DEFENSE AND DESIGN COSTS
PRODUCTIVITY'S SOUL IMPACT
APPLICATIONS OF VE & VA
WHAT NOW? DOD 5000.1
ENGINEERING PROFITS
DOD 7000.2 OF 1967
THE ENERGY CRISIS
COST REDUCTION
TECHNIQUES
JUSTIFICATION...
GROWTH
PERFORMANCE 1974
VE MEASURES & APPLICATION
EFFECTIVENESS...

COMPREHENSIVE JOB PLAN FOR VALUE STUDIES
SUGGESTION STAFF DEVELOPMENT AT IBM
CONFIGURATION MANAGEMENT IN A NUTSHELL
14TH ANNUAL SAVE NATIONAL CONFERENCE ON VALUE AMPLIFICATION
APRIL 28 - MAY 1, 1974
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EDITORIAL POLICY: PERFORMANCE Magazine umbrellas those performance factors which improve the competitive advantage and excellence of American Consumer/Defense products and services for the markets of the world. PERFORMANCE is dedicated to the effective exchange of innovative technology and ideas as they relate to quality, reliability, safety, maintainability, cost reduction, value engineering, life cycle cost, management improvement, cost-to-produce, standardization, cost engineering, integrated logistics support, defect prevention, suggestion systems, motivation and productivity.

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Significant improvements in productivity will be required in order to make our nation fully competitive in the markets of the world. The National Commission on Productivity established a public service advertisement campaign late last summer to generate an improvement of the national spirit, especially as it might affect a renewed pride in workmanship. The aim of the campaign was to improve — rather than to increase — productivity, and to focus worker attention on the quality of U.S. goods and services.

How would you like to sign your work? As a workman or service employee, would you be proud to put your name on the product or to let the customer know that you worked on it? How about your people, Mr. Employer? Would they be proud enough of the job they accomplished to sign their names? If not, personal pride in workmanship is lacking in your organization, and the quality of your goods or services needs improvement.

Returning Identity
The key to improved productivity is the workman, himself! Instead of submerging him in an unthinking, rate operation, management should be working to return his identity to him. The worker should be brought into the management of his own function, and be given an opportunity to plan for, implement and measure his own individual achievements. If management can accept the fact that a worker is important in the production process, it should be a readily accepted corollary that a thinking worker would make an improvement in productivity. We have been overlooking this important key to high productivity.

The most important possession of the worker, on the job, is time. When management schedules work in such a manner as to cause lost time or idle-ness, the individual worker is cheated of this asset. Notwithstanding any ideas to the contrary, the American worker wants to work and to do a good job. However, when faced with enforced idleness derived from poor management, he becomes frustrated with his entire work setup. Morale, an inverse function of frustration, decreases. As a result, individual quality drops, consciousness and tardiness increase. The snowballing effects on productivity and product quality are obvious. Today, in many industries, we have reached the natural peak in non-productive, paid man-hours. Efforts must be expended to reverse the trend.

Joint Responsibility
Improvement in productivity is a joint responsibility of management, the worker and the union. Management must recognize that the working-man is more than a Social Security number and an automaton. It must be willing to accept his participation and be eager for his help. Unions must encourage participation by the worker in the planning and execution of his job to improve productivity. They must not view worker participation as a method for increasing featherbedding and should, in fact, discourage and remove the featherbedding that is rampant in many industries today. The workingmen and their line supervisors should be willing to accept the challenge of determining reasonable levels of production for their individual responsibilities, and to implement a program of measurement against the targets they helped to establish. Once individual targets for productivity have been established, incentives should be offered for those who can exceed those targets.

The measurement of achievement toward established goals is, perhaps, the most important tool for productivity improvement. On a daily basis, workers and their line supervisors should be able to see where they — and their team — stand in relationship to other production teams and to the established targets. Radical changes can be immediately reviewed and corrective action taken — not at the management level, but within the line organization. A subsidiary benefit of this system is that the communication between worker and first-line supervisor is greatly improved, and a team effort approach to problems is fostered.

Return Identity
One of the strongest motivational tools we can use is that of personal involvement. Improvements in performance, with attendant productivity improvements and focus on the quality of U.S. goods and services, are within our grasp. We need only revise our thinking about the American worker — involve him in the planning and measurement of his job responsibilities and pass the authority for corrective action to the worker and his first-line supervisor — in order to reach our national productivity goals. In other words, we must return the worker’s identity to him, and involve him directly in his job.

Personal pride in a job well done will return to our work force, once they have become something more than numbers in a computer and have become participating sub-managers of the plant or organization for which they work. May the time not be distant when all of us are willing and eager to “sign our work.”

Manager-Quality Awareness Program
CRITICIZE EMPLOYEES INTELLIGENTLY

Criticizing an employee is never a pleasant task, but it often is a necessary one, according to Jane G. Bensahel in *International Management.* Here are some suggestions to make the job easier and more resultful:

1. Know why you are criticizing. Is it to let him know where he stands, generally, or to motivate him to better performance, or to keep him from repeating a mistake?
2. Get to the root of the problem. Before talking with the person, investigate what went wrong, why it went wrong, and who, if anyone, shares the blame.
3. Cite specific examples when you sit down to talk. Don’t just tell him he’s doing a bad job.
4. Criticize the act, not the person. Personalizing the problem only creates resistance to the improvements you want to effect.
5. Criticize at the right time, in private, and if possible, at an hour which will permit a brief, second meeting later in the day.
6. Be clear in your explanation of the results you expect. This is the most important part of the interview. You want him to make a change which will benefit both him and you and, subsequently, the company. Be sure he understands exactly what that change is.
7. Follow up. But don’t nag or look over his shoulder. Follow-up means a re-establishment of your confidence in him and being available for help when he needs it and wants it.

INDUSTRIAL PROPERTY MANAGEMENT COURSE

Two courses in Industrial Property Management are offered by the Air Force Institute of Technology at Wright Patterson Air Force Base. The Industrial Property Administration Course (160) is designed for individuals who are new to the field of property administration. In Course 160, the emphasis is placed on understanding Department of Defense policy and procedures for furnishing property to contractors, the requirements for management of the property by the contractor, and the duties of properly administrator.

The Advanced Industrial Property Administration Seminar JT (161) is intended for personnel with at least two years’ experience as a GS-9 or above in the field of property administration. It increases understanding of the magnitude, complexity and importance of the Property Administration function as it relates to Procurement and Contract Administration. In addition it provides the student with a greater understanding of the legal and contractual implications of property administration. The course seeks to develop the student’s willingness and ability to communicate with contractor personnel and members of the government contract management team.

Sheraton-Boston Hotel, site of the 1974 Annual Seminar of the National Property Management Association.

NPMA SEMINAR '74

Boston has been selected as the site for the '74 Seminar of the National Property Management Association. John Winslow, Seminar chairman, has made arrangements for the Seminar to be held October 2-4 at the Sheraton-Boston Hotel. Master of Ceremonies for the Seminar will be James Donnelly, the chief of property, DCASR - Boston.

SOVIET UNION ANNOUNCES PERFORMANCE AWARDS

The United States isn’t the only country concerned with improved performance and increased productivity. A UPI wire story quoted the Soviet Union as announcing new awards aimed at boosting productivity and the Communist equivalent of company loyalty. All major newspapers carried front-page articles on a decree establishing the “Order of Labor Glory” and the “Veteran of Labor Medal.”

INDUSTRY LOOKS FOR INNOVATIVE TALENT

For much of industry, innovation has become the name of the game. And, according to some experts, companies are beginning to beat the bushes for managers who show signs of innovative flair — managers who can work without rules. “With a new crisis every week, with material and fuel in short supply, the long-range planner who goes by the book might be too slow to meet today’s quick changing demands,” explained Bridgford Hunt, president of The Hunt Company, New York.

“The manager who plays by the rules might be too inflexible. Long range is what happens tomorrow. The rules of only a few months ago — rules built for an economy of plenty — won’t work today,” Hunt said. Industry is looking for two kinds of men, he pointed out: the man who can anticipate and overcome shortages with the least cut in production; and the R&D man or the value engineer who can beat the shortages by substitution — by making changes in product design to utilize available material.

TWO BOOKS ON NOW PROBLEMS

“Jobs haven’t changed,” says Fred Foulkes in his new book Creating More Meaningful Work, but “people’s expectations have and this has been expressed in high absenteeism, low morale, high turnover, etc.” Greater educational achievement has helped raise expectations. Says Foulkes: “Workers want some sort of participation. There’s more freedom around. So why should employees want regimented, autocratic jobs?”

After an in-depth study of 400 male union workers, Harold Sheppard and Neil Herrick say in their book, Where Have All the Robots Gone, that one-third of the workers, particularly the young ones, were alienated from their jobs and could not be assuaged with the typical rewards of more money, shorter hours or longer vacations. They go on to assert that, “Worker dissatisfaction metamorphosed from a hobby horse of the ‘tender minded’ to a fire-breathing dragon because workers began to translate their feelings of dissatisfaction into alienated behavior.” They go on to say that turnover rates are climbing. Absenteeism has increased as much as 100 percent in the past ten years in the automobile industry. Workers talk back to their bosses. They no longer accept the authoritarian way of doing things.

Continued on page 32
“A Comprehensive Job Plan for Value Studies”

by JAMES W. FARMER

Blast! Create! Refine!
Cost Visibility!
Good Human Relations!
Apply Uncommon Sense!
FAST Diagram!
Involve Decision Makers!
Free Association!
Decay of Savings!
Over-Simplify!

Anyone who has participated in a full-blown Value Analysis/Value Engineering (VA/VE) seminar is bound to recognize these suggestive phrases. If he paid careful attention to his seminar leaders, he has a fairly clear idea of what they are all about. In addition, he has been exposed to an add-on seminar leaders, he has been exposed to an addition, he has been exposed to an addition, he has been exposed to an outline job plan; probably one that includes these — or similar — phases:

Information
Speculation
Planning
Execution
Reporting

When he returns to the real world, however, after being bathed in the warm glow characteristic of the closing hours of a well-conducted seminar, a typical participant may find himself in somewhat the same situation as did a colleague of mine. Several days after he had received his certificate of completion of a two-week seminar, he came to me for help in — of all things! — assembling a job plan. The volume of material that had been presented during the seminar had been so great that he was having real trouble fitting the pieces together into an intelligible array.

