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Editorial

I am sure you are disappointed and dismayed by seeing so much of the "same old stuff" in our publications. I think most of us would like to see papers about what is new, how others are using VE/VA, the modifications that others have used that were successful in their situations.

You, the members of our organization, are the ones that can provide this information. A paper need not be long nor need it be scholarly footnoted with references. Surely you have one or two "tricks-of-the-trade" that work for you and that you are willing to share with all of us. Write about it! We want your ideas. If you are concerned that you do not write well, remember that that is what editors are for - to help writers revise their papers to make them acceptable. The editors will correct your grammar, spelling and punctuation and suggest changes to give your idea the most impact.

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VA - A Purchasing Technique
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The first of three pertinent questions to be addressed is: "How does the buyer find time to determine the functions needed and the proper price to pay for those functions?"

We must first realize that the buyer must allot time to each phase and segment of his job. Time must be spent on negotiating, expediting, order placement, vendor ratings, rejected materials, etc.

VA is a Purchasing Technique that is all too often excluded from the buyer's duties. The excuse being that there just is not enough time to value analyze and "buy function." The reason being that VA is not understood by the buyer or possibly even by top management. VA should rank equal to negotiating and must become an integral part of any successful negotiation.

In an inflationary economy, we recognize the limits to our efforts to hold or reduce prices. If we approach price reduction by squeezing a vendors profits beyond a reasonable point, that supplier will lose his effectiveness and potential value.

VA can be the one big hope for sizable cost reduction and product improvement. VA should be considered an investment by the buyer. There are few buyers in the 8 to 5 category. Some of the overtime would be well invested (or eliminated) by the successful use of VA principles. VA has its rewards not only in its basic function of providing profit but also as a return on investment of time itself. It solves problems faster and more accurately, helps the buyer reach his objectives quicker, causes the job to be done right, and does not require the time to re-do the job. VA becomes a real "Freedom Machine."

A good place to start in your search for time is to VA the purchasing department or even your own specific buying responsibility. If this has not been done recently with the full job plan approach, it could yield up to 35% saving in efficiency. Do not pass lightly over the information phase. This is the foundation for all the other steps to be followed. Examine your sales interviews, expediting procedures, quotation requests, phone usage, plant visitations, delegation of work load, to name a few.

The average purchasing department spends 50 to 65% of the company's dollars. No area has more potential than "Purchasing." It is important that management know and understand purchasing VA goals. Management is not automatically sold! They have seen or experienced classic VA failures. Management must be given factual information as to exactly what can be expected of a VA program. They must have confidence that you know how to apply and utilize VA.

In some cases, an appropriate way to start is to have a professional VA consultant firm train and establish a VA program for you. Here again the investment can provide high return in time as well as profit.

"The demands of my job are so great that I do not have time for VA" is an empty and invalid statement. As empty as saying, "I do not have time to get quotations," or "I do not have time to negotiate." You have the time if you use what you have wisely. Invest it in VA. You can make it happen!

Here is one way it was made to happen. Engineering and Purchasing wanted to VA a "works assembly" (black box approach) using teams 2 hours per day for several weeks. Top management said NO! The next request was that the teams donate 1 hour (7:00 to 8:00 am) if the company would donate 1 hour (8:00 to 9:00 am). The company said YES! The result: 50¢ savings per assembly; annual production approximately 1 million, AN INVESTMENT OF TIME. Incidentally, the team found one part that had no function — it was added as a fix to correct a malfunction. When a design correction was made, the part was not deleted. After VA, purchasing no longer had to buy this part.

Here is another example of VA time well invested that saved time for the buyer to apply to many other projects. Problem: Pumps (condensate) damaged in shipment. Complaint initiated by the Sales Department. Procedure: Buy what was specified — buy or build skid, depending on configuration. Bolt pump to skid, build wooden frame around the pump. This wooden fortress was ideal for stacking other merchandise (in spite of DO NOT STACK labels). Lift trucks rammed the mighty fortress with other freight. Result: damaged controls and appendages to the pump on arrival. Solution: Decision to look at the function costs. Not all the bright ideas came from purchasing. Many departments and vendors were involved.

A complete reversal of thought emerged on how to protect a product. Let the product be exposed in full view showing its delicate components. Pumps of various sizes and configurations were placed on a wood skid (or in many cases a new 4 way composition skid at less cost) banded instead of bolted, and covered with a heat shrink bag. These units are impossible to stack. The controls loom out at the material handlers and ward off any onslaught. The units are dust, dirt, and moisture protected. The problem was solved, purchased parts decreased, inventory of lumber drastically reduced, and many other fringe benefits. The cost of packing reduced by a conservative 75% (labor and material). This investment
of time provided many hours of time saved for the buyer to apply to other "Buy Function" efforts.

VA was born and developed in purchasing because of needs, not the least of these being TIME SAVINGS. When management decrees a cost reduction on purchase parts, remember the shortest distance to that end is to "Buy Function." Only you can make it HAPPEN!

The second question for consideration is: How does the buyer get to know some key function needs of engineering and manufacturing, so that he can bring in "know how?"

It is important to understand that these needs exist and that the purchasing function should assume the responsibility to fulfill a large measure of these needs.

In addition to being a profit center, purchasing must consider itself the "hub" of a big wheel with its services going out the spokes to various areas and departments.

To be of real service, it is paramount to establish good rapport and earn credibility.

Purchasing should approach engineering and manufacturing, starting at the top. Full cooperation and service should be pledged to them. With the help of appropriate personnel, identify the functional needs of R & D, design engineering, tool engineering, project engineering, and each area of manufacturing including the requisitioning of maintenance, repair and operating supplies.

Have meetings at various levels to learn in some depth what technical assistance is required including costs, technology requirements, new and alternate materials, new manufacturing processes, etc.

As a supplement to personal contact, provide a simple form to encourage and make it convenient for the person to explain assistance required.

In many cases the requisition is a "cry for help" rather than a request to purchase a specific item. The requisition very often points to the need, the person, and the department.

Here is an example. A requisition called for 12 dozen small diameter drills. Why so many? It has been an unusually short time since the last requisition for this same item. Why? An investigation revealed that the drills break in the cast iron while drilling holes for drive pins which fasten nameplates.

Information indicated drills should have been inserted further into the drill chuck. This would help reduce the usage, but left a question: "Is this the best way to perform the function of fastening nameplates?" Creative thinking followed, vendors with alternate methods were called in, such as those with special adhesive backed nameplates and alternate fastening methods. After many alternatives were examined and functions evaluated, including function cost, an automatic drive pin setter was purchased that required no drilled holes. The problem spurred an investigation. Function identity provided the answer. The answer saved dollars and time for all involved. The success of this particular analysis was passed on to other company divisions to provide further saving.

VA often has its greatest opportunity when used in before applications, before the tooling is finalized and committed for. The buyer has the expertise and connections to bring in the experts from a wide field of sources.

Many times, depending on company policy, engineering determines source approval. For certain products, it is important that purchasing criteria be included and determined at the same time. The technical assistance that is brought in to develop parts and products should be compatible to all parties involved.

