Affiliation of Christian Engineers∨Newsletter

and Scientists in Technology

Fall 2014 Issue 32 **American Scientific Affiliation/Canadian Scientific & Christian Affiliation**

IN THIS ISSUE

From the Editor

This newsletter is intended to facilitate camaraderie and exchange of information among CEST members. Reader responses and other inputs are welcomed. Please send me **your** input for this newsletter.

- Send an account of a project you worked on.
- Send a note about something you've seen in the news that you think others would be interested in.
- Send a response to one of our math, physics, engineering, etc. challenges.
- Send a challenge question of your own.
- Send an article about something you've been thinking about.
- Send a photo you took.
- Send a comment on something you read here.

My thanks to those who contributed to this issue, i. e., Dennis Feucht, Ashley Julio, David Kramer, and Tim Yoder..

We'd be glad to hear from you!

BY ■

Response to *The Spider and the Fly* Challenge

The challenge printed last time was:

"In a rectangular room there is a spider on the floor and a fly on the ceiling. The spider wants to get to the fly via the shortest path across the floor, up the walls, and across the ceiling. (Don't worry, the fly won't get away; it's caught in a spider web!)

"Question: Are there locations of the spider and the fly such that the shortest path will involve crossing the corner between two walls on the way up? If so, describe such locations. Or show why there are no such locations. Please send your answer to lwyoder@ieee.org."

I received this response from Dave Kramer, Chelmsford, MA:

I've been BUGGED by your spider and fly problem. Yes, there are cases where the shortest path involves crossing the corner between two walls. This is basically a 2-dimensional problem most easily visualized by collapsing the walls onto a plane where the shortest paths become straight lines. For a long time I could not see any way to force a path through a corner of the walls that would be clearly the shortest. But there is one simple case which proves the rule.

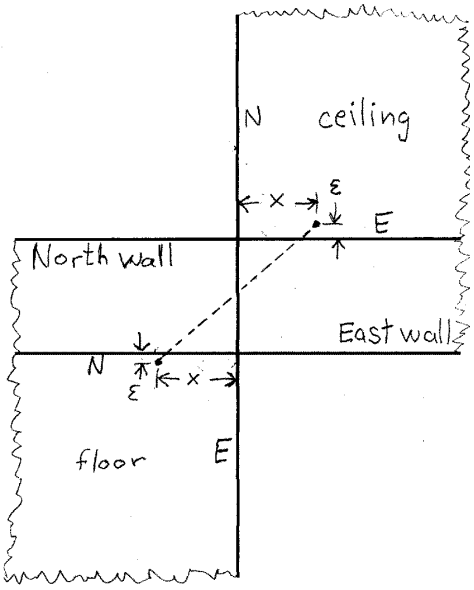
Put the spider in the middle of the joint between the floor and say the North wall. Locate the fly in the middle of the joint between the ceiling and the East wall. The shortest path then clearly runs half way up the North wall to the corner of the North and East walls and then up the East wall to the fly. The trick of collapsing the North and East walls onto a plane confirms the exact straight line path.

This extreme case provides an easy answer to the problem. If the spider or fly are located just a small distance from the wall, (or away from the middle of the joint) it seems clear that the shortest path will still pass through the corner of the North and East walls. But at some point the shortest path will involve going east and up the East wall. This shouldn't be hard to work out, just tedious. Dave Kramer

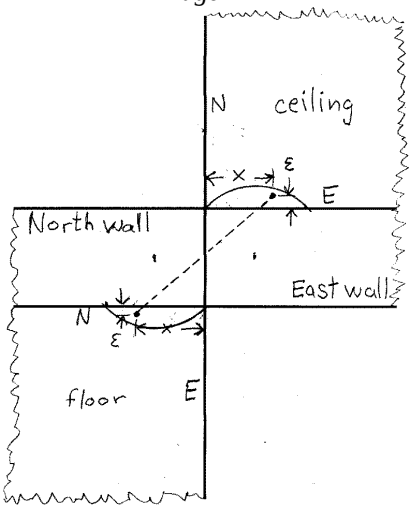
When I asked my grandson Tim Yoder (University of Texas, the oldest of our 5 grandsons. BY) to find the shortest route for a fly on the floor near the midpoint of one floor-wall joint of a 16x16x8 unit high room to a fly on the ceiling near the midpoint of the ceiling-wall joint of an adjacent wall, he showed me that the shortest route is not through the corner, but across the floor and up the adjacent wall. (Or, alternately, up the wall and across the ceiling.) I asked Kramer about this, and he stated that he had been thinking of a room that was a cube, and that he could see that for a "shallow" room, the bugs would have to be closer to the corner for the corner route to be the shortest.

