Lesson #1:

VE Training + Owner/Designer Participation = Greater VA/VE Understanding, Support and Cooperation.
Improving Profits Through Prime/Subcontractor Value Engineering (NEW)
by K.R. Thorson and R. Snidar, June 1984 (Soft Cover) ..........
This 37 page manual provides guidelines, examples and case histories on how prime and subcontractors involved in any type of U.S. federal acquisition contract can optimize profitability by fully utilizing the Value Engineering Incentive clause. The manual specifically deals with the methods and procedures through which a subcontractor can take advantage of the VE Incentive clause and provide benefits for himself, the prime contractor and the Federal Government. A must for everyone involved in contracting with U.S. Government, if they want to improve their profits.

The Negotiation & Settlement of Approved VECPs
For use with DAC #76-39, 20 Oct. 1982 .........................
The purpose of this document is to provide to Government contractors and their suppliers, who are relatively new to the field of Value Engineering proposals, assistance with management, negotiation and settlement of VECPs. Additionally, the sequential coverage of the subject herein is intended to help reduce the submittal of incomplete or poorly substantiated negotiation data which could lead to loss of all or a portion of the Contractor's share of the savings resulting from an approved change. In short, this document will attempt to explain what must take place after a VECP has been adopted in order to get paid.

V.E. in Construction Industry
by A. J. Dell'Isola, 1973 ........................................
Presents a proven, organized approach to reduce cost of ownership of construction projects—educational facilities, hospitals, offices, apartments, laboratories. Applicable to public works projects — roads, sewage treatment plants, transportation systems, dams.

Value Analysis in Design and Construction
by James J. O'Brien ...........................................
A realistic no-nonsense guide to the enormous time and money saving opportunities made possible by applying VA throughout the entire cycle of any construction project.

ORDER FORM ON BACK COVER
VALUE WORLD
April/May/June, 1985

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EDITORIAL POLICY: To provide informative, timely and interesting communications pertaining to Value Engineering/Value Analysis and related disciplines. VALUE WORLD enables contributors to express themselves professionally in advancing the art. VALUE WORLD is dedicated to the establishment of a mutual bond among those seeking to better the quality of working life and establish a communications network through which participants can interact for mutual benefit.

The views expressed in VALUE WORLD are neither approved nor disapproved by the Society. They are the expressions of the author(s). All papers have been edited — frequently condensed — by the editor.

VALUE WORLD is published quarterly on approximately the 15th of March, June, September and December, and is distributed internationally.
During the past 27 years, the University of Wisconsin-Madison has provided Value Analysis/Value Engineering (VA/VE) training to thousands of individuals. This article will summarize the past, describe the present, and speculate about the future of the unique VE training program offered here today.

The University of Wisconsin-Extension, Department of Engineering & Applied Science (Extension-Engineering), conducted the first VE course in 1957. J. K. “Dusty” Fowlkes from General Electric Company’s Value Services group in Schenectady and Wayne “Doc” Ruggles from the Hotpoint Division in Chicago were the main instructors of this two-day course. From all accounts the course was well attended, despite the fact that it was held before VA was widely recognized.

Six years passed before the next course was co-sponsored by the University of Wisconsin-Extension, Management Institute and SAVE, a new national organization. Directed by Professor Fred Schwartz, this course featured C.W. “Smoky” Doyle, Jr. and Robert L. Crouse as lead instructors.

In 1964, David L. Atwood, program coordinator for Extension-Engineering, offered a three-day course which featured Glen Woodward as the instructor. This course was co-sponsored by the Wisconsin SAVE chapter.

In 1965, Atwood contacted Tom Snodgrass to discuss the possibility of offering a different course format. Undoubtedly, this meeting set the stage for the development of continuing education in VE at UW. Tom expressed his interest in presenting a customer-oriented VE approach which he had helped develop as manager of engineering at the Hotpoint Division and which he continued to refine in his consulting work as president of Value Standards, Inc.

Dave accepted Tom’s proposal but insisted that two other Value Specialist regulars be added — Jack Kenny of International Harvester and Tom Cook, Value Engineer at Vapor Corporation. The potential chemistry must have been right, for the first three-and-a-half-day course in 1977 had an enrollment of 110. Since then, enrollment has been limited to 40.

In response to requests from attendees, this course gradually developed into a 40-hour (five-day) program and was moved from February to late March to avoid frequent Wisconsin blizzards.

Fred Schwartz continued his course with the instruction provided by Smokey Doyle and Bob Crouse and the annual assistance of the presidents and other notables of SAVE. Both the Management Institute and the Department of Engineering courses used only projects brought in by participants.

During the next decade, Extension-Engineering, Management Institute and SAVE worked closely to...
An initial member of the SAVE certification board, Fred Schwartz, consulted experts in the University's Education Department to develop SAVE's first certification exam for Value Specialists.

In 1973, Charles Dorgan and Dave Atwood coordinated Extension-Engineering's first 40-hour "Design and Construction VE" course. Officials of design firms were encouraged to attend the first day to become familiar with VA/VE. Their project engineers attended all week to take an in-depth look at the techniques. The turnout for this course was large. At this time, government agencies such as the Public Building Services of the General Services Administration had started to require VE for public building design.

In 1974, Dave Atwood and Tom Snodgrass discussed the possibilities of an expanded VE program. The department chairman of Extension-Engineering at that time, John P. Klus, offered Tom an opportunity to join the department as an assistant professor. Tom joined the department in March, 1975.

In the summer of 1976, Tom developed the correspondence course, "An Introduction to Value Analysis/Value Engineering." The study guide for this course, based on the text, "Techniques of Value Analysis and Engineering," 2nd Edition, by Lawrence D. Miles, has been periodically updated since then. To date, 47 people have completed this independent study course.

In January 1976, Extension Engineering introduced a 40-hour VE course for Design and Construction as a part of the builder institute. Under the direction of James Ferguson, CVS and Fellow of SAVE, and Ralph Jarboe, CVS., this course ran successfully through 1982. Using a grant provided by Extension-Engineering, Ferguson and Jarboe wrote the VE manual and workbook used for these courses. Periodically revised and updated, this VE manual is available for sale.

**Evolution of VE Courses**

Tom Snodgrass' experiences at Hotpoint and his associations with the Value Service group under Lawrence D. Miles emphasized the importance of Function Identification, Function Order, Function Costs, and Function Attitudes. Tom's experience with various organizations uncovered a fairly common...
resistance to well-planned and executed job plans. Organizations often emphasized a particular aspect of the job plan, such as creativity or part Cost Comparison. This approach was justified on the grounds of saving team members’ time or finding a solution more quickly. By taking this shortcut, however, organizations often failed to achieve the full potential of their projects and unjustly criticized VA/VE techniques.

From Tom’s experience evolved his belief that the ultimate success of a VA/VE project depends on the project director’s expert knowledge of VA/VE techniques. He also learned that to successfully impart the techniques of VA/VE to a growing number of professionals, instruction must be firmly based on the latest and best techniques and must use the most effective instructors available.

The integration of activities in SAVE’s professional development program of Function Analysis System Technique (FAST) illustrates this concept. The initial investigation of the ad hoc committee assigned by SAVE to examine the various types of FAST diagramming uncovered several approaches to this powerful technique, most of which were developed in a singly corporate environment. All individuals using some form of FAST diagramming cited the original work of Charles Bytheway as their source and inspiration. His work was first reported at the SAVE National Conference in 1966 and in subsequent conferences after that.

SAVE’s ad hoc committee on FAST diagramming accepted Extension-Engineering’s offer to hold a one-day institute of FAST diagramming in February, 1975. Charles Bytheway and many other participants on FAST diagramming attended. The presentations confirmed the diversity caused by different starting points and use objectives.

However, experience had demonstrated that only two types of FAST diagramming could withstand the rigors of use in a wide variety of in-house VA/VE training sessions. The method developed by Wayne “Doc” Ruggles and used successfully by Value Analysis, Inc. in its 40-hour seminar/workshops was the more widely used of the two. The second method, used by Value

The ultimate success of a VA/VE project depends on the project director’s expert knowledge of VA/VE techniques.

Standards Consulting Services, was developed by Tom Snodgrass with a major contribution from Theodore Fowler, CVS and Fellow of SAVE. Extension-Engineering had used this approach in its 40-hour workshops since 1970.

In the fall of 1975, the two approaches were submitted to a group of volunteers enrolled in a course. The course format included the development of two diagrams on similar projects brought in by the enrollees
and a session on Function Cost Allocation. SAVE's ad hoc committee believed that the results of this course would allow them to combine the two approaches into one superior approach.

This expectation was rudely shattered by the unanimous decision of the 20 enrollees that each format had its own application and purpose and should be retained and utilized in the circumstances in which it excelled.

Two recognized forms of widely used FAST diagramming emerged from this research. The VA, Value Analysis Inc., format deals primarily with parts of a product or system and emphasizes the physical and technical aspects. It is called Technical-Oriented FAST. The Value Standards format deals with total products and systems and emphasizes Function Attitudes as well as Function Cost. It is called Customer-Oriented FAST or Task-Oriented FAST.

Extension-Engineering's next step was to respond to the need to present both formats in separate 40-hour workshops. Since 1970, Extension-Engineering's 40-hour workshop had presented Customer-Oriented FAST under the direction of Tom Snodgrass and Tom Cooke of Thomas Cooke Associates. This approach incorporated computer cost programming and customer/user attitudes. In 1977, Tom Snodgrass invited Dusty Fowlkes and Doc Ruggles of Value Analysis Inc. to present their Technical-Oriented FAST 40-hour workshop. Both workshops remained successful for several years. The demands of success soon forced Dusty and Doc and Thomas Cooke to withdraw their expertise from the Extension programs and pursue their own consulting work. However, they had succeeded in helping to lay the solid groundwork for extension's successful and superior VE I and VE II courses.