Manufacturing, Quality Control, and Engineering reports are often a good clue to a need in those areas. Examples are engineering test reports, quality audits, rework and salvage reports, scrap reports, labor reports, etc.

Here is an illustration where a too stringent specification caused the rejection and return to the vendor of over 50% of the shipments of a torsion detent spring. A specification on the print called for 100,000 life cycles.

The vendor failed to meet this specification (thousands of springs had been rejected). Tighter vendor inspection, different manufacturing process, different grades of wire, all proved unsuccessful.

The vendor of the spring and technical people from the wire sources were brought in for consultation with engineering and quality control. The function of the spring was (only) to insure detent. Normally the momentum generated through the shut-off cycle would carry the shut-off mechanism into detent. On rare occasions the torsion spring was necessary to provide the extra force for positive detent.

After investigation, it was found that no significant amount of the springs were breaking from fatigue before 22,000 cycles. It was further determined that 50,000 cycles equaled the life of the assembly. The problem was solved by changing the print. Though the solution was simple, it was not until after the need was satisfied by bringing in "know how" that those concerned were convinced that it was not cost practical to re-design or develop a spring that would provide 100,000 cycles.

Probably the most important method of all for "getting to know" some of the key function needs of engineering and manufacturing is the art of getting out of your chair, going to where the action is, listening, thinking, and taking action.

The final question looks at some step-by-step buying procedures, using VA principles, which have worked well.

1. Challenge all high cost items. This is usually fertile ground and very often hidden or unnecessary cost are involved.

Example: Being new and curious the buyer wondered why a high cost gate valve was used. Competitive quotes revealed the price to be in line. A short walk to the production area and a talk with the foreman showed that the gate valve was installed between the pump and the holding tank and the function was to shut off water so that the pump could be removed for repair without draining the tank which might have up to 1500 gallons of water. The buyer asked how frequently this valve was turned off, the answer was maybe once in 5 years, maybe less often. The next purchase was a plug valve, at 75% savings.
2. Have a quotation request procedure to help the buyer buy function. Many suppliers are wary of straying from the print unless encouraged by the buyer. It is the buyer's responsibility to supply all the necessary information so that the vendor can offer an intelligent quotation. In many cases, a VA questionnaire can be included with the quotation request that encourages suggestions.

When sending quotation requests to proven reliable suppliers, also send quotations to sources that have different methods of fabrication, different or alternate materials, similar proprietary items, etc.

Get vendor expertise to fill the functional requirement. Remember that the print can be changed if the function is provided.

3. Get the vendor on your VA team. Even if your company does not have a formal VE program, you and your vendor can make a great team and actually VA a suspect part or assembly.

Example: A proprietary hydraulic breather assembly was specified ($1.25 ea.). The price was competitive but seemed high for the function performed. A vendor representative, known for his interest and success in VA, was asked to participate as a two man team with the buyer. Both buyer and sales representative had worked on similar products. Using the basic job plan and in a minimum amount of time, a new breather was developed with the help of engineering, sales, and manufacturing departments. The cost of the new breather was $2.64 each. The basic function was kept intact and unnecessary secondary functions eliminated. The material was changed and instead of the vendor's nomenclature and name appearing on the cap, the customer's name was included in the tooling. Tooling cost was $3,500.00 for a die and was amortized over the first production release.

The vendor reward in this case was being awarded the job. In other cases the vendor can be encouraged to participate by offering him a percentage of the savings.

4. Analyze and compare printed specifications with vendor quotations.

A. Analyze cost increments.

Examine the cost build up as a part or an assembly is manufactured. Observe the conversion costs in processing raw material through each change to its final state. Where are the biggest increments of cost occurring? Do they point to an opportunity for further analysis?

B. Analyze cost per pound.

This technique should be widely known and most frequently used in industry. It is one that can be consistently used to save money simply and quickly. Use high cost per pound to signal the trouble spots.

C. Analyze cost per dimension.

High cost per pound is not the correct frame of reference for every problem. Where length, area and volume are significant items for comparison, these features can prove useful in the analysis of cost.

D. Analyze cost per property.

In this technique, the significant properties of materials and functional assemblies are analyzed. Since properties allow materials to perform functions, this is a natural stepping stone to function and the evaluation of function.

E. Analyze cost of tolerances and finishes.

This might be considered as part of the item above, but because of its important influence on cost, it is listed separately. Overly tight tolerances often result in unnecessary cost. Analyze key tolerances and specifications for finishes to determine whether a relaxation is possible that will permit less expensive manufacturing.

For example you discover an item whose cost is out of proportion to the function it performs. Perhaps this part could be redesigned or an alternate material could be used. These are obvious solutions to high cost. But suppose you examine these possibilities and still cannot envision a cost reduction. With a little more digging you may discover that the cost of this part skycrackets during final machining. You have hit on one of the most costly and often repeated types of over-design-finishes and tolerances.

The above are just a few of the steps and examples to buying function. They are simple, but they are effective.

In trying to achieve better value, it is important to have confidence that it can be done. The attitude that when costs are too high something can be done about it must prevail if effective action is to be taken. Almost everything being produced today could be replaced by something that would perform the same function equally well or better, at lower cost. Techniques are only tools to help achieve better value. No matter what the product or service, high or low volume, light or heavy - defining and evaluating the function is one of your most effective tools to use in developing a better more reliable product that can be produced at lower cost.

SUCCESS!

"SUCCESS HAS MANY PARENTS BUT FAILURE BECOMES AN ORPHAN"

What is success? All individuals have their own definition of success and their own methods of measuring its accomplishment. This is why one person's definition of success could be considered a failure by others.

The line between success and failure is often very slim. Yet, in most discussions on the subject, very little is said about the basic principles that lead to its accomplishment.

The basic principles are simple to state but difficult for some to put into practice. They are:

- Individuals must first determine what they consider success for themselves,
- then establish a plan, with contingencies, to achieve this success,
- put this plan into action, working with others, to bring it to eventual fruition.

Continued on Page 23
VALUE ANALYSIS v/s VALUE PARALYSIS-
The following criteria can help insure a successful value program.

1) VE/VA must start from the top. Top management must institute, understand, and believe in it.

2) All levels of management must be trained in the fundamentals in descending order.

3) The Value Manager in small companies should report to the General Manager and in larger companies to the Controller (where the dollars are counted and audited).

4) The VE/VA effort should be directed at both “after the fact” and “before the fact” with eventual emphasis on “before the fact”.

5) Design the program so that department managers seek involvement to meet their VE/VA budgets.

6) Be careful not to be too extravagant with VE credits for doing one’s own routine job as this can boomerang and cause departmental rifts.

7) Finally, be very conservative with reporting savings, making sure every reported savings is a result of a VE team effort.

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Larry Miles
Sedgefield, Easton, Maryland
(Reprinted [abridged] 1980 SAVE Conference Proceedings)

GETTING THE BUYER INTERESTED IN THE VA APPROACH

A Value Analyst located the buyer of materials for 12 huge waterpower hydro-electric equipments. He asked “have you yet ordered the materials for the job”? The buyer answered, “some of it, I’m in the process of getting the orders out now.” Then followed conversations and actions which were to benefit the company earnings over $100,000.