Having received no general solution to the problem, I will present my special solution — one in which the spider on the floor is ε units from the North wall and x units from the East wall, and the fly on the ceiling is ε units from the East wall and x units from the North wall. (Anti-symmetrically placed.) And the other room corners are far enough away so that they do not need to be considered.

I will let the reader confirm that the path that goes up the North wall and across the ceiling is equal in length to the one that goes across the floor and up the East wall. So we will need to determine what bug position pairs result in a shorter path going through the corner than the one going across the floor and up the East wall. Consider the two figures below. In both cases the walls have height of one unit.

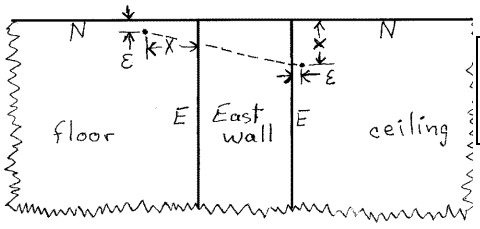


Spider's corner-crossing route



Area from which corner route will be shortest if spider and fly are at x, ε as shown.

BY ■



Spider's non-corner route

The no-corner path is the hypotenuse of a right triangle whose sides are $1 + x + \varepsilon$ and $x - \varepsilon$. The distance squared is $d_{nc}^2 = 1 + 2x + 2\varepsilon + 2x^2 + 2\varepsilon^2$.

The corner path is the hypotenuse of a right triangle whose sides are $1 + 2\varepsilon$ and $2x$. The corner path distance is $d_c^2 = 1 + 4\varepsilon + 4\varepsilon^2 + 4x^2$.

The corner path will be the shorter when d_c^2 is less than d_{nc}^2, or when $x^2 - x + \varepsilon + \varepsilon^2 < 0$. The reader will recognize that $x^2 - x + \varepsilon + \varepsilon^2 = 0$ is the equation of a circle centered at $x = ½$ and $\varepsilon = -½$, and so the shortest routes will be through the corner when the spider and fly are positioned at x, ε (on the floor or ceiling, as appropriate) within the circle. This is illustrated in the next figure.

New Challenge:
The Spider and the Fly II

Consider a room that is a cube. A fly is caught in the spider's web in the center of the ceiling. From a certain area on the floor there are 12 different straight-line paths to the fly. Describe that area. Use a sketch if you like. Please send your answer to lwyoder@ieee.org. We'll acknowledge correct answers in the next newsletter.

BY ■

This photo shows 14 of the main bodies of stoves with some of the clay bricks used to line the fire chamber.

Summer Mission Trip Report
by Ashley Julio

(Ashley is 17 and lives in Santa Barbara, CA. She is the oldest of our 11 granddaughters. BY)

This past summer, a group of sixteen students and I from our youth group at Santa Barbara Community Church traveled to Guatemala with Mission Impact, an organization dedicated to service and discipleship in Guatemala. Our team's purpose was to work alongside the Guatemalans, to serve for ten days on a short-term mission trip. It was incredibly eye opening to be placed in an unfamiliar environment and to attempt to assimilate to the different culture—which varied greatly from our North American lifestyle. Our team traveled to a rural village called Coyolate. The most evident and astounding difference was the material poverty that we observed, as we are so accustomed to our affluent way of living.

One of the most severe problems with the Guatemalans' lack of material goods is the threat that it poses to their health. In most of the homes in Coyolate cooking was done on open fire stoves, which allowed the smoke to circulate freely throughout the entire home, creating a very unhealthy environment for those living there. Our mission was to work with the Guatemalans living in Coyolate to build and install fuel efficient stoves in their homes. This would enable them to use less wood, and the smoke would be funneled out of the homes.

