. (Consider what happens with a high current AC electromagnet in a plastic tub of salt water.) [It's even more exciting with polyphase AC and a rotating magnetic field!]
- "If, instead of dragging a conductor past a magnet we try to rotate it in a magnetic field, there will be a resistive torque from the same effects. Alternatively, if we rotate a magnet near a conducting plate or ring [or conducting egg], the ring [or egg] will be dragged around; currents in the latter will create a torque that tends to rotate it around... A field like that of a rotating magnet can be made with an arrangement of coils [on an iron torus]... we have a 'rotating' magnetic field.... The [rotary drag] torque produced on a conductor by such a rotating field is easily shown by standing a metal ring on an insulating table just above the torus. [Feynman here shows a ring hanging by a string over a table above a three phase toroidal transformer.] The rotating field causes the ring to spin about a vertical axis." (66)
- Feynman has just described the Egg of Columbus to his Cal Tech students, - without ever mentioning its inventor.

Philadelphia Experiment Plausibility

- "….a boiling of the water, ionization of the surrounding air, and even a 'Zeemanizing' of the atoms… The ionization created by the field tended to cause an uneven refraction of the light… The result would not be a steady mirage effect, but rather a moving back and forth displacement caused by certain inherent tendencies of the A C field… We felt that with proper effort some of these problems could be overcome and that a resonant frequency could probably be found that would possibly control the visual apparent internal oscillation so that the shimmering would be at a much slower rate….." (pp 198-199).
- One might expect power dissipation in the water, due to circulating eddy currents in the sea, to heat the water, perhaps to the level of steam. Also, the sea would be a heat sink for any heating of the hull; "Zeemanizing" is discussed elsewhere. There would be a good deal of turbulence near the ship (as demonstrated by the second of our experiments described above). Ionization in the air could result as follows. Large magnetic fields rapidly changing in time can cause an ionizing breakdown of air. (67)

Acoustic Whine and Hum at Philadelphia Experiment

- "I felt the push of that force field against the solidness of my arm and had outstretched into its humming,
- pushing, propelling flow." (p. 110)
- "In trying to describe the sounds that the force field made as it circled around the DE 173.... it began as a humming whispering sound, and then increased to a strongly sizzling buzz, like a rushing torrent." (p. 111)
- "A special series of electrical power cables had been laid from a nearby power house to the ship. When the order was given and the switches thrown 'the resulting whine was almost unbearable. (p. 248) It would seem reasonable to assume that the media immersed in the bias coil's low frequency magnetic fields (the ship and the sea water) would respond with mechanical vibrations, much like the acoustical hum of conventional power transformers for example. (The ship and sea water have become the output of an acoustical transducer, driven by the bias coils.) More than likely, the power content of harmonic spectra would be substantial well into the ultrasonic region, (think of all the electrical, mechanical, and physiological nonlinearities present), accounting for the perception of 'unbearable whine.

Biological Effects of the Philadelphia Experiment

- " We couldn't stand the effects of the energy field they were using… It affected us in different ways. Some only saw double, others began to laugh and stagger like they were drunk, and a few passed out. Some even claimed that they had passed into another world and had seen ad talked to alien beings." (p. 19).
- "Any person within that sphere became vague in form but he too observed those persons aboard the ship as though they were of the same state, yet were walking upon nothing.” (p. 41).
- "As he stood there trying to comprehend what had happened, and looking for his ship, he watched indistinct figures in motion, whom he could not identify as sailors and some other shapes 'that did not seem to belong on the dock, if that is where I was”. (p. 248).

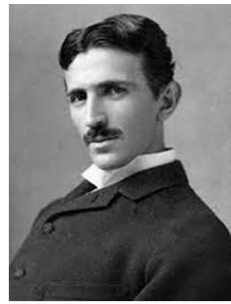
Visual Effects Tied to the Philadelphia Experiment

- "It has been found that (besides flicker), a whole “spectrum” of subjective abstract light patterns can be excited in the brain by using temporal electrodes and pulses of a few volts within the encephalographic frequency range. While shapeless flicker covers a large frequency range, patterns are excitable mostly within the range of 5-35 pulses/second. The number of subjective patterns excitable in each individual was longer for mental patients than for technical students… Most patients with beta-encephalographic activity showed pattern excitation frequencies greater than 50 pulses/second. " (74)
- They observed many light patterns such as stars, wheels, asterisks, bright dot patterns, moons, “smiley faces” and other geometrical shapes.
- Fascinating surveys have been published by Becker, who specifically reports on “magnetophosphenes” (magnetically stimulated phosphenes), (75) and by Oster. (76)
- Becker relates that;
- "'The intensity is greatest between 20 and 30 Hz. Above 90 Hz the phenomenon becomes less evident… As the field strength is increased, the luminosity appears to involve more and more of the visual field… No subjective sensations of any ape were noted during steady field applications, but phosphenes were experienced during 'make' and 'break' of the coil current.” (77)