His requirements weren’t too stringent, so it wasn’t enormously difficult to help him to a solution to his problem. However, the very fact that he — an unusually thorough, conscientious individual — had such a problem suggested the question: Why hadn’t the seminar leaders provided a fleshed-out job plan in their text material?

A resort to available references failed to answer the question, but it revealed that this omission was fairly general. The typical job plans presented were skeletal and exhibited little evidence of any systematic effort to associate — with each phase — its related tasks, together with the procedures and techniques required to accomplish them. This was disturbing, as was a readily distinguished tendency to concentrate on specialized techniques for the information and speculation phases, and to place progressively less emphasis on later phases of the job plan.

Let us grant that it is the evangelist’s mission to preach the gospel, and let us grant further that most of the good news — the gospel — peculiar to Value Studies is found in the value approach to the early phases of the job plan. Having done so, however, let us recall that presumably we are dealing here with a complete job plan, not merely an outline of Value Studies specialties. Furthermore, let us bear in mind the importance of following through in any sort of activity.

When we do so, a truly challenging question presents itself:

Is it practicable to produce a generalized job plan describing a logical succession of clearly defined phases covering all aspects of the Value Studies process? Can we state, for each phase, the problems that must be solved, the questions that must be answered, the procedures to be followed, the specialized techniques that can be helpful, and the admonitions that must not be disregarded?

A famous mountaineer is reported to have said that Everest had to be climbed because it was there; a fighting bull reacts reliably to the matador’s cape; and the writer simply can’t resist trying to develop an answer to such a question. Over three years ago, he prepared such a plan. It is offered here for your consideration.

You will note that the Summary Job Plan respects the classic VA/VE job plan without following it slavishly. It covers some additional territory. It ties together the tasks, questions, procedures, techniques and admonitions associated with each phase. Finally, it is sufficiently broad in scope to be applicable to almost any type of Value Studies problem. It is presented, with some trepidation, in the hope that it may provoke some productive discussion.

The Value Studies job plans we are all familiar with differ slightly one from another, but they are fundamentally similar, and bear a strong resemblance to other problem-solving and decision-making processes. Every such process is constructed about an orderly progression of phases. The basic steps involved are essentially common to all these processes. The differences lie mainly in the techniques prescribed for performing the activities associated with the individual phases.

Although not identical to the VA/VE job plans commonly employed today, the outline of phases presented in Figure 1 is familiar in principle to the reader possessing a background in Value Studies techniques. Summarily:

In the Information phase, we familiarize ourselves with the product and de-
Information Phase

TASKS

Understand the product
Estimate the potential for value improvement
Define the present order of functions

QUESTIONS

What is the product?
What does it do? how? at what cost?
What is the scope of the problem?

PROCEDURE

Define functions
Diagram functions
Obtain costs
Cost each function; post to diagram
Estimate worth to each function; post to diagram
Estimate potential value improvement for each function
Establish present order of functions

TECHNIQUES

Verb-noun definition of function
Function Tree (or FAST) diagram
Cost/worth visibility by function

REMEMBER

Get all the facts

Figure 2

look. Figures 2 through 8 present this information in outline form. Discussion of these outlines will be brief. We shall not belabor the obvious by re-examining matters that are familiar to all, but we shall offer comment on the areas where our plan differs from others.

INFORMATION PHASE

Were we required to name the most important single contribution to problem-solving techniques made by Value Studies, indubitably it would be "Define Functions," and the accompanying insistence on the "verb-noun" manner of doing so.

With Define Functions as a point of departure, the Information phase progresses via Cost Visibility and Function Array to a decision as to the functional area where we shall concentrate our further efforts.

Some five years ago, the FAST diagram was accepted by Value Studies as a means of arraying functions. It offered an effective technique for clarifying the progression of functions from order-to-order and for displaying how primary, secondary, required and unnecessary functions are related one to another. Recently, the writer proposed the Function Tree diagram, a refinement — at least for Value Studies purposes — of the FAST diagram. Whether we use FAST or Function Tree, the interrelationships of function, cost and worth become crystal clear when cost and worth are posted to the individual functions displayed in the diagram.

Both FAST and Function Tree diagrams are powerful tools for examining all types and magnitudes of problem areas. Such diagrams have been applied successfully to analysis of governmental operations, piece parts, manufacturing organizations and elec-
Speculation Phase

TASK Formulate and record alternative ways to accomplish present-order functions

QUESTIONS What else will do the job? 
What else might do the job?

PROCEDURE Use creativity techniques to develop alternative ways to accomplish present-order functions. Record all alternatives developed

TECHNIQUES Free association
Decision matrix
Morphological analysis
Synectics
Other organized techniques

REMEMBER Don’t select
Over-simplify
Try everything
Apply other disciplines
Use uncommon sense

Analysis Phase

TASK Select the most promising alternatives

QUESTION Which approaches offer the most attractive cost-function potential?

PROCEDURE Estimate a cost for each recorded alternative Screen out the alternatives that are excessively costly or simply foolish
Rank the surviving alternatives in descending order of functional acceptability; also rank them in descending order of potential saving
Determine the disadvantages and advantages of each of the alternatives standing high in each ranking
Select at least two, not more than four, of the most attractive alternatives.

TECHNIQUES Enlist the aid of specialty vendors
Tee-chart
Evaluate by comparison
Blast! Create! Refine!

REMEMBER Put a $ sign on every decision

Analysis Phase

Figure 3

many years ago, when the technique was new, the writer was privileged to hear Alex Osborn discuss what he had dubbed brainstorming, the application of free association to creativity. Osborn and his associates developed brainstorming within the framework of the advertising field, and probably would have been at least mildly startled, although pleased, to hear of its application to hardware problems.

Nevertheless, when Value Studies techniques were being evolved, brainstorming was accepted as a valuable method for stimulating the creative effort. Incidentally, it proved to be such fun, and its application became so well known, that many individuals—who should know better—presently tend to regard brainstorming as synonymous with Value Studies.

As persons boasting some small degree of sophistication in the Value Studies field, we recognize the value of brainstorming, but we also remember the importance of other aids to creativity, including, among others, the decision matrix, morphological analysis and synectics.

In any event, whatever the method or methods applied, the name of the game in the Speculation Phase is to create and record ideas without rejecting even the most far-fetched of them.

SPECULATION PHASE

Analysis Phase

Figure 4

The newcomer to Value Studies almost invariably finds that it goes against the grain for him to record all the ideas created during the Speculation Phase. When once he grasps the point that a screen is provided by the Analysis Phase, he begins to find it less offensive to record the idea, seemingly ridiculous in and of itself, that presently may serve to trigger a new and valuable creative chain reaction.

Once all the ideas—good, poor and harebrained—have been collected, we do review them to pick out the ones that have genuine potential. The Analysis Phase procedures and techniques are all well-known and require no elaboration here. By applying them, we screen out the inapplicable solutions and arrive at a manageable number of alternatives possessing high yield potentials.

DEVELOPMENT PHASE

In the Development Phase, we zero in on our target by selecting, from the approaches that survived Analysis, the one that will yield the maximum benefit to our management.
Development Phase

TASK Select the optimum approach

QUESTION Which approach best satisfies user's needs?

PROCEDURE Rough-draft a proposal to management for each of the alternatives chosen in the Analysis phase
Check each draft proposal against all requirements
Select the most desirable approach

TECHNIQUES Enlist the aid of specialty vendors
Evaluate by comparison
Identify roadblocks
Identify grey areas
Involve decision makers
Plan a sales approach

REMEMBER Put a $ sign on every decision
Use good human relations

Figure 5

We accomplish this by rough-drafting an actual proposal for each approach that got past the Analysis Phase screen. We then check out these proposals against the requirements, and against each other.

In the Development Phase, we begin to consider personalities – the probable reactions of individuals – together with the strictly technical aspects of the various approaches we are studying. If we have several prospective proposals of substantially equal technical value, obviously we will select the one that conforms most closely with the known thought patterns of the persons involved in accepting and implementing such proposals.

Presentation Phase

TASK Prepare and present a proposal that will convince management

QUESTIONS What do we recommend?
What will it accomplish?
What will it cost?

PROCEDURE Gather all data pertinent to the selected approach
Refine and digest the data
Develop specific recommendations
Organize proposal material into a management-oriented format
Establish and utilize the most effective time, place and mode of presentation

TECHNIQUES Translate bare facts into action terms
Show before versus after
State implementation cost clearly and completely
Show how savings will decay if approval is delayed
Make definite, positive recommendations
Include enabling documents, ready for signature

REMEMBER Indicate support for all estimates
Use good human relations
Present a recommendation, not an idea

Figure 6

IMPLEMENTATION PHASE

As Value Studies specialists, we may or may not be charged with the Implementation Phase. If we aren't, we doubtless will be called in periodically to consult with the personnel handling Implementation. In either event, the outline shown in Figure 7 should be helpful.

It is intended to remind us of the factors we must bear in mind if our proposal is to be implemented properly. None of them are unusual, none are peculiar to Value Studies and none can be neglected if implementation is to progress smoothly to successful completion.

Continued on page 27
By Robert Jones

Effective Listening Techniques, Suggestion Program Philosophy, Administrative Operations — these were among the courses recently conducted for staff members of an IBM Suggestion Services Department. The need for a training program became evident at International Business Machine's Computer Component Manufacturing Facility, East Fishkill, New York, when the decision was made to consolidate that location's Suggestion operation and IBM's Manassas, Virginia, facility.

