THE USER'S ROLE IN MAJOR TRAINING SYSTEM ACQUISITIONS - AS PERCEIVED BY THE DEVELOPER

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ABSTRACT

The purpose of this paper is to delineate the various responsibilities and interrelationships of the agencies involved in the acquisition of a major training system. As the title suggests, this paper will emphasize the role of the user as perceived by the materiel developer. Discussed within the paper will be these interrelationships as they exist with a major Army training system acquisition. The participants will be identified, the four phases of the acquisition process will be presented and a discussion of the role of the user in this process will be highlighted. Also covered will be the user's role in the development of Front-End Analysis (FEA) materiels and Task and Skills Analysis (TASA) documentation. In addition, a common vocabulary will be included to establish a basis of understanding and suggestions will be offered on problems which need heightened interest and tracking during the design, development and acquisition processes.

INTRODUCTION

In Army training system development, there are primarily four groups or agents who play a critical role. These include the materiel developer, the training developer, the user school (or proponent) and the selected contractor who will produce the training system or device. Although there are numerous other agencies and participants in the entire training system acquisition cycle, for the needs of this paper, only these four critical participants will be addressed. Once identified, the role of these agencies will be matched to the acquisition process itself. Focusing on the user proponent and its role in the process, suggestions will be offered as to how a more productive relationship between agencies may be obtained. The user's role in the development of FEA and TASA materiels will also be addressed.

ACQUISITION CYCLE PARTICIPANTS

A description of the four participants identified as critical for this discussion can be found in the PM-TRADE Training Device Acquisition and Life Cycle Management Guide as prepared for the Project Manager Training Devices, U.S. Army.(7) For the purposes of this paper, these participants are the Training Developer, Materiel Developer, Proponent School (User) and selected contractor who will develop the training system or device.

The Training Developer is that agency responsible for the formulation of training concepts, doctrine, organization, training objectives and requirements for the training of U.S. Army Forces. This command or agency is responsible for the development and conduct of training which will provide the skills necessary to operate and logistically support materiel systems being developed. In most instances, the principal Training Developer is the U. S. Army Training and Doctrine Command (TRADOC).

The Materiel Developer is the element responsible for research, development, production and production validation of a training device. In most cases, the Project Manager for Training Devices is the principal Materiel Developer. The Project Manager (PM) of the systems involved (e.g., M-1 Tank, U.S. Roland, Firefinder, AH-64) is generally charged to oversee the total project and provide funding. Working with and within this agency is the Project Director at PM-TRADE who is assisted by the Naval Training Equipment Center. The responsibility here is to turn a proponent school's (user's) training requirements into specifications for inclusion in a Request for Proposal (RFP). This is the document that provides a description of the items to be procured. It is a request for a manufacturer to submit a proposal supported by a cost breakdown. By directing this effort, the Project Director is considered the driving force for PM-TRADE in the accomplishment of the mission of training device acquisition.

The User (or proponent school) is designated as the command, organization, or unit that is to receive the training system or device from production for use in accomplishing a designated mission. The user provides guidance to the materiel and training developers during the training device acquisition process on matters pertaining to the expected operational employment and logistic support. Although not always, the user or proponent is normally the agency who supplies to HQ TRADOC a training device requirement for validation. This validation process encompasses the establishment of a Joint Working Group consisting of representatives of PM-TRADE, USATSC (U.S. Army Training Support Center - the training device focal point for TRADOC), and the Proponent School (Armor, Infantry, Air Defense, Artillery, etc.) with the DARCOM-PM (Dept. Army Readiness Command-Project Manager). It is the Training Device Requirement (TDR) document prepared by TRADOC which gives operational, technical, and cost information necessary to obtain Headquarters, Department of the Army (HQDA) approval. When approved by HQDA, the TDR is the document of record of the Army's requirement and will contain the guiding factors against which developers and contractors meet the user's needs.

The selected Contractor is an individual, partnership, company, corporation or association having a contract with the procuring activity (usually PM-TRADE with the contracting auspices of Naval Training Equipment Center) for the design, development, manufacture, maintenance modification, or supply of items under the terms of a contract. In the case of a training device, this participant builds the hardware and develops the training scenarios and software as per the specification requirements of the contract. This is the legal agreement between the Government and Industry for the acquisition of the device needed.

Within this paper, these four participants will be of concern with the user's role highlighted, in particular with respect to the training device acquisition process.

TRAINING DEVICE ACQUISITION PROCESS

The training device acquisition process consists of four distinct phases. They include (1) Need Identification - Concept Formulation Phase, (2) Demonstration and Validation Phase, (3) Full-Scale Engineering Development Phase, and (4) Production and Deployment Phase.