Visual Effects Tied to the Philadelphia Experiment

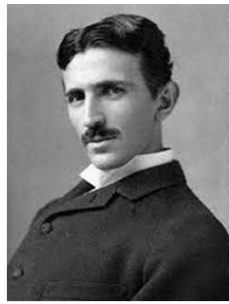
- Magnetophosphenes and Purkinji figures. A phosphene is a sensation of light produced by physical stimuli other than light. A magnetophosphene is one stimulated by time-varying magnetic fields. What about Purkinji patterns?
- Johannes Purkinji, the renowned Czech physiologist of the 19th century once said, "Deceptions of the senses are the truths of perception." By this he meant that, "Illusions call our attention to the workings of the visual system, whereas normal perception falls to do so." (71)
- Purkinji was famous for studying a number of variously shaped, subjective optical patterns that can be excited by electrical stimulation. In 1819, he put a circuit interrupter (a chain) in series with a battery and electrodes across the face, and saw different shaped geometrical patterns when he wiggled the chain (The phenomenon goes back (again) to Benjamin Franklin and to Allesandro Volta.)
- Following on the clue that a low frequency electromagnetic pulse spectrum was involved, Knoll and Kugler, in Germany (at Munich), investigated the excitation of “Purkinji patterns”. (72) (Apparently, similar patterns have been observed during brain surgery by direct electrical stimulation of the visual cortex at 60 Hz.) (73)

Speculations As to Underlying Physics Climbing Out onto a Limb!



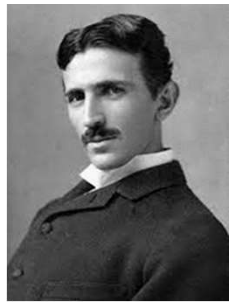
- Could it be possible that, as a result of magnetically biasing the ship to radar stealth, torsion deformations were excited in the fabric of space-time itself?
- Were that possible, then there might be teleportation and time-travel without the crushing effects of gravitational curvature, or squeezing through the Schwarzschild radius down the throat of a black-hole, or thoughts of bubbling out through a white-hole at some unknown place in the universe, or 10 44 joules required to make the machine run. The torsion technique might even be within reach of pre-WW-II electrical engineering.
- If the spin were right, one might leap ahead along his world line (or perhaps even backwards) without travelling all the distance in between. What an enchanting idea!

Gyromagnetic Phenomena and Torsion



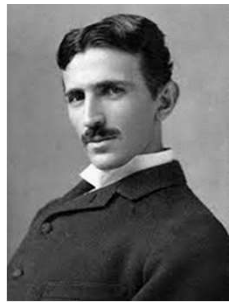
- "One finds that distant observers, who measure only the metric field, cannot distinguish between a (ferromagnetically) polarized source of spinning matter (which causes torsion locally) and a rotating distribution of matter with the same total angular momentum (which nowhere causes torsion)." (88)
- What was meant by ferromagnetic generation of localized torsion? Could it be possible that, as a result of magnetically biasing the ship to radar stealth, torsion deformations were excited in the fabric of space-time itself? Were that possible, then there might be teleportation and time-travel without the crushing effects of gravitational curvature, or squeezing through the Schwarzschild radius down the throat of a black-hole, or thoughts of bubbling out through a white-hole at some unknown place in the universe, or 10^44 joules required to make the machine run. The torsion technique might even be within reach of pre-WW-II electrical engineering. If the spin were right, one might leap ahead along his world line (or perhaps even backwards) without travelling all the distance in between

Speculations As to Underlying Physics Climbing Out onto a Limb!



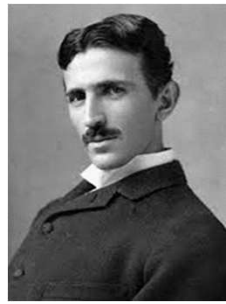
- In the pursuit of this hypothesis, we came across a very extensive literature on the relationship between quantum mechanical spin and space-time torsion. (This seems to be the present employment of Einstein's 1929 UFT (Unified Field Theory) space with torsion.)
- Based on this research, there could be linkage of the affect of quantum mechanical spin on the structure of space-time.
- We need to distinguish between temporal jumps due to "Anholonomity" and jumps due to "Torsion".