The primary responsibility of our suggestion operation is to ensure that employees receive complete and prompt answers to their ideas. Handling employee's suggestions at a distant location multiplies these responsibilities. The increased workload, plus the transfer of experienced staff to other personnel activities, meant adding new people. The immediate concern was communications: not only between your staff and other employees, but within your own department. "How do I train my new people in suggestion operations, selling the program to others through manager/employee meetings, communicating with different levels of people, etc.?”

Your assignment is to put in place a Suggestion Operation Training Program, with the objective of educating your newer staff members along with upgrading the skills of the present staff in all facets of the business. You begin bringing in new Suggestion analysts who will be the liaison between suggester and management, and administrative support personnel.

COURSE SELECTION

The thrust of our education package was directed towards the Suggestion analysts; therefore, their ideas were solicited on the subjects to be covered, method of presentation and scheduling. The results of a previous course also were considered in the choice of subjects. Also built into two of the classes was a chance for the student to become the instructor. The response was positive; team feeling was created.

The analysts' primary concern was communications, in their daily contacts with employees and managers by telephone, at meetings and by written correspondence. The local Education Group was consulted, resulting in constructive feedback.

The additional workload condition caused by the processing of suggestions for two locations — some 7,000 annually — coupled with almost half the staff being inexperienced, made impossible the expenditure of large amounts of time in the classroom. On-the-job training was introduced initially as orientation to the department. The agenda and courses were subsequently structured to obtain the course information in net-form over a three-month period without loss of quality or too much impact on the daily work schedule.
A ten-minute presentation by each attendee was videotaped for review, and followed up with a critique by the instructor.

DEVELOPMENT AT IBM

As many suggestions were accepted for manufacturing courses were given to improve conductor products and the manufacture.
Divided into four categories, the subjects were: Communications; Department operations; Manufacturing; and Suggestion program philosophy, mission, objectives.

It was felt that these four divisions would give each trainee, experienced or inexperienced, knowledge which could be applied. The actual courses presented, in their respective divisions, are described as follows.

COMMUNICATIONS

Effective Listening Techniques: Emphasis was placed on proficient development of the four central listening skills. These skills are: overcoming distractions, detecting central ideas, maintaining emotional control and evaluating the message. In addition to carefully designed listening exercises, the program included a discussion on the significance of listening in interpersonal communication, a series of selected readings to reinforce the theory underlying each skill being developed, and cases involving communication problems. Pre- and post-tests were given to determine the amount of progress achieved by each participant. The class was presented in six, two-hour sessions.

The course segment has been successfully presented to a number of management personnel at East Fishkill in the past. The instructor is presently a staff instructor with the Management Development Group and was formerly education manager at Poughkeepsie, New York.

Effective Presentation Techniques: This course sharpens the more experienced analysts’ skills in the art of presenting material at manager/employee meetings and also prepares new analysts to make Suggestion Program presentations. Emphasis was placed on do’s and don’ts in making presentations, proper introduction and closing of sessions, use of visual aids to sell the program to employees, and effective question and answer techniques. A ten-minute videotape presentation by each attendee followed with a critique by the instructor was included. Videotaping and critiquing proved a very useful method of classroom instruction and feedback.

Effective Written Communications: This aids the analyst in editing investigator’s written comments without loss of message and in abstracting key thoughts to be channeled to the suggester on adopted and non-adopted ideas. It also provides analysts with the capability of writing a more effective memo. This course was conducted by the editor of IBM East Fishkill’s semi-weekly house organ, Circuit.

DEPARTMENT OPERATIONS

While reviewing the course curriculum with the students, a recommendation was made to have some of the more experienced people in the department present a half-hour talk on their part of the operation. This accomplished two very important functions: the presenter had the chance to speak before his peers on a subject important to him; new analysts were able to receive first-hand an overview of the entire department’s function.

The presentations were:

Administrative Operations: A comprehensive presentation on administrative operations was given, including:

- do’s and don’ts for presentations were emphasized.

Mail (referrals, general correspondence, new suggestions, etc.), typing (non-adopted and adopted), office equipment, filing (correspondence and records), and retrieval (suggestions — active, closed and records storage). Other areas discussed were numbering and preparation of new suggestions and record keeping.

Analyst Operations: Subjects included: Suggestion receipts — processing time, completeness of form, safety receipts, predates and abstracting. Referrals — safety suggestions and delinquent investigators wishing to make a referral. Rejects — receipts, Safety Department review and concurrence, ineligible suggestions, predating documentation and coordinator activity.

Also reviewed were: Analyst Twenty-one-Day Ruling — states that an analyst retains suggestion file until completion if held longer than twenty-
Department of the Suggestion Department Reports: Covered the fifty monthly and year-to-date (YTD) suggestion activity showing number of receipts and their value, open and closed suggestions, award and savings dollars, number of eligible employees, etc.

Personnel Manager's Report — Reflects Suggestion activity (monthly and YTD) for each of the eleven major organizations at East Fishkill.

Financial Returns Report — Shows the cost of processing suggestions.

Analyst Activity Report — a breakdown by each of the four department analysts showing savings, the total number of suggestions processed and still under investigation, new suggestions received, and processing time.

MANUFACTURING

Since semiconductor components are manufactured at East Fishkill, many ideas come from the assembly areas. These suggestions contain terminology and describe processes foreign to Suggestion Department personnel. Interest was expressed by the students in having a course dealing with the product and also seeing how it is manufactured.

East Fishkill Manufacturing: This course covered the process and testing techniques employed in our four major manufacturing areas. It described why each of the operations are necessary and how they are performed. The three-hour course was conducted by the manager of Systems and Programming Education, who also is an IBM East Fishkill Tour Host. The classroom instruction was followed by a tour of the manufacturing assembly line, which for some was a first.

SUGGESTION PROGRAM PHILOSOPHY, MISSION, AND OBJECTIVES

To introduce this program, the East Fishkill site personnel manager addressed the mission of the Suggestion Plan. Emphasis was placed on it as a source of monetary and personal recognition for employees. The interest of senior management on site in the operation was discussed. Other areas covered were the consolidation efforts under way and the expanded role of the East Fishkill Suggestion Department.

The East Fishkill Personnel Services manager — cafeteria, benefits, suggestions, recreation — talked about the department’s objectives in consolidation, including purpose, expectations and problems. A first-hand account by the speaker of his experiences during consolidation of another division also was presented.

Suggestion program philosophy was covered by the IBM Corporate Headquarters Awards Program staff coordinator. Topics discussed included the program’s history since 1928, today’s environment, and the future outlook and place of the Suggestion Program.

The manager of East Fishkill’s Suggestion Department discussed corporate and site operating objectives. This included obligations to Manassas and Fishkill under consolidation and an overview of the department’s operating budget. A comparison was made of the two locations’ activities with that of the corporation’s over the last year.

RESULTS

The author was one of eleven participants in the sessions. Overall impressions of the program and instructors as evaluated at the conclusion were very good. The majority of participants felt that Effective Listening Techniques would be most helpful in everyday communication with others. About half the students commented that extended sessions in Effective Written Communications were needed.

At the conclusion of the program, diplomas were presented to each of the participants as a memento.

CONCLUSION

Training sessions are valuable, but attempting to measure the results after a short period of time is almost impossible. However, the subjects covered should be useful to the student back on the job and hopefully in future assignments in Personnel, Manufacturing, etc. Not only does the employee now understand his and others' jobs more completely in the department, but he also has some background on the jobs of people who provide a majority of his suggestion workload. Continued training might include courses in Interviewing Techniques, Art of Persuasion, Interpersonal Communications, and Conference Leadership.

Training, whether OJT or formal classroom instruction with professional leaders, is necessary in industry today. The proper education of Suggestion Program personnel also is essential, and must be carefully planned and executed.
ROBERT E. COLEMAN is president of the Riegel Textile Corporation, Greenville, South Carolina. He served in the United States Marine Corps in the Pacific and North China at the end of World War II, and started to work in the textile industry in 1941. He graduated from North Carolina State University in June of 1950 and has been with Riegel for eighteen years, starting as assistant superintendent in the Trion Grey Mill. He moved to New York in 1959 and was made president of Riegel Textile Sales Company in 1965. In April of 1969 he moved to Greenville as executive vice president of Riegel Textile Corporation and, on January 16, 1973, was made president and chief operating officer. He is a director of the South Carolina Textile Manufacturers Association; a director of Textile Hall Corporation; and a trustee of the J.E. Sirrine Textile Foundation.

The American textile industry is a labor intensive industry. It employs almost one million people directly in textiles and almost another one and one-half million are employed in the apparel and related industries. The textile and apparel industries in the U.S. are a vital part of our economy. Together, they employ more people than any other industry.

The textile industry has been plagued for the last two decades by foreign imports. Late in 1971, it negotiated new trade agreements with major foreign competitors. These agreements, along with the changes in exchange rates between the dollar and foreign currencies, have had a good effect on its business.

The U.S. textile industry sales for 1972 were 28 billion dollars. This was an increase of fourteen percent over 1971.

The textile industry, as most every other U.S. industry, is wrestling with problems created by full employment. The greatest opportunity in the U.S. textile industry is to improve the performance of its people by whatever means available.

Riegel Textile is a medium-size company. In fiscal 1972, we did 202 million dollars in sales. Through the first six months of fiscal 1973, sales were running at the rate of 220 million dollars annually. We are a completely vertically integrated textile operation — that is, we start with the raw material and ship a finished product.

We serve many different markets, ranging from fairly simple, mundane products — such as baby diapers — to highly sophisticated products for industrial application — to high fashion material for the apparel trades.

Riegel is run by nine thousand people located in thirteen manufacturing plants in Canada, Maine, South Carolina and Georgia. In addition, we have retail outlets in most of the major cities in the U.S. and Canada. These outlets serve the home sewing and home decorator trades.

