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DIVISION OF  
CORPORATION FINANCE

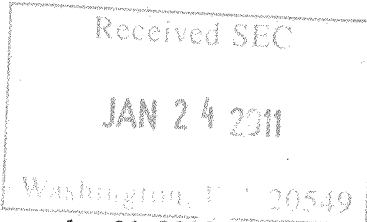
UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4561



11005646

January 24, 2011

Richard E. Baltz  
Arnold & Porter LLP  
555 Twelfth Street, NW  
Washington, DC 20004-1206



Act: 1934  
Section: \_\_\_\_\_  
Rule: 14a-8  
Public  
Availability: 1-24-11

Re: CSX Corporation  
Incoming letter dated December 21, 2010

Dear Mr. Baltz:

This is in response to your letter dated December 21, 2010 concerning the shareholder proposal submitted to CSX by William R. Miller. We also have received a letter from the proponent dated January 10, 2011. Our response is attached to the enclosed photocopy of your correspondence. By doing this, we avoid having to recite or summarize the facts set forth in the correspondence. Copies of all of the correspondence also will be provided to the proponent.

In connection with this matter, your attention is directed to the enclosure, which sets forth a brief discussion of the Division's informal procedures regarding shareholder proposals.

Sincerely,

Gregory S. Belliston  
Special Counsel

Enclosures

cc: William R. Miller

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

January 24, 2011

**Response of the Office of Chief Counsel**  
**Division of Corporation Finance**

Re: CSX Corporation  
Incoming letter dated December 21, 2010

The proposal states that “CSX should undertake to develop a kit that would allow CSX to convert the majority of its locomotive fleet over to a far more efficient power conversion system, based on fuel cell power, by 2025.”

There appears to be some basis for your view that CSX may exclude the proposal under rule 14a-8(i)(7), as relating to CSX’s ordinary business operations. In this regard, we note that the proposal relates to the power conversion system used by CSX’s locomotive fleet. Proposals that concern a company’s choice of technologies for use in its operations are generally excludable under rule 14a-8(i)(7). Accordingly, we will not recommend enforcement action to the Commission if CSX omits the proposal from its proxy materials in reliance on rule 14a-8(i)(7). In reaching this position, we have not found it necessary to address the alternative bases for omission upon which CSX relies.

Sincerely,

Reid S. Hooper  
Attorney-Adviser

**DIVISION OF CORPORATION FINANCE  
INFORMAL PROCEDURES REGARDING SHAREHOLDER PROPOSALS**

The Division of Corporation Finance believes that its responsibility with respect to matters arising under Rule 14a-8 [17 CFR 240.14a-8], as with other matters under the proxy rules, is to aid those who must comply with the rule by offering informal advice and suggestions and to determine, initially, whether or not it may be appropriate in a particular matter to recommend enforcement action to the Commission. In connection with a shareholder proposal under Rule 14a-8, the Division's staff considers the information furnished to it by the Company in support of its intention to exclude the proposals from the Company's proxy materials, as well as any information furnished by the proponent or the proponent's representative.

Although Rule 14a-8(k) does not require any communications from shareholders to the Commission's staff, the staff will always consider information concerning alleged violations of the statutes administered by the Commission, including argument as to whether or not activities proposed to be taken would be violative of the statute or rule involved. The receipt by the staff of such information, however, should not be construed as changing the staff's informal procedures and proxy review into a formal or adversary procedure.

It is important to note that the staff's and Commission's no-action responses to Rule 14a-8(j) submissions reflect only informal views. The determinations reached in these no-action letters do not and cannot adjudicate the merits of a company's position with respect to the proposal. Only a court such as a U.S. District Court can decide whether a company is obligated to include shareholder proposals in its proxy materials. Accordingly a discretionary determination not to recommend or take Commission enforcement action, does not preclude a proponent, or any shareholder of a company, from pursuing any rights he or she may have against the company in court, should the management omit the proposal from the company's proxy material.

January 10, 2011

United States Securities and Exchange Commission  
Office of Chief Counsel  
Division of Corporate Finance  
100 F Street  
Washington, DC 20549

RE: CSX Corporation – Omission of Stockholder Proposal Pursuant to Rule 14a-8  
Reference - Letter and attachments dated December 21, 2010 concerning  
shareholder proposal by William R. Miller sent to the SEC

Ladies and Gentlemen:

I respectfully request that the staff (the Staff) of the Security and Exchange Commission deny the request of CSX to exclude my stockholder request from its Proxy Statement. It is clearly in the authority of the stockholders to provide strategic direction to the Board in an area that has a major impact on environmental and public health issues (Exchange Act Release 40018) and in particular such strategies that, as a by-product, can have a major, positive, long term financial impact on the company. Conversely it is a conflict of interest for the management to object to a strategy with long term benefits that might affect their short term incentive program payments ("personal benefit" to management).