SAVE's ad hoc committee believed that the results of this course would allow them to combine the two approaches into one superior approach.

To strengthen its outreach effort, Extension-Engineering has developed two videotapes on VE I and three on VE II. They can be rented or purchased to aid VE training.

In 1977, Extension-Engineering also recognized the importance of providing orientation to VA/VE techniques for top executives and middle managers. The course, "Organizing, Planning and Implementing Value Engineering Programs," was designed to reach this goal and has been conducted annually since 1977.

Identifying and Evaluating Good Products," a three-day institute, helps professionals strike a balance between marketing and engineering operations.

The Mecca of Continuing Education

Such growth in continuing education opportunities in VE was fostered in large part by the University's tradition of service to the state and its people. A leader in developing the concept of university extension, the outreach arm of the university, the University of Wisconsin-Extension is today the oldest and largest public service of its kind in the nation.

Engineering and Applied Science is one of 23 academic departments around which UW-Extension is organized.

A summer school for carpenters, machinists, sheet-metal workers, and stationary, marine and locomotive engineers launched Extension-Engineering's activities in 1901. Since then, Extension-Engineering has continued to fulfill the hopes of past UW President Charles Van Hise who said, "University extension must be so organized as to adapt itself readily to changing conditions. It must be prepared at any time to take up whatever new work falling within the legitimate scope of university service is demanded by the people."

In 1912, when smoke pollution became a problem in several cities, Extension-Engineering developed lecture presentations for plant engineers on more efficient and sanitary uses of coal fuel.

During both World Wars I and II, Extension-Engineering served armed servicemen all over the world with technical correspondence courses.

However, Extension-Engineering's services grew most remarkably during the years since 1949. Veterans benefits allowed hundreds of thousands of veterans to enroll in an expanded correspondence study program.

Rapid technological advancements in the late 1950's and early 1960's made the technological updating of

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*Value World, April/May/June/1985* 7
thousands of engineers necessary. Extension-Engineering responded with short courses and institutes which tapped the leading edge of the new space, transportation, electronics and computer technologies.

Clearly, technological advancement has broadened the scope of UW-Extension which, in turn, adapted to the changing conditions. In 1958, the University dedicated the Wisconsin Center which has served as the locus of continuing adult education on the Madison campus. Every year hundreds of programs are held at the Center.

In 1964, a branch of Extension-Engineering opened in Milwaukee to serve the state's largest industrial center.

Madison's Extension facilities were further expanded in 1967 with a gift from Wisconsin alumni. The Alumni House, a lakefront structure adjoining the Wisconsin Center, affords two large rooms from receptions and conferences.

To help meet the lodging needs of participants enrolled in its programs, Extension offers the Wisconsin Center Guest House and the J. F. Friedrick Center.

After more than 80 years of continuing education programming, Extension-Engineering offers a variety of formats to enhance the professional development of engineers and scientists. The breadth of offerings include two-to-three-day institutes and workshops; one- to two-week short courses; 55 correspondence courses; semester-length evening courses; and special self-directed learning opportunities such as the Professional Development Degree in Engineering Program, the Energy Management Diploma Program, the Disaster Management Diploma Program, and the VE Specialist Diploma Program.

Thirty-five faculty members, full-time specialists in

The Wisconsin Center provides classroom space for hundreds of Extension programs and features a specially designed Continuing Education Computer Lab.
engineering and applied science, develop and administer the continuing education opportunities. Almost half have earned Ph.D.'s, most are registered professional engineers or architects, and most have at least five years of professional experience prior to joining the faculty.

In 1984, more than 9,000 people enrolled in approximately 300 institutes and short courses provided by Extension-Engineering. Participants came from every state in the nation as well as from several countries abroad. Programs were held in out-of-state locations and many were presented "in-plant" for various Wisconsin businesses and industries.

Today Extension-Engineering is the largest university engineering extension in the country. Selected by UNESCO as a case study, it will be used as a model by developed and developing nations worldwide who want to provide a similar program for their engineers.

The combination of resources and commitment to continuing education found at UW-Extension has provided fertile soil for the growth of VA/VE training.

VE Diploma Program

In 1980, Tom Snodgrass was appointed to SAVE's certification board. With his fellow board member, Christopher Barlow, CVS, Tom worked on a modified Associate Value Specialist certificate. This work focused his attention on the need for a continuing education/professional development that would help an individual progress from her/his introduction to VA/VE to more challenging courses, and finally to certification as a Value Specialist. What resulted was the world's first VE Specialist Diploma Program introduced by Extension-Engineering in 1980.

This specialized continuing education program requires a minimum of two years to complete, assuming full-time employment and other responsibilities which limit time spent on course work. There is no charge to enroll in the program. Individuals typically enroll after completing one 40-hour workshop and often after including the course, "Organizing, Planning and Implementing Value Engineering Programs."

An individual earns the VE Specialist Diploma by accumulating 45 Continuing Education Units (CEU). One CEU is defined as ten contact hours of participation in

Because the program is available internationally, the opportunities for course transfer and individual tailoring of diploma curricula are substantial.

Consistent with the philosophy of continuing education and professional development, the diploma program enables students to complete 27.4 of the 45 required CEU through independent study. Furthermore, the diploma candidate and Extension-Engineering's professional development coordinator work together to develop a learning agreement best suited to the candidate's personal and professional goals.

The program provides two courses of study—one for individuals in industry, service and government agencies and another for individuals in architecture, plant facilities, design and construction.

Presently, 25 individuals are enrolled in the program. To date, seven people have earned their diplomas. A summary of required and elective courses leading to the diploma appears with this article.

The demand for trained value specialists continues to grow. More and more top-level managers recognize that value specialists are a major force behind strategic planning and competitive superiority and that effective value specialists require proper training. Perhaps this explains why the majority of VE Specialist Diploma Program enrollees receive financial support from their organizations.

The Future

Under the leadership of Tom Snodgrass, continuing education in VE at the University of Wisconsin has hurtled forward. In addition to developing a comprehensive training program, Tom has directed the incorporation of VE techniques into the University's new Center for Product Exploration. Funded by the Wisconsin Department of Development, the Center screens entrepreneurs for potential growth, selects the most promising and provides the necessary technical, marketing, financial, management, and operating support and guidance.

Ron Thomson, an instructor at the University's College of Engineering, has further extended VE principles by incorporating them in his mechanics design courses.

A major energy research study on design materials for products, funded by Extension-Engineering, has developed cost and energy usage information for design engineers.

During its brief but dynamic history, the VE program at Extension-Engineering has uninterruptedely provided innovative continuing education opportunities and community services. What about the future? As VE techniques become more widely recognized and utilized, the pioneers at UW-Extension, proudly reflecting on the early days of VA/VE, will continue to plan to meet the growing need for continuing education in VE.
VE Specialist Diploma
Required and Elective Courses

Industry, Service, Government Agencies

Part One — Required Courses (36.6 CEU)

VE I — VA/VE (5 CEU)  
40-hour [5-day]  
Seminar/Workshop

VE II — VE/Value Research (5 CEU)  
40-hour [5-day]  
Seminar/Workshop

Organizing, Planning and Implementing VE Programs (1.6 CEU)  
3-day Institute

An Introduction to VA/VE (15 CEU)  
Correspondence

Individual VA/VE Project (10 CEU)  
Independent Study

Part Two — Electives (6 CEU)

You choose courses that meet your specific professional objectives. These courses could include, but are not limited to, the following:

Creative Action in Engineering and Science (1.8 CEU)  
3-day Institute

Identifying and Evaluating New Products for Good Value (1.8 CEU)  
3-day Institute

Materials for Function Design (1.6 CEU)  
3-day Institute

Technical Writing (4.8 CEU)  
Correspondence Course

Final Exam (2.4 CEU)

Architecture, Plant Facilities, Design, Construction

Part One — Required Courses (36.6 CEU)

VE I — VE for Design and Construction (5 CEU)  
40-hour [5-day]  
Seminar/Workshop

VE II — VE/Value Research (5 CEU)  
40-hour [5-day]  
Seminar/Workshop

VE Orientation for Design & Construction (1.6 CEU)  
3-day Institute

Individual VE/Management Project (10 CEU)  
Independent Study

An Introduction to Function Analysis for Architects, Engineers and Builders (15 CEU)  
Correspondence Course

Part Two — Electives (6 CEU)

You choose courses that meet your specific professional objectives. These courses may include, but are not limited to, the following:

Creative Action in Engineering and Science (1.8 CEU)  
3-day Institute

Technical Writing (4.8 CEU)  
Correspondence Course

Renovation/Rehabilitation of Buildings (1.2 CEU)  
2-day Institute

Effective Project Management for Building Design and Construction (5.0 CEU)  
5-day Short Course

Final Exam (2.4 CEU)

Your total CEU Requirement: 45 CEU
"Spelunker’s Corner"

Processing Time Can Be The Death Knell for a VECP

By William H. Copperman, CVS

One of the many VE struggles going on in the military today is the processing time for Value Engineering Change Proposals (VECPs). It takes up to six months and beyond for approvals, which in many cases wipes out the potential savings of the VECP.

Everyone agrees that the time it takes for processing is excessive. There has been no clear cut way for improvement, even though the services are dedicated to improving the processing time.

In looking again at MIL-STD-480A, covering Configuration Control of Engineering changes, deviations and waivers, it appears that a way does exist for improving the processing time. This can be done if the government and contractor people want to avail themselves of the approaches outlined in 480A.

The MIL-STD-480A also covers processing time for ECPs and VECPs. Under paragraph 4.9.5 it states that the target for processing time is 15 calendar days for urgent ECPs.