The Need Identification - Concept Formulation Phase is where training voids, new training needs, and technological forecasts are identified by the Training Developer to determine the training capabilities, doctrine, organization, or potential training devices that will improve the training of the Army. The Demonstration and Validation Phase is where technical concepts are validated to determine if they fulfill the needs or voids that were identified and that training effectiveness is achievable. In the third phase, Full-Scale Engineering Development Phase, the training device or system is fully developed, engineered, fabricated, tested and a decision is made whether the item or system is acceptable to meet the requirement. In the fourth and final phase, Production and Deployment Phase, the training system or device is procured and distributed, individuals or groups are trained in its use, and logistic support is provided. Within these phases, normally the procurement and contract administrative services are provided by, or through, the Contracting Officer from the Naval Training Equipment Center, Orlando, Florida.

LINES OF RESPONSIBILITY

After examining the participants and the process of training device acquisition, it would be helpful to discuss the working relationships involved. Establishing clear lines of responsibility and coordination, plus review and guidance channels among the participants in the acquisition process is difficult at best. The system for achieving this coordination is theoretically in place, but more often than not during the acquisition of a major training system or device, many of the participants at one time or another are "overtaken by events" and these channels inevitably break down. This breakdown can be caused by a number of reasons - it could be simply a lack of communication and/or the inability to establish clearly defined lines of responsibility. The relationship between all participants in the acquisition process is one that requires dedicated coordination and clearly defined areas of responsibility to ensure timely and accurate input into training requirements and the resultant training system or device development needed to fulfill these needs. A breakdown between developer and user; between developer and contractor or any combination of participants, could result in an inadequate or inappropriate development product.

THE USER'S ROLE

The user's (or proponent school's) involvement in the acquisition process should be one of active participation from the early stages of requirements definition and TDR development up through and beyond the actual design, development, acquisition and delivery of the training system or device. The user's role begins with the initial identification of a training need. At this point a complete FEA should be conducted by the proponent to determine how the training system or device would fit into the total training program. This analysis addresses the how, who, when, why and where aspects of the proposed utilization of the training system or device.[6] Because the Army is committed to the "Systems Approach" for the development and acquisition of major materiel items,[4] it is mandatory that the user be versed in the Instructional Systems Development (ISD) process and be able to work confortably within its guidelines. Front-end analysis as part of the ISD process has been described as the "interactive process by means of which the requirements of a system may be progressively more definitive and brought more sharply into focus."[5] This implies that FEA is an on-going and dynamic process that requires the authors to up-date and "fine tune" the information presented as the knowledge base about training requirements and needs expand. In most cases, part of this requirement analysis will include Task and Skills Analysis (TASA) of a present or nearly deployed weapon system for use in the development of a required training device. This Task Analysis will not only serve as a basis for the Training Device Requirement (TDR) but could conceiveably be part of a government deliverable to the contractor to form a baseline from which to work. It is because of the fact that the acquisition process embraces all phases from inception of a training need to completion of a contract[2] that the quality of the front-end input is so important in the success of developing a needs responsive device or training system. Central to this idea of quality input, is the associated need of continued input and communication between user and materiel developer throughout the acquisition cycle. This is most critical when the materiel developer is monitoring and reviewing the work of the contractor. As an example, after contract award and during actual development of a training device, problems sometimes arise concerning the exact definition or training intent for the device that is to be procured, or possibly a change in training needs has developed. The quality of communication and input that takes place between the materiel developer and user can determine the effectiveness and useability for the training device when

delivered. A lack of quality input or a lack of timely input can both result in inappropriate training design and can slow the development process, possibly causing additional expense. As mentioned before, clarification of user need is dynamic and always improving in terms of precision and accuracy of training requirements. Certainly, the user can be instrumental in helping the materiel developer make critical decisions on such items as; which task to train, review of instructor display formats on training devices and the requirements for student performance records, to name just a few.(1) The addition of this requirement to the school's list of responsibilities - platform instruction, training extension courses, field manual development, and training device requirements development, etc.(3) is indeed a tall order, but one that will pay dividends in the form of increased training effectiveness of the devices being developed. The better the quality and timeliness of the school's input to the materiel developer during this stage of the acquisition process, the better the quality of the device itself.

SUGGESTIONS FOR IMPROVEMENT

If the user schools are to provide the needed input to the acquisition cycle in both a quality and timely fashion, it is necessary that they be supplied with the needed resources and personnel to do the job correctly. It is important that the members of the acquisition team do not have their abilities and energies stretched too thin. Subject matter experts, tacticians, instructors and instructional system developers are needed to supply the required information. Those individuals assigned the responsibility for these areas must also use their role as decision-makers. Their opinions and direction are required to help improve this training device acquisition cycle. When these qualities are lacking, the materiel developer and others involved in the acquisition process are left to their own devices to secure the appropriate answers. A deferred user decision is a decision someone else will make. The user will be ultimately required to live with this decision.

A second improvement could be made if a better system of "corporate memory" were instituted within the schools. This might be achieved by maintaining a more stable cadre of individuals who can stay with a project from inception to completion. This would help solve the "learning curve problem" and "memory loss" associated with a high turnover of personnel. Working with the materiel developer and all members of the acquisition process, the user must keep abreast of program direction and maintain a steady flow of input. This will assure that the school's views and needs are kept in the forefront. To do this effectively, it is mandatory that the "corporate memory" of the school be maintained and when personnel changes are required, a conserted effort is made to bring the new member up to speed, and to enable him to become a productive, contributive segment of the team.