I – The proposal does not relate to the company's "ordinary business operation" but rather to a (new to CSX) strategy that expands the company's contribution to improving the environment, reducing oil imports, advancing energy conversion efficiency technology and improving profitability. This is clearly not "micromanaging"

II – I have provided documentation that this shareholder (me) is in a position to make an "informed judgment" on this subject. This is not really rocket science. Other shareholders can avail themselves of sufficient information on the internet to understand the opportunity being presented.

III – Using 2008 as an example:

CSX spent \$1.6 billion on diesel fuel

This required 75 million barrels of crude oil (1% of the nation's oil imports) to produce The Union Pacific, the Burlington and the other major railroads together used about five times CSX's usage. The conversion technology CSX will develop could be applied (under license) to magnify the benefit to the environment and economy by a factor of six.

If it had already been implemented:

The tons of CO2 being poured into the environment by railroads could have been about halved.

The tons of nitrous oxide pollutants being poured into the environment reduced by 80%

The profitability of CSX alone would have been about \$1.50/share higher

The US Navy is tied with the Union Pacific as the two largest users of diesel fuel in the nation. The technology CSX will perfect under this plan will be applicable to ship propulsion, cutting the Navy's fuel cost (and doubling the cruising range of the converted vessels).

It is clearly in the interest of the nation to allow the stockholders of CSX to consider the merit of the proposal.

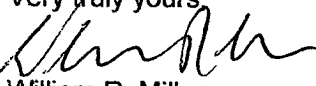
IV – The objection that it is designed to provide a benefit to the proponent made me almost fall off my chair laughing. First of all I only own 50 shares of CSX. Secondly, I am 82 years old. Third of all, it will take 15 to 20 years for this proposal to be implemented. It is ludicrous to propose that I am doing all this just to sell my 50 shares at some huge profit on my 100<sup>th</sup> birthday. If CSX is really worried that I might get some huge consulting contract out of this, I would be willing to certify in writing that I will not do that.

V – When I try to figure why the management is so desperate not to allow the shareholders to see the proposal, I can only think of a few possibilities:

- a) They think the basic idea is so good that the shareholders might actually vote it in and they'd have to do something about implementing it. They fear change.
- b) The cost of implementing the change, even with DOE and DOT subsidies, will be high enough to affect their short range type incentive compensation plans.
- c) They are afraid that if the concept achieves this publicity, Congress might jump on it as an opportunity for energy conservation and pollution reduction and impose new, mandatory energy efficiency requirements on locomotives as they have on autos.

#### CONCLUSION

It is in the long term interests of the nation and the stockholders of CSX for the shareholders be permitted to vote on the proposal.

Very truly yours  
  
William R. Miller

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

December 21, 2010

**BY ELECTRONIC DELIVERY**

United States Securities and Exchange Commission  
Office of Chief Counsel  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549

RE: CSX Corporation - Omission of Shareholder Proposal Pursuant to Rule 14a-8

Ladies and Gentlemen:

On behalf of CSX Corporation, a Virginia corporation (the "Company"), in accordance with Rule 14a-8(j) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we are electronically submitting this request for a no-action letter and a letter dated December 1, 2010 from Mr. William R. Miller, including the accompanying resolution and supporting statement (the "Proposal," attached hereto as Exhibit A) sought to be included by Mr. Miller in the Company's proxy statement (the "Proxy Statement") for the 2011 Annual Meeting of the Shareholders pursuant to Rule 14a-8 under the Exchange Act.

On behalf of the Company, we respectfully request that the staff (the "Staff") of the Securities and Exchange Commission (the "Commission") confirm that it will not recommend any enforcement action if the Company omits the Proposal from its Proxy Statement for the reasons set forth below. By copy of this letter, we also are informing Mr. Miller of the Company's intention.

**THE PROPOSAL**

The Proposal requests that the Company "undertake to develop a kit that would allow CSX to convert the majority of its locomotive fleet over to a far more efficient power conversion system, based on fuel cell power, by 2025."