VA. The company had very severe off-shore competition on that job and to get the job, made a very low bid. We told the sales department that we would help them keep the quality and get some lower costs. Now it’s time for us to do it — starting with the purchase of the materials. Have you ordered the \( \frac{1}{2} '' \times 2'' \) copper bus which the factory fabricates into windings for the generators?

Buyer. No, we haven’t sent them out. We have the specifications and the material list. We have quotations. They are ready to go. As you know they use 1500' on each of the 12 equipments. That size of material is available in 300' maximum lengths. We will be ordering 60 lengths to make up the 12 1500' windings.

CONCENTRATING THE BUYER’S ATTENTION ON THE FUNCTION

VA. Do you mind if we use the VA approach on all of the material for this job? I’d like to help you learn it and help you do it. It concentrates attention on the function or use or purpose of what we buy. What does it do for us? Then it associates all costs with “what it does.” We relate this usefulness or function directly with what you pay for it, and what we must later add to make it fully useful. We call that identifying the function and evaluating the function, i.e. putting a value in dollars on what it’s going to cost to get that job done — at that stage of the thinking. Then with that in mind we search very hard for means, costing less, to achieve it.

Buyer. If it pays off and doesn’t load us up, or delay the job too much, I’m for it.

VALUE ANALYST AND BUYER GATHER INFORMATION ON PRESENT METHODS

They walked through the factory and saw the equipment for uncoiling and handling the copper bus. They saw a large area for feeding the bus into equipments which shaped and cleaned the ends and facilitated silver brazing the pieces together, followed by reshaping and cleaning, an exacting and costly operation. The VA said, all of these costs go to produce one function, conduct electric current. Other costs are for the functions of shaping it so it will perform on the alternator and insulating it so it can be mounted in the equipment. Now we take a tight look at each function with the question, “how can we perform all of the functions without all of the cost”?

The buyer was already catching the spirit and technique of it.

Buyer. All of that silver brazing work and expense really doesn’t do anything for us, doesn’t provide any useful function. It is needed because they ship it in short pieces. Still the standardized materials handbook lists 300' as the maximum for those large sizes. I expect they make it in a continuous mill. I wonder why they cut it off, I’ll find out.

FINDING A BETTER METHOD

At the copper mill, the buyer saw, as he had expected, the bus coming out in continuous length, then a flying shear cut it into 300' lengths. He made contact with the decision making management at the mill, told them of the need for 1500' lengths, and discussed with them what he called their anti-function treatment of the piece, in cutting it into small lengths. They checked the mechanics of it. They found that a 1500' length of that particular size would wind nicely onto a skid. Next day they made one. Next week it was in the buyer’s factory. All of the costs and concerns and inspections of the entire silver brazing operation were ended. Manufacturing could be condensed and streamlined. It handled so well for the copper mill that they lowered the base price of the copper.

BUYER SEES THE GREAT BENEFITS FROM THE FUNCTION APPROACH

VA. That’s what we mean by a buyer buying function. He makes it his job to see that each cost is necessary to help provide a wanted function.

Buyer. That worked fine. I can probably do it on the smaller items.

VA. Small items of course, but why not the big items where the dollars are? Buyer. They are covered by specifications and drawings and tests. They are too involved for a buyer to get into. For example a flanged steel shaft which is 3' in diameter and 30' long with a 6' diameter flange on one end. It costs about $1.00/lb. as a rough machined forging. Dimension, structure, analysis, everything is thoroughly specified.
Only two places in the country can make it. Only one of them quoted on it. Its not sensible, or even possible for a buyer to get involved and to make things better instead of worse, is it?

V4. The buyer has a simple, practical, powerful tool that is not necessarily used by anyone else—paying money only for wanted function. Have you placed the order for the shafts?

Buyer. No, I'm working out details of shipment, but I must order them now.

VALUE ANALYST SHOWS HOW THE FUNCTION APPROACH CAN BE APPLIED TO THE BIG JOBS

V4. The “Function” approach works just as well where the real money is, as elsewhere. Let’s use it while buying the shaft. Always the first thought is, what function does it provide? We know that it mounts and supports the alternator windings and connects them to the waterwheel. There are two function studies that often help. The first is “Particle” function study. We raise the question, “Exactly what function is each particle of material performing”? The answer obviously is one or both of two functions — resist deflection and/or transmit torque.

Buyer. O.K., now what?

“PARTICLE FUNCTION” IS INTRODUCED

V4. We know that since we buy it by weight, we are paying for every particle of steel everywhere in the shaft. Is each particle either transmitting torque or resisting deflection?

Buyer. No, obviously those particles in the exact center neither resist deflection nor transmit much torque, the stiffness and the “turning strength” are provided by the outer portions of the shaft. As a matter of fact there is a 6’” dia. hole through the center. It’s put there so x-ray equipment can be pushed through to detect any flaws in the steel.

V4. Good, but why is the hole only 6” dia.? Did the engineers believe the remaining center steel was functioning usefully?

Buyer. I’ll find out.

He phoned. He was told that the hole was kept small to minimize the cost of machining out the hole, and that the steel in the center didn’t contribute useful function anyhow. He said that for performance the hole could be as well be larger.

V4. He’s told us what we suspected, that we’re buying, transporting and handling a lot of steel that isn’t doing us any good. Now let’s ask him to give it a technical check and see how much we could remove from the center without effecting performance or safety. A 1” dia. hole would take out 4 times as much steel as a 6” hole. Then we’ll know our functional need, and we can discuss getting it with our supplier.

The laboratory reported that a 15” diameter hole would be suitable. The buyer requested an alternative quotation based upon the 15” diameter center hole instead of the 6” diameter. He was astonished when the quotation was the same identical cost per lb. The vendor said that “it makes no difference to use the size of the hole. We take it out in one cut by trepanning anyhow”.

The buyer had, on the large involved item, by function technique, removed tens of thousands of dollars of “un-functioning” cost. Meanwhile discussions of the second function study were proceeding.

“SPECIFICATION FUNCTION ANALYSIS” IS INTRODUCED

V4. The 2nd very productive function study technique you’ll always want to use is called “Specification Function Analysis”. Let’s try it on the shaft. We know that drawings and specifications are to tell the supplier what to provide and to make sure they will function when received. Many are basic, while many, in different ways make the material more costly for the supplier, and thus for us. Some specific specifications cause increases in cost, and presumably bring some specific function which would not be assured without that cost. This study identifies exactly what added function is provided and relates it to exactly how much cost is added by it. On the flanged shaft, ask the supplier what tolerances are adding cost, and how much is added.

Buyer. There is no cost added by any tolerance specification, as a matter of fact, we buy it rough machined. It is just a straight round 3” diameter bar of steel, with a flange on the end — and of course the hole through the center.

V4. Good, but I wonder if we’re buying any substantial amount of particles of steel which will become non-functioning, on the outside of the bar, because they are machined off. Let’s look at the drawing of the finished size overall, and see if that would increase the cost of the rough machining.

This showed long sections that were machined down several inches, leaving flanges and shoulders for part mounting.