We first heard of Zero Defects in the Spring of 1965. We sent some of our people to visit the Martin Company in Orlando, Florida. They were tremendously impressed with what they saw and heard at the Martin Company and their enthusiasm for the Zero Defects concept convinced management that we should seriously consider a program for Riegel. Being perfectly candid, many of us at Riegel were apprehensive of this program. We wondered whether or not you could seriously and genuinely expect people to “do it right the first time.”

After a good many weeks of discussion, we decided to take the big jump and, in October of 1965, we initiated the...
program with a kick-off campaign at each of our plants. We talked with all of our employees, explaining the Zero Defects concept; what other companies had done with it; and what we could expect it to do for us as individuals and as a company. We offered each employee the opportunity to sign a pledge card which was also signed by the president of the company. The response was tremendous — over ninety-nine percent of our employees signed the pledge cards — and we were off to a good start.

We use our Zero Defects Program in two important ways:

First — To recognize those people in our company who do an outstanding job, and second — To inspire as many of our people as possible to “do it right the first time.”

There are many elements in our program but, in my judgment, the three most important tools of our program are: the achievement awards; the advisory boards on which the achievement award winners sit; and the corporate awards.

We make achievement award selections in each of our plants every four months. These awards are presented to our people on the basis of recommendations made by their immediate supervisors. A local committee selects the winners from the recommendations which have been submitted during the four-month intervals. The awards are presented to the employees on their jobs — with as much surprise as we can maintain.

The awards ceremony consists of reading a letter to the employee which I have written — the letter includes the specific recommendation which his supervisor wrote — and the presentation of a bronze plaque and special achievement award pin. The achievement award winners are then invited to become members of the advisory board in that particular plant. Although this is voluntary, we have yet to have an employee refuse to serve on an advisory board.

The advisory boards are the working forums of the program. We presently have twelve advisory boards. A meeting is held with each board every four months.

In a typical board meeting, no one is allowed at the table except the board members, the plant manager and myself. The other people attending the meeting are there as guests. I review the current state of Riegel’s business in some detail with the board and describe, by major division, the outlook for our business for the next six months. I then try to give a general picture of what is going on in the textile industry and in the nation’s economy.

We then review the recommendations made by the board members at the previous meeting. Our target is to have all recommendations completed in the four months between meetings. The progress of recommendations that are too involved for this time schedule are reported on at each meeting. No recommendation can be turned down without my approval and, so far, less than three percent of the recommendations made by our advisory boards have been rejected.

After reviewing the old recommendations, we open the meeting for new recommendations. We get some great ones and, as you would expect, some that are not so great. We give equal attention to both types, because we feel it is important to honor any recommendation with sincere evaluation. We have spent almost one million dollars in implementing these recommendations over the time the program has been in effect.

I believe the advisory boards are a great way to communicate with our people — not just the board members, per se, but with the additional people with whom the board members are in constant contact.

The third key element is the corporate awards. Twice each year we select corporate winners from the achievement award winners at each plant and take them on an all-expense-paid trip which lasts for three days. We have been to Washington, New Orleans, Houston and New York City. I go with the employees on these trips and they have my undivided attention. It gives us a great opportunity to know each other better, to talk about things other than business, and to establish a rapport which would be extremely difficult, if not impossible, for me, as president, to have in any other way. It also gives our employees a chance to see exciting places and people. For instance, when we go to Washington, we visit the congressmen and senators who represent these employees. The members of Congress welcome this opportunity and our employees really appreciate these meetings.

The program involves a lot of my time and the time of other levels of management, but I am convinced that it has improved our overall performance and has made a significant difference in our company’s results. However, I would continue the program even if the only benefits derived were knowing our people better and being able to communicate with them more effectively.

All of us face many interesting challenges today. In my opinion, the greatest challenge of American industry is for performance improvement. There is no doubt in my mind that we must find new ways to motivate people in American industry. And while Zero Defects is not a panacea for all the problems of our company, nor any other company, it is a great way to enlist the efforts of people toward a common goal.
INDUSTRY SURVEY
OF GOVERNMENT
PROPERTY
ADMINISTRATION

The following survey was conducted in accordance with RPSA 1.402-3S, and is presented in the format prescribed by 5.204-3S.

INTRODUCTION:
Name: Government Property Administration, Department of Defense (all services and agencies) and the National Aeronautics and Space Administration.
Address: Various operating locations in the United States and foreign countries.
Types of Property: All.

METHOD USED:
This survey is based on a statistical sampling of NPMA industry members, conducted in accord with 8.204-3S and contains pertinent comments presented by those members. It also reflects findings developed by other industry associations, some of which may have been presented to appropriate government representatives. It does not necessarily reflect the opinion of the author or the company which employs him.

BACKGROUND:
A cursory review of the history of Government Property Administration reveals that during World War II and the Korean crisis, government contracts were predominately cost reimbursement types. In these circumstances “everything” was government property. Government Property administrators kept many records and the noise level was minimal. In later years, as the predominance of government moved to fixed-price-type contracting, the burden of property administration shifted to contractors. At that time, the role of Government Property Administration shifted from the doer to the critic.

Contractors readily admit that most of us were raised and educated in the cost reimbursement contract environment so, at first, did not realize the important implications of the shift and did a less than respectable job in the property administration area. However, contractors are quick to point out that the job we did was acceptable to the new-found government critics, as reflected in our records during this transition period.

A GAO investigation in 1966 was the catalyst for a complete change in the scheme of things. In their usual fashion, they discovered enough “horrible examples” to move the spotlight to the property field. Since that time, we have seen increasing emphasis placed on the need for better property systems and property administration.

From the information gathered during the preparation of this survey, it is clear that contractors feel the pendulum has swung too far and needs to return to a more reasonable position — especially in these days of reduced budgets, appropriations and procurement dollars in the contractors’ business.

The survey team has found that industry understands, appreciates, and accepts the government motivation to reduce its overhead costs in connection with ownership of certain property, such as plants and equipment. Industry also understands the motivation to reduce overhead payroll by passing the burden to the contractor. Industry does not understand, or necessarily appreciate, the economic effectiveness of this shift of burden accompanied by unreasonable or non-productive requirements.
FINDINGS:
1. In almost every case when a contractor is cited for misuse or abuse of facilities, acquisition costs are used to highlight the scope of the misdemeanor. In fact, the average age of government facilities — plants and equipment — is well past 16-2/3 years. Stringent IRS guidelines grant full depreciation at that age. So, when we are talking about a $50,000 item of World War II or Korean vintage, we really concern ourselves with a depreciated value of $5,000 or less. Replacement values are also out of context, because no government contractor we can find would replace government equipment in kind. Scrap or used values have some validity, but they vary so widely as to be unusable. The point is that we so frequently hear about a “$13 billion government facilities problem” which is really only a $1.3 billion problem at depreciated values. This contention is further borne out in Congressional hearings. During testimony in favor of legislation to permit sale of plant equipment to holding contractors, the government admitted that less than $1 billion — about $880 million, to be more exact — was involved. The result of this testimony was the apparent downshift of priority for the legislation proposed.

2. In cases where legislation exists for negotiated sale of these facilities in conjunction with the phase-out programs, contractors are quick to respond to reasonable terms and conditions. This is evidenced by sales to contractors in such instances. Other cases reflect that the existing system of valuation of these assets has resulted in negotiation impasses.

3. The cost to a small contractor to establish an approved property system approaches that of very large concerns.

4. Companies with division at more than one geographical location face the problem of having their property systems approved by more than one Government Property Administration agency. Wide variance in interpretation of requirements exist.

5. Wide variation of interpretation of requirements for a satisfactory property system also exist within each service or agency, and even between individual property administrators.

6. Requirements for property systems and operations make little or no distinction between types of property with respect to non-expendable, expendable, or dollar breakpoints for control — with the exception of facilities.

7. Most government property administrators have not been trained in techniques to evaluate computerized systems and insist on maintenance of unnecessary redundant manual records.

8. Most property systems are placed in jeopardy of approval based on individual, exceptional, human error; “horror cases” rather than on evaluation of the system structure and functions.

9. Government system surveys fail to make favorable reports when deserved.

10. Identical items, belonging to different government agencies, require different records and irregular financial reporting.

11. Government survey recommendations for corrective action are too broad, vague, unrealistic, and provide no guidance as to what is desired.

12. The cost of control frequency exceeds the cost of the item(s) controlled.

13. No allowances are established for “breakage” of government property, minor losses, or damage of inconsequential amounts.

14. Government survey sampling techniques as used by different agencies and individual property administrators are inconsistent.

15. Established statistical confidence limits portrayed in 3 Supplement of the RPSA are unrealistic when applied to other than hardware items.

16. Criticism directed against contractors frequently disregards content or intent of the contract at hand outside the government property, special tooling, or special test equipment clauses.

17. Individual item control of government property costs between $13 and $25 per item per year — exclusive of inventory.

18. Government requirements for procedures and procedure changes:
   a. Expect unlimited and unnecessary detail.
   b. Fail to recognize costs connected with such procedures and changes. Surveyed costs range from about $1,000 to more than $5,000 per procedure or change.
   c. Fail to recognize necessary procedure preparation time. The surveyed range is from nine to sixteen weeks to produce a procedure with a life expectancy of one year.

CONCLUSIONS:
Improvement in government property administration is required in all categories. The system is unsatisfactory.

CORRECTIVE ACTION REQUIRED:
1. Publish procedures which take into account appropriate cost considerations in the various categories of property administration with first priority to:
   a. Use of depreciated values for government property.
   b. Setting dollar breakpoints for various types of controls. $100 for expendable, $101 to $1,000 for bulk control (in-out-balance records) and over $1,000 for individual item control are recommended.
   c. Establishing “breakage allowances” for minor losses. $25 per item up to a maximum of five percent of inventory is recommended.
   d. Setting standards for cost quantification of property systems effectiveness for systems approval. One percent of total inventory variance is recommended.

2. Develop and publish a basic property manual which contractors may adopt or adapt at their option.

3. Develop and make available, on a time sharing basis, a basic computerized property system which contractors may adopt or adapt at their option.

