

Dod Value Engineering

This Handbook provides an understanding of the DoD value engineering (VE) program in order to encourage broad participation and achieve maximum benefits.

Value engineering, a technique for reducing cost and improving productivity, has been used by Defense for 20 years. Recently, the Department has stressed this technique to reduce weapon systems acquisition costs under defense contracts. Although increased savings have been reported, Defense was still more than \$300 million short of its fiscal 1982 savings goal. Navy lagged behind the other services. GAO believes that value engineering should be integrated into Defense's overall approach to reducing costs and improving productivity. GAO also believes that value engineering savings will increase if Defense (1) provides high level support and visibility, (2) recognizes value engineering achievements, (3) increases contractor awareness, and (4) better manages the Navy program. DOD agreed with GAO's conclusions and said it would improve its value engineering program. (Author).

The preliminary purpose of this directory is to provide a current, consolidated listing of all Value Engineering personnel within DoD. This directory will be used in directing contractors and government personnel to the responsible individual at each location for the operation of the VE Program. (Author).

This Conference Report summarizes and consolidates the proceedings from the 1984 DoD Value Engineering Conference held 1-2 November in Leesburg, VA. The findings and recommendations with supporting material from the five workshops are provided in addition to the complete plenary session presentations. An Executive Summary is presented in Part I. Part VI-Workshop D: VE Training/Orientation. Keywords: Value Engineering, Conference Report.

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Lean Six Sigma (LSS), Design for Six Sigma (DFSS), and Value Engineering (VE) have a proven track record of success for solving problems and improving efficiency. Depending on the situation, integrating these approaches can provide results that exceed the benefits of each individual approach. Value Engineering Synergies with Lean Six Sigma: Combini

The purpose of this thesis is to determine the barriers to more active contractor participation in the DOD Value Engineering (VE) program. A review of professional literature such as DOD Inspector General, General Accounting Office, and other research reports provide the background information necessary to explain potential barriers to more active contractor participation in the DOD VE program. Thirty telephone surveys were conducted with Government and contractor personnel to solicit

the opinions of these acquisition professionals concerning barriers to more active contractor participation in the DOD VE Program. The results and analysis of the interviews are reported. It was concluded that there are four significant barriers preventing more active contractor participation in the DOD VE program. The four significant barriers to more active contractor participation in the DOD VE program are insufficient funding, the VECF submission and approval process, a low level of VE awareness among acquisition professionals, and a lack of support for the VE program among top-level DOD management. Recommendations to improve contractor participation in VE are establishment of a centrally managed VE fund, streamlining the VECF process, increased VE awareness training, additional VE personnel resources, enforcement of VE savings goals, and greater top-level management support. The DoD Value Engineering Change Proposal (VECF) Process Action Team (PAT) was chartered by the Principal Deputy Under Secretary of Defense for Acquisition and Technology on September 16, 1996, in response to reductions in the VECF savings reported in the DoD VE Annual Report. The objectives of the PAT were to identify and remove the impediments to the VECF and thereby improve the incentives for contractors to identify life cycle cost savings opportunities for the Government. The PAT analyzed the VECF process, the service implementing programs and the changes in the acquisition environment that may have contributed to the lower achieved savings. Initial results and proposed solutions were discussed with a spectrum of Program Managers and Defense contractors involved in systems acquisition and supply support of fielded systems. Preferred recommendations were identified and an Action Plan was developed.