Buyer. They rough machine to within ½” dimension. I’ll get a rough sketch of the shaft allowing ½” over the finished size overall, and see if that would increase the cost of the rough machining.

The vendor stated that turning the outside of the shaft to the desired contour, as long as the ½” tolerance remained, posed no problem, and the price per lb. would remain the same. As the result of the buyers function thinking and work, a new drawing was made which showed contours needed. Each 1000 lbs. off saved $1,000, also freight and in-house machining.

BUYERS UNDERSTANDING OF THE “PARTICLE FUNCTION” AND “SPECIFICATION FUNCTION” ANALYSIS APPROACH GIVES HIM THE TOOL TO USE ON OTHER PROJECTS, WITH GREAT SAVINGS

The buyer said, “Now you’re getting me excited about this ‘Buying Function’, do you suppose we can do anything about that monster six foot diameter flange on the end of the shaft”? The VA said, “you try it, you’re getting the knack of it.”
The buyer started function questioning of the enormous flange. He was at once told, "No dimension or tolerance of the flange can be changed in the slightest. A committee of our people and the waterwheel supplier worked it out and all agreed to adhere to it 100%. As a result, we have never had any problems of waterwheel and shaft flange fit."

Next stop was the waterwheel supplier's plant. "We question that all particles of steel in that large flange are working when we get the waterwheel securely bolted to it", the buyer told them. Then he explained the particle and specification function study approach. As the thinking developed, they said that they felt there was non-functioning steel there, and to match it they had to put non-functioning steel in the mounting flange of the waterwheel. They said that they were just as interested as anyone to reduce non-functioning weight and cost, they would work out their thoughts and be in touch.

The result was that the joint committee established new dimensions reducing the flange diameter from six feet to five ending more thousands of pounds of weight and dollars of cost. The buyer was now competent to achieve results "on his own".

WHAT DOES THIS STORY SAY?

It says that with only modest effort the Value Analyst can equip his buyers to bring tremendous benefits using simple VA methods. Do It.

The ten Value Analysis principles for buyers was clearly set out in my paper printed in the 1979 SAVE Proceedings. Review these principles in your Proceedings or secure a reprint from the National Business Office.

TEN FUNCTION ANALYSIS SYSTEMS TO TEACH YOUR BUYER

1. Purchasing Particle Function Analysis.
4. Purchasing Aesthetic Function Analysis.
5. Additional Cost Function Analysis.
7. Functioning Produce Function Analysis.
8. Supplier Manufacturing Process Function Analysis.
10. Combinations of the Above, such as 1 & 2 or 2 & 9, etc.

Tom Hansbury says that a man who won't read doesn't have much of an advantage over a man who can't read.

Funny Funny World

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31 — Last day to receive discount on Conference Exhibitor Registration

February, 1982
3 — Wisconsin Chapter Meeting — "Quality Circles — How to Organize a Program" Contact Oved Friedman (414) 963-4442
14 — VALENTINE’S DAY — Don’t forget your sweetheart today.
28 — Last day of SAVE Membership Drive Contest

March, 1982
7 — Wisconsin Chapter Meeting — Management Night Contact Dave Ebert (414) 885-3381
17 — St. Patrick’s Day

April, 1982
7 — Wisconsin Chapter Meeting — CVS Certification — "What are the Requirements" Contact Tim Murphy (414) 449-6000

May, 1982
5 — Wisconsin Chapter Meeting — "Handling Stress" Contact Warren Schmid (414) 747-4147
23-26 — 1982 SAVE INTERNATIONAL CONFERENCE, Hyannis, MA Contact Rita Bates (214) 253-5171

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WHY SCIENTISTS DON'T WRITE UP
UP TO THEIR CAPABILITIES OR

The Case of the Cringing Communicator

by Ernest Mazzatenta*

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*Ernest Mazzatenta teaches science writing at the General Motors Research Laboratories in Warren, Michigan, as well a general semantics in the College of Lifelong Learning at Wayne State University, Detroit.

Most scientists and engineers entering my technical writing class at the General Motors Research Laboratories are reasonably good communicators. But a predictable segment—usually about 15%—comes into the course writing considerably below its capabilities.

The problem is not so much a lack of previous schooling in spelling, grammar, punctuation, etc. It is attitude — and because it is attitude I am faced with a problem in general semantics.

These students hold attitudes about the purpose and style of technical writing which seriously impair their ability to function as effective communicators. Therefore, I must first establish what these attitudes are and then decide how they might be changed. I must help them to see technical communication in a different light (hence the problem in general semantics). Only then can I have a positive impact on their technical writing skills.

The subtitle for this article suggests the major part of this semantic problem. In the laboratory or test cell, these engineers and scientists are sure of their direction, confident of their ability to conduct the experiments, and optimistic about being able to extract something of value from their work. But once these same engineers and scientists seat themselves to report results, they become inhibited handwringers.

Their attitudes about what technical writing should do and be translate into an extremely defensive style of writing.

In this article, I shall identify the characteristics of that defensive style and then turn to the attitudes which nourish it.

Why do I consider this a semantic problem which must not go unattended? Because functional reports — for example, procedures, proposals, handbooks, manuals, and reports of scientific investigations — should not be havens for indirect expression of ideas. Need I stress that circuitousness in such reports inevitably leads to vagueness, ambiguity, and imprecision? These faults, in turn, cause reader confusion, incomplete comprehension, and most serious of all, inadequate utilization of report information.

At the General Motors Research Laboratories where I teach, the research scientists and engineers must report their findings and conclusions to others throughout the corporation. These reports represent major products. The more understandable the reports, the more likely they are to be read and applied in other GM units — in design, engineering, production, marketing, etc. When imprecise, these reports can lead to delayed action — or no action at all.

Defensive-minded scientist-writers not only cause problems for others in their organization but for their profession if and when they publish in their society journals. Unless they shun vagueness and ambiguity, their contribution to the state of the art is, at best, questionable.

In short, when scientist-writers mute their message and conceal its significance, they poorly serve their readers, their employers, and their profession. If they persist with this "style" of writing, they inevitably harm themselves, i.e., reduce their chances of promotion and limit their opportunities to add luster to their professional reputation.

Watch a boxing match and you will quickly see that the fighter who spends most of his time "covering up" is the one who never wins — neither the bout nor the crowd's plaudits. In like manner, the scientist-writer concerned only with protecting himself neither reaches his audience nor gains its repsect.

Identifying the Deficiencies

In this section, I shall cite four deficiencies which characterize defensive reporting. These are all traceable to the scientist's incomplete perception of the scientist-as-writer (a semantic problem to be addressed in a later section). These deficiencies are:

1. Overuse of the passive voice verb;
2. Underuse or complete avoidance of the personal pronouns "I" and "we" — and the possessive adjectives "our" and "my";
3. Knee-jerk use of qualifying words and phrases (also known as hedgewords); and
4. Avoidance of adverbs which could supply needed precision.

To refresh your memory — and with apologies to those who need no refreshment — a sentence in the passive voice is one in which:

- the subject is acted upon;
- the agent is either missing or located at the end of a prepositional phrase;
- the verb needs a helper, some form of the verb, "to be."