For the reasons discussed below, the Company believes that it may omit the Proposal under Rule 14a-8(i)(7) because (i) the Proposal relates to the Company's research, development and testing of future technologies, and (ii) the Proposal probes too deeply into matters of a complex nature requiring the Company to choose specific technologies. The Company also

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# ARNOLD & PORTER LLP

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Office of Chief Counsel  
Division of Corporation Finance  
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believes that it may exclude the Proposal under Rule 14a-8(i)(4) because the Proposal is designed to result in a benefit to the proposing shareholder.

## ANALYSIS

### **I. Introduction.**

Rule 14a-8(i)(7) permits a company to exclude a shareholder proposal from its proxy materials if the proposal relates to the company's "ordinary business operations." According to Release No. 40018 (May 21, 1998), accompanying the 1998 amendments to Rule 14a-8 (the "1998 Release"), the term "ordinary business" is "rooted in the corporate law concept of providing management with flexibility in directing certain core matters involving the company's business and operations." In the 1998 Release, the Commission noted that the underlying policy of the ordinary business exclusion is "to confine the resolution of ordinary business problems to management and the board of directors, since it is impracticable for shareholders to decide how to solve such problems at an annual shareholders meeting." The Commission noted that the "policy underlying the ordinary business exclusion rests on two central considerations. The first relates to the subject matter of the proposal. Certain tasks are so fundamental to management's ability to run a company on a day-to-day basis that they could not, as a practical matter, be subject to direct shareholder oversight." The second consideration stated in the 1998 Release "relates to the degree to which the proposal seeks to 'micro-manage' the company by probing too deeply into matters of a complex nature upon which shareholders, as a group, would not be in a position to make an informed judgment." The Proposal implicates both of these central considerations.

### **II. The Proposal may be excluded under Rule 14a-8(i)(7) because it relates to the Company's product research, development, and testing.**

The Proposal may be excluded pursuant to Rule 14a-8(i)(7) as relating to the Company's ordinary business operations because it attempts to micro-manage the Company's business with respect to the Company's research, development, testing, and use of rail equipment. The Proposal requests that the Company develop, install and test specific technology--resolving that the Company should undertake development of "a kit to convert existing locomotives to fuel cell power" using a "power conversion system, based on fuel cell power" with "diesel reformer, solid oxide fuel cell and waste heat recovery." The Staff has consistently recognized that proposals relating to the complexities of product research, development and testing decisions are incompatible with shareholder action and has permitted their exclusion. For example, in

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Office of Chief Counsel  
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*Marriott International, Inc.* (avail. March 17, 2010), a shareholder proposal asked Marriott to test and install “[s]howerheads that deliver no more than 1.6 gallons per minute (gpm) of flow . . . in several test properties.” In approving Marriott’s no-action request under Rule 14a-8(i)(7), the Staff specifically noted that “though the proposal raises concerns with global warming, the proposal seeks to micromanage the company to such a degree that exclusion of the proposal is appropriate.” The Staff further noted “in particular, that the proposal would require the company to test specific technologies that may be used to reduce energy consumption.” In another instance, *E. I. du Pont de Nemours & Co.* (avail. Mar. 8, 1991), a shareholder proposal sought to accelerate the company’s plans to eliminate production of ozone-damaging chlorofluorocarbons and more aggressively research alternatives. The Staff permitted the exclusion of the proposal, indicating that “the proposal appears directed at those questions concerning the timing, research and marketing decisions that involve matters relating to the conduct of the [c]ompany’s ordinary business operations.” Likewise, *Burlington Northern Santa Fe Corp.* (avail. Jan. 14, 2004) involved a proposal that urged the company’s board to “embrace testing of the Electronic Train Management System,” or alternatively, a cab signaling system for its trains. The Staff permitted exclusion of the proposal under Rule 14a-8(i)(7) because it related to “the development and adaptation of new technology for the company’s operations.” See also *Union Pacific Corp.* (avail. Dec. 16, 1996) (granting relief under Rule 14a-8(i)(7) to exclude a proposal requesting a report on the development and adaptation of a new railroad safety technology because it related to the development of “new technology”); *Chrysler Corp.* (avail. Mar. 3, 1988) (permitting the exclusion of a proposal seeking information on the feasibility of developing a mass produced electric vehicle because the proposal resolved “to engage in product research and development”); *Chrysler Corp.* (avail. Jan. 22, 1986) (permitting the exclusion of a proposal requesting that the company design and mass produce an electric vehicle because it related to “the allocation of funds for corporate research”); *Arizona Public Service Co.* (avail. Feb. 27, 1984) (permitting the exclusion of a proposal seeking a moratorium on certain research because the proposal related to “the amount and location of research and development activities”).