This Conference Report summarizes and consolidates the proceedings from the 1984 DoD Value Engineering Conference held 1-2 November in Leesburg, VA. The findings and recommendations with supporting material from the five workshops are provided in addition to the complete plenary session presentations. An Executive Summary is presented in Part I. Part IV-Workshop B: VE on Spare Parts includes papers, Talking Paper on Spare Parts, Spare Parts Acquisition, Buy Our Spares Smart (BOSS), Contracting and Manufacturing, DLA Value Engineering (VE) and Competition Advocate Interface, Reverse Engineering, Standardization of 440 Volt Input Power Cables, and GIDEP/VEDISARS. Keywords: Value Engineering, Conference Reports. The purpose of this thesis is to determine how the Department of Defense value engineering policies and processing procedures affect a contractor's motivation to submit value engineering change proposals. A comparative analysis of the DOD Value Engineering Program with private industry's value analysis program and also an examination of how the Hughes Aircraft Company has used the DOD Value Engineering Program, resulted in three conclusions. The first conclusion is that the incentives offered by the DOD Value Engineering Program have been found by private industry to be ineffective in attracting supplier participation in value analysis. The second conclusion is that delays in incorporating the VECF in the end-item significantly reduces a contractor's motivation to submit future VECFs. The third conclusion is that the contractor's perception of the government buying activity's willingness to fairly evaluate VECFS is the most significant influence on a contractor's motivation to submit VECFs. (Author).

Value engineering (VE) is a recognized technique for reducing costs while

maintaining or improving productivity and quality. The Department of Defense's (DOD) VE program consists of both government- and contractor-developed cost-reduction projects designed to reduce a system's life-cycle costs. In response to Congress' request, we agreed to provide information on (1) the role the VE program has played in supporting cost reduction in DOD weapons system programs and (2) the alternative measures program managers take to reduce costs and/or incentivize contractors. In summary, we found that the VE program has made a minimal contribution to cost reduction in DOD. Value engineering is only one of a number of approaches used by the services to control costs, and its use varied significantly from project to project. In part, its limited use is attributable to new cost-reduction initiatives introduced by the department since the 1990s and in part due to the cumbersome processes required to implement the program. Perhaps, more importantly VE projects are typically undertaken during production or after a system has been fielded. At this point, opportunities for substantially reducing costs are more limited. Our work on commercial best practices suggests that the opportunities to significantly influence costs occur earlier in the life cycle of a system. Generally we found significant variance in both the use and support of value engineering throughout the services. For example, neither the Air Force or the Navy have full time staff resources dedicated to the VE program and consider VE just one of many tools available to reduce costs. At one Navy buying activity, we could not identify any VE projects, while at other Air Force and Navy buying activities we identified isolated instances where VE projects were being undertaken. In contrast, the Army has a more structured program with staff resources committed to managing the program and developing VE projects. However, even within the Army, there were variances in management emphasis from command to command. For the 11 weapons system programs we examined, we found that DOD program managers use a variety of strategies as alternatives to or in conjunction with VE. But how or when VE or other strategies are used varies by project. Like VE, other strategies often seek to motivate contractors to submit cost-reduction ideas and sometimes provide opportunities for contractors to share in the savings. Some program managers said they consider the VE tool or methodology, but said they use other approaches better suited to their programs or integrated into their management approach. The limited use of the VE program has been the result of a changing acquisition environment and the administrative burdens associated with the program. DOD introduced a variety of new cost-reduction initiatives in the 1990s as it looked for ways to reduce costs and create a more efficient acquisition environment. DOD also changed its procedures and processes to foster greater efficiency and cost effectiveness. For example, DOD encouraged programs to replace military specifications and standards with performance specifications, giving contractors configuration control and resulting in less need for contractors to submit changes to DOD for approval. Administrative requirements also contributed to limited contractor participation in the VE program. The proposal

process is seen as complex and resource intensive.

Significant opportunities appear to exist for increasing defense industry participation and effectiveness in the DoD Value Engineering Program through stimulating a much greater exploitation of the 'savings sharing' potential of industry-initiated Value Engineering Change Proposals (VECPs). It is concluded that defense industry will probably increase its VECP activity significantly: (1) When it is generally convinced that its DoD 'customer' is receptive to industry-initiated VECPs. (2) When DoD VECP processing time is reduced and the quality and quantity of VECP 'feedback' information are improved. (3) If the DoD closely monitors experience and problems under the current VE Armed Services Procurement Regulation provisions and makes timely corrections as necessary to maintain strong industry motivation. (4) If all concerned DoD and defense industry personnel have a thorough understanding of the intent, objectives and procedures of the DoD VECP Program.