Some passive constructions follow:
The test sample was examined by Dr. Boyd.
The analytical equipment will be installed.
The active voice alternatives could be:

Dr. Boyd examined the test sample.

We will install the analytical equipment.

Overuse of the passive voice often makes it difficult for the reader to establish who is doing what, how something is done, and even when that something got done.

Consider this sentence — one typical of those which appear in Abstract and Introduction sections of technical reports:

Considerable work has been done on the electro-hydraulic actuator.

When succeeding sentences telling us more about the work also are couched in the passive, we often are left to decide whether the work was done by the scientist-writer over the past few months, by his predecessors in the laboratories over the past decade, or by outside researchers over the past century.

Dr. H.J. Tichy expresses the fault adeptly in **Effective Writing for Engineers, Managers, Scientists:**

"The passive voice weakens style — because it is used consciously or unconsciously to evade responsibility. A popular passive construction is:

"It is though that..."

"Used anywhere else but in science or technology, this indicates that a general opinion or thought follows. But when (the scientist) uses it, he may mean, 'I think that,' 'We think that,' 'the committee thinks that,' or 'I'm hoping that you will think that.'" (1)

Thus, Dr. Tichy uses a light touch to make a serious point: whether overuse is international or not, it often results in difficulty in identifying doers. In all too many cases, I should add, context doesn't allow the reader to make the right choice.

Some scientists will say there are no valid alternatives to passive constructions like "It was found that..." and "It was shown that..." But they have not tried very hard to find them. In place of "It was found that," one can substitute: "Field work verified..." or "On-the-road experiments documented..." or "Production tests proved..." or any number of other quite acceptable alternatives.

In place of "It was shown that," a resourceful writer will supply "Statistical studies showed..." or "Sample borings demonstrated..." or "Laboratory analysis revealed..." or "An attempt to correlate the moduli with the strength showed a wide range of confidence levels" when what is meant is, "A correlation between the moduli and strength could not be established."

*The Conclusions Section.* In the Conclusions section, the defensive scientist often will merely rephrase the results offered earlier in the Results section—and hope that the reader will consider them conclusions. That I consider the ultimate hedge.

The reader, often management, has a right to expect more. I assure you that GM Research management expects more. In all fairness to that reader, this section should be the most lucid. It should begin with a forthright expression such as:

"Our experiments lead us to following conclusions..."

"On the basis of this work we can conclude...

"These tests enable us to draw these conclusions..."

Once the scientist has opened in this direct fashion, he should follow through in like manner. But, all too often, he begins to unload his bag of unneeded qualifiers. Even when he has proven his premise by using the most sophisticated equipment known to mankind, he will stack qualifier upon qualifier. You will find this section peppered with such words as "possibly," "perhaps," "probably," "apparently," "seemingly," and that safeguard to end all safeguards: "with all other things being equal."

They say, "Under certain conditions of temperature and relative humidity, the moisture content of the air seems to tend to increase the likelihood of oxidation of iron and certain iron compounds when exposed to these atmospheres."

What they mean is, "Iron will rust in damp atmospheres." (2)

They say, "It seems that it might possibly be very wise to follow this procedure if no better one is proposed."

Meaning: "It might be wise to follow this procedure." (3)

**Tracing the Misperception**

Question: Why does the cringing communicator commit these crimes against the reader?

Answer: Because he perceives them not as transgressions but as basic tools of the scientist-writer. He sincerely believes that overuse of the passive voice, underuse of personal pronouns, and profligate use of qualifiers mark him as objective, conservative, and cautious.

Why do I know this? Because a sufficient number of "cringers" entering my class over the years have told me so.

As any serious student of general semantics can quickly see, this problem actually has three dimensions: attitude, behavior, and image. Ignore any one dimension and you will have great difficulty in treating the others.

Contribution to this misperception of the scientist-as-writer are three factors:

—college experiences
—past work experiences
—current reading of a limited number of professional journals
Once aware of these influences (and assuming that they have, in fact, been negative) the writing teacher must take every opportunity to point out that they represent incomplete evidence. What is more, he must urge the scientist-writer to seek added evidence, just as he would in any other kind of scientific investigation. Until the writer does just that, he will not consider changing.

Let's turn now to college experiences. What does the budding scientist or engineer learn about technical communication while he is in school? Usually very little or nothing, either because his school doesn't offer a course in the subject or because he has managed to duck it. (For 10 years, my pre-course student questionnaire has provided overwhelming statistical evidence to support these two conclusions.)

At the same time, most technical reports are written in science and engineering classes in accordance with "standards" set by the teachers of these classes. Not surprisingly, these teachers are not often equipped to teach writing—at least not the kind that is expected "on the outside" today. The standards reflect their inexperience.

Consequently, the student engineer acquires some bad habits—for example, overuse of the passive. And these habits become an integral part of the student's image of the scientist-as-writer.

Fortunately, the situation is improving as more colleges and universities establish courses in functional writing and as more make them mandatory for science and engineering majors.

A scientist's early work experience also often supports the misperception of the scientist-as-writer. If the young scientist's first supervisor-editor treats adverbs as much tinsel and needed personal pronouns as signs of immodesty, then this young scientist is not likely to forget the experience. If subsequent supervisors edit the same way, his erring concept of the scientist-as-writer is reinforced.

This isn't to say that all supervisors are ignorant about the principles of effective technical writing. But, regretfully, many are no better equipped to teach writing than are most professors of mechanical or chemical engineering. After all, neither group was schooled in these principles so neither could be expected to know and teach them.

Another major influence is the professional journal which the scientist or engineer habitually reads. If this journal (often his society's publication) is filled with most or all of the flaws mentioned earlier, then the scientist is likely to consider them virtues. Because he may seldom read other journals, he even may consider these alleged virtues representative of what appears in the technical press. Thank goodness, they are not representative—as so many well-written, well-edited journals illustrate today.

**Summary**

Allow me to summarize what I have been saying or suggesting about the defensive scientist's attitude toward technical communication, his behavior based on that attitude, and his image of the scientist-as-writer.

Because of limited training and experienced in technical reporting and narrow exposure to "model" publications, the defensive scientist perceives his role as writer incompletely. His misperception leads him to conclude that all his deficiencies are virtues and that deviating from them will stamp him as a less-than-objective (perhaps even irresponsible) scientist.

The semantically-oriented teacher, editor, or mentor can—through the methods described here—expand and improve the scientist's view of technical communication. More specifically, the teacher introduces evidence and testimony to affect the scientist's understanding of what is "proper" and "effective."

The improved vision helps the scientist to cast off the role of cringer and to adopt the role of forceful communicator. When that occurs, the scientist becomes—in the eyes of his employer and in the judgment of the scientific community to which he belongs—a better scientist.

**NOTES AND REFERENCES**

3. Tichy, op. cit.

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**NICE WORK IF YOU CAN STAND IT**

Scientists in Bristol, England are paying volunteers $6.80/day to sit and do nothing but stare at a T.V. set. All the set has on it is landscape. The objective is to determine how quickly a person gets bored and what action can be taken to improve monotonous jobs.

