

THE ACADEMY OF ELECTRICAL CONTRACTING

**Paper Presented by
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New Management Tools For The Nineties

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Good morning! I am a new member of the Academy having been elected and installed at the Dallas National Convention in 1986.

I am not, however, exactly a neophyte in matters relating to the National Electrical Contractors Association. I attended my first District One meeting in Atlantic City in 1950. I have known every District One Vice President from A. Lincoln Bush to Morton Hoffman.

At the 1950 meeting, I was given an education by a marvelous Boston gentleman; Al Frank, who many of you may have known. Seeing me scribbling notes furiously during the NECA presentations, he said in his characteristically raspy voice:

"Listen, kid, I'll tell you all you need to know about NECA.

"The President is a contractor who has made so much money at the business he calls it the industry.

"The Vice Presidents are eleven guys who want to be President.

"You can tell who is on the staff at Washington because they always refer to NECA as the 'National Association' which is the National Electrical Contractors Association without the electrical contractors and that is how the staff would like it to be."

The passing years have demonstrated time and again the wisdom of his analysis.

When Mike Thompson asked me to present a paper at this meeting, he was kind enough to send me a list of the papers which had been presented at the previous meetings, as well as copies of many of them. This list, which comprises some forty-eight presentations at the 18 previous meetings, is heavily weighted towards subjects of retirement and management succession. Feeling you have been well and fully advised on those matters, I intend to speak on management tools for the 90's.

The three areas I commend to your attention are the FAX machine, the beginning on a company drug policy, and the value of aptitude measurement in considering employees for training and/or management potential. If you were making a martini, the facts about FAX would be the vermouth, drug policy would be the olive or twist, and aptitude testing would be the gin. Truth in packaging.

The FAX machine has been available for over a century, but only in recent years have technological advances permitted the cost to be lowered so drastically that a FAX is viable for companies of any size. I recently installed one in my home and find it saves me a great deal of time.

Alexander Bain prided himself as a Scottish clock-maker, but his greatest accomplishment occurred in 1842 when he created the first operational facsimile machine. Although it did not immediately impact the "office" of that time, it has since been hailed as the machine that initiated the concept of electronic mail.

Facsimile, commonly known as FAX, is traditionally used for sending printed and graphic information from one location to another by producing an image

replica or facsimile of that information. The distance of communication can be across the room or across the world.

Facsimile devices combine photocopying technology and telephone communications to deliver copies remotely. There are three basic steps in a facsimile transmission:

1. The original document is placed on or into a platen of the facsimile machine. A light source scans the black, white and grey images on the input document, converting information into an electrical representation (signal) that is transmitted over telephone lines to a receiving FAX device.

2. The receiving unit converts the electronic message to its original form.

3. A printing device is activated to produce an exact copy (facsimile) of the received document.

The most important advantage of facsimile over telex is that information does not have to be keyed into the system, thereby eliminating inaccurate keyboard entries. Also, telex is limited to text materials that can be transcribed on a keyboard. The advantage of facsimile over optical character recognition (OCR) is that any kind of document can be transmitted. Most OCR systems "read" only a limited number of typefaces.

With facsimile, practically anything goes, such as typewritten or printed materials (regardless of language, including such non-English character sets as Arabic and Japanese), handwritten notes, signatures, graphics, artwork, photographs, maps, drawings or engineering designs. Anything that can be copied on a conventional copier can be FAXed.

There are two basic types of facsimile systems: analog and digital. Analog, the older of the two, is only capable of low-speed transmission of documents. A low-speed transmission would typically entail from two to six minutes for each page. An analog facsimile device scans an entire document, including blank spaces. Information is scanned line-by-line at a constant speed and transformed into a continuous wave form similar to that of a sound wave. Using analog compression methods, some units skip lines and thereby reduce transmission time to about a minute per page.

Digital devices are much faster. Transmission speeds for a page run as low as 20 seconds. Messages are converted into a digital on/off code, or binary electronic signal, as in computers, with a 0 bit = white and 1 bit = black images. In this process, scanners "read" the difference between black and white images and compress white spaces on a page. This reduces telephone time for a transmission, making the corresponding transmission cost considerably lower. Digital telecommunication networks also have a lower error rate in transmission than analog.

Another advantage of digital transmission is that all digital machines can "talk" to each other. Most analog telex systems can only talk to similar types of equipment.

Facsimile is truly a "turnkey" technology. To get started, you only need an electrical outlet and a telephone line. Most facsimile devices are easy to learn and operate. They require only minimal training and can operate unattended.

There are facsimile devices suited for practically every business need and size of operation. Applications are almost unlimited and facsimile devices are available from a large number of manufacturers.

Capabilities of facsimile devices include those that can be set for automatic dial up of one or several receiving stations for unattended transmission of documents to multi-locations at anytime during a 24 hour period. Such devices are used for transmissions at lower after-hour rates or across national or international time zones. Some units have activity reporting features, such as time and date of a message, number of pages received, the identity of the sending terminal, as well as automatic reduction of oversized documents. There are also new types of software-based facsimile units using "store and forward" technology, providing interfact for personal computers and word processors throughout the world.

By 1990, Facsimile is expected to become the major form of electronic mail in competition with the regular mail system. A recent article in *Business Week* said that over half of the telephone transmission between Japan and the United States is facsimile. Clearly, FAX is an idea whose time is now.