4. Revise property system evaluation procedures to minimize the “judgment factor,” which seems to be the major cause for non-standard evaluations.

5. Assign property administration for a company to a prime government agency.

6. Establish training courses for government property administrators to qualify them to perform computer systems analyses.

Government property administration is requested to submit its plan for correcting these deficiencies or state its position within thirty days. Failure to correct the unsatisfactory conditions may result in withdrawal of the faith of contractors that the objective of government property administration is to assure the reasonable preservation, protection and use of government property.
By Wallace H. Egbert

If all the inhabitants in the world were removed, there would be no energy crisis. Man is dependent upon the energies of the planet he inhabits. Man uses these energies wisely or wastes them foolishly.

Using existing energies wisely and finding new ones are man's greatest challenges in the closing years of the 20th Century.

Man is an individual and much depends on his individual actions to see us through the present energy crisis. Saving energy to keep America working is everyone's responsibility, and these efforts will help toward forestalling layoffs, shutdowns and individual hardships.

Management needs to direct their employees' attention to the crucial areas of the energy crisis. In this article we will only give a partial list of crucial areas every business, government agency or institution should prepare and distribute to their work force.

Crucial energy crisis areas:
- Petroleum products
- Electrical current and distribution systems
- Steam, light, power
- Packaging, paper
- Transportation facilities, roads
- Equipment, lumber, metals, raw materials
- Finish products

What can an individual do?

Employees are anxious to lend their aid and support to management in these perilous times. Management has a ready-made program through which it can communicate with its people: The Suggestion System. Never in the history of our nation has the Suggestion System been called upon to serve such a vital part in minimizing the national problem.

Regardless of what type of recognition might be offered by management for energy saving ideas, the greatest benefit is the satisfaction that the individual gets for his or her personal contribution in helping their company overcome its own energy crisis.

When every man and woman does his or her part, we will survive and win the battle against the energy crisis. No battle is ever won by just one person; it is the result of everyone taking his or her own responsibility and not letting someone else carry it for them.

What then is the conclusion?

There is but one answer: The skies may be overcast, but the sun is shining above them, so this cloud, "The Energy Crisis," is over us now, but the sun of happiness, comfort and prosperity is above it and eventually will radiate upon us. Man's determination to conquer any problem will force this cloud away and will let the sun shine through.

By asking your employees through the Suggestion System for their ideas on how to use the energies wisely, you will be helping yourself and at the same time be helping the entire nation. Use the Suggestion System wisely.
Society of American Value Engineers

Member Salary Survey

This survey was conducted as an objective established by Mr. R.J. Park, Chrysler Corp., Director, Career Advancement, SAVE. Mr. D.A. Johnson, the Magnovox Corp. designed and distributed the questionnaire. Mr. C.A. Sheufelt analyzed the data and prepared the report. Mr. D.J. Erickson assisted Mr. Sheufelt in statistical analysis of the survey data.

The objective of this salary survey was twofold. First, so that members could review the results to assess their current position. Secondly, so that companies considering the possibility of starting new Value Engineering programs would have an indication of the cost of high quality talent.

The report summarizes the data collected from the first Value Engineering Salary Survey. Standard statistical techniques were used in analyzing data and results are shown in the salary curve and charts. Approximately 10% of the total membership participated.

Chart No. 1 shows salary versus years since degree. When data presented in the Chemical Engineering Journal (1) is compared to Chart No. 1 it can be seen that the average Value Engineer earns $2,000 more per year than the average engineer.

It is hoped that the results of this survey will incite greater participation from the membership in the second survey and that they will complete the questionnaire in the next issue of "Communications."

(1) Jay Motley "How Your Pay Stacks Up" Chemical Engineering Vol. 80, No. 8, 2 April, 1973. PP 80-81

Replies represented the following industries.

- Diversified: 9
- Metal work or fabrication: 12
- Aerospace: 19
- Electrical or electronic: 12
- Chemical or plastics: 0
- Business equipment: 3
- Paper: 1
- Automotive — Trucks: 5
- Pharmaceutical: 4
- Consumer goods (non-durable): 4
- Sales division: 0
- Other (specify industry): 45

PERFORMANCE
In addition to those named in Issue 18 of PERFORMANCE, additional selection has been made of those persons who, through education, training and extensive work experience in the field, have been certified by SAVE as specialists in VALUE. For further information, contact Thomas F. Cook, vice president — Professional Development, SAVE, Corporate Manager — Value Assurance, The Huffman Manufacturing Company, Dept. P, P.O. Box 1204, Dayton, Ohio 45401.

The following named persons have achieved certification between October 1, 1973 and January 28, 1974:

John W. Anderson, Army Corps of Engineers.
John E. Reichen, Tektronix, Inc.
John T. Guiney, Army Corps of Engineers.
Donald E. Parker, General Services Administration (PBS).
Henry M. Wales, General Electric Co.
Don R. Taylor, Harbridge House, Inc.
Gordon N. Hodge, Bell Aerospace Co.
R.J. Labelle, General Electric Co.
Anthony R. Tocco, TRW.
Richard N. Carlson, Naval Undersea Systems Center.
Frank McGinnis, Sperry Gyroscope Division.
John A. Jonelis, Western Electric.
Laurence J. Sauter, Naval Air Systems Command.
Donald E. Poinsette, Jenn-Air Corp.
Paul W. Dobrow, Army Corps of Engineers.
Stephen Popadich, Army Corps of Engineers.
Richard J. Park, Chrysler Corp.
John L. Marcon, Private business.
Charles L. Baker, General Dynamics.
James E. Ferguson, Jr., Army Corps of Engineers.
Leonard S. Horner, Martin Marietta.
Andrew J. Snee, Value consultant.
Paul J. Rappaport, Army Electronics Command.
Emil F. Fiedler, Vought Systems Div.
Kenneth Adgar, Vought Systems Div.
John W. Shaffer, General Dynamics.
John D. Jackson, General Dynamics.
Richard E. Maneli, Private business.
Frederick E. Suhm, Army Corps of Engineers.
Harvey D. Welch, Brunswick Corp.
Thomas R. King, Joy Manufacturing Co.
Byron J. Davies, General Electric.
John F. Prendergast, Value Programs for Industry.
Albert F. Kee, Value Programs for Industry.
James W. Parker, Value Programs for Industry.
William G. McMurry, Motorola, Inc.
Adam J. Sawoski, The Singer Co.
Wilbur L. Bryant, Bell Aerospace Co.
Robert L. McGraw, Sr., Army Corps of Engineers.
Russell W. Bartholomew, RANCO Inc.
John R. Steinmetz, Sperry Univac.
Dale E. Daucher, General Services Administration (PBS).

Doyle T. Brooks, Jr., Vought Systems Div.
Stephen W. Boska, Naval Undersea Systems Center.
Richard L. Blaisdell, supervisor of Shipbuilding, Groton.
Carl P. Becker, Boeing Aerospace Co.
Paul E. Frusti, Chrysler Corp.
Vincent L. Lao, Lao & Associates.
Derrel E. Kay, Amana Refrigeration.
Kenneth L. Woodman, Mar-Lay Assoc.
Charles W. Bytheway, Sperry Univac.
Joseph J. Kaufman, Honeywell, Inc.
Robert F. Eberle, Naval Weapons Handling Laboratory.
Roy E. Fountain, Private business.
Harold J. Smith, Aerojet Corp.
James S. Hellen, Value Associates.
Jon F. O'Connor, Vapor Corp.
Karl M. Feiertag, consultant.
Herbert Steiner, Army Electronics Command.
Paul J. Bellino, Jr., Defense Personnel Support Center.
Walter L. Wichita, Building Industry Consulting Ctr.
Melvin A. Hunter, Emerson Electric.
Carl L. Wilson, Day & Zimmerman.
Robert D. Cribbs, Collins Radio.
Edwin V. McGuire, Ford Motor Co.
Raymond E. Pippin, Collins Radio.
H. Poe Bradbury, Army Corps of Engineers.
Donald J. Madden, Commonwealth of Massachusetts.
Ivor Frank, Grumman Aerospace.
Joseph R. Wheeler, McDonnell Douglas Corp.
Arnold H. Brogan, General Services Administration (FSS).
Paul T. Filipi, Army Corps of Engineers.

22 PERFORMANCE
**WHAT IS IT?**
Configuration Management is the discipline for administration and control of engineering changes, waivers and deviations.

**WHY DO IT?**
The cost of product changes frequently gets out of hand on both major and minor programs unless changes are properly managed.

**WHO NEEDS IT?**
Although some industries, such as automotive, have long practiced the change control discipline, many government contracts have a great need for CM support within and from contractors.

**SYMPTOMS INDICATING NEED FOR CM**
- Excessive cost of changes.
- Decisions on change take too long to make.
- Approved changes are not incorporated effectively.
- Documentation does not match the product.
- Total costs are unknown at the time the change is approved.
- No control of waivers and deviations.
- Items of unknown configuration are in use.
- Technical documentation is lacking when needed.
- No individual is responsible for change control.
- Faulty procurement specifications are in use.
- Cost saving is not recognized as a reason to consider change.

**PERFORMANCE**

**HOW BEST ACCOMPLISHED?**
Experience indicates that most effective CM efforts consist of at least the following ingredients:

1. Management assigns a capable person the responsibility to do it.
2. Government and contractor personnel interfacing in CM work are well educated in the concept and application.
3. A CM plan is tailored to meet only the minimum needs of the particular program.
4. A specific CM task is placed in applicable procurement contracts.
5. Selected hardware/software items are designated for appropriate control.
6. CM is applied to products during all phases of the life cycle through retirement from inventory as needed.

**THE BASIC ELEMENTS OF CM**
Select and identify configuration items (CIs).
Progressively and continuously control changes to the baseline of the technical documentation.