WFRA Radio
WINDOW ON VALUE

Beginning with the next issue of Value World this column will contain items directed at keeping you abreast of activities in value.

We are in need of brief paragraphs from YOU. Send us your management or other personnel changes, announcements of a new contract awarded or job completed, the opening of a new facility or the success of a recent VE study or seminar or any other items of interest you would like to share with your fellow SAVE members.

Here is a sample as found in a recent issue of Value Engineering & Management Digest*:

VE in Design and Construction

Several new and/or expanded VE activities in federal design and construction agencies have been discovered. This included four agencies not heard from before (the Forest Service of the Department of Agriculture; the Indian Health Service of the Department of Health and Human Services; the National Park Service of the Department of Interior, and the Department of Housing and Urban Development) and the strong forward expansion of VE in the Navy's construction program.

Also, the Corps of Engineers has just approved its largest-ever VE Change Proposal...a whopping $11,624,304 in savings, on one project, and it advanced the state-of-the-art in dam construction by using roller-compact concrete.

*Suscriptions available through the SAVE Business Office. See article on page 23.

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OVERCOMING ROADBLOCKS

In Value Engineering, Value Analysis, Suggestion awards or Cost Improvement, the ultimate goal is to improve the cost of products and/or services while maintaining the desired level of performance. In the process there is one factor that must be uppermost in mind, these are “second guessing” efforts at all times. Therein lies a hazard. It makes no difference when the cost improvement effort occurs it does concentrate on the removal of unnecessary costs from the “brain children” of the originators. And, in many cases, those originators are not too happy about some value guy picking to pieces the creation he labored for hours, days or weeks to produce, and proudly sold to his boss.

The net result is for him to throw up road blocks in an effort to save face and, almost without exception, the engineering “top brass” will back him to the limit. I maintain strongly that all Value, Suggestion, and other cost improvement operations be grouped together under a single manager, and be designated Cost Improvement. That manager should be responsible only to the General Manager, who heads all the departments within the company. It is only thus that any organization can obtain the maximum results from a cost improvement study, for he is the only man who can demand that department heads give objective consideration to all cost improvement recommendations.

H.K. (Ken) Davidson
Jalisco, Mexico

"SIX MISTAKES OF MAN":
1) The delusion that individual advancement is made by crushing others;
2) The tendency to worry about things that cannot be changed or corrected;
3) Insisting that a thing is impossible because we cannot accomplish it;
4) Refusing to set aside trivial preferences;
5) Neglecting development and refinement of the mind and not acquiring the habit of reading and studying;
6) Attempting to compel other persons to believe and live as we do.

CICERO
Roman Philosopher
(Executives’ Digest, 1977)

CURRENT IMPRESSIONS

Value Analysis is a potent tool for reducing costs without loss of required function. It is most effective where it is the least glamorous, in conceptual design or early management planning (doing it right the first time).

V.E. has suffered from several ills over the years i.e. lack of technical competence of those in V.E. operations; credit claimed falsely and playing the numbers game in cost reduction programs.

If top management is convinced that V.E. works, is kept informed and not embarrassed by incomplete staff work, they will support V.E. Staff the operation with those technically competent in value engineering and success is assured.

Richard Meyers, PE
Pacifica, CA

CRITICISM is a difficult adversary and has 2 universal truths: 1. You can’t defend against it. 2. Everyone is subject to it.

Rev. Herbert Pennington
First United Methodist Church
Franklin, PA

WANT FRIENDS?

YOU CAN MAKE MORE FRIENDS IN TWO MONTHS BY BECOMING REALLY INTERESTED IN OTHER PEOPLE THAN YOU CAN IN TWO YEARS BY TRYING TO GET OTHER PEOPLE INTERESTED IN YOU.

Dale Carnegie

THE BEE -

The Bee is the strangest creature I’ve seen
To every hive there’s just one queen.
So huge she cannot stand upon her legs
But only lie about laying eggs.

While the worker bee flits from flower to flower
Industrious during each daylight hour
Gathering pollen while the weather is sunny
Then chews it up and spits out honey.

There is also the Drone, a free board and roomer
A lazy, honey eating, non-producing consumer
Kept by the workers in case that he might
Be successful in his one and only Nuptial Flight

We can liken the gathering of ideas, you see
To the activities of the industrious Bee
Instead of gathering pollen for honey
Workers gather ideas for saving money.

Gathered up in the Cost Improvement Hive
If you’re not on the Queenly Throne
Then you’re either a worker or a drone.

So gather ideas while you may -
They’re blooming around you every day
Don’t be a drone, just lapping up “honey”
Be a Worker; chew up thoughts and spit out Money!

By Poet Laurete
Jack Williams
Los Angeles, CA

Next issue: How to train Fleas!!
BREAK THROUGH

I have an idea.
I'm quite sure it's a "jewel."
Should I talk with my boss
Or will he call me a fool?
They tell me they're looking
For new ways to do things.
I'm not sure they're serious;
For each new day brings -
Questions... no answers
another boring day--
With nothing to look to
But my rightful pay.
We talk and I listen
In this one-way street.
With road blocks and stop signs;
No yield signs to meet.
I have an idea,
I still think it's good.
I want to discuss it
With my boss who should -
Assist me to write
To develop my thought!
For writing on paper
Makes me distraught.
I'm good at my job.
I do it each day.
I can make it better
At the same rate of pay.
If only he'd listen
And help me to say
What I know will improve
This old costly way.
My boss--he's a nice guy--
With family and friends;
But at work he's as different
As tangents and trends.
I have an idea.
I know what to do.
I'll submit a suggestion
and approach my boss, too!
I hope he will listen.
I'll approach him today
And ask him to help me
Improve the old way.
What a great day that was
For he suggested to me
The following message
Which is my "cup of tea"!
Identify the problem.
Decide what to do.
Explain your solution
Approach your boss, too.
Submit your suggestion,
Don't hold back a day.
IDEAS are too valuable
To not handle this way!

Dave Noyes
Carpenter Technology Corp.

PRODUCTIVITY - DONATUCCI APPROACH

The two greatest impediments to higher productivity are too many people on the job, or too few. The defect of too many people is obvious, but too few people leads to an equally bad situation. It means that you're going to get into a last-minute crash program of hiring skills that aren't readily available. Or you're going to lose time and money in training programs.

Dominic Donatucci, Manager
Multi-Plant Operations
Westinghouse Electric, Pgh.

WOMEN - WHY NOT?

The Value Engineering 40 hour evening workshop has been continuously conducted at General Electric's Re-Entry and Environmental Systems Division in Philadelphia for over five years.

This very successful course covers a thirteen week period and until recently the participants have nearly always been of the male category.

A very interesting event happened recently when the title of the course was changed back to the one used by our hero and originator: Larry Miles - i.e., Value Analysis.

Within a short period of time seven women enrolled when the term engineering had been dropped. Two of these women were computer operators, one was a flight analyst, another from the Purchasing Dept., and the remainder were secretaries.

The ladies were grouped into one team and applied VA techniques to an aerospace structure. One of the several ideas that have since been implemented featured a new method of moulding plastic foam material. When asked how the idea originated, the answer came back that similar methods were used in baking cakes.