The shortest item of discussion is the most important: There is an urgent need for your company to develop and adopt a substance abuse policy. Drugs and alcohol are massive problems in the workplace with estimates that 1 worker in 6 has a serious problem.

Why, then, only a brief report? Substance abuse is an entire culture and each of you probably have an entirely unique knowledge of and involvement in a corporate policy.

It is well established that some people are listeners and some are readers. To assume any announced message or printed bulletin will communicate to everyone is not realistic.

Accordingly, for those of you wishing to know more about drugs and alcohol policies, there is both a toll-free number and information on an excellent book published by the Edison Electric Institute.

Toll free number:

National Institute on Drug Abuse Workplace Hotline

(800)843-4971

Textbook:

Edison Electric Institute Guide to Drugs and Alcohol

Publication Number 078546

1111 19th St., N.W., Washington, D.C. 20036

(202) 778-6400

\$15.00 per copy ppd.

Listen or read. Please don't do neither.

The third entree on our menu is aptitude testing. Another idea that has been with us for over a half century but constant refinement has made it more useful for the Nineties.

Why should you measure aptitudes? Well, this season in the National Basketball Association, there are __ players six feet and under, and __ players seven feet and over. Clearly, if you owned an NBA franchise, you would measure the height of prospective players. While height alone would not assure you of quality players, it is a measurement that would be in your best interest to know.

Aptitudes are natural talents, special abilities for doing, or learning to do certain kinds of things easily. Manual dexterity, music, spatial visualization, and memory for numbers are examples of such aptitudes.

Aptitude measurements are *NOT* intelligence tests. Unlike an IQ score which is of little value in career selection, test results provide information about a person's various strengths and weaknesses. Two people can have identical IQ scores, but very different aptitude patterns.

The aptitude testing organization which I have found to be a valuable management data bank is the Johnson O'Connor Research Foundation which was founded in 1922. They principally offer testing in 15 major cities, and the address and telephone numbers of those 15 offices appear in Appendix A in this paper.

The current fee is \$450 for four 3-1/2 hour sessions, which can be taken in any time periods convenient to you. Most people take the tests in a morning and afternoon session on two consecutive days, but this is not necessary, if another schedule would suit you better.

The Foundation has isolated 18 aptitudes. The test, which the foundation prefers to call "worksamples" since they simulate work-related tasks, are given during three morning or afternoon sessions.

There is also a test for vocabulary, which the foundation considers essential to success in every job.

During the three testing sessions, which many people consider fun, you will listen to tapes of musical tones, fool with building blocks, fold and unfold paper, and try to learn strange words—all for specific reasons.

But there are no right or wrong answers and, unlike school tests, a low score can sometimes be an asset. In fact, the foundation has found that having too many aptitudes can be a liability since few jobs use more than three or four.

The most heavily emphasized aptitude is called

structural visualization, an O'Connor term for the ability to think in three dimensions. There are two tests for this.

In one, you are asked to recreate a cube which has been sliced into odd-shaped pieces. In the other, you are handed a folded paper with an imaginary hole and have to figure out where the hole would be when the paper is unfolded.

People with high scores here make good engineers, architects, and doctors.

If you don't have the structural aptitude, you are considered an abstract thinker. The O'Connor foundation believes everyone is one or the other. There is no test for abstract thinking but if you score low on the structural test, you are given a high score here and would be better as a manager, executive, accountant or salesman.

To use the foundation well requires that management understands the aptitudes measured and that the person being treated understands this is not a high score/low score or pass/fail set of tests.

It should be valuable data for both management and employees to have a realistic basis for future expectations.

If you have no questions on any of the three areas discussed, I will be available to discuss more important matters such as Holy Cross football in 1986-1988 and Holy Cross basketball which won the NCAA championship in 1947 with only 1,600 students and no gymnasium.

Thank you for your attention and courtesy.

Appendix A

The Johnson O'Connor Research Foundation is called the Human Engineering Laboratory at the Boston Test Center Only.

Atlanta

3400 Peachtree Road, N.E., Suite 1511
Atlanta, GA 30326
(404) 261-8013

Boston

347 Beacon Street
Boston, MA 02116
(617) 536-0409

Chicago

161 East Erie Street
Chicago, IL 60611
(312) 787-9141

Denver

3545 South Tamarac Drive, Suite 150
Denver, CO 80237
(303) 694-3351

Fort Worth

650 South Henderson Street
Fort Worth, TX 76104
(817) 335-1867

Houston

2077 South Gessner, Suite 210
Houston, TX 77063
(713) 783-3411

Los Angeles

3400 West Sixth Street, Suite 307
Los Angeles, CA 90020
(213) 380-1947

New Orleans

1001 Howard Avenue, Suite 3800
New Orleans, LA 70113
(504) 524-6239

New York

11 East 62nd Street
New York, NY 10021
(202) 838-0550

Philadelphia

1500 Chestnut Street, Suite 1704
Philadelphia, PA 19102
(215) 567-0154

San Diego

402 Camino del Rio South, Suite 300
San Diego, CA 92108
(619) 297-1823

San Francisco

701 Sutter Street, 2nd Floor
San Francisco, CA 94109
(415) 885-3003

Seattle

1218 Third Avenue, Suite 900
Seattle, WA 98101
(206) 623-4070

Tulsa

6804 South Canton, Suite 400
Tulsa, OK 74136
(918) 492-2927

Washington, D.C.

121 Second Street, N.E.
Washington, D.C. 20002
(202) 547-3922