When you read the definition for urgent VECP under paragraph 4.5.2, it states that this priority shall be assigned to an engineering change proposal for any of the following reasons: “To effect, through value engineering or other cost reduction efforts, net life cycle savings to the government of a total of more than $100,000 where expedited processing of the change will be a major factor in realizing these lower costs.”

MIL-STD-480A also covers processing time for ECPs and VECPs. Under paragraph 4.9.5 it states that the target for processing time for urgent ECPs and VECPs is 15 calendar days.

The 15 calendar days is not in concert with the Federal Acquisition Regulation (FAR) which states 45 days for approval. The FAR probably has precedence over the MIL-STD. However, a fresh look at MIL-STD-480A shows that MIL-STD-480A is not superseded by the FAR.

My recommendation to contractors is to place a “big red” URGENT on all VECPs that meet the MIL-STD-480A requirements and do the VECP right the first time. Government people should place the VECPs on top of the pile (per MIL-STD-480A) instead of on the bottom and stop looking for reasons to delay approval (or disapproval).
Learn Basic Value Analysis: Take a Correspondence Course

By Donald E. Parker, PE, CCE, CVS

Donald E. Parker, PE, CVS, CCE, is with the firm of Smith, Hinchman & Grylls, Assoc. Mr. Parker is a certified cost engineer and member of the international Building Economics Commission. He is President of the Value Foundation and President of SAVE National Capital Chapter. He is recipient of SAVE's Value Engineer of the Year and Distinguished Service Awards.

A good way to brush up on your skills in VA is to take a correspondence course. If you are preparing for the CVS examination, the homework, quizzes, and examinations offered by a correspondence course are good practice. You can measure your progress and identify those areas of the discipline where you need to concentrate your study. If you need points for recertification, a correspondence course is a good way to earn them.

The advantages of a correspondence course are that you can take the course at home, at your own pace. Often your employer will pay the cost of the course.

It was developed by the Value Foundation in 1981 providing something suitable for purchasing officials and the public in general.

Correspondence courses are less expensive than paying tuition, travel, per diem, and salary to take other types of courses.

Correspondence courses, however, do have some shortcomings. They lack the lectures, advice, counsel, and explanations available from an instructor. However, these shortcomings can be overcome if one makes a diligent effort to read and study the material thoroughly, and search out vital knowledge. All these things are characteristics and traits of a successful value analyst!

About the Course

The course title is Basic Value Analysis. It was developed by the Value Foundation in 1981 for the specific purpose of providing something suitable for purchasing officials and the public in general. It is specifically non-technical. The course uses common household items for homework and examples.

It is not for the advanced value engineer. It is for those who know very little about the subject and want to know more. The tests are good for those who think they know everything!

The textbook. The only text for this course is VA (Second Revised Edition) by Carlos Fallon. This is a fascinating and captivating book written in a style only Carlos Fallon can produce. If one has to read a book to learn a subject such as this, and do it at home, then the most interesting reading, as well as informative, on the market today is Fallon's book. The sole distributor of this book is the SAVE Business Office.

The course features:
- 10 lessons
- each lesson with homework & quiz
- a mid-term examination
- a final examination
- all open book
- take up to a year to complete

Course objectives. The major objective of the course is to develop an awareness that a specific technique exists for improving the value of anything. After completing the course, you should be better able to:
- Recognize poor value or test products and services to see if value improvement potential exists.
- Approach any product or service, not necessarily within your area of expertise, and use the VA job plan to study it.
- Understand the concept of value and the practice of VA.
- Participate, with better understanding, in a 40-hour VA workshop which studies a real "live" project.

The major objective of the course is to develop an awareness that a specific technique exists for improving the value of anything.
Course Procedures

The course comes with a study guide which provides an introduction and objective for each lesson. Normally, you quickly read the assigned text for the lesson to obtain an overall understanding. Then, you go back and read the text a second time, this time studying it carefully for comprehension and understanding.

You do the homework assignment next, reading the homework objective in the study guide carefully. The homework is intended to broaden, supplement and reinforce your understanding of the text.

Finally, you complete the quiz for the lesson. The questions for each quiz cover only the limited span of the just previously assigned reading and homework. You will need to study the text carefully for clues to the questions. Quiz questions are not tricky but they are exact and precise to test your understanding of the material and your ability to relate other facts to what you have read.

You complete each lesson, one at a time, and mail the homework and quiz to your Course Administrator. You may begin the next lesson but should not send it in until you have received your score and answers to the preceding lesson.

After you have completed and mailed the fifth lesson, you receive the mid-term examination. This is an open book exam. You can study the work for the first five lessons and understand the answers to the questions missed. After completing the mid-term exam and receiving your score, you continue to complete the remaining five lessons, one at a time.

Quiz questions are not tricky but they are exact and precise to test your understanding of the material and your ability to relate other facts to what you have read.

Some administrative procedures regarding this course are:

Course length. The minimum length is 12 weeks. This provides one week for the completion of each lesson, mid-term and final examination. The maximum length of time permitted for completion of this course is one year.

Lesson time. Each lesson is designed to require approximately four hours of work as follows:

- reading and study 1-1/2 hours
- homework 2 hours
- quiz 1/2 hour

Grading. Credit for successful completion of the course is on a pass or fail basis. A composite grade average of 70 percent or more is required to pass. Participants must complete all 10 lessons and the two examinations to be eligible for passing the course.

The weighting (points) for grading is:

<table>
<thead>
<tr>
<th>Quiz</th>
<th>10 at 100 = 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10 at 100 = 1000</td>
</tr>
<tr>
<td>Exams</td>
<td>2 at 500 = 1000</td>
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<tr>
<td>Total points possible</td>
<td>3000</td>
</tr>
<tr>
<td>Points needed to pass</td>
<td>2100</td>
</tr>
</tbody>
</table>

How to Obtain the Course

The course is available in two ways:

First, it is available to any SAVE Chapter that wants to offer it to their members. The National Business Office has the textbooks and lesson plan booklets for the students and the instruction kit for the Chapter proctor. The instruction kit contains the homework answers, quiz answers, and mid-term and final examinations with answer guides. All your Chapter has to do is appoint a Course Administrator to give the course, purchase the course supplies from the SAVE Business Office, and conduct the course for your members.

Second, it is available from the Value Foundation, 1199 National Press Building, Washington, D.C. 20045, for a tuition fee of $75.00 (including text). A CVS will proctor the course for you and provide professional counseling by telephone as needed. You can take up to a year to complete the course. The Value Foundation will issue a certificate of completion when finished.

Propagating the Methodology

The Value Foundation has a small flyer with registration form available for this course. The next time your Chapter sets up an exhibit at an industrial or trade show, why not ask the Foundation for a few flyers. Then, when someone walks by and asks, "What is VE all about," you can offer something positive — a correspondence course from which they can learn the basics.

The National Capital Chapter, SAVE, just started offering this course to its members as a Chapter service. The Chapter Vice President, Pete Picard, is doing his time as Course Administrator for the Chapter. Nine members immediately enrolled in the course. Most are outside the metropolitan Washington, D.C. area and cannot regularly attend meetings because of travel distance. What a nice way to keep in touch and offer something to these members.

The course has also been offered to the general public through a paid advertisement in Purchasing Magazine.

The course has also been offered to the general public through a paid advertisement in Purchasing Magazine. The ad ran in the September-November, 1984 issues and resulted in many inquiries. No longer do we have to talk to ourselves when we now have a tool to offer to others. This correspondence course is good education for many different groups and organizations. SAVE members should use it as a form of outreach whenever possible.
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  □ $360.00 — Non-Member (Please check appropriate item under Dues Payment Section)
  □ $310.00 — SAVE Member (Show membership serial number printed above name on address label ____________).

Partial Registration
  □ $160.00 — One Day Only (Includes Conference Proceedings and meals for the day — except dinners.) Indicate day ____________

Speaker’s Registration (Speakers Must Register)
  □ Free — One Day Only (Includes Conference Proceedings and meals for the day — except dinners.) Indicate day ____________

OR
  □ $90.00 — Discount off Full Regular Registration — Not Applicable to Students.

Other Registration
  □ $80.00 — Spouses Program
  □ $25.00 — Optional Evening Function

Dues Payments — Non-Member Registrants, Please Check One
  □ Includes partial payment of my 1985-1986 dues (from 11/1/85 to 5/1/86 only) for Chapter ____________
  □ Includes payment of new member dues from 5/1/85 to 11/1/85. Please send application form. (Form must be returned to process membership)
  □ DOES NOT include dues payment

Student Registration

Pre-registered, full-time students only — must be validated. Validation form will be furnished upon receipt of Registration Form.
  □ $35.00 — SAVE Member (Must hold valid SAVE Student Membership — Show membership serial number printed above name on address label ____________).
  □ $50.00 — Non-Member (Indicate School) ____________

Other Registration

□ Visa □ MasterCard Card Number ____________________________ Card Number ____________________________ Expires __________

Signature required for Visa and MasterCard ____________________________

□ Check (Payable in U.S. funds on U.S. bank to 1985 SAVE CONFERENCE)

Total amount enclosed $___________ Check no. ____________ □ Purchase Order ____________

Miscellaneous

Please indicate any special dietary requirements ____________________________

Is this the first SAVE Conference you have attended? _____Yes _____No. If not, how many have you attended in the past? ____________________________

REGISTRATION FORM MUST ACCOMPANY PAYMENT AND/OR PURCHASE ORDER. NO PHONE ORDERS.