### **III. The Proposal may be excluded under Rule 14a-8(i)(7) because it relates to the Company’s ordinary business matters.**

In addition to micromanaging the Company’s ordinary business operations by calling upon the Company to undertake specific research, development and testing activities, the Proposal also improperly restricts the Company’s choice of potential technologies and, contravening the Commission’s guidance in the 1998 Release, “prob[es] too deeply into matters of a complex nature upon which shareholders, as a group, would not be in a position to make an informed judgment.” Specifically, the Proposal calls on the Company to supplant management’s



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ordinary business judgment by allowing participation by the Company's shareholders in the process of evaluating and choosing the specific types of fuels and locomotive equipment that the Company should use to manage economic and competitive risks related to energy efficiency.

The Company is one of the nation's leading transportation suppliers, operating an average of 1,200 trains per day and managing a network that encompasses about 21,000 route miles of track in 23 states, the District of Columbia and the Canadian provinces of Ontario and Quebec. An integral part of its business is selecting the best approach to moving a wide-range of products across the country in a way that minimizes the effect on the environment, takes traffic off an already congested highway system, and minimizes fuel consumption and transportation costs. In evaluating power sources, the Company's management reviews a variety of criteria, including available fuel sources, capacity, cost, reliability, and compatibility with regulatory requirements. The considerations involving the choice of one fuel type or locomotive technology over another are inherently based on complex business considerations that are outside the knowledge and expertise of shareholders. As a group, the Company's shareholders would not be in a position to make informed judgments about the specific fuel or locomotive technologies that would best suit the needs of the Company and its shareholders. The Staff has permitted companies to exclude proposals dealing with such complex matters in the past. For example, in *WPS Resources Corp.* (avail. Feb. 16, 2001), the Staff concurred with the exclusion of a shareholder proposal requesting that a utility company develop new co-generation facilities and improve energy efficiency because the proposal dealt with "choice of technologies."

**IV. The Proposal is excludable as relating to ordinary business matters even if the proponent were to attempt to recast the proposal as related to a significant social policy issue.**

With the exception of a brief statistical citation about emissions and a statement that the Proposal may result in environmental gains "as a by-product," Mr. Miller does not suggest that the Proposal is intended to raise significant social policy issues. Even if he were to do so, we note that the Staff has consistently recognized that a proposal which inappropriately addresses ordinary business matters may be excluded in its entirety even if it also touches upon a significant social policy issue. For example, in *Marriott International, Inc.* (avail. March 17, 2010), the Staff permitted the exclusion of a shareholder proposal under Rule 14a-8(i)(7) despite the proposal's purported link to global warming:

In our view, although the proposal raises concerns with global warming, the proposal seeks to micromanage the company to such a degree that exclusion of

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## ARNOLD & PORTER LLP

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Office of Chief Counsel  
Division of Corporation Finance  
December 21, 2010  
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the proposal is appropriate. We note, in particular, that the proposal would require the company to test specific technologies that may be used to reduce energy consumption. Accordingly, we will not recommend enforcement action...

The Company believes that the Proposal is excludable under Rule 14a-8(i)(7) regardless of whether the Proposal also tangentially touches on a policy issue because it directly addresses ordinary business issues.

**V. The Proposal may be excluded under Rule 14a-8(i)(4) because it is designed to result in a benefit to the proponent.**

The Company believes that it may also exclude the Proposal under Rule 14a-8(i)(4) because the Proposal is designed to result in a benefit to the shareholder-proponent, Mr. Miller. Pursuant to Rule 14a-8(i)(4), the Company may exclude a shareholder proposal if it "is designed to result in a benefit to [the proposing shareholder], or to further a personal interest, which is not shared by the other shareholders at large." In Release No. 34-19135 (Oct. 14, 1982), the Commission recognized that a proposal may be excluded pursuant to Rule 14a-8(i)(4) even if it is "drafted in such a way that it might relate to matters which may be of general interest to all security holders," if it is "clear from the facts presented by the issuer that the proponent is using the proposal as a tactic designed to . . . further a personal interest." In his letter to the Company introducing the Proposal, Mr. Miller references a copy of his resume "showing, in bold, those portions of [his] experience that specifically relate to [his] proposal." Mr. Miller's resume discloses multiple ties to the energy supply industry, including service as a "consultant" to a company developing fuel cell technology. In addition, the letterhead of Mr. Miller's introductory letter plainly indicates Mr. Miller's status as a "consultant" for a "technology acquisition and utilization" business. The Proposal specifically calls for the development of a "power conversion system based on fuel cell power" and "envision[s] that CSX would undertake this development in partnership with a major solid oxide fuel cell company..." As such, Mr. Miller stands to receive a "benefit" from the Proposal and further his "personal interest" as a consultant. The Proposal should therefore be excluded.