The stoves were built by mixing concrete, pouring concrete into molds, and assembling the components into a small, functional structure. The specific materials used were as follows: cement, wire mesh, rebar, sand, clay bricks, cement blocks, metal stove tops, metal pipes/chimney. The cement blocks raise the stove about two feet above the ground. The wire mesh and rebar (placed inside the mold) make the cement stove component stronger. The clay bricks and sand retain heat. And the metal pipes/chimney funnel the smoke out of the home. (See photos.)

An installed stove. Note that the main body sits on a slab. Wood is pushed in and ashes are removed through the square hole in one end, and smoke leaves to the metal chimney via the round hole in the other end.

The cost to make one of these stoves is approximately $82. This cost only includes the physical materials used to build the stove. An additional "cost" is the labor that is needed to construct the stove, but each family who receives a stove contributes with manual labor. They work alongside Mission Impact's technicians for a day to build the stove and then help with installation.

The stoves have been specifically designed to last for fifteen years, if properly cared for. Because Mission Impact requires that families who receive a stove also assist in the building and installation process, their hope is that they would have the ability to organize and request another stove project, if another family member or member of the community should need one. Some reports have suggested that families were actually able to build their own stove once they understood how the technology works.

It was incredibly satisfying to be able to contribute to the small Guatemalan village of Coyolate in this way, knowing that we have helped them acquire the tools necessary to more safely and efficiently go about their daily routines.

Ashley Julio ■

A Brief History of CEST
by Bill Yoder

This article will give you a clue about this issue's masthead.

Twenty years ago the ASA was big on Commissions and Affiliations. These were sub-groups of the ASA intended to help members get involved in ASA activities. Generally, commissions were set up to address issues and affiliations were intended to give people with similar professional backgrounds a place to hang out together. In the November-December 1995 ASA Newsletter ten commissions and two affiliations were mentioned. No doubt that emphasis on sub-groups is why some engineer members of ASA soon saw the absence on an engineering sub-group as a significant lack, thus motivating them to set about forming such a group.

There was an Industrial Commission that involved some engineers and others in industry. Its name, though, doesn't sound inviting for those in academia or government. In any case, at least by 1996 there were discussions about forming an Affiliation of Christian Engineers. According to an email I received on 3/17/97 from one of the parties involved, "The ASA Board, at its meeting last November, agreed to ASA's sponsoring an Affiliate of Christian Engineers (ACE). An ACE Task Force of four ASA Engineers (Ruth Miller, Chair, David Swift, Jack Swearengen, and Joe Carson) was organized by Don Munro, ASA Executive Director, late last year."

One member of the task force, Joe Carson was very motivated to get ACE started and had some strong opinions about what it should do. In particular, he wanted it to be a group that would come alongside folks who were fighting wrongdoing in organizations involving engineers — come alongside in the sense of being willing to go to court on behalf of such causes. The other task force members did not so much disagree with this objective as with his tendency to push his agenda without coordinating with them.

Although Ruth Miller had been identified to chair the task force, Carson undertook various organizing activities on his own. For example he sent out emails such as this 4/13/99 email:

"Subject: Announcing the Affiliate of Christian Engineers (ACE)

"ACE is a newly-formed "virtual" organization for Christian engineers, around the world. Dues will be about $15.00 a year. ACE will be a website, with "plenty of bells and whistles," that will provide its members numerous ways to network and obtain information relevant to the profession of engineering and our common faith. ACE will encourage its members to be "salt, light, and leaven" in their places of employment and in the engineering profession. It is hoped that ACE will be, as its name implies, loosely affiliated with the American Scientific Affiliation (ASA)."

Carson's view was that ACE had the potential to enlist thousands – even hundreds of thousands – of Christian engineers, and with annual dues of $15 per year, this would provide plenty of money to do the things he envisioned.

It appeared that Carson intended to organize and run ACE as he saw fit. This had the effect of alienating Carson from the other task force members.