In today's environment of reduced budgets and staffing, the Department of Defense (DoD) can no longer afford the extensive time delays and increased costs that programs have experienced in the past. When one program costs more than planned, decisionmakers are forced to delay or cancel other programs. Such actions result in criticisms and may prompt outside involvement by the Government Accountability Office, the Inspector General, or even Congress. Value Engineering (VE) can play a key role in ensuring programs stay within budget or even save money. This document updates information in DoD Handbook 4245.8-H, Value Engineering, last published in March 1986, and Army Pamphlet 11-3, Value Engineering (undated), both of which were used as sources of information. It shows how VE can be an effective mechanism for generating cost savings or cost avoidance for contractors and the U.S. Government. It is intended for multiple audiences. For Government practitioners, it gives details on the basics of the VE methodology and discusses how to establish a VE program. For Government program office personnel, it explains the impact VE can have on their success. For Government contracting officers and industry, it describes best practices for applying VE on Government contracts. For both Government and industry management, it provides an overview of the benefits of a strong VE program.

The purpose of this thesis is to determine how and to what extent the Department of Defense Value Engineering (VE) effort can be utilized to improve the procurement of spare parts. An in-depth research effort was undertaken in this area. Interviews were conducted and data were collected from the DOD, DLA, and Navy Supply Systems Command regarding this topic. A comparative analysis of the data revealed trends and opportunities for VE application to the procurement of spare parts, which resulted in three conclusions: First, VE is a proven cost saving tool but is underutilized in spare parts procurement. To maximize savings, VE should be emphasized in the replenishment spare parts process. DOD must initiate efforts to encourage more contractor VE participation

in the spare parts procurement process. Second, there continues to be a lack of top management support within the DOD for VE as a whole, which directly impacts on VE investment in spare parts procurement. An intensive training and education process is necessary for Government and contractor acquisition personnel emphasizing the benefits of the VE program. The third conclusion is that the current DOD procurement environment of reduced budgets and fewer major weapons acquisitions heightens the need for greater use of VE in the spare procurement process. Proper use of the Value Engineering program, in major systems acquisitions and spare parts procurement, possesses numerous opportunities and advantages for both the Government and contractors alike. This Conference Report summarizes and consolidates the proceedings from the 1984 DoD Value Engineering Conference held 1-2 November in Leesburg, VA. The findings and recommendations with supporting material from the five workshops are provided in addition to the complete plenary session presentations. An Executive Summary is presented in Part I. Part V-Workshop C: VEP/VECP Administration, Negotiation, and Implementation. Keywords: Value Engineering, Conference Report.

This report summarizes the results of the joint audit of the DoD Value Engineering Programs. The audit was requested by the Office of the Under Secretary of Defense for Acquisition and Technology to satisfy the requirement in Office of Management and Budget Circular No. A-131, "Value Engineering," May 21, 1993, that agency value engineering programs be audited 2 years after issuance of the Circular. During the audit, the Inspector General, DoD, and the Army and Air Force Audit Agencies issued 12 audit reports on DoD Value Engineering Programs. Office of Management and Budget Circular No. A-131 requires Federal agencies to use value engineering as a management tool, where appropriate, to ensure realistic budgets, to identify and remove nonessential capital and operational costs, and to improve and maintain optimum quality of program and acquisition functions. The DoD Value Engineering Program involves both in-house and contractor programs. The DoD has reported more value engineering savings than other Federal agencies. For FY 1994, the DoD reported value engineering savings of \$855 million and investment costs of \$248 million. For FY 1995, DoD reported value engineering savings of \$734.4 million and investment costs of \$43.9 million. The audit objective was to determine whether DoD value engineering policies, procedures, and implementation of the revised Office of Management and Budget Circular No. A-131 were adequate, and the reported value engineering savings for FY 1994 and FY 1995 were valid. The audit also assessed how extensively value engineering was included in contracts, whether contractors believed they were encouraged to participate in the value engineering program, and how value engineering related to other streamlining or savings initiatives. The audit also evaluated the adequacy of management control programs applicable to the VE programs. In 1959, the Department of Defense (DOD) adopted the Value Engineering (VE) program as one of several programs aimed at overall cost reduction. The purpose of VE is to achieve the essential functions of DOD requirements at the lowest total cost, consistent with the needed performance, reliability, quality, and maintainability. The DOD's VE program for contractors is implemented through the inclusion of value engineering clauses in contracts prescribed by the Armed Services Procurement Regulation (ASPR). Of the VE clauses available in ASPR, only the Value Engineering Incentive (VEI) clause authorizes the sharing of savings under two methods: a VE sharing rate, or the original negotiated contract cost sharing rate. Since the DOD seeks to motivate defense contractors through its profit policy, this research investigates