### CONCLUSION

For the reasons set forth above, the Company believes that the Proposal addresses the ordinary business matters of the Company and is designed to further a personal interest, which is not shared by the shareholders at large. The Proposal is thus excludable under Rule 14a-8(i)(7) and Rule 14a-8(i)(4).

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Office of Chief Counsel  
Division of Corporation Finance  
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Pursuant to Staff Legal Bulletin 14C, in order to facilitate transmission of the Staff's response to our request, our facsimile number is (202) 942-5999. Mr. Miller's email address is

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

If you have any questions regarding the subject matter of this letter, please contact the undersigned at (202) 942-5124 or Mark Austin at (904) 359-3167. The Company intends to mail its definitive proxy materials on or about March 21, 2011.

Very truly yours,



Richard E. Baltz

Attachment

cc: William R. Miller  
Shareholder Proponent

Mark Austin  
CSX Corporation

**EXHIBIT A**

**Mr. Miller's Proposal**



## WILLIAM R. MILLER

CONSULTANT

TECHNOLOGY ACQUISITION & UTILIZATION  
BUSINESS & ORGANIZATIONAL DEVELOPMENT

RECEIVED

NOV 8 2010

CSX CORPORATION  
Corporate Secretary Office

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

November 2, 2010

CSX Corporation  
Office of the Corporate Secretary  
500 Water Street C160  
Jacksonville, FL 32202

Dear Sir:

Enclosed is a Stockholder's Proposal that I would like to have included with the Proxy statement for the upcoming 2010 Annual Meeting.

Enclosed is a copy of a letter from TD Ameritrade certifying that I have personally continually held 50 shares of CSX stock since March 7, 2008.

I am also custodian, with voting rights, of an additional 25 shares of CSX stock which I hold in a TD Ameritrade Account for my grandson, Dante Mele. This stock has been held since January 29, 2009.

Enclosed, for background, is a copy of my capsule resume showing, in bold, those portions of my experience that specifically relate to this proposal.

Since the cost of implementing this proposal might have some effect on profits in the short term, it would appear that any CSX executive, who is on a short term incentive compensation plan (who might therefore be impacted), should recuse themselves from making decisions related to this proposal.

Sincerely,

Handwritten signature of William R. Miller

William R. Miller

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

Resolved: that CSX should undertake to develop a kit that would allow CSX to convert the majority of its locomotive fleet over to a far more efficient power conversion system, based on fuel cell power, by 2025.

Technology exists to develop a kit to convert existing locomotives to fuel cell power. Such a system, with diesel reformer, solid oxide fuel cell and waste heat recovery can produce conversion efficiencies approaching twice that of existing diesel electric plants. This, combined with the fuel cells far lower fuel consumption at idle or light loads, holds out the promise of cutting fuel consumption in half.

CSX spent \$1.66 billion on fuel for its locomotives in 2008 (which required 75 million barrels of crude oil to produce)

If it had already been fully implemented, this plan could have:

Increased after tax earnings about \$1.50/share

Reduced CSX's CO2 footprint by 50%

Reduced CSX's NOx pollution by 80%

Reduced US oil imports by 1%

Since the average locomotive is in use for 20 years, CSX can get the benefit much faster by converting its existing fleet rather than wait until new fuel cell locomotives are coming off the assembly line and taking 20 years after that to complete the changeover. This alternative is possible because the solid oxide fuel cell and the other auxiliaries are compact enough to fit in the volume vacated by the diesel engine/generator.

By designing the conversion to include a reformer that extracts the hydrogen from the diesel fuel (to feed the fuel cell), the fuel cell powered locomotives can operate on the same diesel fueling infrastructure as the existing locomotives during the swap out.

It would be envisioned that CSX would undertake this development in partnership with a major solid oxide fuel cell company and a major locomotive manufacturer (or remanufacturer). In all probability,

Miller Page 2 of 2

substantial matching funds would be available through the DOE and DOT for at least the feasibility portion of the work. CSX could also recover development costs by selling the kits to other railroads since most railroads use the same locomotive models.

Initially, the cost of converting the locomotives will be high until the production of kits gets into the hundreds. However, since the average CSX locomotive in 2008 burned about \$400,000 worth of fuel, the payback in cutting that in half is rapid.

Any organization or individual investing in CSX for the long term and who enjoys the prospect of large, long term paybacks, should vote for this action. As a byproduct, it also is a major contributor to the environment and to energy conservation.

Short term speculators in the stock will probably vote against this plan.



4600 Alliance Gateway Freeway, Fort Worth, TX 76177 | [tdameritrade.com](http://tdameritrade.com)

November 20, 2009

Mr. William Miller

\*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

RE: CSX Stock Holding for account ending in \*\*\*FISMA & OMB Memorandum M-07-16\*\*\*

Mr. Miller,

I am writing per your request concerning your holding of CSX Corporation (CSX) stock. You purchased 5 shares on February 20, 2007 while this account was held by TD Waterhouse. These were transferred to the current account number in May 2007 with the completion of the merger of TD Waterhouse into TD AMERITRADE. You purchased an additional 45 shares on March 7, 2008. You have held a total of 50 shares of CSX continuously since March 7, 2008.

If you have any questions, please do not hesitate to call 1-800-669-3900 or by secure e-mail from the Message Center of your account. Thank you for choosing TD AMERITRADE.

Mark Cowan  
Client Services, TD AMERITRADE  
A division of TD AMERITRADE, Inc.



## WILLIAM R. MILLER

Summary -Fifty years plus of diverse business experience with thirty-two years of professional management experience including sixteen years as corporate officer of major corporations. Experience spanned a wide range of business sizes, technologies and position assignments.

- 2004 to 2006 – Consultant (under contract) to the DentaleZ Group of JEP Management, Inc.  
(Last assignment – development of a potential new dental operatory light based on LED technology)
- 1997 to 2002 - Consultant to the Power Systems Group of Kohler Company (Last major assignment – Fuel cell feasibility study for peaking and distributed generation applications)
- 1996 to 2001 – President – ImageSource, Inc. (Small start-up company in hi-tech lighting)
- 1993 to present - Consultant - Business Development and Technology Acquisition & Utilization
- 1988 to 1993 - Chief Corporate Development Officer & C.T.O. - Welch Allyn, manufacturer of diagnostic instruments, exam lights, bar code scanners, miniature lamps and video inspection devices. Continued as a consultant to Welch Allyn until 1994
- 1987 to 1988 - President - Advanced Biotech (Start up) – H<sub>2</sub>O<sub>2</sub> gas sterilization technology\*)
- 1976 to 1987 - Vice President, R&D - American Sterilizer Co. (see product list below)
- 1972 to 1976 - General Manager, Systems Division & President of the Guilbert Subsidiary, both part of the American Sterilizer Co., manufacturer of hospital capital equipment (tables, lights, sterilizers, etc)
- 1972 to 1986 - Owner - Armor Electric, (Large, Erie area, remanufacturer and distributor of electric motors, pumps & controls)
- 1954 to 1971 - G.E. - Individual contributor positions followed by management assignments, all related to electrical machinery and controls, last as the Manager of Engineering in the Propulsion Equipment Dept. (Electrical motors and generators for locomotives, transit cars and electric wheels)
- 1952 to 1954 – USAF - Project Officer - Electronic Warfare
- 1952 B.S. & M.S. - Electrical Engineering, M.I.T. (Including Co-op program with G.E)

### OUTSIDE ORGANIZATIONS

Overall Advisory Bd. & R&D Panel - Adv. Tech'y. Center of Central & NW PA (Penn State) to 1987  
Co-founder - Gannon University Engineering Advisory Council -1976 to 1987  
N.Y. State Science & Technology Foundation Review Panel - 1991 to 1993  
Board of Directors - NY Photonics Development Corp. - 1989 to 1993  
Co-author -"Erie 2000" Study for Erie Conference on Community Development  
Chairman - Upstate NY Technology Study for Syracuse Metropolitan Development Authority  
Licensing Executives Society - 1988-1994

### RECOGNITION & ACHIEVEMENTS

Professional Engineer -PA (Ret.) Author: "*Change Creators and Momentum Maximizers*" (2003)  
Twenty patents Author: Hymn "*Winter*" (2004) Mediation Cert. -Franklin Pierce Law Center  
Who's Who in the East Who's Who in Science & Engineering Capt. USAF Res. (Ret.)