We welcome the ladies to our VA workshop and hope that this becomes a regular feature.

LARRY DAVIS, CVS.
NORRISTOWN, PA

FUNCTION BY OSMOSIS:

Functional Analysis is the heart of Value Management. Its simplicity frightens away newcomers upon initial contact. Continual exposure wears down the resistance until one feels more comfortable and at ease - a simple tool is adding function as a drawing requirement. What better way to expose our minds to think function.

Slowly at first, but gradually by osmosis, our habits will become more tuned to think in terms of how and why that we will ignite a vast reservoir of new ideas.

R.L. Campbell
Indianapolis, IN

See Bits and Barbs
Revisited on pages 6, 9, 13
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AN INVITATION TO JOIN THE 1982 VE PRODUCTIVITY STUDY MISSION TO JAPAN OCTOBER 8th TO OCTOBER 24th, 1982 CONDUCTED AND SPONSORED BY THE SOCIETY OF AMERICAN VALUE ENGINEERS IN COOPERATION WITH THE SOCIETY OF JAPANESE VALUE ENGINEERING AND JAPAN AIR LINES

WHAT WOULD IT BE WORTH TO VISIT YOUR MOST AGGRESSIVE COMPETITOR, TOUR HIS FACILITY AND QUESTION HIS MANAGEMENT STAFF — BY INVITATION?
The Society of American Value Engineers (SAVE), in cooperation with the Society of Japanese Value Engineering (SJVE), offers this unique opportunity to American industrial executives. This VE Productivity Study Mission affords you a first hand look at Japanese industry in practice, from the worker's involvement through management concepts.

WHY UNIQUE?
Since 1966, SAVE has assisted SJVE with their industrial tours throughout U.S. industry, in addition to giving the SJVE members close support and training in the principles and applications of Value techniques. To say they were apt students is a gross understatement. Over 225 Japanese managers representing over 100 corporations visited and studied our concepts. Some of the industrial giants include: Matsushita, Hitachi Ltd., Sony, Toyota, Honda, Mazda, Nippon Electric Company, Fujitsu Ltd., Toshiba, Nissan Motors, Mitsubishi Motors, Takeda Chemicals, Hiroshima Steel, Kawasaki Heavy Industries, Nippon Steel, Fuji Electric — and many more.

All have active and successful VE programs; all have high productivity and gross earning rates; and "all" are but a small part of the 388 corporate member firms of SJVE.

It was the President of SJVE, Ichiro Ueno, and Matsushita Electric Works Vice President, Mitsugi Kanaya, who extended the invitation to SAVE. The Japanese visitors who toured the U.S. not only want to show, with pride, their accomplishments, and share the plans and programs that got them there, but SJVE and their corporate members also requested this as an opportunity to express their appreciation for the assistance SAVE has given them over the years.

These aspects are what make this VE Productivity Study Mission unique, and provide the opportunity for achieving the specific goals of each participant.

We invite you, your associates and your spouses to join us and share in the technical exchange with our friends in Japanese industry.

John W. Bryant, CVS
President
Society of American Value Engineers

KEY PURPOSE:
Study elements of applied VE Productivity in Japanese industry from all aspects, including management, production, education. Scope of industries is wide range and includes construction, electronics, telecommunications, heavy equipment manufacturing and many more. Interface with specific industry areas will be tailored to the specific desires of each member of the mission, as much as possible.

ORGANIZATION OF TECHNICAL VISITS
Technical visits will be geared to the specific goals of each participant. Your preferences should be noted on the application form and returned to SAVE at the earliest possible date.
TECHNICAL VISIT OBJECTIVES

The following companies represent the major industrial and commercial organizations which have been assisted by SAVE during the last three years with technical visits in the USA. Please indicate your top five preferences for reciprocal visits, in order of priority:

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PRIORITY</th>
<th>COMPANY</th>
<th>PRIORITY</th>
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<tr>
<td>Diesel Kiki Company</td>
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<td>Mitsubishi Motors Corp.</td>
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<tr>
<td>Fuji Electric</td>
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<td>NEC Cost Consultants, Ltd.</td>
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<td>Fuji Heavy Industries, Ltd.</td>
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<td>Nippon Electric Co. Ltd.</td>
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<td>Fujita Corporation</td>
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<td>Shiseido Company, Ltd.</td>
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<td>Fujitsu Limited</td>
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<td>Sony Corporation</td>
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<td>Hitachi Chemical Co., Ltd.</td>
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<td>Taisei Corporation</td>
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<tr>
<td>Hitachi, Ltd.</td>
<td></td>
<td>Takeda Chemical Co.</td>
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<tr>
<td>Iwatsu Electric Company</td>
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<td>Tokanco Company, Ltd.</td>
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<tr>
<td>Kawasaki Heavy Industry</td>
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<td>Toshiba Corporation</td>
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<tr>
<td>Kayaba Industry Co., Ltd.</td>
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<td>Yanmar Diesel Company, Ltd.</td>
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</table>

Other companies you would like to visit (List by Priority):

________________________________________

Indicate any of your special areas of interest.

________________________________________

Indicate the type, level and extent of information you would like to obtain:

________________________________________

Return this Survey Form to the National Business Office, 220 N. Story Rd., Suite 114, Irving, Texas 75061.

Notes

1. Those members of the group who wish to arrange visits with their affiliate subsidiary, or supplier firms can do so during the last few days by notifying the SAVE office in advance.
2. With the study group formed, committee members will be selected to develop a technical program.
3. A member of the SAVE organization will act as business manager. The senior member of the group will be the representative spokesman for the group.
4. Group size: approximately 15 members. The tour is limited to a maximum of 30 persons. Reservations will be made on a first come first serve basis.
5. Wives are invited (in addition to the group size), and SAVE will arrange interesting side trips while you are attending to business.
6. A valid passport and a tourist visa will be needed. No vaccination is required for Japan. SAVE can assist you in securing applicable visa for Japan.
7. Expenses for the fifteen days are estimated at between $4,000 to $4,500 each. A more detailed expense budget will be submitted as the group is formed. Final prices to be determined by May, 1982.
8. SAVE will be pleased to make arrangements for your connecting transportation to and from the West Coast if you wish. Otherwise, we assume that you are making these arrangements yourself.
9. Cancellations cannot be made after August 31, 1982. Transfer or assignment of reservations will be accepted until September 15, 1982. There will be a $20.00 bookkeeping charge for all cancellations. No refund will be made for services not used or cancelled voluntarily during the trip.
10. Advance Registration will be accepted by the SAVE Business Office for a deposit of $100. Final payments to be required by August 31, 1982. Purchase Orders will not be accepted.

FURTHER DETAILS WILL BE PUBLISHED IN INTERACTIONS, VALUE WORLD AND SPECIAL BROCHURE MAILINGS AS THEY BECOME AVAILABLE.

ADVANCE REGISTRATION FORM

Enclosed is my check for $__________ as deposit for the VE Productivity Study Mission to Japan October 8-24, 1982. Final payment will be made by August 31, 1982. (Please make checks or money orders payable in U.S. funds to Society of American Value Engineers.)