At the 1999 annual meeting of the ASA at John Brown University, task force members met with other engineers to organize the affiliation. Carson was not there. Earlier discussions at a meeting of the Industrial Commission, which involved some of the same people, addressed and endorsed the idea of merging the commission with the new affiliation. Such a merger was agreed to at the affiliation meeting. The meeting then had to consider what the affiliation's name would be as it was considered that Carson had gone off on his own with ACE. After lengthy discussion the name Christian Engineers and Scientists in Technology was chosen.

This name has the advantage of being inviting to non-engineers who are working in technology in one way or

another, but it is also a confusing name. Is it to be understood as

Christian*((Engineers+Scientists)*(in Technology))?

Or as

Christian*(Engineers+(Scientists in Technology))?

And what does it mean to say one is "in technology"? Does that mean you are a technician repairing TV sets, or someone using technology in the design of new devices, or someone reducing some new scientific concept to practice, or what?

At that 1999 meeting officers were chosen for CEST as follows: Ruth Miller, president; John Osepchuk. vice-president; Jack Swearingen, secretary-treasurer; and Harry Lubansky, webmaster. A draft constitution was circulated for comment, but it was never officially accepted.

At the 2001 annual meeting at Kansas State University Ruth asked to be relieved of her role as president so she could focus on her upcoming tenure review, but she agreed to be vice-president. Other officers chosen there were Bill Yoder, president; Jack Swearengen, secretary-treasurer; and John Osepchuk, special assistant to the president.

In the first few years after its formation, CEST was involved in organizing annual meeting sessions focused on engineering and technology. In more recent years program organizers have generally planned engineering and technology sessions without direct involvement of CEST in the planning, but usually with CEST members as presenters.

ASA executive secretary Don Munro had recommended that the affiliations should issue periodic newsletters, so in 2006 I began publishing one for CEST. This was originally published in paper and to a closed group at yahoogroups.com in hopes that employed engineers leery of having their names and comments appear online would correspond. But the amount of material submitted by CEST members was relatively modest – most members have yet to submit their first item. At the urging of Jack Haas and Randy Isaac, I agreed to begin posting new issues on the ASA website in 2011 — at http://www.asa3.org/ASA/cest.

What is to be the future of CEST? By the end of this year I will have turned 75 and will have completed 50 years in the ASA. I do not plan to prepare CEST newsletters beyond the time of the ASA 2015 annual meeting at Oral Roberts University. I would be glad to publish your comments about whether CEST should continue, what it should do, and your interest in helping in some way.

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I have followed Carson's ACE for all these years, and although a lot of words have been posted on ACE's website, christianenginerer.org, there is no apparent evidence that ACE has become a significant membership organization. In recent years I have asked him several times if he would consider releasing the name *Affiliation of Christian Engineers* back to us, but he has firmly declined with answers like this:

"I applaud what ASA does, I take grave exception to what it shuns – 'boat rocking' to advance and defend engineering or science ethics - and I take grave exception to why it fails: to 'love of money'.

"So if I have something you may value; I really don't see that ASA is worthy, at present, of it, [be]cause it shuns inconvenient parts of being a Christian when they could impact $. I accept you can see it quite a bit differently."

BY ■

Technology in the News
Ocean Thermal Energy Conversion

See *IEEE Spectrum*, September 2014, page 18

Efforts at ocean thermal energy conversion (OTEC) were undertaken in the 1970s and 1989s but were shelved when the price of oil fell. But today new efforts are underway. The technology seeks to take advantage of the temperature difference between surface water and water in the deep. Using a suitable refrigerant, heat from the surface water will boil it. The vapor produced will be used to run a turbine and generate electricity. Then heat will be exchanged with cold water from 1000 meters or so deep, condensing it back to a liquid so the cycle can repeat. An advantage of OTEC over wind and photoelectric power is that it will produce electricity reliably around the clock.

Two Paris based companies are undertaking to build a 16-MW OTEC plant 5 kilometers offshore from the Caribbean island of Martinique. "Construction is set to start next year and the team plans to have the plant operational in four years."

More on OTEC at http://spectrum.ieee.org/energy/renewables/ocean-thermal-energy-back-from-the-deep.

Technology in the News
Supercapacitors

See *The Economist*, July 12, 2014, page 71

Supercapacitors can do some things better than batteries because they can be charged and discharged faster. So if you want to recover the energy from braking a vehicle and then use that energy to get it going again, supercapacitors may be the best choice. The drawback has been that the volume energy density for supercapacitors is lower than that for, say, lithium-ion batteries. But developers have reached 30-40% of a lithium-ion battery's energy density, and the use of new materials is expected to increase energy densities still further in the near future.

Another advantage of supercapacitors is that they can go through as many as a million charge-discharge cycles while lithium-ion batteries quit after only a few thousand cycles.

See the news note at http://www.economist.com/news/science-and-technology/21606715-new-sort-storage-device-gives-lithium-ion-batteries-run-their.

BY ■

Engineering in a Wider Context
An article by Dennis Feucht

(The views expressed here are those of the author, and not of the ASA or CEST. In addition, we cannot vouch for the websites listed at the end of the article. BY)

In Engineering 101, we were taught that engineers are society's technical problem solvers, that we use scientific and engineering principles to better the physical existence of humanity. While we expend major efforts on technology development, how effectively are we solving problems of society? This leads us to consider some wider aspects of engineering.

Is Marketing Engineering?

To ease into the topic, consider this question: Is marketing actually part of

engineering? If engineers are society's problem-solvers, then is not an important first step in engineering to define the problem to be solved? In Engineering 101, that was the first step of the "engineering method" followed by a search for solutions, then deciding on one and specifying it - somewhat simplistic, but maybe okay for a freshman course.

Some problems are obvious. If you were a design engineer at H-P or Tektronix during the 1960s, increasing oscilloscope bandwidth was your central problem. Your fellow design engineers were thinking and talking about technical details and new ideas involving circuit speed. How that impacted society was indirect at best. It more immediately impacted whether the large computer companies were going to buy Tek or H-P 'scopes to service their increasingly fast minicomputers and mainframes. Computers were in a high-growth phase of development as an up-coming technology, and they impacted the direction of test-equipment development. It was also obvious that computers could solve numerous problems, from replacing the tedium of manual calculation to communications networking and automatic control of a wide range of processes and devices.

The combination of computing concepts and emerging semiconductor capability set the direction that electronics technology took in the last half of the 20th century. Computers, as breakthrough technology, at first had an indeterminate range of future possible applications, giving inventive engineering minds, like artists, a medium in which to exercise creativity. The excitement that breakthrough technology brings consists in part in the fact that *we do not know* how far it will allow our powers to be extended. The word *breakthrough* connotes the removal of conceptual obstacles, freeing engineers to enter new and unexplored territory. On these frontiers, technical adventure drives activity in the belief that what is found will be useful in solving human problems. This is why intelligent tinkering is not a waste of time, though it may not directly address a human (or economic) need. Engineering proceeds in part on the faith that new technical possibilities will in some way advance human life for the better. In the past, the societal context of the biblical worldview set the background for thinking about what could be beneficial or detrimental from technology. Whether an engineer was a Christian or an atheist, as Francis Schaeffer had pointed out, they operated on a common moral base rooted in the divine revelation of God's law. What constitutes an "advance" is assessed on the basis of one's wider view of reality and our purpose as humans. It relates to concepts involving the larger reality beyond engineering.

This open-ended engineering research is not usually associated with marketing, for it is not focused on satisfying human desires but on enabling engineers. Some technical projects address enablement rather than customer interest in the hope that problems lacking solutions will become solvable, leading to novel products of great market appeal. Marketing, as is commonly practiced, is restricted to a search for an understanding of existing problems that can be fulfilled with technology the marketer assumes is within the reach of in-house capabilities. Visionary marketers who imagine too far beyond the actual state of technology tend to sell vaporware. And at the other extreme, marketers lacking vision can lead their respective engineering departments into me-too development lacking sales potential.

If the problems we set out to solve are too far behind the technological frontiers, the resulting products are not competitive, offering too little, too late. But at the other extreme, if we try to push the state of the art too aggressively, we might never get a product to market. Finding the "leading edge" and solving problems there, which are neither too easy nor too hard, is the mark of a good engineer.

Marketing, in this sense, is the first step in product design, but not research. Product design engineers are marketers in that they are aided in knowing how best to direct their innovative efforts and choose their problems by their understanding of the larger societal picture (called "the market") and the needs they find within it. Consequently, the nexus that brings engineers and the larger society together is the effort to satisfy divinely-given human desires, consummated in the form of product sales. It is not, therefore, surprising that many good marketing people are former design engineers.

One additional comment on marketing: customers usually do not understand their own needs well. Marketing field trips to major customer sites seeking answers to the question, "What do you want us to build?" are often fruitless. Customers can tell whether a product will meet their need, but they usually cannot articulate the need itself. When a new product or feature eases or eliminates some of their problems, they are quick to recognize it and buy. It takes creative marketing insight to identify these problems, the kind of insight associated with inventors or design engineers. Good marketing is part of engineering.

Must Engineers Be World Watchers?

The expansion of engineering concerns to marketing is but one step into a larger world. Wider societal issues related to engineering terrify some engineers, causing them to retreat deep within the confines of their respective laboratories. Most of the problems solved by applying science and technology are capable of eventually being reduced to something simple, described clearly in rigorous, quantitative language, and solved using repeatable, reliable methods. As engineers, we like those kinds of problems. Solving them gives us a sense of concrete progress. We prefer to relate to the physical rather than the social world in our work.

In contrast, the social setting is more complex, complicated by human desires, conceits, and the vicissitudes of human will. No clear, generally-accepted resolution of the wider issues is obtainable in the way it is possible to settle questions in engineering. Consequently, no firm conclusions have been reached that are agreed upon by all. Much talk and analysis goes on but little is ever resolved by the social philosophers, chattering media, and political pundits. Engineers often regard these wider problems as intractable, conceptually unmanageable, and efforts to solve them result in little to no visible progress nor benefit. They are too far ahead of the leading edge for feasible problem-solving, it might seem.

While the bigger picture is messier, none of us can avoid it entirely. As Christians, we are already familiar with it in how questions or problems that arise in a church context are also not always (maybe even not usually) resolvable because they have so many facets to them and are missing key facts. We all operate within the wider social order, bringing to

it our wider views about life and reality. (Marketing people often act as a buffer between this larger reality and design engineers.) Our combined mental model of social and physical reality guides our selection of which technical problems to work on and which products to develop. Many others like ourselves are doing this around the world. The North American advantage in doing product design is that a historic reservoir of American ingenuity, technical know-how, and infrastructure has given N. American engineers the advantage for much of the last century. But the parameters of the world are changing in a way that is profoundly affecting American engineering, forcing engineers to look at the larger situation. Let's do some of that, at a time when the bellwethers of global economic and social disruption are clearer than ever.

Where the World Is Headed

In their book *The Sovereign Individual*, two world-watchers, global investor and history buff, James Dale Davidson, and British ex-parliamentarian and history buff, Lord William Rees-Mogg describe how, about every 500 years, new technology changes the basic social state of affairs. The Middle Ages ended with two inventions, one in military weapons and one in communications. The invention of gunpowder led to the indefensibility of castles, empowering kings to consolidate rule within their realms and build large central governments. And the printing press led to the rapid spread of ideas, resulting in a reformation in European Christendom and a renaissance in thinking. Both of these new technologies had social consequences unimaginable in 1500.

Now, 500 years later, we are caught up in another transition of the ages, driven by two new technologies, again one military and the other in communications. We are seeing the end of the age of large, centralized governments and the nation-state in general. The Soviet Union has already broken apart and since the early 1990s, the number of nation-states in the UN has increased by about 50 %. Technological innovations are shifting power back toward the individual, and the meaningfulness of nation-state boundaries is fading, as central governments struggle to maintain a reason for their existence.

The Internet is obviously the communication innovation that is "globalizing" the world. When information, influence (which is the essence of political power), and money (which is the means of political power) transfer freely across nation-state borders via the Internet, the borders become less relevant. And militarily, when a small group of individuals, or even a single person, can possess a weapon of mass destruction (WMD) capable of destroying a large city, the balance of coercive power shifts back to the individual. The size of a state's military is irrelevant in combating WMDs. A suitcase-sized nuke (80 of which the former head of Soviet intelligence said were missing) gives their operational possessors a substantive negotiating position.

A key political struggle of our time is that of nation-states attempting to maintain control over their jurisdictions against the social changes set in motion by new technology. To combat WMDs, for example, requires that a state have the power to discourage the will to use them, to successfully enforce mind control. We live in an age of unprecedented mind management, propaganda, and mass-media spin-doctoring. (And you thought the movie, *The Matrix*, was fiction, eh?) Without explicit investigative effort to the contrary, one's view of reality will, by default, be what the power elite will construct it to be through the prevailing information institutions. The television networks, newspapers, and radio stations in the U.S. are owned by about 8 large conglomerates.

This relates profoundly to engineers. The technology we develop: how will it shape the future? If we want it to be for good, how can we foresee the consequences? It is a broad question, yet it is possible to achieve an acceptable answer, though it takes considerable effort of an unusual kind for engineers. It requires a massive diversion from engineering to a study of the world-system. In *Matrix* movie language, one must take the red pill, and study political history (reading more than what the winners of wars have written), economics, law, global finance, the power elite, and covert operations (including organized crime). The result, when carried out, might leave you with a different viewpoint from which to do engineering. Hopefully, this wider investigation will bring more depth and wisdom to the selection of which kind of engineering problems to address, and a better sense of which are liberating versus which contribute to the decay of civilization and the growth of the police state.

Electronics is incomprehensible to those who do not apply the needed effort to understand it. Similarly, one's impression of the dynamics of society and its institutions can be misleading to those who do not look beyond the appearances.

Some Places to Start

In conclusion, the viewpoint of a mature engineer encompasses a continuum from detailed technical competence to an awareness of the overall social context in which it is applied. The alert and well-rounded engineer also has a range of mental habits that not only include those of engineering, but also those needed to see the picture in the jigsaw-puzzle pieces of information about the wider reality affected by our efforts.

A few years ago, I turned off my soldering iron for a while and did this kind of study. At first, the challenge is simply in qualifying one's sources (especially for covert operations). From this distilling process, I leave you with a list of websites that I have found provide insight into what drives world events. Apply your own investigation to an assessment of these sites, and however you get there, get to the bottom of what's going on. It will affect your engineering outlook immensely. I wish you well in the search and let me know if you find something really interesting that I missed.

- www.globalresearch.ca Website of Canadian academic political economist who has brought together some of the deeper analysts of world events, especially in a broader, longer-term context.
- www.infowars.com Investigative reporter Alex Jones, based in Austin, Texas, occasionally appears in the mainstream media (CNN, *60 Minutes*) with stories they omitted but can no longer ignore. He has a wealth of documented news not otherwise covered but revealing, especially on the emergence of the police state and the New World Order aspirations of the Anglo-American power elite.
- www.fame.org If you learn nothing else, understand the "money issue", explained clearly by Larry Parks, the Foundation for the Advancement of

Monetary Education, in his lead article on the nature of money. Also recommended from this site are articles by the nation's leading legal authority on money, Ed Vieira.

- www.piecesofeight.us Website for the definitive work (2 volumes) on U.S. money, *Pieces of Eight*. Sounds boring (and some legal details are, which can be skipped without loss of continuity), but otherwise surprisingly illuminating on how the whole System runs on money. Author Edwin J. Vieira, Jr. argues cases before the U.S. Supreme Court and has won some landmark cases (such as right-to-work case, *Beck v CWA*). He has a Ph.D. in chemistry from Harvard U., but also happens to be an attorney with a Harvard J.D. This guy is brilliant. In his (2 volume) novel, *The Crashmaker* (www.crashmaker.com), he says what he would not dare put into print as non-fiction, about how those in the circles of power in Washington and the world rule and connive the rest of us into supporting their schemes.
- Anthony C. Sutton's books, *Wall St. and the Rise of Hitler*, *Wall St. and the Bolshevik Revolution*, and others, from a Stanford U. Hoover Institution fellow and formerly a leading expert on Soviet-American relations, reveal political history not covered in government-taught American history classes. The first book can be downloaded from the Web; for one site, try

  http://www.reformed-theology.org/html/books/wall_street/index.html
- www.zmag.org/chomsky/index.cfm Noam Chomsky, the renowned linguistics professor at MIT, is also an astute political investigator and outspoken dissident who understands how the System works underneath. One need not accept his political solutions to benefit from his observations and investigations.
- http://www.whatreallyhappened.com/RANCHO/POLITICS/MENA/TATUM/tatum.html High-level ex-CIA agent Gene "Chip" Tatum's testimony in videotape interviews by former Los Angeles FBI station chief Ted Gunderson. Tatum was involved in Nixon's shady Cambodian operation Red Rock and later, in the Contra affair of the CIA. He personally reported to ex-CIA chief and Vice-President George Bush as his handler. Tatum's personal testimony, some of which is on legal record in a U.S. District Court in Florida, can be found by searching the Web (try "Black-Ops Reporter") for *The Tatum Chronicles*. The strange tactics the government used against Tatum when he started to talk is itself evidence for his participation in the events of which he speaks, involving Richard Nixon, William Colby, Oliver North, Manuel Noriega, Bill Clinton, George H. W. Bush, Barry Seal, Jeb Bush and others. A transcript of some of this is at:

  www.tpromo.com/gk/stacey/tatum.htm
- http://www.lobster-magazine.co.uk is a British journal of global covert and "paramilitary" activities published by one of the "leak agents" who has a reputation for reliability, through whom covert operatives can leak information they think should be revealed without exposing themselves. Other such watchdog sources are ex-naval-intelligence officer, Al Martin (www.almartinraw.com), ex-FAA flight inspector Rodney Stich (www.defraudingamerica.com), ex-LA cop from a CIA family, Michael C. Ruppert (www.copvcia.com), and finance professor J. Orlin Grabbe (www.aci.net/kalliste/charles_hayes_index.htm or http://orlingrabbe.com), whose connection with ex-CIA agent Charles Hayes and the Fifth Column would be of special interest to computerists interested in global electronic banking and encryption. Hayes offers a possible explanation for why a record number of members of Congress decided not to run for another term in 1996, when his group found their secret foreign accounts of plundered government funds through CIA backdoors put into banking software.
- http://home.hiwaay.net/~becraft Constitutional attorney Lowell H. Becraft, Jr., is a leading national researcher of income-tax law (the flip-side of the money issue), and other constitutional issues involving instabilities in existing law. He won the longest income-tax trial in U.S. court history (the Lloyd Long case) and is a leading figure in the tax-honesty movement.
- www.givemeliberty.org Ex-engineer Bob Schulz's organization has emerged to prominence in the tax-honesty movement by bringing together the best national legal researchers and ex-IRS agents to address the issues of the income tax. He is methodically taking steps to have the federal government respond to and resolve major charges of fraud and illegality in the administration of the tax. His forum at the National Press Club in July, 1999 was the most requested program ever run on C-SPAN. He has since run two-page spreads in *USA Today* that has resulted in reprisals but no answers from Washington, though officials speaking for the House, Senate, and White House are on videotape record as promising that they will supply them.
- www.weforum.org The World Economic Forum is where high-level global financiers meet to discuss what they have done and would like to do to the world financial system. The Forum meets in Davos, Switzerland; entrance fee for the annual event is around $20,000. For a more exclusive meeting of the power elite, the annual Bilderberg Conference, see www.bilderberg.org. Nobody gets into Bilderberg meetings without an invitation, but a few leak information from them.
- www.cfr.org The Council on Foreign Relations is the premier private power-elite club for which every U.S. President since WW II except two have been members. The U.S. State Dept., Dept. of Defense, and Dept. of Treasury are dominated by CFR appointees. The CFR publishes *Foreign Affairs*, which contains articles often portending what will be done by the power elite well before it happens.

Dennis L. Feucht September 2014

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Bill Yoder, ed. ■

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