A final suggestion would be the improvement of the communications link between the materiel developer and the user school. All too often vital information needed for the steady progression of the acquisition cycle "finds the cracks and falls through" for lack of an efficient communications link. Establishing a more efficient communications network between the developer and user could go a long way in improving the reception and use of the delivered materiels. It must be stressed that the responsibility of seeing that this communication link exists is as much the school's responsibility as it is the materiel developer's. In fact, it is in the school's or user's best interest to keep this link connected and used to its fullest benefit. When the user keeps the developer informed and up-to-date as to what the user's needs are, everyone benefits.

CONCLUSIONS

The user's role in major training system acquisition from the perspective of the materiel developer is one of active participation from the early stages of requirements definition to delivery of the training system. Quality and timely input at all required stages of the process will pay returns in the form of a training effective product. In this respect, it is vitally important that the user assume a leadership role in providing the necessary information concerning FEA and TASA materiels needed to develop an effective system, and continue this role consistently throughout the entire process of training needs identification, design, development and acquisition of the system involved. Given the expertise, dedication and ability of the personnel at the user schools, it is imperative that an effective communications link be established between developer and school to tap this invaluable resource and use it to its best advantage during the training system acquisition process.

GLOSSARY

The list included here is intended to help establish a common base of definition of some of the terms used throughout the acquisition cycle. Although not all inclusive, this list includes many of the terms used in this paper.

Acquisition Life Cycle. Normally consists of four phases (Concepts, Validation, Full-Scale Engineering Development, and the Production and Deployment) with key decision points reached at program initiation and between each of the phases for major systems. These phases explain a normal acquisition path, not a prescribed path, which all programs must follow. A program may skip a phase, have program elements in any or all phases, or have multiple decision points per phase.

Materiel Developer (MD). The command or agency responsible for research, development and production validation of a system (to include the system for its logistic support) which responds to HQ DA objectives and requirements. Materiel developers designated from the following, with specific responsibilities assigned as appropriate: Chief of Engineers, The Surgeon General; CG DARCOM: CG USACSC: CG USAINSCOM: and CO, U.S. Army Research Institute (ARI).

Product Manager (PM). The individual, designated by a Materiel Developer, who is delegated authority and assigned responsibility for centralized management of a particular development/acquisition or other specified program that does not qualify for system/program project management but requires some degree of centralized management.

Project Manager (PM). An individual, chartered by the CG. DARCOM, who is assigned the responsibility and is delegated the full-line authority for the centralized management of a specified development/acquisition project.

Proponent School. The TRADOC school designated by the CG, TRADOC, to exercise supervisory management of all combat/training development aspects of a materiel system.

Request for Proposal (RFP). Request for the manufacturer to submit a proposal supported by a cost breakdown. It provides a description of the items to be procured. It may include specifications, quantities, time and place of delivery, method of shipment, packaging and instruction manual requirements, materiel to be furnished, and data requirements, both logistic and administrative.

Training Developer. The command or agency responsible for the development and conduct of the training which will provide the skills necessary to operate and logistically support materiel systems being developed or otherwise acquired. (For most equipment, this is TRADOC).

Training Device. Any three-dimensional object developed, fabricated or procured specifically for improving the learning process. Training devices may be either system devices or non-system devices. Items which simulate or demonstrate the function of equipment or system such as three-dimensional models, mockups, or exhibits, and are designed, developed, and procured solely to meet training support requirements. They are further defined as follows:

(a) System devices are designed for use with one system or item of equipment, including subassemblies and components; e.g., launch effects simulator for the TOW missile system and Shillelagh Conduct of Fire Trainer (COFT) for the M551, etc.

(b) Non-system devices are designed to support general military training and/or for use with more than one system or item of equipment, including subassemblies and components; e.g., Multiple Integrated Laser Engagement System, etc.

Training Device Acquisition Process. A sequence of specified decision events and phases of activity directed to achievement of established program objectives in the acquisition of training devices and extending from approval of a training need through successful deployment of the system or termination of the program.

Training Device Requirement (TDR). A document prepared by TRADOC with the assistance of PM-TRADE which gives operational, technical, and cost information necessary to obtain HQ DA approval. When approved by HQ DA, the TDR is the document of record of the Army's requirement and will contain the guiding factors against which developers and contractors meet the user's needs. A HQ DA-approved TDR supports the expenditure of RDTE and/or OPA funds for development and/or procurement of the training device.

User. The command, organization, or unit designated to receive the training device from production for use in accomplishing a designated mission. The system is included in the user's TOE, TDA, or in an appropriate Common Table of Allowances (CTA). The user provides guidance to materiel and training developers during the training device acquisition process on matters pertaining to the expected operational employment and logistic support.

NOTE: These and other definitions which are useful in understanding the acquisition process and the role each participating agency plays in its completion, can be found in the Training Device Acquisition Management Model (TDAMM), prepared for the Project Manager Training Devices, United States Army.

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