Name: ____________________________________________ (Last) (First) (Middle Initial)

Company: _______________________________________

Address: _______________________________________

(Street) (City) (State) (Zip Code)

Office Phone: ___________________ Home Phone: ____________

Mail to: SAVE Business Office, 220 N. Story Rd., Suite 114, Irving, TX, 75061.
BOOK REVIEW

Many new features are planned for upcoming issues of Value World. One of these is a Book Review column. We will review books currently in the SAVE Bookstore to refresh your memory on these fine volumes as well as inform you of new books as we receive them. We will also run occasional reviews of books we hear about that are not available through SAVE.

Watch for special sales. We hope to run sales in each issue corresponding with Book Reviews or feature articles to give you the opportunity to obtain these books at a reduced price. You will notice the Editors' Sale this issue features the 1980 and 1981 SAVE conference Proceedings from which two of our articles are taken.

Take advantage of these special offers to complete your personal or company library at a reduced price. Some of these volumes are in limited supply and prices are subject to change without notice, so be sure to get your orders in early.

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SAVE and SME Join Forces

SAVE has finalized an arrangement with the Society of Manufacturing Engineers to make their publications available to SAVE members. Future issues of Value World will carry advertisements for SME publications. These are coded so that when you send your order to SME, SAVE will receive a commission.

Negotiations are currently in progress with other publishers and services to make available to you other items of interest. These will be announced in Interactions as they become available.

The SAVE Business Office hopes to be offering correspondence courses through the Bookstore soon. As these and other books are made available to SAVE members, they will be announced in Interactions.
SELF CONFIDENCE A VITAL NEED

I firmly believe that there is a definite line of demarcation between having self confidence and being "cocky." In fact, this is one of my pet theories.

Every individual needs confidence... because this attribute also embraces self-reliance and self-esteem, which actually reflects itself to others and begets respect from them.

You can even project a feeling of strength and beauty if you radiate qualities of strength and beauty.

However, since the course of life, like a winding highway, generally has some abrupt turns, things can happen which will temporarily jolt us. But the detour is usually temporary and with courage and confidence, we can get back on the straight track again. As it has been said, there is happiness and pain and one helps you to appreciate the other.

Even with long-enduring handicaps some persons have triumphed over them and attained international fame. Former President F.D. Roosevelt was a prime example - he had polio and became a physical cripple, but remained a physical giant who gained a niche in history among the leaders of the world.

Confidence not only imparts a wonderful inspiration to its possessor, but from a practical standpoint, confidence and enthusiasm are the greatest sales producers.

Cicero wrote: Confidence is that feeling by which the mind embarks in great and honorable courses with a sure hope and trust in itself.

Skill and confidence are an unconquered army.

A wise man once said, "I can do all things through Christ which strengtheneth me." The man who believes this has calm, quiet confidence, but, because his confidence is based on God's power and not his own power, there is never the slightest speck of egotism.

Every individual can develop confidence. Build it up by saying that you believe in yourself and that it can be done. Don't brag openly about what you can do, but know, within yourself, that you can do it.

Alexander Graham Bell said: When one door closes, another opens: but we often look so long and so regretfully upon the closed door that we do not see the one which has opened for us.

Mutual confidence prompts love. And, as Barbara Jordan of Texas said: "When love will have more attention than hate, then peace will prevail over war, justice over injustice and sanity over insanity."

No one has a right to sit down and feel hopeless. There's too much work to do. Errors - and if you're human, you're going to make some - should be reasons for growth, not excuses for discouragement.

To try when there is little hope is to risk failure. But not to try at all is to guarantee it. And when you reach the end of your rope, tie a knot and hang on.

A man once said: I wondered why somebody didn't do something. Then I realized that I was somebody. It was his first realization of the vital need of self-confidence.

A candle loses nothing of its light by lighting another candle. This also applies to people... and their confidence is being helpful to others and themselves.

Finally, remember that it is sad not to know, but not to want to know is worse.

CHESTER L. WASHINGTON, Publisher

SUCCESS! (continued)

Each of these principles must, of necessity, be thought out and put into force with a positive attitude, for with a positive attitude and diligence, anything is possible.

But, "A JOURNEY OF A THOUSAND MILES BEGINS WITH THE FIRST STEP."

A.E. Mudge, CVS
10/5/78

(This is Part One of a Two-Part Series)
Do you know how many members SAVE has? Only 1,429 on November 1, 1981. Although this is an increase since August 1, this is not where we should be. Help SAVE enroll new members and help yourself as well. Prizes will be awarded to the four individuals signing up the most new members during December, January and February.

**PRIZES**


**FIRST PRIZE** - A $175.00 discount off Registration to the 1982 SAVE International Conference at Hyannis, MA May 23-26, 1982.

**SECOND PRIZE** - Prepaid Individual Membership for the following three years (1982-83, 1983-84 and 1984-85).

**THIRD PRIZE** - Prepaid Individual Membership for the following year (1982-83).

**RULES**

1. Only new membership applications received in the National Business Office from December 1, 1981 through February 28, 1982 are eligible.

2. Only prepaid applications with the sponsor's name indicated are eligible.

3. Points will be awarded to applications received as follows:

<table>
<thead>
<tr>
<th>Membership Grade</th>
<th>Points Awarded</th>
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<tr>
<td>Regular Individual Member</td>
<td>1</td>
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<tr>
<td>Individual International Member</td>
<td>1</td>
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<tr>
<td>Regular Corporate Member</td>
<td>2</td>
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<tr>
<td>International Affiliate</td>
<td>2</td>
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<td>(Foreign Corporate)</td>
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<td>Sustaining Corporate Member</td>
<td>3</td>
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<td>Student Member</td>
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<td>Library Member</td>
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<tr>
<td>Reinstated Member</td>
<td>0</td>
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4. Prizes will be awarded as follows:
   - GRAND PRIZE - Individual receiving largest number of points.
   - FIRST PRIZE - Individual receiving second highest number of points.
   - SECOND PRIZE - Individual receiving third highest number of points.
   - THIRD PRIZE - Individual receiving fourth highest number of points.

5. Winners will be notified by mail prior to March 31, 1982 and published in *Interactions and Value World*.

6. Prizes are not subject to substitution, however they can be transferred upon receipt of written request from winner.

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**1982 SAVE INTERNATIONAL CONFERENCE**

**SOCIETY OF AMERICAN VALUE ENGINEERS**

The Sheraton-Regal Inn, Hyannis, MA

**BOSTON — 82**

May 23 - 26, 1982

Hosted by:
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Robert D. Clark, President

$25.00 discount on Registrations received prior to April 12, 1982.

For further information contact:
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SAVE Business Office
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Irving, TX 75061
(214) 253-5171

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Please Note that you must get your reservations in promptly for the 1982 Conference. SAVE has arrangements for a special room rate only at the Sheraton-Regal Inn which is the headquarters hotel for the Conference. This means that after all of the available accommodations are taken at the Sheraton, you will have to take reservations at other hotels in the area which do not offer a special rate for SAVE members.

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