MANPRINT BULLETIN

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AAWS-M Training Impact Analysis: A Case Study

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Editor's Note: This is the first of two articles documenting lessons learned from a training impact analysis on the Advanced Antitank Weapon System-Medium (AAWS-M), the proposed replacement for the Army and Marine Corps Dragon system. The analysis was done during the proof-of-principle phase from May 1987 to July 1988. The questions raised are being addressed as AAWS-M enters full-scale development.

New system training requirements are often estimated using the easily obtained data on the predecessor system. This is appropriate when the predecessor system is not deficient in design, does not have a history of training problems, and there is no question regarding the technology of the follow-on system. When such conditions do exist, using predecessor data may be inadequate and provide misleading information for the decision-makers who ultimately determine training strategies and resources. The importance of conducting additional analyses and obtaining additional data was demonstrated in the AAWS-M training impact analysis.

The Dragon medium antitank weapon is an ex-

Continued on page 2

MANPRINT Lessons Learned

We have two great "lessons learned" articles in this issue: one concerns an AAWS-M training analysis (the first installment of a two-part series), the other deals with lessons learned from a HARDMAN analysis. A special thanks to those authors!

About our next issue . . .

Our July/August issue, which will focus on the "Soldier as User," is in need of some good "success story" articles. We are looking for examples illustrating how MANPRINT's impact on an acquisition affected the ultimate user: the Soldier. Send typed, double-spaced draft (no longer than three pages please!) to Automation Research Systems, Ltd., ATTN: Nan B. Irick, 4480 King Street, Alexandria, VA 22302. **Deadline: June 1, 1989.**

AAWS-M *(continued from page 1)*

ample of a current Army system with design problems and a history of training problems since the initial tests were made in 1972. Gunner problems in surviving the Dragon's "launch trauma" and tracking the target until missile impact have been documented in operational tests. From 1972 through 1985, ten Army tests have examined Dragon training issues in attempts to field a satisfactory training device and determine an adequate training program. Given these problems, and the fact that three technologies were considered for the AAWS-M, a more intensive examination of the AAWS-M training requirements was conducted to verify the initial estimated made prior to the proof-of-principle phase.

Estimates of AAWS-M training requirements were made prior to the introduction of the MANPRINT program in the Army. The data sources used for these training requirments were based on easily obtained information on the Dragon: programs of instruction (POIs), field manuals, task analyses, and system tests. Additional data sources and techniques used in the AAWS-M training impact analysis were formal observations of institutional and unit training on the Dragon (e.g., time and error data, training resources); detailed identification of the skill and knowledge requirements on all Dragon and AAWS-M tasks; and formal observations of contractor training on AAWS-M prototypes (e.g., time and error data, training resources) during the proof-of-principle phase. The initial AAWS-M training assumptions and the results of the impact analysis are compared below.

Assumption 1: All Dragon tasks apply to AAWS-M however, AAWS-M task steps will differ.

Conclusion. This was a valid assumption, supported by detailed analyses of Dragon and AAWS-M tasks.

Assumption 2: The Army can train and test Dragon gunners on all critical skills in 40 hours. A similar POI will be satisfactory for AAWS-M.

Conclusion: This assumption was shown to be false. Training observations showed that all critical Dragon skills identified in the task analyses were not trained in either the institution or the unit, and some skills and tasks were trained incompletely. The 40-hour gunner POI did not allow time to train all the critical skills (e.g., thermal imagery). However, the task analyses showed these same skiills in a revised Dragon POI and AAWS-M developed for the analysis required almost 80 hours, double the original estimate.

Assumption 3: The most difficult Dragon task is that of firing the weapon; the other tasks are easy to learn and sustain. Since the AAWS-M design will simplify the firing task, all AAWS-M tasks and skills will be simple to train and sustain.

Conclusion: This assumption was partially correct. Firing the Dragon is a difficult task, as shown by extensive test data and training observations. Some other antiarmor skills and tasks, however, are not easy to learn and are hard to sustain (e.g., target identification). In addition, there will be a shift from motor skills with Dragon firings to cognitive demands with AAWS-M firings.

Assumption 4: Dragon training problems result primarily because the design did not fully appreciate the soldier's tracking ability and the soldier's ability to perform under environmental stress. The training device lacked fidelity in these problem soldier performance areas. These training problems will not occur with AAWS-M because of improved system design and training devices. (With the Dragon, large muscle groups must be used to make fine tracking adjustments. The gunner must maintain the crosshairs on the target until missile impact despite intense heat, a noise level of 178 decibels, obscuration of vision by smoke and debris during the initial two to three seconds of missile flight, and the likelihood of being distracted by the infrared source of the missile. The training device does not replicate the missile's infrared source or heat, and provides limited simulation of noise and obscuration.)

Conclusion: The Dragon assumption was only partially correct; therefore, the assumption regarding AAWS-M training was incorrect. Dragon training problems do result from the above factors. Survey and observational data showed that turbulence in the gunner's position also created Dragon training problems in units. High turbulence results in gunners with minimal skills and leaders with inadequate instructional expertise. Improved system design and better training devices willl not guarantee quality AAWS-M instruction. AAWS-M devices should be designed to be highly self-instructional to reduce the negative impact of instructor inexperience.

Assumption 5: Units focus on sustainment training. AAWS-M training resources for units, particularly →

training devices, should support sustainment.

Conclusion: This assumption was partially correct. Survey and observational data showed units also have a heavy initial training load, often providing initial training to 60% of their Dragon gunners because of personnel turbulence. If the unit training requirement continues with AAWS-M, unit training resources must support initial training, and training device basis of issue plans and requirement documents must reflect both initial and sustainment training demands.

Formal observations of training proved to be a valuable source of data. The observational data showed omissions in the present Dragon training program which could result in a poor AAWS-M training program unless corrected. In some cases, these problems are not easily solved. They require training research and the development of special training support materials. The best example found in the impact analysis was the lack of thermal imagery training materials. Although the Dragon night tracker was fielded in the late 1970s, no training support material was fielded with it, and none has been developed to date. The observations also provided valuable time-on-task and error data used to estimate the difficulty of AAWS-M tasks.

Manpower and personnel factors within the Army also influenced the AAWS-M training requirements. Personnel turbulence in units influenced the types of devices recommended for fielding within units, since initial as well as sustainment training is needed. A more subtle, but equally important impact is the need to design self-instructional training devices that are not highly dependent upon instructor expertise. The turbulence issue did not arise within the Marine Corps, since their Dragon gunners have a military occupational specialty, rather than an additional skill identifier which is used to distinguish Army dragon gunners.

In summary, the resource requirements for AAWS-M changed substantially from what had been assumed prior to the analysis. The analysis also confirmed the critical interrelationships among the MANPRINT manpower, personnel and training domains.

For more information, contact Jean L. Dyer, ARI, