

A Silent Key

A Paper

Presented to the Athenaeum Society

By

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As you all know I wasn't slated for the 2012-2013 presentation schedule. But here I stand, delivering an unexpected paper, after what was easily the most unexpected year of my life.

The society was instead supposed to hear from its then 3rd-most senior member. I don't know what my father planned to write his paper on - he liked to surprise me with the topics as much as he liked to surprise the rest of the society. But Thomas Watkins Westerfield is sadly no longer with us, Daddy is no longer with me.

As you all know, Dad was an Amateur Radio Operator, a HAM Operator. Many times I have fetched Dad from his "HAM Shack," a room off the garage at home, for meals or visitors. The HAM Shack was Dad's refuge, his sanctuary, his Fortress of Solitude. The HAM Shack has all manner of radio equipment along with a computer, where Dad would tinker with other hobbies; genealogy, disaster relief preparation and training, and the bookmarked antique tractor parts sites showing strictly Allis-Chalmers orange and white. WA4ZVL, Dad's call letters, or as he would call them on the air, "W-A-4-Zed-Vee-El" ring in my ears today just as clearly as they always have. Since September 11, 2012, those valuable call letters have been, in HAM Operator parlance, Silent Keys.

Serving in Dad's stead this evening, I thought the opportunity appropriate to honor his contributions to Athenaeum by sharing excerpts from some of his greatest hits throughout his tenure in the Society, which dates back to _____. Tragically, I do not have access to all of his papers. There formerly existed a trove of those treasures from a long line of society members retained by the Public Library but I believe those have been lost to time and accidental misappropriation. But I was able to uncover a handful from Dad's HAM Shack. There was a paper about the South, another more recent paper about Dad's experiences with culture and disaster relief efforts in Port Au Prince, Haiti. There was yet another about the history and personality of Nathan Bedford Forrest. On balance Dad also managed to include light hearted topics like the history of bubble-gum.

However, there are two papers from Dad that I felt like sharing portions of tonight both because they interested me and because at one point they sparked the interest of my father.

NANOTECHNOLOGY (2005)

Hey Honey, I Shrank the Kids

During my senior year of high school this poor farm boy had two life jolting experiences. The first occurred October 4, 1957. All of the high school students at Utica High School were called into the gymnasium for a general assembly. A single table, a chair, and an unusual looking radio on the table occupied the stage. The chair was occupied by my old chemistry and physics teacher, Mr. John P. Miles. As the students quietned, the volume of the radio was increased and a steady silence was interrupted with a beep.....beep..... beep. Mr. Miles later explained to the audience that the Soviet Union had just launched into outer space the world's first artificial satellite, Sputnik I.

The second was my first experience of travel out of the Commonwealth, except for an occasional trip across the river from Owensboro to Evansville, IN to the stockyards. These trips were to out-of-state schools that had offered me a basketball scholarship.

I was both awed and stimulated by these experiences. The awe came from my first awareness of this universe. My stimulation grew from my realization that I had a lot to learn.

The year following the completion of my undergraduate work at Georgetown College I received another of those life-jolting experiences. I was serving as a science teacher in the Eminence, Kentucky independent schools. Wanting to initiate interest in the sciences, I organized a school wide science fair. I approached an acquaintance that managed the local Bell Telephone office for a prize for the winner of fair. He told me in a few days that he had something. It turned out that the prize was an all expense paid trip for the winner and his teacher for a week at Bell Labs in Murray Hill, New Jersey. I was like a kid in a candy store. My student was equally excited. High on the list of research projects that we observed was the first operational laser in the world. They demonstrated its far ranging potential for communications, medicine and defense. We viewed the first prototype of a now common transistorized integrated circuit. Needless to say, at that time of my education and career, I had no awareness of either of those innovations.

Once again I was reminded how little I knew about the world around me.

When I got out of college and had a steady income, I became involved in a hobby that I had long aspired to pursue, amateur radio. My first radio station, which I still have as an item of memorabilia, was a Knight Kit R100A receiver and a T100A transmitter which occupied the entire surface of my restored office desk. Between my education and my hobby, I became well

versed in electricity and electronics, regularly building transmitters, receivers, amplifiers and power supplies. At one point I even built a microwave oven. I tell you of these experiences to make a point. I became aware of the rapid pace of technology development and the shrinking dimensions of its elements. That early transmitter that I built contained a simple triode amplifier tube. (I demonstrate to you its size). Shortly thereafter, that voluminous tube was replaced with a transistor that was 1/100th its size and 10 times its power. However, that reduction in size didn't last long for the power transistor was replaced with an even smaller one. And now, we can boast the inclusion of the complete electronic components of a radio receiver in a single integrated circuit.

In a parallel universe consider the shrinkage of computer technology and the related hardware. While in graduate school at the University of Kentucky I was required to schedule time on the University's only student accessible computer. A Univac, that occupied an entire floor of the School of Engineering. Subsequently, after moving to Hopkinsville and assuming a science teaching job at Hopkinsville High School a student's father, who managed the computer department for Thomas Industries, gave me an opportunity to experience a much more powerful machine that occupied a single large room. After joining the staff of the Pennyroyal Center and outgrowing the capacity of our board chairman's computer, the IBM System 3 at Mr. Frank Yost's Hopkinsville Milling Company. The System 3 was not much larger than a good sized office desk and possessed a processing ability 5 times that of the TI computer and a 100 times that of UK's. Not only did the physical size of computer technology shrink, but the cost to consumers did also. [The computer at the Pennyroyal Center once consumed an entire room and used discs the size of small spare tires, and cost a fortune. Just before Dad retired he signed the contract for the purchase of a new computer that would operate the entire Center, link all its facilities, handle of the voice communications of the integrated telephone system, had the magnetic storage capacity to contain the entire medical record of every individual that ever received any kind of service from the center, the electronic accounting records for the history of the Center and everything added in the foreseeable future. All of that capacity would fit in box no larger than your typical Labor Day picnic cooler. And the price of that hardware was less than half the cost of that original PC.]

Apollo 11's guidance computer, large as it was and mission critical as it was, contained a tiny fraction of the computing

power contained in the very first generation iPhone - and the iPhone's hardware performance was restricted by software.

While we were all witnessing the shrinking size of office technology similar strides were being made in business, industry, medicine and aerospace. Most of the innovations being made in all these arenas was being driven by studies in the latter, aerospace. We've all been impressed with the dramatic improvements in textiles, pharmacology, medical diagnostic and treatment procedures,

In a relatively quiet manner, with all this technology growth, there burst on the scene a whole new realm in the world of discovery. Labeled by those most informed as the "new industrial revolution", these efforts promise to effect the worlds population in a fashion far more dramatic than that of the industrial revolution. I am speaking of the ultimate in miniaturization, technology development in the dimensions of $1/1,000,000,000,000$ (one billionth) of a meter, or a nanometer. The new efforts have been called by the creators, NANOSCIENCE or NANOTECHNOLOGY.

Just what is nanotechnology? The name is a catch-all phrase for materials and devices that operate at the nanoscale. Likely during your past science instruction regarding measurements of length, you became well familiar with kilometers, meters, centimeters and millimeters. Possibly a measurement in the "micro" or "pico" ranges. In that system of measurement, "nano" is the prefix that symbolizes a billionth and therefore a nanometer is one-billionth of a meter. Reference to nano materials, nanoelectronics, nanochemistry, nano devices and nano powders simply mean the material or activity can be measured in nanometers. Allow me to put this dimension in perspective for you. For comparison, a human hair is about 100,000 nanometers. A human red blood cell is over 2,000 nanometers long, virtually outside the nano scale range.

Nanotechnology had its beginnings in the late 50's when Nobel Laureate physicist Richard Feynman gave a lecture entitled, "There's Plenty of Room at the Bottom, in which he proposed that the properties of materials and devices at the nanometer range would present future opportunities. The term reached greater public awareness in 1986 when K. Eric Drexler, PhD., published, "Engines of Creation: The Coming Era of Nanotechnology".

So how will nanotechnology work?

When Henry Ford built a manufacturing plant for Ford automobiles in the early 1900's the plant occupied 2,000 acres along the Rouge River in Michigan. The factory included the equipment for every phase of the car including the blast

furnaces to produce the steel, a steel rolling mill, a glass plant and more than 90 miles of railroad rail. Designed for mass production, it was lauded as the industrial miracle of the era.

Such manufacturing facilities will be a historical spectacle for those who in this 21st century see nanotechnology come to fruition. Over the next decades, machines will dramatically shrink in size...becoming so small that it would take thousands of them to fit in the period at the end of this sentence. In these future decades these machines will be used to manufacture products at the molecular level, piecing them together one atom or molecule at a time creating baseballs, telephones or automobiles. You name it.

The visions include nanogears no more than a nanometer wide that could be used to construct a matter compiler through which raw materials would be arranged an atom at a time, producing a macro scale structure.

As early as 1990 IBM scientists, with the assistance of an atomic force microscopy instrument positioned 35 xenon atoms on the surface of a nickel crystal spelling out IBM, the worlds smallest logo.

Dreamers in the medical field have not ignored these opportunities. In the nano world, patients will drink a fluid containing nanorobots that are programmed to attach and reconstruct the molecular structure of a cancer cell or a virus making them harmless. Nanorobots could be programmed to perform delicate surgeries. Such nano surgeons could work at a level a thousand times more precise than the sharpest scalpel.

Nanoscience has the potential for a positive effect on the environment. These nanoscale devices would dramatically reduce the dependence of traditional fuels. Contaminants could be removed from water supplies, toxic wastes could be recycled to use products. Cutting trees, mining for coal or drilling for oil could well become passé.

Developers of fabrics for your friendly Eddie Bauer store have created stain resistant Nano Care™. Small whisker-like particles are used to coat the surface fibers, creating a stain repelling surface. Health care companies have discovered that a coating of nanocrystals of silver on bandage fabrics renders the antimicrobial.

The most dramatic progress comes in the area of carbon fibers. The aerospace industry continues to amaze us with outcomes. You are likely familiar with the carbon fiber design of shuttle surfaces and more notably the stealth aircraft. Recently, while attempting to improve the difficult and multiple step process for producing carbon fibers, researchs created a

unique structure of carbon atoms at the nano dimension. Called carbon tubes, the tubular thread prove to be hundreds of time stronger than present day fibers.

Progress is also being made in the area of metallurgy. For example, aluminum, known for its light weight and oxidation(or rusting) resistance, has been a popular material for thousands of household and commercial products. Its brittleness to angular forces, however, has limited its use in many applications. With a single atom thick veneer of nanosized aluminum oxide particles, aluminum takes on a whole new realm of properties making it tougher and stronger than the steel used to make bearings.

The exposed surfaces of many new refrigerators, air conditioners, and laundry machines act as antibacterial and antifungal agents because they have been painted with nano-produced pigments.

Nanoscale layering of materials have resulted in a four-fold increase in the performance of permanent magnets.

[Nano science, needless to say, has incredible potential in a wide array of applications. I look forward to what advances will be made in the near and long term.]

TRILATERAL COMMISSION (1991)

Who's Pulling The Strings?

[The second excerpt I have to share tonight is particularly interesting to me in light of my new position in the General Assembly. What begins as a visual description of marionette and its puppetmaster ends with the question, "Who is Pulling the Strings?"]

Twenty plus years ago when I first moved to Christian county it was no time before I heard of the infamous back room at Rutlands. I was lead to believe that more decisions effecting city and county government were made there, at the old Rock Cafe or more recently the Woodshed than in the chambers of the council or a sitting of the fiscal court. I soon discovered that school issues were more likely resolved in a huddle at the Holiday Inn restaurant or in the back room of a local TV repair shop than at the formal session of the school board. Who's really pulling the strings?

[As for the General Assembly, I'll simply add that I was never a part of any backroom discussion or cigar smoke filled room making decisions for the citizens of the Commonwealth - and to my knowledge no one else was either. Perhaps things truly aren't operated that way...or perhaps they don't give you a key to the

secret sanctum until your 2nd year.]

Let's begin our analysis in 1972 with the annual International Financial Forum sponsored by Chase Manhattan Bank. David Rockefeller, then the Chairman of the Board, influenced by a declining share of the world financial market, advanced a hypothesis. His premise identified the accelerating pace of change in the world and the increasing number of international crises. He cited current national governments inability to give appropriate thought to the issues and as a result were losing their world outlook. President Nixon had just lead off with a home run in the first inning of the China game. As a result, indicated Rockefeller, Japan's leadership was upset with American foreign policy or more specifically, its practices. Rockefeller suggested, without results, the formation of a group of "well-informed, diversified" opinion-makers which could become a symposium for new ideas. Later in the year on a plane riding home from a meeting of the Bilderberg Society in Belgium, Rockefeller not only shared a seat with Zbigniew Brzezinski but shared his ideas regarding the formation of such a "think tank". Brzezinski who at that time was with the Institute for International Change at Columbia, Robert Bowie of the Harvard Center for International Affairs and Henry Owen of the Brookings Institute were a few of the academicians present at the Belgium conference who had read Rockefeller's paper calling for the specialized colloquium. Brzezinski who had recently published a book, Between Two Ages, which called for a high level consultative council linking Japan, Western Europe and the United States, was eager to discuss the idea with Rockefeller. Several informal meetings later after McGeorge Bundy, then the president of the Ford Foundation, agreed to assist in the financing of such a venture and Brzezinski agreed to take a two year leave of absence from Columbia, such a group to be named the Trilateral Commission was formed in mid-1973. It's avowed aim, to increase political and economic co-operation among the three regions, seems harmless enough. One could be led to believe that it is just an international Athenaeum society. Brzezinski served as its first executive director.

Although little known to the general public, the Commission has thrived. It's 300 plus members including hundreds of recognizable names from public life, business, academia and the media, are concentrated in three cells, one each in North America, Japan and Western Europe. Membership, however is on a much broader international scale. Each cell has its own organizational hierarchy and staff. They appoint individuals to commissioner status and facilitate localized conferences. The entire group meets annually in a plenary session lasting three days. At these conferences, members hear and discuss task-force reports on

specific subjects, all written by three member-authors, one from each continent. Its printed organ, the Triialogue, publishes these reports and occasional papers by non-members.

As quickly as the sessions began and the papers published the Commission's motives came under fire. Although nobly defended by Rockefeller, the detractors interestingly came both from the philosophical left and right.

The action which moved the Commission to more than just another seminar group was the election to membership of a youthful looking southern governor with a boyish grin, James Earl Carter Jr. For Carter it was an introduction to the seats of the mighty. Like the kid in a candy store, Carter thrived on the associations with such power brokers. Attendance records suggest that Carter never missed a meeting. He is quoted as saying, "membership on this commission has provided me with a splendid learning opportunity and many of the members have helped me in my study of foreign affairs". Actually, Carter approached his participation as a kind of graduate seminar in international affairs. More significantly, Zbigniew Brzezinski became Carter's mentor in the Commission. Brzezinski spent considerable time with Carter, talked to him, sending him books and articles; effectively molding his perception of the international scene.

It was no surprise to the Commission watchers when Carter's name surfaced as a presidential candidate and ultimately the party's standard bearer. With the post-Watergate Republican leadership in shambles, what better champion of the Trilateral perspective than an untainted, believable good old boy from the South. It was even less surprising when Walter Mondale, also a strong Trilateralist, was tapped as his running mate. One of Carter's most ardent backers, United Auto Workers Chief Leonard Woodcock was one of his fellow Trilateralist. You can almost detect the smirks of the Commission leaders as a Carter-Mondale sweep of the election put two of their carefully groomed proteges at the helm of the nations ship.

Undaunted, the plan played out. Fully a quarter of the Commission's entire United States membership were directly involved in organizing the Carter administration team. Not only did they assist in structuring the team, they filled a great number of the most power wielding positions. Review the list; Brzezinski, a Polish emigrant of the '50s whose vita includes more Russian experiences than Western, became National Security Adviser; Cyrus Vance, Secretary of State; Michael Blumenthal, Secretary of the Treasury; Harold Brown, Secretary of Defense; Warren Christopher, Deputy Secretary of State; Richard Holbrooke, Assistant Secretary of State for East Asian and Pacific Affairs; Paul Volcker, Chairman of the Federal Reserve and Andrew Young,

Ambassador to the United Nations; all card carrying Trilateralists. Carter's new found friends were a source of irritation to his old guard. Having been unceremoniously dumped in deference to the "thinkers" they, led by a brash Hamilton Jordan, were quick to spill the beans on the Commission insiders.

Apparently the single factor which prevented the total control of the White House by the Trilateralists was Carter's unexpected belief that, in fact he was in charge. Bickering between the team soon lead to its ineffectiveness and partial dissolution. Vance quarreled openly with Young and Brzezinski. Carter eventually booted Blumenthal. Unpredictably, time and again Carter moved tangentially to Trilateral views. They were most disappointed in his world wide focus on human rights. Glaring evidence of their influence surfaced in Carter's introduction and support of a new Panama Canal Treaty. Carter appointed another Trilateralist, Sol Linowitz, as the treaty's chief negotiator.

During the 1980 presidential campaign conspiracy talk was abundant. Of the front runners in both parties, all but one were in some way linked to the Commission, the lone exception, Ronald Reagan, who was accused by some of having no connection with any intellectuals. Anti-trilateralists placed Carter and Bush in the same basket. John Anderson was so extreme few worried at all about him. Unfortunately for the Commissioners, Reagan floated to the top. When it appeared that their influence had all but been erased GOP leader and candy expert, William Brock also a Trilateralist, influenced Ronnie who in the eyes of the anti-trilateralists executed one of his classic blunders and picked one of the Commission's darlings and his most negative critic, George Bush to be his ticket mate. The electoral college votes had hardly been counted when Reagan announced Trilateralist, Casper Wineberger as Secretary of Defense.

The observers of political puppetry do not completely agree on the ultimate motives of the Commission. The more ardent suggest, "these members are pursuing nothing less than control of the world...a world government to be controlled by the Commission". Others suspect a less direct approach; a unified international monetary and economic system that will render national governments superfluous. Their philosophical thread, "the management of interdependence" is repeatedly found in the Commission's formal papers. Brzezinski's influence on the Commission's philosophy and direction is troublesome. Repeatedly his socialist, humanist ideologies, as outlined in his Between Two Ages, surface on the Commission agenda. Ideas including global information, common scientific language, pluralistic religious responses, international peacekeeping forces, a synthesis of the

scientific and the spiritual and the exploitation of science in the service of man flow directly from his pen. The importance of centralized planning surfaces again and again in his writings. Another key in his philosophy is his attitude toward a free press. Described as obstreperous, by Brzezinski, the free press is labeled as one of the barriers to the implementation of the necessary global planning. Brzezinski has been and continues to be in the position to influence hundreds of powerful men. Regardless of your opinion of him personally, all agree to the magnitude of his studies and intellect.

Why do these acts of influence peddling exist? Brzezinski unintentionally offers an answer. For the academician, what better laboratory for his theoretical philosophies than the international scene. For the aspiring politician, what better opportunity to raise his stock in the power arena than on the coattails of an senior statesman. For the international businessman or banker greed for a bigger deal appears as a primary motive.

Will the puppeteers have ultimate success? Even though national politics and international relations are replete with their meddling examples there are several phenomena which will ultimately limit or at least control their influence.

The first is inherent to the nature of any "think tank". If its purpose is to "foster ideas from many", we can be assured that there will be disagreement over problems, priorities and solutions. Hence there is little likelihood of a coordinated plan which can follow through to completion.

A second deterrent is a paradox in the function of planning. Centralized planning by bureaucrats, academics and social engineers is diametrically opposed to the basic tenets of individual freedom.

A third lies in a society trend first publicized by James Nasbitt in his book, Megatrends. The concept of "high-tech, high-touch" From the period just prior to Nasbitt's book being published to the present, the number of special focus publications has more than tripled. These dramatic growth in the scope of these organs of the "truly free press" in contrast to the centrally controlled electronic network media is reassuring. Computer technology which embraces local and wide area networks has led to person-to-person communication on broad social and political topics. With the influences of these two developments more persons are more widely informed about more issues than ever before. As a result of this heightened awareness by all, those who would foster a manipulated society will encounter the old adage, "you can fool all of the people some of the time and some of the people all of the time but not all of the people all of the

time". The real effect will have to be judged by history, and more of it is written every day.