Anholonomity and Torsion



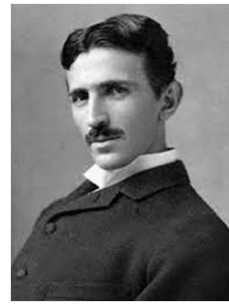
- Imagine a reference system of coordinates that you carry around with you to make measurements. This reference system consists of a field of orthogonal basis vectors that span three (3) space dimensions (e1, e 2, e 3), and time e 4 These are Einstein's "n-Bein", or "tetrad" fields. Now, using this reference field of frames, you can make measurements, which can be transmitted to a second observer, who can transform your measurements into his reference field of frames using his own set of orthogonal basis vectors (e 1', e 2 ', e 3 ', e 4').
- In flat space-time (where the Riemann curvature tensor is zero), each observer can relate his reference frames (determined by his set of orthogonal basis vectors) to another observer's reference frames via a simple Lorentz transformation, provided that no forces are acting on the observers (observers are moving inertially). In the case when observers are not moving inertially, relating the reference frames of the observers can be greatly facilitated by employing the mathematical machinery of torsion and the anholonomic object as we show in the following.

Anholonomity and Torsion



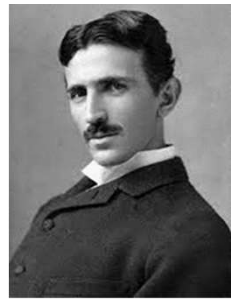
- Now imagine two separated observers (observer 1 and observer 2) who wish to compare measurements (we do not assume the observers are moving inertially). In order to do this they must determine how their reference frames differ. The only way to compare reference frames is to transport observer one's set of basis vectors to the same location as observer 2 and see how they differ when compared with each other at the same location.
- As Eddington and Schouten recognized in the 1920's, parallelograms (composed of parallel transported vectors) don't necessarily close (either because of anholonomity or because of torsion). (91) (92) (93) (94)
- "Einstein's world geometry may be briefly described as a geometry in which there are parallels but not parallelograms. Thus he admits the existence, even at great distances, of a line CD equal and parallel to AB; but the line through B parallel to AC fails to cut CD. (We are dealing with at least three dimensions, so that lines are not necessarily coplanar.) The geometrical idea of an abortive parallelogram which fails to close up at its fourth comer, does not carry us very far, and it is necessary to proceed analytically." (95)

Anholonomity and Torsion



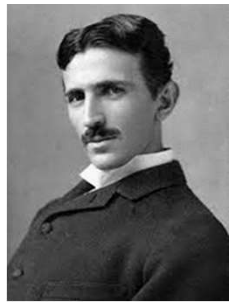
- This is not an effect attributable to curvature. Furthermore, while the anholonomic object can be transformed away by a coordinate transformation, this is not the case for torsion.
- Torsion, unlike anholonomity, is due to changes in the properties of the underlying manifold and cannot be transformed away by a change in the coordinate basis. Torsion is a measure of how much the manifold is crinkled or folded, and such geometry's can be made anholonomic Riemannian by tearing, as discussed in great detail in the publications of Gabriel Kron. It should also be noted that the principle of equivalence does not hold in spaces with torsion. (105)

What Is Torsion?



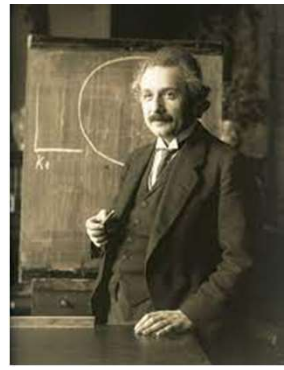
- A simple picture might help to illustrate torsion: imagine a folded towel. Start at a point underneath the fold and trace a circle so that you cross over the fold. The point where you return after tracing the circle is on the fold above the point where you started. If there were no torsion, i.e., no fold, you would have returned to the same point where you started.
- (Do not confuse this with curvature. What we are discussing is distinctly different from Riemannian curvature!) The torsion component measures the gap across the fold from where you started to where you finished. The distinction between gap defects arising from anholonomity and from torsion is shown elsewhere.

Anholonomity and Torsion



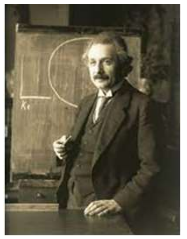
- In spaces with anholonomity (but no torsion), the gaps are actually measured as the Sagnac effect and Thomas precession respectively. The former is of considerable interest to GPS receivers and photon rate gyros.
- As we have seen, anholonomity is a mathematical creation caused by a choice in coordinates or resulting from noninertial motion. It's a twisting of the coordinate surfaces used an observer.
- Torsion, however is caused by a folding of the space-time manifold itself. What could cause a folding or crinkling of the space-time manifold and so create torsion? Is there a way that we could actually build such a 'time machine' out of magnets and coils and capacitors and stuff?