**BACKGROUND**
The first formal CM program was initiated by a component of the Defense Department about 1963, when a dire need was recognized to control a large volume of engineering changes. These changes were very expensive and sometimes complex, and lack of proper control helped to contribute to cancellation of some major programs. In 1969, overall Defense policy was issued for CM on systems and equipment, and efforts are continuing to support this policy. The Federal Aviation Agency, NASA and other government activities are also involved in active CM programs. Numerous industrial companies have active CM programs.

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**AMERICA'S NEW YOUTH OPPORTUNITY PROGRAM.**

To some it may only look like a booklet.
But to a kid with ambition, it’s a world of opportunity.

It’s a free government booklet about technical education and the terrific careers that abound for technicians.
Careers that only take a year or two of technical education.
Careers that can pay as much as a four-year college graduate earns.
Careers that are opening up twice as fast as that for any other group.
In fact, right now thousands of jobs are unfilled. Just waiting for qualified people.
In fields like medicine and architecture. Chemistry and ecology. Urban planning and nuclear research, to name just a few.
The facts are in our free booklet.
If you’re a kid looking for a promising career, send for it.
If you’ve got a son or daughter who’s undecided about what to do, send for it.
If you’re active in your church or community’s youth programs, send for it.

Simply write: Careers, SW Washington, D.C. 20202.

**AMERICA NEEDS TECHNICIANS**

What is hailed as the world's most advanced communications system for public safety now in use in Huntington Beach, California, has not only resulted in a decrease in crime, but has helped to attract business and industry to Huntington Beach, declares Earle Robitaille, chief of police of one of the fastest growing communities in the United States.

Robitaille said a new approach to communications was needed in order to meet the challenge of providing more effective law enforcement and several feasibility studies were conducted. Not only were a wide variety of hardware and software manufacturers consulted, he noted, but planning and forecasting were carried out within city police, fire and administration departments. Present needs were defined and future requirements projected through 1985 and beyond.

Finally, a decision was made which Robitaille terms "the most advanced public safety communications system operating anywhere and we are proud to be a pioneer in its implementation."

Designed and manufactured by Motorola Communications and Electronics, Incorporated, the new Command and Control system was created and built to increase the efficiency and safety of the officer in the field, increase efficiency in the communications command center and provide more and better management information data.

In the new system, readout teleprinters are installed in all Huntington Beach patrol cars. This enables messages to be printed for direct reading within the vehicle for the officer's information and action. Accuracy is assured and messages are received and acknowledged faster than by oral communications, since officers no longer are obliged to write down the messages.

All an officer need do is press an appropriate button over the UHF radio system, which automatically transmits communications along with the officer's number into the computer. This takes but a fraction of a second. Dispatchers are made more efficient and initial system tests have indicated that a ninety percent reduction in air time has been achieved through the use of data instead of voice for these transmissions.

Under the old manual dispatching system using radio voice only, an average of fifty seconds was required for an officer to receive, copy down and acknowledge a dispatch message. Using the teleprinter system, an average of only seven seconds is taken for the officer to read and acknowledge a message.

Upon initial entry of a call for service, the response address is typed onto a video terminal to assure proper response to a valid location, the communications operator requests an address file search to be performed by the computer. The computer, in a mere three seconds, verifies the validity of the address and supplies geographical identification codes. The address file also will return a printed list of police and fire hazards known at the location, i.e., personal medical alerts, fire hazards (materials & processes), arrest warrants, criminal registration, etc.

An additional advantage is provided by the use of the computer and message switcher in the command and control center. An officer can request the dispatcher to make a records check on a person or vehicle, either from information stored in Huntington...
Two dispatchers, two complaint writers and communications supervisor operate the console of the Huntington Beach, California, Police Department's Command and Control Center.
Police Officer James Austin reports his location to the department's command/control dispatcher as silent alarm message is printed on automatic teleprinter in the vehicle. Above the teleprinter are the radio controls and the mobile status encoder-decoder.

Beach's own computer or from other sources. This has led to more effective law enforcement, higher apprehension rates and increased officer safety.

The Police Department now is in the planning phase of a vehicle locator file. Anticipated for completion in December 1974, the system will graphically indicate the location of all police units within a ¾-mile radius. The display also will indicate the availability status of each unit by color coding, and the location and priority of all calls requiring police response. This valuable information will reduce response time to emergency calls and allow for the more effective use of police personnel.

Jerry A. Matney, mayor of Huntington Beach, related that, "Huntington Beach's population increased one hundred percent between 1965 and 1973.

"We were faced with a huge need for increased police and fire protection, as well as numerous other services, but without an adequate tax base.

"Businessmen seeking new sites naturally consider such protection when making decisions as to where to locate," Matney stated, "and our new Command and Control system has already helped to attract several new firms to Huntington Beach."

Additional features which help to increase efficiency and service to the public and to business are an alarm system, fire department interface and greater use of the city's helicopters, fixed-wing aircraft, K-9 squad, Special Enforcement Detail and bomb squad — all tied into the new Command and Control Center.

Business alarms, robbery, burglary, intrusion, etc., alarms which are wired directly to the police department are connected to the Command and Control computer. As the alarm is tripped, the computer instantly teleprints the alarm notice to all police field units. The available units will immediately respond. The delay normally encountered from the initial dispatcher response to the alarm to actual voice transmission has been deleted.

The Command and Control Center also is equipped with a special alarm audio-monitoring system. A business owner can now add audio monitoring devices to the conventional alarm sensing devices. When the alarm is tripped, either by intrusion or for a robbery, a police officer in the Command and Control Center will monitor all voices and noise within the establishment. This will provide the police department with more accurate information instantaneously as it occurs.

Associated with this alarm system will be a random access microfilm file containing emergency response information relating to the specific location. The dispatcher will have at immediate access general area maps listing all escape routes and specific building diagrams indicating all ingress and egresses to the building, etc.

Although the police and fire departments maintain separate, distinct dispatching facilities, the computer interface between both agencies allows for instant exchange of information. A telephone call to either agency requesting response assistance from either agency can be directed to the proper dispatching agency with no additional delay.

The system also has greatly enhanced the utilization of the department's four helicopters and one fixed-wing aircraft which constantly patrol the city from the air. The police department is presently studying the feasibility of equipping their aircraft with live television cameras. The Command and Control Center will house television monitors where dispatch and command personnel can view incidents which may occur anywhere in the city on live television.

In summary, Chief Robitaille reported that, "In addition to giving residents, visitors, business and industry better and faster police and fire protection through use of this new system, we also will be able to increase our services and keep costs down, thus resulting in even more favorable tax rates for Huntington Beach."
Implementation Phase

TASK Install the approved change

QUESTIONS What must be done? in what sequence? with what results?

PROCEDURES Obtain any additional required management authorization
Obtain necessary changes in technical data package
Procure necessary equipment, tools, raw materials, piece parts, supplies, etc.
Install and de-bug the change
Train personnel to work with the change
Establish standards

TECHNIQUES Use PERT or similar technique

REMEMBER Use good human relations
Install it right

Figure 7

AUDIT PHASE
Wherever we are concerned with a Department of Defense, General Services Administration or related contract with provision for sharing savings accruing as the result of accepted Value Engineering Change Proposals, details of the Audit Phase will be spelled out in the contract. Certainly, the audit won’t be neglected.

Should our Value Studies work have a less formal contractual basis, we may need to remind ourselves that it doesn’t pay to hide our light under the proverbial bushel. If our efforts result in producing a nice extra profit for management, it behooves us to remind our superiors and colleagues of this achievement.

Unquestionably, this will mean that we have to spend time digging through unexciting cost reports and performing arithmetical drudgery, but it will pay off when we publish our results.

Since Larry Miles evolved Value Analysis as a means for attacking hardware problems, Value Studies techniques have achieved widespread acceptance in the hardware area and have been developed for application to software, as well.

As applications of Value Studies techniques become more general, and as more and more persons are introduced to them, it seems desirable to add details of the follow-through beyond the Development Phase to the classic Value Studies job plan, and to incorporate into it clear statements of the tasks, questions, procedures and techniques associated with each phase.

The Summary Job Plan proposed here provides a clean-cut progression of phases, and outlines for each phase what its task is, what questions must be answered, what procedures should be followed and what techniques to apply.

It is presented here in the hope that it will clarify certain areas that have been confusing, and remind us that we must make and sell positive recommendations, then implement our proposals and, finally, prove our accomplishments.

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Figure 8
The products manufactured in the Hiroshima Plant of Japan Steel Works (JSW) are broadly divided into two groups. One group is standard products manufactured in advance — such as pinsetters for bowling, deck cranes, injection moulding machines, etc. — and the other group is order-made products designed and manufactured after receiving orders — such as a plastics processing machine, high pressure gas compressor, paper machine, etc.

In the case of order-made — made-to-order — products, the quantity to be manufactured ordinarily is only one. Therefore, the quality of materials and the shapes of parts differ every time a product is manufactured. Accordingly, the VE technique differs considerably in comparison with that for general, standard products.

This paper explains the cost reduction of large-sized, order-made products, taking as an example the paper machine. JSW has produced many sets of paper machines under a license agreement with J.M. Voith GmbH in the Federal Republic of Germany, since 1964. At the beginning of our technical cooperation, we had invariably gone into the red, because the paper machine which we manufactured, based on the drawings of Voith, was too rigid and heavily built. At one time we were apprehensive as to whether the manufacture of the paper machine could be continued.

But today, after expending considerable time and personnel, and the introduction of VE techniques, we are steadily making profits.

**STRUCTURE OF PAPER MACHINE**

The paper machine consists of parts as follows:

**Stock-inlet** — The stock which is pumped up from the stuff box is agitated and spread out on the Fourdriner wire (belt) at proper pressure.

**Wire part** (moving belt) — Water is removed from the stock and formed into a sheet on the running wire.

**Press part** — The sheet entering the press part from the wire part contains from eighty to eighty-five percent water. The water further is mechanically removed from the sheet by pressing.

**Dryer part** — The sheet, which touches the large-sized dryer-cylinder, to which steam is supplied, is then dried mainly by evaporation, and the moisture content is reduced to about two to three percent.