the alternate VE sharing methods to determine which sharing method provides the greater profit potential for the defense contractor. This research incorporates the ASPR VE computation instructions into contract pricing models for the fixed-price-incentive and cost-plus-incentive fee type contracts. Simulated profit levels are generated for each VE sharing method through the application of a hypothetical VE change proposal in the models. Conclusions and recommendations are drawn from the simulations. (Author).

The purpose of this thesis is to determine how and to what extent can the Department of the Department of the Navy's Value Engineering Program be utilized in the acquisition of computer software. A review of professional literature such as journals, periodicals, and research reports provide the background information necessary to explain potential relationships between Value Engineering (VE) and computer software. Surveys were submitted to all Department of Defense (DOD) Program Managers, U.S. Navy Systems Commands, and Defense Contract Management Command Districts to determine how senior DOD management currently perceives the VE computer software relationship. An analysis of the data resulted in the following conclusions: (1) the Federal Acquisition Regulation part 48 does apply to software, however, it was written with an emphasis on hardware and unit cost reduction; (2) the methodologies of VE do apply to computer software development and acquisition; (3) DOD software acquisition policies do not effectively support the utilization of VE; and (4) contracting personnel and Program Managers require additional training in software development. Value Engineering is an effective contracting tool that can offer tremendous opportunities for Government and industry alike when used appropriately.

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Value Engineering Guide for DoD Contractors Department of Defense Value Engineering Program Needs Top Management Support Report to the Congress Summary Audit Report on DoD Value Engineering Programs

This study surveyed the attitudes of program managers, contracting officers, and engineers in major acquisition programs toward effective implementation of the Value Engineering (VE) contract clauses. Reported savings from Value Engineering Change Proposals declined by 30 percent from 1969 to 1976. Suggestions in the literature indicated that the attitudes of government personnel were one factor in the failure of VE to produce anticipated cost savings. In terms of advantages, the respondents agreed slightly that the VE clauses remove costly requirements and produce associated benefits such as improved reliability. Under disadvantages, the respondents agreed slightly that VECP's are difficult to process and administer, that the VE clauses are too complex, that contractors hold back cost savings ideas, and that government and contractor employees do not know enough about VE. The respondents were neutral toward the concepts that approved changes often do not work in

practice, and that life cycle costing and other cost control techniques decrease contractor's motivation to submit VECP's. No systematic differences in attitudes were found among the program managers, contracting officers, and engineers groups. Navy personnel perceived less potential for cost savings or associated benefits than either Army or Air Force personnel. (Author).

The report describes Value Engineering from its conception and introduction into the defense systems acquisition process. The Value Engineering discipline, the emphasis, interest and image is described together with its interrelationships with other recent developed cost reduction techniques. Finally, the issue of revitalizing Value Engineering from top Government officials is addressed and recommendations offered. The data and narrative in the report is based on interviews with key personnel in the Value Engineering Office of OSD, DA and DOD components. The revitalization and renewed interest is supported with copies (Appendices C through I) of memoranda and letters among OSD and DOD level. (Author).

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