MAIL TO:
REGISTRATION • 1985 SAVE CONFERENCE
221 North LaSalle Street • Suite 2026 • Chicago, Illinois 60601 • (312) 346-1600

REGISTRATIONS RECEIVED AFTER APRIL 5, 1985 WILL BE PROCESSED AT THE CONFERENCE
SAVE Presents

1985 SAVE INTERNATIONAL CONFERENCE

VALUE — ★ OF THE FUTURE

Presented by the
SOCIETY OF AMERICAN
VALUE ENGINEERS

SAN ANTONIO — 1985
APRIL 28 – MAY 1

AIRLINE INFORMATION

UNITED AIRLINES, as the official carrier for the Society of American Value Engineers, is offering a special discounted fare to attendees traveling to San Antonio from any city served by United. United is offering unrestricted 40% off normal coach fare or, if you stay over a Saturday night, 20% off “Easy Saver” fare. This could mean savings of up to 50% off of regular coach fare. You or your travel agent simply call United's toll free convention reservation desk and identify our meeting with the special assigned account number: 800-521-4041

Account Number: 532M

United’s reservation specialists will assist you with your reservations at the special discounted fare. REMEMBER, it is only when you book on United through the toll free convention reservation desk that you are eligible for the discounted fare. Call today!

HOTEL ACCOMMODATIONS

Hotel accommodations should be arranged directly with the hotel. Be sure to mention the SAVE Conference to qualify for the special rates: single $55.00, double $65.00. Hotel reservations should be made prior to March 28, 1985 or rooms will be released. A hotel room reservation card will be mailed to you with confirmation of registration if time permits.

Hotel address: Marriott Riverwalk
711 E. Riverwalk
San Antonio, TX 78205

Reservation Phone No. — 512/224-4555
1985 SAVE INTERNATIONAL

FRIDAY – April 26, 1985
2:00 p.m.–9:00 p.m. BOARD OF DIRECTORS MEETING

SATURDAY – April 27, 1985
8:30 a.m.–5:00 p.m. BOARD OF DIRECTORS MEETING
2:00 p.m. CVS EXAM (By Invitation Only)

SUNDAY – April 28, 1985
8:00 a.m. CVS BOARD BREAKFAST MEETING
10:00 a.m. Exhibit Set-Up
12:00 noon Registration Opens
1:00 p.m. "TIMBER" – A VE BASICS WORKSHOP
– A.E. Mudge, CVS
2:00 p.m. CVS INCOMING/OUTGOING BOARD MEETING
3:00 p.m. CHAPTER EFFECTIVENESS FORUM
4:00 p.m. Exhibits Open
6:00 p.m. Exhibits Close

MONDAY – April 29, 1985
8:30 a.m. OPENING GENERAL SESSION: Keynote Speaker – MARY ANN GILLECE
Deputy Under Secretary of Defense
Acquisition Management
10:00 a.m. BREAK
10:30 a.m. VE DOES SAVE
– T.R. Chamberland, P.E.
WIN-WIN-WIN – SCHOOL CONSTRUCTION IN WASHINGTON STATE
– H.C. Childs, AIA
INFORMATION CONSCIOUSNESS – A CALL TO ACTION
– K.A. Hayes
VE-TRIEVAL – A CORPS OF ENGINEERS VALUE ENGINEERING INFORMATION RETRIEVAL SYSTEM
– E.A. Degenhardt, P.E.
TECHNOLOGY FOR PRODUCT PLANNING AND DEVELOPMENT
– T. Takubo
A STUDY OF STRATEGIC VE TARGET COSTS BASED ON COST REDUCTION CURVES FOR MIDDLE- AND LONG-RANGE MANAGEMENT PLANS
– M. Ogawa, CVS
A FIELD STUDY OF VE/VA IN JAPAN – THE CASE OF LISTED-STOCK ENTERPRISE
– T. Ohta
12:00 noon LUNCH – SPEAKER
ALEXANDER A. CUNNINGHAM
Executive VP – North American Passenger Car Operations General Motors Corp.
1:30 p.m. VALUE ENGINEERING CHANGE PROPOSALS IN CONSTRUCTION, A BANE OR A BLESSING!
– M.M. Hochberg, RE., CVS
COST MODELS FOR APPLIED VALUE ENGINEERING
– D.E. Parker, P.E., CVS, CCE
USING FAST TO MODEL NEW PRODUCT DEVELOPMENT FLOW
– A.P. Coletta
A SYSTEM FOR QUALITY IMPROVEMENT & PRODUCTIVITY
– R.R. Dominguez, CVS
BASIC VA/VE TECHNIQUES SEMINAR
– J.K. Fowlkes, CVS
– J. Groothuis, CVS
– R. Otto, CVS
– J.W. Bryant, CVS
– T. Hays, AVS
3:00 p.m. BREAK
3:30 p.m. THE CENTS PROGRAM
– M.S. Mast
RECENT VE INITIATIVES AND THEIR IMPLEMENTATION IN THE DoD: PART I
– G.A. Frank, Chairman
– H. Milodozeniec - Army
– C. Barbieri - Air Force
– R.J. Shaffer - Def. Logistics
– McAnich - Navy
CALTRANS TRIES SOMETHING DIFFERENT
– W.R. Rinkleib, P.E.
6:00 p.m. EXHIBITOR RECEPTION ( Cash Bar)
7:00 p.m. AWARDS BANQUET
CONFERENCE PROGRAM

TUESDAY – April 30, 1985

7:00 a.m. CHAPTER PRESIDENTS BREAKFAST

8:30 a.m. ENHANCEMENT OF PERFORMANCE OF VALUE ENGINEERING STUDY TEAMS BY USE OF THE PERSONAL PROFILE SYSTEM
- G.L. Adams, P.E., CVS
- H.B. Roos

8:30 a.m. VE & PARAMETRICS

9:00 a.m. VALUE MANAGEMENT IN GENERAL MOTORS – AN OVERVIEW
- D.R. Bales

10:00 a.m. EXPANDING THE VE PROGRAM SUPPLIER WORKSHOPS

10:30 a.m. OVERLOOKED LINKS TO EXCELLENCE, ROADBLOCKS TO PRODUCTIVITY
- A.L. Paley, CVS

12:00 noon OPEN LUNCH

1:30 p.m. DESIGN FOR RELIABILITY
- J.W. Friest, Ph.D., P.E.
- A.P. Coletta
- R. Feller

2:00 p.m. PROJECT SELECTION
- Bob Schenkel

2:30 p.m. OVERLOOKED LINKS TO EXCELLENCE, ROADBLOCKS TO PRODUCTIVITY
- A.L. Paley, CVS

3:00 p.m. BREAK

3:30 p.m. ANATOMY OF A JOB PLAN
- R.J. Park, P.E., CVS

4:00 p.m. OVERLOOKED LINKS TO EXCELLENCE, ROADBLOCKS TO PRODUCTIVITY
- A.L. Paley, CVS

5:00 p.m. OPEN LUNCH

6:00 p.m. INTERNATIONAL RECEPTION (Cash Bar)

6:00 p.m. “A TASTE OF TEXAS” – Optional, extra cost ($25.00) function
- Barbeque Dinner, Live Entertainment

6:00 p.m. “GLOBAL VALUE” – AN INTERNATIONAL ROUND TABLE EXCHANGE
- W.J. OP de Beeck, CVS, Chairman

WEDNESDAY – May 1, 1985

8:30 a.m. VALUE ENGINEERING AND THE PURSUIT OF EXCELLENCE
- R.A. Fraser, Ph.D.

9:00 a.m. COPING CREATIVELY WITH STRESS
- R.J. Greene

9:30 a.m. VALUE ENGINEERING PRISONS FOR OPTIMIZED DESIGN, CONSTRUCTION & OPERATION
- B.W. Stainton, CVS

10:00 a.m. BREAK

10:30 a.m. SAVE ANNUAL BUSINESS MEETING

12:00 noon LUNCH – SPEAKER TBA

1:30 p.m. THE APPLICATION OF VALUE ANALYSIS TO HOSPITAL PRODUCTIVITY (A CASE STUDY)
- M.A. Oper

2:00 p.m. FUNCTIONAL MORPHOLOGY (AN AID TO DESIGN AND COST REDUCTION)
- M.L. Shillito

3:00 p.m. BREAK

3:30 p.m. VALUE MANAGEMENT AND ORGANIZATIONAL EFFECTIVENESS
- R.L. Harris, P.E.

4:00 p.m. IMPLEMENTATION-TRACKING
- D.L. Christopher

4:30 p.m. INGREDIENTS IN A HAPPY LIFE... OR... HOW TO LIVE JOYOUSLY IN AN UPTIGHT WORLD
- S.R-Bonvallet, CVS

5:00 p.m. CONTRIBUTORY LEARNING FOR VALUE PRACTITIONERS
- Trisha Barlow, CVS
- Teresa Barlow, CVS

5:00 p.m. INTERNATIONAL SESSION
- W.J. OP de Beeck, CVS, Chairman

5:00 p.m. HOW TO BECOME A VALUE PROFESSIONAL
- J.J. Kaufman, CVS
- P.S. Megani, CVS
- W.T. Baum, CVS
- L.W. Zimmerman, CVS
- S.C. Lashutka, CVS

6:00 p.m. A BUILDING CONTRACTORS PERSPECTIVE – AUSTRALIA
- B. Dawson

6:00 p.m. CONSTRUCTION ROUNDTABLE
- H. Elegant, CVS, Chairman

Value World, April/May/June/1985 17
**SPOUSE’S PROGRAM**

**MONDAY — April 29, 1985**

9:00 a.m. — Get acquainted coffee at hotel. Tour of King William Historical District and Mission Trail, lunch (on your own) at Los Patios, on the banks of Salado Creek. Return to hotel at 2:00 p.m.

7:00 p.m. — AWARDS BANQUET

**TUESDAY — April 30, 1985**

10:00 a.m. — Tour through Fort Sam Houston, the Quadrangle, Brackenridge Park and the Sunken Gardens. Visit McNay Art Institute, then on to El Mercado, the Mexican Market, for lunch on your own and some “South-of-the-Border” shopping. Return to hotel at 2:00 p.m.