A Short History of Unified Field Theories

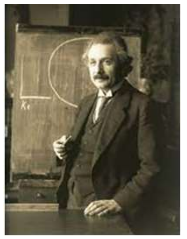


- Historically, the idea of an unsymmetric affine connection was first discussed in a 1921 footnote by Arthur Eddington. (112) He conceived that such a manifold would be “infinitely crinkled”. This can be visualized as a geometrical manifold constructed as a folded or pleated sheet of cloth as mentioned above. Any attempt to extrapolate out away from the contact point of reference P 0 will lead to unanticipated results. Infinitesimal parallelograms are discontinuous as one approaches a pleat from above the fold or from under the fold. If the discontinuity is due to actual folds in the manifold, the resulting pentagon is due to torsion and the discontinuity.
- If, however the jump discontinuity is due to folds in the choice of coordinate surfaces, the resulting pentagon is due to anholonomity and the coordinated time correction is required.This is the case for the Sagnac effect and it is clearly observed with the GPS (Global Positioning Satellite) system, and especially with global time dissemination.

A Short History of Unified Field Theories



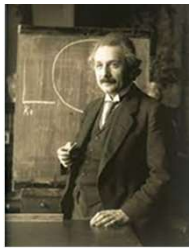
- The torsion tensor was introduced almost simultaneously in 1922 by Eli Cartan (113) (1859~1951) and in 1923 by Jan Schouten (114) (1883~1971). Subsequently, from 1925 to 1931 Einstein employed affine connection asymmetry in speculative generalizations of relativity theory. (115) (116) (117) (118) (119) (120) He had hoped to link the four vector potential (A a) to a contracted torsion tensor field (S b ba). He seems to have had difficulty recognizing the distinction between anholonomity, which depends on the commutation of the basis vectors, and torsion, which depends solely on the asymmetry of the affine connection.
- Norbert Wiener was the first to recognize that Einstein's distant parallelism gave the possibility of comparing "spins" at different points.
- "The notion of a parallelism valid for the whole of space and of Einstein's n-uples enables us to carry over the Dirac theory into general relativity almost without alteration… the quadruples need not be integrable so as to furnish us with a co-ordinate system throughout space… This seems to us the most important aspect of Einstein's recent work … " (121)



A Short History of Unified Field Theories

- Wiener saw the tetrad approach of Einstein's as providing a bridge between the macroscopic world of mechanical bodies and the microscopic world of quantum mechanics, and a way to compare the distant interaction of spins.
- Perhaps the curious issues which Dr. Eric Laithwaite* has raised concerning "spin radiation" from gyros may be resolved in this manner. "....it should be possible to cause one force-precessed wheel to transmit a torque through space to another spinning wheel. If that be true, it is extremely likely that this kind of [non-electromagnetic] radiation is bombarding the earth from outer space and should be capable of collection." (122)
- Modem work on unified field theories is concerned more with the identification of torsion with spin, which was not Einstein's stated purpose in the 1920's versions of the Unified Field Theory

Torsion and Time Discontinuities



- Torsion allows the space-time manifold to be folded in a manner such that the fold has a discontinuity along the time axis. That is, if we suddenly “turn on” the torsion the manifold will abruptly fold up along the time axis. Similarly, folding could also occur in the spatial hyperplane. It is interesting to speculate on what sort of spin densities would accomplish such a feat on a macroscopic scale. Some work on torsion has focused on conditions in collapsing stars where very high spin densities may exist that could cause large macroscopic effects. (171) (172)
- Nevertheless, it seems to us that laboratory magnets and solenoids may provide the necessary field strengths to manifest torsion’s effects at the quantum mechanical level. At the macroscopic level, it would be of great interest to see if the Sagnac effect can be “turned on and off” by ferromagnetic torsion, and how much magnetic field is actually needed to be able to observe this on the lab bench.
- Finally, purely as an academic exercise, how much magnetic resonance driving current is required to create a torsion tensor necessary to transport a DE- 173 forward along its world line by, say, □t = 10 million seconds (4 months)? Are these the sort of thoughts that resulted in Dr. Valentine comment,
- "[Dr. Jessup said] This use of magnetic resonance is tantamount to temporary obliteration in our dimension but it tends to get out of control. Actually it is equivalent to transference of matter into another level or dimension and could represent a dimensional breakthrough if it were possible to control it." (pg. 130).