**Breaker stack** — The sheet is pressed to obtain higher smoothness.

**Size press** — The sheet is sized by special sizing material.

**Calender stack** — Uniform thickness and gloss of the sheet are obtained as the sheet passes through the nips.

**Reel part** — The sheet is wound to a fixed diameter onto the reel which is the last unit on-line of the paper machine.

**Winder** — The sheet is cut to a fixed width and rewound to a fixed diameter required by the customer.

If there is a flaw in one of the above parts, the paper machine will not function properly.

**SELECTION OF THE VE THEME**

The type of individual paper machine differs, because the kind of paper, the output and the rate of mixing of stock are involved, necessitating a different size and speed for each machine. However, the equipment can be standardized to three stages, by size. We can assemble a complete paper machine by combining these equipments. The selection of the VE theme on the paper machine — order-made, large-sized product — is as follows:

The cost of the individual equipment parts, which are able to be reduced in cost drastically by adoption of VE proposals at the designing level, is not expensive, but the quantity is numerous. The following are examples:

**Automatic guide equipment** — It stabilizes the running speed of the wire in the wire part, the felt in the press part and the canvas in the dryer part.

**Stretcher** — The function of the stretcher is to give proper tension to wire, felt, and canvas. About ten or so are installed in all paper machines.

**Doctor** — The functions of the doctor are to remove paper powder and dust, and to keep the surface of the roll clean. Several tens of doctors are installed in each paper machine.

**The others, such as bearings, platform, etc., fall under the above-mentioned category.**

There are equipment items which are impossible to reduce in cost by adoption of VE proposals at the designing level, but are able to be reduced in cost drastically by Industrial Engineering (IE) at the production level. The production quantity of these is small, but their cost is very high. To cite an example:
By Kenji Hirata

KENJI HIRATA is a member of the Injection Moulding Machinery Section, Machinery Design Department, Japan Steel Works, Hiroshima, Japan, and is a trained and practicing Value Engineer. He is a graduate of the Okayama Technical High School. Mr. Hirata entered employment with the Japan Steel Works, Hiroshima Plant, in early 1965, where he was assigned to the Paper Machinery Section of the Machinery Design Department, and was transferred to the Injection Moulding Machinery Section in 1972. He participated in the Fifth National Conference of the Society of Japanese Value Engineers in Tokyo in 1972, where this paper was presented.

Suction roll — Suction rolls are installed in the wire part and the press part. The function of the suction roll, which has suction boxes inside of it, is to remove the water from the sheet efficiently. The material of the roll shell is centrifugal cast iron or cast steel, and several thousand of small holes are drilled on the surface of it. The cost of the suction roll is about ten million yen — about $33,000.

It is possible that the cost of the roll shell can be reduced drastically by adoption of IE. There also is room for cost reduction of the inner parts by application of VE. There is another idea which performs the same function as the suction roll, but it requires long tests and verification before it can be used.

Relative effect of cost reduction between adoption of VE proposals at the designing level and by IE at the production level is as follows:
- There are equipments which are heavy and have numerous parts, with the cost ratio of materials and manufacturing being about the same. For example, the dryer part requires more than half of the volume of the paper machine. The greater portion of the dryer part is made of cast iron and its weight is several hundred tons. We can reduce the cost of the dryer part as follows:
  - Improvement of the work by IE, which reduces the manufacturing time and the preparative time; the design work which minimizes the manufacturing phase; the design which reduces allowance for machining; and the changing of the machine structure from casting to weldments.
  - I have mentioned above the selection of the theme. These are typical examples, and it does not necessarily mean that all these standards can be applied to the entire paper machine. Where such applications are not feasible, we have tried to reduce the cost of the equipment by VE, wherever it was deemed that it had merit.

ESTIMATED COST REDUCTION AND ACTUAL COST BY VE

As a result of tabulating the cost reduction figures of each equipment, we found it was possible to reduce the estimated cost by eleven percent.

Subsequently, as the jobs were completed one after another, the figures of actual cost were obtained, which showed that the actual cost bettered the estimated cost.

Since the introduction of VE, the projects which were selected in connection with the paper machine numbered more than thirty. The participants of each VE team were six persons, four of them being engineers of the Design Department and others being those of the Purchasing and Production departments. The length of VE activity was two weeks on one project, after which VE proposals were submitted.

The proposals based on the projects relative to the paper machine were adopted and fully implemented.

The paper machine section is provided with the VE proposal report, the cost table, the purchase price list, and a showcase of VE samples. These are utilized in our daily routine work.

Also, in the Production and Supply — purchasing and sub-contracting — departments, the application of VE has produced good effects on production. It is felt that the effect of the working estimation system has become evident as a manifestation of cost-consciousness.

CONCLUSION

I have explained the cost reduction by VE for large-sized, order-made products, choosing the paper machine as an example. At first, we feared that it was impossible to put to practical use the VE technique for order-made products, if we had to change our design on account of change of specifications at the request of customers which might affect our delivery schedule. However, in fact, we were able to use the VE technique without much difficulty, even after the change of design, as the groundwork of VE had been completed.

The important factors of the cost reduction by VE are as follows: The drastic cost reduction by efforts at the design level; the drastic cost reduction by IE at the production level; and the drastic cost reduction, if efforts at the designing and the production levels are mutually made.

It is obvious that large cost reductions can be realized if concerted efforts are made by the Design and Production departments.

I also would like to report that the VE technique which was applied to paper machines was also applied to plastics processing machinery, which is one of our main lines of products in the Hiroshima Plant, and it is obtaining good results.
"OPEN THE DOOR BROTHER"

By Walter M. Kleinmann

"Mr. Entrepreneur, why are you operating a business?" Now don’t say you went into business for the good of the community, or to make jobs for people, or for some altruistic or philanthropic reason. While jobs are created, to be sure, and benefit does occur in a community when a business is established, these are secondary results arising out of its existence. The prime reason is: "Business exists for profits!"

Recently, President Nixon appointed a National Commission on Productivity, and some interesting facts are being brought to light. In a recent speech, Senator Charles Percy of Illinois pointed out that for years the United States has enjoyed a position of technological superiority, but recent surveys would lead us to believe this position is a fact becoming a myth.

We find that in the waning years of the '60s, United States productivity increased by a total of ten percent, while many of the industrial nations of Europe increased productivity forty to fifty percent. It is reported that Japan's productivity has increased ninety percent. If we are to continue to enjoy the prestigious position as the world's leader in technology and productivity, it behooves us to develop and encourage innovative programs to build our economy to higher levels.

In the past, walking fast was adequate, but today that's not good enough. We're going to have to run just to keep up. This is a good secondary reason for improving your business. In doing so you will add to the strength of our national economy, but that does not alter the fact that the game is profits.

BUSINESS EXISTS FOR PROFITS!

Businessmen and women, regardless of stature or rank in the company, want to make money, elevate their position in life and improve technology. It's obvious that no one would deliberately risk hard-earned cash without being assured the possibility of multiplying his investment.

There is the small business that requires the services of only one or two individuals, but the corporate structures of today require the services of many people, include numerous large buildings and require a great deal of machinery. Without people, however, all this is meaningless.

Have you ever visited your company on Sunday and observed the costly equipment standing idle? People are needed to start machinery in motion so that the reason for your investment in the business can be realized. It takes people to invest what they have to invest in your business to make it pay; their energy, sweat, aches, tears, yes, and blood, too, if you want to be dramatic and truthful about it. In a very realistic sense, your employees become partners in your enterprise when they start working in your company. So, OPEN THE DOOR BROTHER, let your partners have a little "say" in the operation of the business.

Years ago, many managements kept the operation of the business in a file drawer marked "classified." Only top, senior management established quotas, quality of product, regulations and company policy. They still do make the final decisions. Years ago, too, it was thought that management was successful when it accomplished these same quotas and produced a quality product. This is still true, but realistically we know it is also accomplished by the managers who direct and lead others in the performance of their jobs. It is recognized that while it is management's prerogative to establish guidelines and standards for a successful operation, in the final analysis it is the employee — who meets the job demands by his level of performance — who determines the results on the Profit and Loss statement.

No one can refute the important part employees play in the success or failure of a business. No one can deny that men and women on individual jobs are close to the details of the jobs and probably are in the most ideal position to recognize possible areas of improvement. Many times employees have, at coffee or lunch breaks, discussed their areas of work. You often hear, "They ought to do this," or, "They ought to do that." Unfortunately, what "ought to be done" never reaches the ears of those empowered to take action should there be any practical value to the recommendation. The conversation around the coffee or lunch tables has real value if the mechanics for documenting some of the ideas are provided by the company for the employees.

One experience we had recently at Johnson & Johnson happened when we were walking to our company cafeteria with a fellow employee. I remarked that he had not submitted any suggestions recently. His comment was one we have all heard before, "I don't have any bright ideas lately." We sat down with some of his buddies and I listened to their conversation for a few minutes before returning to my office. As I left them, I asked my friend to stop at my office before he returned to his job.

When he did, I commented, "I thought I heard you say you haven't had any bright ideas lately."

"Yes," he said, "that's right, I haven't."
"Well," I continued, "just now at coffee you dropped four potentially good thoughts while you were berating the company. Why not put those ideas on a Suggestion form and give the company a chance to hear them?"

We talked a few minutes more, which resulted in his submitting his ideas to the Suggestion Program. Two of them were rejected as impractical, and he received an honest evaluation as to why they could not be used. The other two were acceptable and adopted; resulting in a net savings to the company of $2,800 in the first year of use. Obviously, he was very happy to accept his check for putting his thoughts on paper.

We've reviewed the fact that we are in business to make money. We've also established that much can be said about looking to our employees for help in operating business more efficiently, resulting in greater savings to the company. You may say this is all very basic and known fact. I agree that if you are management, these are things you are aware of. Suppose, however, I tell you that if you will give me $1, I will return to you $4.93, and for as many dollars as you give me, I will give you a comparable return.