**WEDNESDAY — May 1, 1985**

10:00 a.m. — Stroll along the Riverwalk to River Square, where you’ll board a river barge for an exquisite Champagne Brunch. Disembark at the Southwest Craft Center for browsing or shopping. Return to hotel at 12:00 noon.

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**GENERAL INFORMATION**

**CONFERENCE RATES —**

In addition to admission to the technical sessions and exhibit area —

- **Full Registration** rates include all meal functions and one copy of the conference proceedings.
- **Daily Registration** rates include one luncheon and one copy of the conference proceedings.
- **Student Registration** includes all meal functions except Awards Banquet and does not include a copy of the conference proceedings.
- **Spouse’s Program Registration** includes three days of organized activity and Awards Banquet.

Additional meal function tickets for special functions will be on sale at registration.

**CANCELLATIONS —** Substitutions may be made at any time. Cancellation of a confirmed registration may be made through April 19, 1985. Cancellations received after that date are subject to the full registration fee.

**TAX DEDUCTION —** (Treasury Reg. 1.162.5) An income tax deduction is allowed for expenses of education incurred to (1) maintain or improve skills in one’s employment or other trade or business (2) meet express requirements of an employer or a law imposed as a condition to retention of employment, job status or rate of compensation.

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**SPECIAL NOTICE**

The U.S. Army Materiel Command will host a dinner on Wednesday, May 1, 1985, at 7:00 p.m., featuring a speech by General Richard H. Thompson, commander of the AMC. General Thompson has made the VE Program a Command Priority Program, and has established a FY85 goal of saving $242 million through financially settled Value Engineering Change Proposals.

All SAVE Conference attendees are invited to attend this dinner. The cost is $25.00, and RESERVATIONS ARE REQUIRED. Contact JoAnn Dial or Jill Gerald, 202-274-8284 or 202-274-8289, between 8:00 a.m. and 3:00 p.m. EST, or write to: Headquarters, U.S. Army Materiel Command, ATTN: AMCMPT-P, Dial/Gerald, 5001 Eisenhower Avenue, Alexandria, VA, 22333-0001.

RESERVATIONS MUST BE RECEIVED BY APRIL 3, 1985. Tickets may be paid for and picked up at the AMC Exhibit in the Exhibition Area prior to the end of the Exhibitor Reception, Monday evening, April 29, 1985.
Value Management Program: 
A 'Quality' Education

By Jessie James DuBois, Ph.D.

Jessie James DuBois, Ph.D., is a Value Management Coordinator at Delco Electronics Division of General Motors. She has extensive experience in education, training and value work. Her educational background includes a B.S., M.S., Ed.S., and Ph.D.

As a Value Engineer, Jessie is responsible for preparing, organizing and conducting VM workshops. She provides technical assistance and guidance in project and team selection. She is also responsible for materials development. She is a member of the Central Indiana Chapter.

QUALITY IS...number one
QUALITY IS...free
QUALITY IS...our most important product
QUALITY IS...designed in
QUALITY IS...first
QUALITY IS...only complete with "U" and "I"
QUALITY IS...the degree of excellence which a thing possesses

These phrases probably sound familiar. Much verbal support is being paid to the quality issue. We are bombarded by catchy phrases and new programs stressing the importance of quality. In retrospect, however, we find that quality has always received some degree of emphasis. Significant quality programs have been in operation for the past 30 years — quality circles, for example. It is one thing to talk about what should be done and quite another to get something done. Change is not accomplished by talk alone; rather, it occurs by action.

We in the business of Value Management (VM) are in an ideal position to take action and to facilitate quality improvements. When conducting VM seminars, it is evident that a QUALITY component is a worth-while element of the overall job plan. QUALITY should be more than a verbal endorsement during the workshop. It should become an integral part of the workshop and the follow-up.

Hypothetical Case Study. X and X Manufacturing, Inc. was rightfully proud of their superior plastic products. They manufactured covers for stereo and computer equipment. Because of rigid quality standards, they were reworking or scrapping a number of covers due to appearance flaws caused by handling processes and procedures. Much data had been collected to document that this was a quality and therefore a cost, problem.

Enter...A team of seven experts from the various areas involved with the product. The group was brought together specifically to reduce rework and minimize scrap.

Observation. The traditional job plan used with other product and process team studies tended to avoid, or at least minimize, the basic quality issue. The team, in addition to the sequence flow chart, cost visibility chart, function worksheet and FAST diagram, needed a procedure to force them to pinpoint the quality problem. They needed to know what caused the problem. What was the function of the problem part, procedure, area, etc.? Could they document that indeed a quality problem did exist? Finally, they needed to know the cost penalty for the problem.

Technique: A Quality Identification Worksheet was developed as a tool for addressing these questions. (See Attachment A,) The team was the first to use the new worksheet. They were individually assigned, prior to the workshop, the task of completing as much of the requested information as possible.

The same information is needed for a quality study as is needed for the product, systems/procedures and/or process study. However, if a team is formed for the primary purpose of addressing a quality problem, then additional information is needed. Note that the Quality Identification Worksheet provides space to list the perceived quality problem[s], function[s], possible causes, documentation data, and the cost associated with each problem. This worksheet, used in conjunction with the sequence flow chart, pinpoints the problem, when and where it is occurring, and provides data used in speculating as to possible causes. The information obtained is used in the later stages of the VM job plan.

During the value seminar, the team was given time to discuss their individual sheets and to combine their responses into one comprehensive listing. (See Attachment B,) They assessed the magnitude and cost penalty for each problem on the list. It was a relatively straightforward procedure to identify the most significant functions and problem areas for brainstorming during the speculation phase.
Brainstorm. When the problem functions were identified and prioritized, it became evident that there were five major problem areas: 1) marred areas and scratched plastics (42%), 2) burrs on edges (27%), 3) imperfect or defective stamped lettering (17%), 4) broken tabs and corners (13%), and 5) miscellaneous (less than 1%)

After checking frequency of occurrence and cost, other quality concerns on the original list were found to be minimal. They contributed so little to the rework and scrap cost that precious workshop time was not used to address them. Prioritizing based on cost data was an essential step in identifying the problem areas and functions to be brainstormed.

The basic principles for brainstorming were followed: 1) group size 5-7 people, 2) a non-expert included to act as a catalyst and avoid stereotyped way of approaching solutions, 3) one problem at a time brainstormed, 4) each problem defined as specifically as possible, 5) session limited to one-hour per function, 6) criticism and evaluations absolutely ruled out, 7) freewheeling welcomed and encouraged, and 8) quantity of ideas stressed.

As the ideas started to flow, one idea sparked another and within an hour a hundred or so ideas were generated for each function.

Evaluation. During the evaluation phase, the team sorted the hundreds of ideas listed during the brainstorming session. They eliminated the nonsense items, costed and prioritized the ideas worthy of further investigation. It was evident that the ideas suggested for each of the categories could be further subdivided into specific action items.

For example, to correct "marred areas and scratched plastic" 20 ideas were retained. They were grouped into six categories: 1) packing suggestions, 2) protection ideas, 3) handling changes, 4) process revisions, 5) design modifications, and 6) miscellaneous. Nine ideas were retained in the "burrs on edges" category; 10 were kept for further investigation to correct "imperfect stamped lettering;" 14 for "broken tabs and corners." A total of 53 ideas were to be followed-up by the team.

Potential Savings. The cost information collected prior to the workshop was used to calculate the potential savings. The savings were defined as the difference between present method cost and proposed method cost — assuming the ideas proposed were to be implemented.

So What? How is quality improved? To this point, the team has done what is typically done. They have "talked about" the problem; this is, of course, an essential step. They have, however, gone one step beyond the talking stage and have formulated an action plan. Again, this in itself, is not too unusual. Many people, groups, teams, organizations and congregations have "plans" for action.

Organize. To assure that action indeed will be taken, the proposals from the team project are set up on special tracking forms. Each of the 53 ideas retained for further evaluation was assigned a 6-7 digit number. (See Attachment C.) For example, 1843-01 signifies that the workshop was held 1/84; this is team 3 attending the 1/84 workshop, and -01 is the first idea recorded.

Each idea then is carried as an action item for the appropriate team member to follow-up. The person responsible for the action item then must provide a status report to the group at the weekly team meetings. Quality must be addressed for each idea being tracked.

Track. The tracking system assures that good ideas are not forgotten and lost. An idea is dropped only when the person responsible for investigating it further has determined that it is not feasible to implement. An idea may be dropped for any number of reasons — e.g.,

The real challenge occurs after the workshop when the team members go back to the demands of their daily assignments.

cost effectiveness, timing, manufacturability, serviceability, etc. Recommendation is made to the team that the idea be dropped. They either weigh the evidence and concur or offer additional suggestions if they think the idea still has merit and should be modified for implementation.

Implement. Proposals the team completes are included separately in the tracking system. Within approximately three months, all ideas should either be dropped or completed. A "completed" does not necessarily mean that the ideas are all implemented. Rather, it could be that the team has completed their assignment and the mechanisms are in place to assure that the idea will be implemented. Future implementation may be scheduled to occur in the following areas: 1) design changes, 2) rearrangements, 3) process changes, 4) new equipment installations, etc.

When all ideas are completed or dropped, the final determination is made as to the savings to be realized by each of the proposals implemented. A bottom line accomplished in quality improvement and cost savings for the team effort can then be determined.

Avoid Fizzle. It is important to officially and formally close a team project — permitting a team to "fizzle" is disastrous to the future of a VM program and most certainly does not improve quality. A closure letter of recognition and thanks to team members and sponsors is a good way to say "you had a job to do, now it is done and here is what X and X Manufacturing, Inc. gained as a result of your team effort." When the project is closed, its time to issue a certificate of accomplishment. When the ideas are implemented is when a certificate is earned, not at the end of a workshop. Attending a workshop is the easy part. Following through to assure implementation of all cost effective ideas is the difficult task.

Attain Closure. The real challenge occurs after the workshop when the team members go back to the demands of their daily assignments. Can the group continue to function as a team? Can they discipline themselves to meet regularly? Can they find the time to in-
## QUALITY IDENTIFICATION WORKSHEET

<table>
<thead>
<tr>
<th>Quality Problem(s)</th>
<th>Function: Specific Work-The (Problem) Part? Area Assembly Was Designed To Do</th>
<th>Possible Cause(s)</th>
<th>Documentation Problem Exists % Scrap, Yield Rejects, Rework, Etc.</th>
<th>Cost Penalty (Labor, Material, Etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marred areas and scratched plastic</td>
<td>Display protection Visual enhancement Protect contents</td>
<td>Handling (mechanical) automation human packing transporting process tools</td>
<td>42% scrap/rework</td>
<td>.08</td>
</tr>
<tr>
<td>Burrs on edges</td>
<td>Visual enhancement Protect contents</td>
<td>Molding process Tooling Fixtures</td>
<td>27% scrap/rework cost</td>
<td>.05</td>
</tr>
<tr>
<td>Imperfect or defective stamped lettering</td>
<td>Identified brand Identifies mfg. Identifies user</td>
<td>Dirty parts Viscosity ink Static Transfer</td>
<td>17% scrap/rework cost</td>
<td>.031</td>
</tr>
<tr>
<td>Broken tabs and corners</td>
<td>Mold plastic to other hardware</td>
<td>Tooling fixtures Inadequate design Out-of-spec</td>
<td>13% scrap/rework cost</td>
<td>.03</td>
</tr>
</tbody>
</table>
investigate their action items? Can they implement their ideas?

The answers to the above questions are either "yes" or "no." Regardless of whether the answers are "yes" or "no," there is a formal closure.

**Conclusion.** The VM job plan offers a very structured approach to attacking and solving a quality problem. By adding the quality component, there is a method by which those involved in diagnosing a quality problem can go beyond the discussion mode into the action mode and ultimately complete to the implementation of solutions.

Superior quality is a reality when there is a definite plan of attack and when that plan is followed through to implementation. Through the use of VM techniques, quality problems can be: (1) identified, (2) documented, (3) evaluated, (4) solutions brainstormed, (5) solutions evaluated, (6) plan of action formed, (7) organized follow-up, (8) recorded, reported, and (9) solved.

### 1/84-3 PROJECT TITLE: DEPARTMENT J - REJECT/REWORK/SCRAP OPERATION

**PROJECT OBJECTIVE:** To Reduce Rework and Minimize Scrap in Department J.

**TEAM MEMBERS:** XXX, XXX, XXX, XXX, XXX, XXX, XXX

**TEAM COORDINATOR:** XXX

**TEAM SPONSOR:** XXX

### IDEA #: CONTACT PERSON: IDEA: STATUS: QUALITY IMPACT: SAVINGS $ AVOIDANCE$

<table>
<thead>
<tr>
<th>Idea</th>
<th>Contact Person</th>
<th>Idea Description</th>
<th>Status</th>
<th>Quality Impact</th>
<th>Savings $</th>
<th>Avoidance $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1843-01</td>
<td>XXXX</td>
<td>Investigate use of protective tape.</td>
<td>Expect improvement (will be evaluated)</td>
<td>To be determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1843-02</td>
<td>XXXX</td>
<td>Automatic mold part removal process.</td>
<td>Will improve or idea will not be implemented</td>
<td>To be determined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1843-03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1843-04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Thanks from the Value Productivity Development Fund!**

Thank you from SAVE to these contributors to the Value Productivity Development Fund. Join the honor roll! Contact the SAVE business office for information on how you can help promote VA/VE.

- Metropolitan New York Chapter 004
- St. Louis Gateway Chapter 047
- Wisconsin Chapter 055
- Seattle Chapter 078
- Central Indiana Chapter 044
- Twin Cities Chapter 050
- Northern Ohio Chapter 056
- Rocky Mountain Chapter 080
- Los Angeles Chapter 090

VEI, Incorporated
Signode Corporation
A Unique Work-Study Program
Students Learn While Helping Industry

By Edward W. Mitchell, CVS

Edward W. Mitchell, CVS is Value Analysis Manager for Northern Telecom in Toronto, Ontario. He is also a SAVE Director and the Society's Vice President, Communications.

McGill University in Montreal, Quebec can boast a unique industry-school program in Value Engineering/Value Analysis.

It was all started 12 years ago by David Pfeiffer, associate professor in the University's school of mechanical engineering. At a school renowned for its medicine and engineering programs, Professor Pfeiffer established a value engineering elective course for senior engineering students. He contracted with Henry Wales, CVS, a fellow of the Society of American Value Engineers, to come to Montreal one day each week for eight weeks to instruct the students in Value techniques and to lead the students through the workshop course.

To add reality to the course, McGill University contacted local industries asking for real projects to study, for technical assistance, and for a small fee to defer administrative costs. Since 1973, students in the course have been analyzing six to eight projects each year, conducting studies on items ranging from hydroelectric networks to women's brassieres.

Northern Telecom became a member of the McGill VE program two years ago, submitting a project on a small piece of telecommunications equipment. The results: student recommendations that reduced the subassembly piece part count by 32 percent and eliminated a difficult manufacturing operation.

Pleased with this initial student effort, Northern Telecom submitted these three projects to the McGill program last year: the repair and overhaul process for the model 500 telephone, a telephone installer's connection tool, and a cabler loading system used to manufacture copper cable. Again, the results were well received by management — five year projected savings approximately one million dollars.

Last year McGill VE students tackled a variety of projects. For CAE Electronics Ltd., students studied motion jacks on flight simulators. These are the hydraulic computer-controlled legs which move the machine around to simulate flying motions during pilot training. By simplifying shapes or changing materials and redesigning six pieces in each new jack, students presented the company with changes which could save up to $804,000 in manufacturing costs over the next five years.

Canadelle Inc., producers of Wonderbra, had a problem — how to stop the underwires in a brassiere from poking through the fabric. Company marketing experts estimated that their market share could be increased by about five percent if these irritating wires could be contained.

McGill VE students came up with plastic socket tips which can be stitched into the garment, holding the wire in place yet allowing it to move back and forth. The additional manufacturing cost is about 16 cents per bra, but the potential profit in increased sales for Candelle is estimated at $1.2 million by the second year and $5 million after five years.

Professor Pfeiffer indicated that not all of the student VE projects become a reality. However, since 1973 about 40 percent have been implemented translating into millions of dollars in savings.

The success of McGill's unique VE program is attributed to a combination of David Pfeiffer's commitment to the program, the excellence of "Hank Wales" as a teacher, communicator and value engineering expert, and positive support from University officials.

Northern Telecom is a proud participant in the program and has had the further good fortune of having some of the talented young engineers from the program join its company ranks after graduation. As a good corporate citizen, Northern Telecom plans to continue its involvement with the McGill University Value Engineering Program. It is one way of spreading Miles' methodology within the academic community, a real necessity if VA/VE is to continue to flourish.
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Using Value Consultants

By R. Terry Hays

Terry Hays, Director of Program Management, is a key staff member of Value Analysis, Incorporated, an international VA/VE consulting firm based in Newport Beach, California. This firm has been in the consulting business for over 27 years and is a recognized leader in the VA/VE consulting field.

Introduction

A frequent topic of SAVE conference hallway conversations, as well as more formal company internal meetings, is Value Management consultants — what are they, what should they be, what is their role in business and professional societies, and why are they so much more a fixture today than 20 years ago? In this article, we will discuss what a consultant is, then why use a consultant, and frankly, what are the attitudes towards consultants. Finally, we will talk about what to look for when considering the use of this resource.

What is a Consultant?

There is often confusion on just what a consultant is. This may be because the use of consultants is growing rapidly and they are being used in a greater variety of ways. However, they are basically used to supplement your resources with expertise generally not found in your company. Supplementing your resources can occur at two levels: consulting or free-lancing.

For example, a free-lance value engineer may be hired to perform a specific predetermined VE study or a one-shot training course. In contrast, a value consultant would first analyze the need, then recommend the highest potential Value Management Program and the mode of the study. The consultant would provide services such as developing program timing, study team composition, and the method of actually conducting the study. This, of course, implies that the "consultant" has broader experience than the free-lance value engineer.

To effectively accomplish their task, consultants should offer the following characteristics:

An acknowledged expertise in a specific area. Obviously, Value Management is one. But VM is quite a broad field itself. You may be looking for skill and expertise within the VM spectrum such as organizing a program, leading actual studies, training, or even such specialization as preparing Value Engineering Change Proposals under government contracts. You may even desire to have expertise in specialized areas such as electronics, automotive, or construction, even though the VM principles are consistently applied.

The ability to work with the people in your organization. Consultants are outsiders. As a result, their mode of operation should be advisory rather than directive. To achieve lasting benefits from the use of consultants, they must be able to work with and advise people in your organization. In the end, the change that you are looking for must come from within and be implemented by your people. The consultant must present experience operating in this manner. It can be a difficult transition for many, as they have often achieved success within their own organization, where they have been accustomed to directing others. While the directive approach may result in some short-term success, it has proven historically to be less than successful over time.

When considering a consultant, remember that they work on the basis of a contract. Whether a formal or an informal contract, a firm understanding of what is expected by both the consultant and the contractor is essential.

Why Hire a Consultant?

Organizations typically hire consultants when they do not have the internal expertise to do the job themselves or wish to make a long-term commitment. Certainly not to tell you how to run your business! While this can happen, and a few consulting firms do specialize in that field, they are usually called upon in a time of crisis or survival mode such as being close to bankruptcy.

The most common reasons include:

To supplement or augment your resources. It can be very economical to hire consultants as needed because, while the consultant's daily fee will in all probability be higher than a full-time employee, there is no long-
term commitment. Payment is only for the short term, to meet a specific objective. In some cases, especially in creative activities, such as VE studies, hiring outside consultants is a way to acquire new talent and ideas. Many companies find it worthwhile to supplement their VM programs with outside trainers rather than carrying these resources on their staff for just one or two seminars a year.

To serve a specific need. You may be considering a Value Consultant to help you in a number of ways, from setting up a Value Management organization in your company, complete with employee training, to providing assistance on a specific product study. Whatever the case, it is important that the needs and objectives be well determined first.

To provide objectivity and an unbiased outside perspective. A consultant can provide fresh and impartial viewpoints. Because a consultant does not have vested interest in their recommendations, they can often get ideas implemented that someone within a plant or company could not. The consultant can give advice without having his personal or political motivations questioned.

To improve internal skills. Classically, VM consultants offer a wide range of educational programs aimed at the various levels of an organization — from management orientations to technique-oriented workshops. However, a word of caution...too often the benefits of the traditional 40-hour workshops are oversold.

Too many companies have experienced poor VM programs because they expect an attendee at a basic workshop to return and become their Value Manager. But you cannot expect this type of expertise to be developed as the result of one such course. Workshop participants have learned the basics of the Value Management techniques, and they are qualified to perform further studies under the guidance of qualified Value Engineer.

Study team leadership and training qualifications come only after additional experience under the guidance of qualified value engineers. It is for this reason that Value Analysis, Incorporated offers its clients a full year of consulting services to properly train the Value Manager and organize their program.

To provide expertise. A company will want to hire a consultant with a demonstrated track record not just in the general field of Value Management, but also in the specific aspect of Value Management that your company is looking for. You may be looking for a consultant to assist you in establishing a Value Management activity within your company, to train your employees in the VM techniques, or to run study programs for you. Whatever the case, you want someone who has developed expertise in that particular area.

To be a sounding board. A consultant allows you to “pull away” from the day-to-day business environment and think, question and speculate — to let your imagination open up and even run wild. The consultant can serve as an understanding and sensitive sounding board in the creative process, which is the environment in which remarkable ideas, products and even companies have been born.

Be a confident. A consultant allows you to talk in confidence about sensitive issues, concerns, people, organizations, etc. Sometimes you really can't talk to anyone else about these things, but the consultant can offer you the opportunity to do it in confidence and provide their counsel from their wide experiences.

To identify problems. Insiders are often not objective enough to identify, or to bring into the open, a problem and its symptoms. Frequently in Value Engineering, this involves inter-relationships between departments or the inadequacy of a tool being used such as a cost accounting system structured for contract analysis but inadequate for product analysis.

To create credibility. The very fact that management has brought in a paid consultant heightens the credibility and importance in employees' minds. It is not unusual for a consultant to make a recommendation which has been offered before by insiders only to fall on deaf ears. But now that the consultant recommends it, the idea is received receptively and realistically analyzed. This is also true of ideas proposed by internal value management study teams who have been trained by outside consultants.

To bring knowledge. Very importantly, a consultant can bring to you the knowledge gained from dealing with hundreds of companies of all sizes, from all industries and with just about every problem, failure, or success you have heard of. This scope and awareness of how other companies have addressed and solved major problems, successfully and unsuccessfully, may be a virtual treasure house of help and open up new vistas or approaches. Strange as it may seem to many, there really are common denominators for success — whether you make and sell peanut butter, paper napkins, shoes, jet engines, defense systems, diapers, homes, computers or yogurt. Opening up the myopic view of products and industries can be most worthwhile, a vista many firms never see. A consulting firm with a staff of varied backgrounds can be an invaluable resource.

**A consulting firm with a staff of varied backgrounds can be an invaluable resource.**

Ideas Toward Consultants

Since a Value Management Consultant will be working very closely within your organization structure, and a successful assignment requires full disclosure of what might be considered company confidential materials, it is worth briefly exploring attitudes toward consultants. It seems to be a love/hate relationship. Certainly, consultants are expected to provide beneficial guidance and even turn around negative situations.

On the other hand, there are many negative feelings about consultants. The old cliche' that says, ‘a consultant is someone who borrows your watch and then charges you to tell you what time it is,' demonstrates...
those feelings. It may be that some consultants do not perform their jobs well, and once a client has had a bad experience he does not forget it quickly. Even in SAVE there was once much speculation regarding the proper role of consultants in the society.

Some common, real or imagined reasons a client may hesitate in hiring a consultant include:

Conflict of Interest. Some time ago the "60 Minutes" TV show featured a segment on the "Beltway Bandits." The "Bandits" referred to were the large consulting firms that ring Washington, D.C. Of course, the title implies the tone of the show. They focused on those firms that were simultaneously consulting for the Department of Energy, large oil companies and even OPEC nations. While there is an apparent conflict of interest here, you too could be involved in a similar set of circumstances.

When you look for a consultant, you naturally want one with experience in your business field. But if the consultant you want has worked for your competitor, can they ethically work for you? Of course, consultants do operate with certain caveats. First, we do not disclose anything from other clients without their full permission. Secondly, it is our policy that if a potential conflict has the smallest implication of arising by our bidding on a second assignment, we clear it first with our current client.

Obviously, not everyone may follow the strict policy of Value Analysis, Incorporated, so check carefully the reputation of whomever you are interested in working with. But the truth is, if you don't have the necessary faith in your consultant, don't hire him. Too many problems will arise.

High Fees. A successful assignment can yield high returns for a client. Typically, in a VM study assignment our clients realize well over 10 times our total fees and costs. It is very hard to find investments that return 1000%. But still clients may resent what they consider to be high fees. Interestingly, one of the prime reasons that some DoD personnel refuse to support the VE incentive clause is because they resent having to pay the contractor "exorbitant benefits" for coming up with cost saving ideas. They must figure that 100% of nothing is better than 50% of something.

Fear of Embarrassment. Some management is reluctant to hire consultants because they may come up with ideas that will improve situations that the management is responsible for and, thereby, he would be embarrassed to admit he had not created those ideas himself. In fact, one of the greatest detractors to the implementation of VE proposals is that same fear by the management responsible for the areas where the proposals suggest change.

Ill-Defined Problems or Assignments. Utilizing a consultant may fail when the client's problems or expectations are not clearly defined. A client may direct the consultant to work on a symptom rather than the true problem. Even more damaging is when a client defines a problem with some preconceived solution. This is often a lose/lose situation. If the team works toward management's solution, they may miss a more significant opportunity, and if the team uses a more open-minded approach to the problem, they may risk management's acceptance of their recommendations.

In comparison, consultants may also be guilty of misdirecting their efforts. This is particularly true if a consultant has narrow expertise and then ignores the factors outside of it. For example, a consultant specializing in design aspects of VE may not recognize that while the design department is creating designs for low volume applications, manufacturing is reorganizing for automation and high volume capability.

Poorly Conceived and Presented Solutions. It can easily happen that a consultant offers recommendations but fails to get them implemented. A prime reason may be that the proposals are not responsive to the clients' character. For example, a company operates under the strong and autocratic rule of its founder. The VM consultant recommends establishing a Value Management Committee. The suggestion may be good, but the president is not likely to accept or implement it.

Staff Resentment. Employees may resent having a consultant hired over them and paid their "exorbitant fee." This is particularly true when the consultant operates in a field they consider their own expertise. Can't the training department conduct the VE training? Why do we need some outsider to run a product cost reduction study? Furthermore, the consultant may not even be around for the time-consuming and detailed work of implementing the final ideas. They get all the glory, but the staff does all the work!

Many of these concerns, whether real or imagined, should fade away as you work with your consultant, provided you have made the right selection. As the consultant works with your people and shares with them a new technique that can help them do a better job, you should find any preconceived resentment disappearing. And when the "work" has been completed, it is important that the credit for any successes be directed at the internal team members responsible for developing and implementing the ideas.

To allow this to happen, it is clearly the responsibility of management to create a good atmosphere prior to the consultant arriving on the scene. The role of the consultant and the reason for their participation need to be clearly explained. Assigning a key individual to work closely with the consultant will assure continuity in completing the task when the time comes for the consultant to leave.

Even with this transition, the implementation cycle can be a real problem. The typical VM seminar ends with proposals, not accomplishments. Too often expected results have not occurred because of the lack of planned follow-through. This is another reason that Value Analysis, Incorporated works with their clients for a full year following the seminar/workshop.

If the consultant you want has worked for your competitor, can they ethically work for you?
Selecting Your Consultant

Should you use a VM consultant? Can you afford to use one? Can you afford not to use one? Which consultant should you select? How should you use this resource? Possibly the best way of answering these questions is to step through the decision making process that you might use in making your selection.

Identify Need. The first step is to determine what you want to accomplish. Are you looking to establish an ongoing Value Management Program that will allow you to derive benefits year after year? Or are you looking for a short-term fix to a problem area? Do you want to train a large number of your employees in the techniques of VM? Or do you need to develop a new Value Manager to lead the Value Management Program you currently have in place? Only you can answer these questions. But what if you are not sure how far to get involved with the Value Management process? The mere fact that you are asking yourself these questions indicates that you are interested in improving your product or services, profitability and employee skills.

Identify the Type of Consultant. Based on your needs, you may want a consultant with a particular specialty(ies) or experience(ies). Whatever the case, your problems are “full time” and you should have a consultant who is full time, dedicated to the Value Engineering/Value Analysis services that they provide.

Seek Out Competent Consultants. You need a consultant who is competent and willing to focus on your needs. Even the “standard” training course should be tailored to the specific needs of each organization. While SAVE does approve consultants’ training programs, this is based on the course content and allotted time. There is great variability as to how the time is spent and which areas are emphasized. So how do we find a reputable consultant?

A good place to start is with SAVE. Their National Business office in Dallas, Texas maintains a list of any and all Value Management Consultants who have registered with the society. But a word of caution... SAVE does not evaluate consultants. However, SAVE does have a professional certification program. In order to become a Certified Value Specialist (CVS), an individual must demonstrate knowledge and competence in the field of value engineering as well as experience. So look for the CVS designation.

While the list of consultants from SAVE will give you a good start, you need to develop a more detailed background on the capability and integrity of the consultants you may be considering. There was an old automobile ad that said to “ask someone who owns one.” An invaluable resource to you is someone else who has used the consultant, as they can provide you with a frank evaluation of the consultant.

All consultants will provide you with a list of references, but be honest. Do you think that any consultant will knowingly include someone who will not give them a good rating? However, the list of references can provide you with a strong clue as to the depth of experience and variety that the consultant can offer. By talking to the references you can also gain insight as to the type of results and the quality of the Value Management services provided by the consultant.

Making your Decision. As you approach your final decision, it may be advantageous for you to prepare for that decision in much the same way as you would respond to a request for a proposal. Only here, since you will be hiring a consultant to work closely with you, ask for their comments on your request as well. They may provide you with some important insights to your situation.

Obviously, a face-to-face meeting is beneficial to both sides. While most consultants are pleased to make a marketing call to you, you can gain some very important information on the consultant by observing them as they work for other clients. Consultants can often receive approval from their host client to have guests attend training seminars and study team workshops. In fact, this is a practice that we strongly encourage at Value Analysis, Incorporated, as it provides potential clients a first-hand evaluation of the consultant, their capabilities, and how well they interact with the people in the organization that they are serving. When all is said and done, it is often the ability of the consultant to interact with your employees that will determine the success of your program.

Remember, you are looking for a consultant to fill a specific need. You want someone who is fully qualified in the field of Value Management, has the experience and necessary staff to meet your particular needs, and be someone that you feel comfortable with and have complete faith in.

Fees. Too often the first question asked is, “What are your services going to cost me?” While an important matter, is it not more appropriate to first identify what your needs are, then determine the consultant(s) who can best fulfill those needs? The VM consultant is a professional and normally operates on a fixed fee or daily rate plus expenses. While fee structure can vary quite wildly at times, be careful when evaluating bids. Are you getting what you want? Are you paying for what you need? If you receive a low-ball bid, ask the same questions that you would of any other supplier. Does that consultant really understand the task and does he have the full-time resources to back him up and assure that your objectives are met?

As in most business situations, you will probably get what you pay for. While the most effective assessment of the success of your decision will probably be the return on investment that your Value Management Program provides, this information is not, unfortunately, available to you when you need to make your decision. Therefore, the best alternative is to find a consultant with a proven track record and the expertise to meet your needs.

Conclusion

A carefully selected value consultant can provide a client, regardless of size, with significant benefits. But as with any working relationship, a close, compatible working relationship must be established with full and open commitment by both parties. Value Management consulting offers immediate and large paybacks to the client with long-term benefits structured into the assignments.
College Level Education —
Our Achilles Heel?

By A.H. (Bud) Brogan

Arnold H. Brogan is Director, Engineering, of the Office of Federal Supply and Services (GSA) and is responsible for the development of all technical support documents required for the procurement office, household and related furniture items managed by the Furniture Commodity Center.

"Tis education forms the common mind. Just as the twig is bent, the tree's inclined..." — Alexander Pope.

Some six years ago, Donald Parker, director of the Value Foundation, called me to discuss the possibility of my teaching an accredited three-hour Value Engineering Theory course in the School of Architecture & Engineering at Catholic University of America in Washington, D.C. Don, under the auspices of the Value Foundation, had written that he had just completed teaching the initial semester. Dr. Michael C. Soteriades, chairman of the Civil Engineering Department at Catholic University, had agreed to a continuing VE educational effort at the university. We, of the VE fraternity, owe Dr. Soteriades and his successor, Dr. T. C. Kao, our thanks for having the confidence and understanding of VE to pledge the resources of Catholic University to a long-range commitment on its behalf.

The course offered at Catholic University is an excellent example of the merit and demonstrated value of incorporating a dynamic and flexible VE course of study into the general engineering education of engineers and architects accommodating undergraduate and graduate level students as well as practicing professionals.

One unique feature of the course at Catholic University is that an engineering — trained college professor can readily teach the curriculum. In addition, guest lecturers who are trained in VE can augment the course by adding a rich and divergent contextual viewpoint. Another distinction of the course is the requirement for a term paper which consists of a value study of a live project. Full documentation and presentation of this project is required for the student to satisfactorily complete the course.

The following two excerpts from the course introduction material will give you a feel for the depth and purpose of the course:

**Course description.** VE is a set of methods to reduce the cost of producing or using goods and services without reducing necessary quality or performance. The objectives of this course are to introduce the concept of VE and demonstrate its application and techniques. The course provides practical knowledge in specialized techniques used in VE, such as: creativity, weighted evaluation, design-to-cost, life cycle costing, FAST diagramming, and human relations.

Upon completion of the course participants will be equipped to:

- identify the function of a design or product
- allocate cost and worth to function
- apply creative techniques in developing alternatives
- systematically judge subjective choices
- prepare a cost model from an estimate
- perform as a member of a VE team
- have a greater awareness of the concept of value

Course format also includes formal presentation of methods and theory interspersed with class exercises to apply the techniques to assigned problems. Each student has the opportunity to perform and present an independent value study on a subject of their choice.

**Course Schedule & Content.** Schedules are provided for a 14-week semester schedule and a 10-week quarter schedule. The course contains the following elements:

- 11 formal lectures
- 9 reading comprehension quizzes
- 8 written homework assignments
- 1 mid-term examination
- 1 long-term independent value study assignment
- 1 oral presentation
- 1 final examination
- 7 key class exercises

The growth of student interest and the variety of students at Catholic University taking this course is of
prime interest to the VE community. From a first class (fall of '78) enrollment of 10 undergraduate students, the fall semester of '84 had expanded to 26, and the variety was extraordinary — 1/3 were undergraduates, 1/3 were graduates, and 1/3 were working professionals (of varying specialties) who were back for refresher work. Some were also pursuing master and doctorate degrees. Looked at from another perspective, the class of 1984 was about 50 percent engineers and 50 percent architects. Also among the established professionals, there was a representative group of electrical and mechanical engineers. In essence, the class of 1984 was a microcosm of the consummate Value Study Team.

Another interesting and significant feature of the Class of '84 was that almost 1/2 of the students were from overseas. Some 12 students were from the Middle East and Africa. In each case they were superior and highly motivated students who were soon to return to responsible professional positions in their respective countries. I found in each student a willingness to work hard and a real desire to acquire knowledge and expertise in management and cost effectiveness techniques. The course at Catholic University fits the need perfectly.

Stop for a moment and review the make-up of the Catholic University Class of '84, and then ponder the potential for global SAVE expansion it represents:

- The fertile minds of new civil engineers.
- The imagination of highly motivated architects.
- High placed professionals to be responsive to new ideas and cost saving recommendations.
- Professionals in those areas of the world where innovation and creativity is so badly needed.

Now, let's pause for another moment and assume that I have generated at least a potential agenda of the positive points in educating a selected group of people in the ways and means of our profession. Then, let's multiply the Class of '84 by the number of chapters we have and it can be readily seen that the impact on chapter growth has not only the potential to be substantial but on-going and substantive in the long-term prospects of VE.

It is clear that our static national enrollment figures indicate that some strong remedial measures be taken. I submit that a vigorous, nationally orientated educational effort is needed to breathe new life into our organization. In my opinion, such an effort would result in invigorating our specialty with the new technological innovations that are crucial to VE and to the engineering profession as an aggregate. The bending process will have indeed begun.
Trees That Survive

Education is the focus of this issue of Value World. And well it should be.

To me it seems paradoxically true that in the VE profession the process of educating would-be practitioners is one of our greatest strengths; and it is also one of our most noticeable weaknesses. Hazarding a gut-feel unsupported by evidence in hand, I would say that on the whole we are magnificent in providing VE education in the early goings; and equally poor in later phases toward educating the public on how to weave VE into the fabric of an organization.

I'm reminded of the beginnings of a new forest following a devastating forest fire or timber harvesting. At first, saplings and underbrush flourish. The early growth gathers nutrients from the soil and sun, sufficient to prosper in the early situation. It's a fun time.

But things change. The forest thickens. Plant life competes for a limited supply of ground area in a confined space until ultimately only the taller trees are able to feel the life sustaining sun's rays. The smaller, less active growth eventually dies from its own inactivity or lives on in lesser fashion.

I am thinking that the experience of those trained in value principles is analogous to the forest process. In excess of a million engineers, technicians, students, buyers, administrators, managers — whatever — have been educated in VE. Countless times, we have all seen or heard the swelling, unbridled enthusiasm of new students following their first VE workshop or experience. Elation! Feelings of Gestault. The potential for a million candidates for prospective membership in a Society (SAVE) that more than any other source sustains the profession by giving it identity, credibility and clout. Yet we have something fewer than 1,500 members. A mere 1,500 trees, if you will, who have survived, emerged strong, healthy and active from the many candidates who could have emerged to participate in this unique circle.

Why? I don't know all the reasons why. But I do know some of them. So do you. It is a simple question that requires a complex answer.

I'm sure, however, that education — what we teach, how we teach — is a significant part of it. Perhaps the answer lies not in our failure to stimulate interest initially, for we seemingly have done that demonstrably well, but rather how we sustain the growth once it has germinated.

Growth must surely be a key. And this perhaps is where our collective educational talent should strategically be addressed.

Your thoughts are welcome.
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