The National Association of Suggestion Systems has just released its 1973 Statistical Report. After surveying their membership, they found that the overall savings/cost ratio is $4.93 to $1. For every dollar that is spent on a Suggestion Program the company realized $4.93 in return! All factors were considered in arriving at these figures; awards, administrative costs, investigatory costs, etc. You need not be a mathematical genius to know that's a good return on investment.

OPEN THE DOOR BROTHER! Right on the door step is the proven method to help your company on the financial road to success. Suggestion Programs are infested to stimulate the creative thinking of the employees and to offer an organized method of putting acceptable ideas (suggestions that will reduce waste and improve work methods, products, working conditions and equipment) into use. The function of the system is to join all members and representatives of management in leading employees to develop and submit good, usable ideas. As previously pointed out, the men and women on individual jobs are close to the detail of those jobs and it is good basic policy to stimulate them to devise improvements in order that both company and employees might benefit. Recognizing the individual, and providing him an additional means to participate in some of the thinking that takes place in the company, is an important industrial relations tool.

Each year suggestions submitted by employees of NASS member companies number in the millions. Many of these ideas have resulted in tremendous dollar savings to companies. Let me share with you two outstanding contributions resulting from the Suggestion Program in two companies.

1. I.B.M. had a costly problem with computer cores. An employee submitted a suggestion to correct the condition. It was adopted, and I.B.M. realized a savings of $750,000 per year. For this idea, Huylon Van Buren received the tidy sum of $75,000, the highest known cash award paid by any NASS member company.

2. United Air Lines didn't know they had a problem. But an employee submitted a suggestion to make a minor change in the luggage compartment of the aircraft. He reasoned that the change would result in a better center of gravity and ease the strain on the motors, thereby enabling the engines to operate more efficiently with less gas usage. The idea was tried and found practical and feasible. United now realizes a savings of approximately $458,500 each year. Gordon Plunkett, the suggestor, was quite happy to receive ten percent of the first year's savings.

There are many stories that could be told about savings realized through the Suggestion System. Time and space do not permit detailing more in this article. Suffice it to say, that of the member companies participating in this report, the average savings enjoyed by each company was $966,000.

If you are a progressive, aggressive manager and your company is suffering from lethargy for lack of new and improved methods, if your employee morale needs bolstering, and if there is a need to establish greater rapport, improve productivity and technology, if you want to tap a hidden and/or forgotten resource, if you are interested in greater profits through savings and efficiency, then a Suggestion Program is what your organization could use...now. BROTHER, OPEN THAT DOOR!!!
UPDATE
Continued from page 7

LARGEST SUGGESTION AWARD

A suggestion that resulted in modification of equipment netted Lawrence Baughman, master mechanic with thirty years’ service at the General Tire & Rubber Company’s chemical plant in Mogadore, Ohio, an award of $25,000. The award, maximum allowed under General Tire’s suggestion awards program, is the highest ever given by the company and the largest ever in the rubber industry. It also is believed to be among the top ten suggestion awards ever given to any employee in American industry.

Installation of officers took place in January for the North Texas Chapter of NPMA when Richard S. Carnett (left) became the immediate past-president of the chapter and James R. Stiles took over the leadership of the organization. Stiles is a contract administrator with General Dynamics, Fort Worth. In an address to members after installation as president, Stiles announced the program and objectives established for the coming year, which include plans for the Chapter to sponsor a Regional Seminar/Workshop in the Dallas/Fort Worth area in mid-year. Details on the Regional Property Seminar/Workshop may be obtained from the North Texas Chapter, NPMA, P.O. Box 1413, Grand Prairie, Texas 75050.

NEW PRESIDENT OF NPMA

John B. (Bert) Benson was elevated to the presidency of the National Property Management Association upon the resignation of Donald M. Fry. In submitting his resignation, Mr. Fry, vice president for Property and Accounting at World Airways, Inc., cited the current energy crisis besetting air carriers, the effect on profitability, staff and cost reductions, as negating his effectiveness and capability to continue as the Association's president.

Bert Benson was a charter member of the North Jersey Chapter and subsequently served as program chairman, treasurer and chairman. He was chairman of the Membership Committee of the National Property Administration Association and served as chairman of the Merger Committee which united NJPMA and PAA into NPMA and served on an interim basis as national president until the first national election. He subsequently was elected vice president of the Eastern Region and at last year's national election was elected as national vice president.

Bert attended Kearny public schools and Coleman’s Business College and has been active in property administration with Singer-Kearfott Division since 1957 and is presently manager of Property Accounting.

At the Chicago Transit Authority, new employees are given a suggestion booklet and form when hired to show them that CTA is truly interested in better ideas. Peter Meinardi, (left) General Administration & Finance manager, looks on as Russ Warnstedt, Employee Suggestion coordinator, explains some of the advantages of submitting ideas to Shirani Gunawardane, a new-hire clerk typist from Sri Lanka (Ceylon).
QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY
By Glenn E. Hayes, Ed.D
Charger Productions, Inc., Capistrano Beach, California

Quality control became identified as a management and production function exactly 50 years ago. The best text for personnel who have to apply the principles of quality control in practice has just been produced. QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY is a fine tribute to the 50th anniversary of the profession. Moreover, those desiring to obtain an enjoyable and readable text on quality assurance will find it a pleasure to consult and peruse this book.

The range of QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY extends considerably beyond the production processes, clearly detailing how clerical and accounting fields relate to the technique, and explains how quality standards have been developed and positioned within the current economic system. Acquisition and meaningful use of data are discussed in simple terms; the student is not lost in a maze of technical jargon.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY is Dr. Hayes' second volume on the subject. His previous text has been used in many colleges, universities and in industrial training courses. His updated and extensively revised work covers a considerably broader QA field, without sacrificing the detailed material which made the first book so eminently practical as a teaching text.

Quality control engineers will find much workaday information in the sections on Statistical Quality Control, Tests and Measurements, Reliability and Maintainability Engineering, and Evaluation of Potential Vendors. Procedures and techniques utilized by leading manufacturers and those stipulated in government contracts are included. Sampling Inspection Tables appear in detail to facilitate proper use and/or inclusion in a quality assurance manual. Theory and applications of nondestructive testing also are emphasized.

Organization and integration of a quality control department within the framework of either a large or small company are explained, and there is much relevant information relating to the most effective and economical use of the QA function in the manufacturing processes.

Discussion questions are incorporated in the text, and there are sufficient tables, charts and figures to provide the correct answers — greatly simplifying the work of quality assurance instructors and most useful for those engaged in self-study programs.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY is an outstanding text and reference which no doubt will contribute measurably to the advancement of the field in the years to come.

Harry G. Romig, Ph.D., P.E.
Professor Emeritus,
School of Business Administration
California State University, Long Beach
Member, Evening Extension Staff, Citrus College
Consultant in Industrial Engineering

Book Review

VALUE ANALYSIS TO IMPROVE PRODUCTIVITY
By Carlos Fallon
John Wiley and Sons, Inc., New York, New York

How often do you take a technical book along to enjoy reading while on vacation? Mr. Fallon's superb text, explaining a little-understood subject, Value Analysis, will pleasantly surprise you, whether it be on vacation or just while doing some leisurely reading at home. An example of his capability to whet the appetites of all of his readers can be seen by this quote from an unsolicited opinion by James S. Hellen: "...is the most enjoyable reading volume ever done on the subject. His inimitable style of making a point will delight both the professional and the neophyte, alike. Not only does he please our fancy, he is a master at stimulating the intellect — an exciting teacher."

Simply stated, the book is about the important subject of value...the value of the car you want to buy, the shopping center you wish to construct, the purchasing system operating in your industrial plant or — whatever. Mr. Fallon explains methods for determining value, and helps anyone learn how to do a better job of using his resources. For more sophisticated approaches, the techniques of operations research and mathematical modeling are covered, providing additional working tools for the value analyst's kit. There is something of value in this book for everyone.

The author has blended clear description with a sprinkle of Latin wit and his technical acumen; these are then combined with the vast wealth of his working experience. The result: A dedicated work by Carlos Fallon to anyone who cares to find better ways to achieve economic value. — Rudy H. Kemper
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The National Commission on Productivity, Washington, D.C.
QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY

Encompassing the 240 primary inputs necessary for an effective QA program

HARD-BOUND TEXTBOOK SIZE
AUTHOR: GLENN E. HAYES, Ed. D.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY, Glenn Hayes' second book on the subject, encompasses the entire QA spectrum. His first work, Quality Assurance in a Manufacturing Enterprise – published in 1970, was quickly accepted as a standard text by major colleges and universities.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY delves profoundly into the theoretical aspects of QA while at the same time amplifying practical techniques for control and meaningful reporting.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY's more than 400 pages, the result of over two years' preparation, are profusely illustrated with easy to read diagrams, charts and reporting structures. Expanding greatly on his first work, Hayes' second volume is destined to become THE primary guideline for establishing and maintaining effective industrial QA operations.

QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY, attractively bound in a durable cloth cover with silver foil imprint, is being offered on a pre-publication basis with a special 30-day, money-back guarantee to individuals and corporations at $14.95 a copy. To take advantage of this pre-publication, money-back offer, simply complete and mail the coupon below:

Glenn Hayes, a registered professional engineer in the state of California, is Associate Professor in the Industrial Technology Department, California State University, Long Beach. Prior to his academic affiliation, he held various quality assurance management positions in the electronics, steel, aluminum, aerospace and aircraft fields. He has served in a consultant capacity in quality assurance to private industry and the U.S. government.

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Please send______ copy/copies of Dr. Glenn Hayes' book, QUALITY ASSURANCE: MANAGEMENT AND TECHNOLOGY. If not completely satisfied with the contents, I may, within 30 days of receipt, return the book(s) for a full refund. Payment of $14.95 for each copy ordered enclosed: ( ) Check; ( ) Money Order; or ( ) Bill Company.

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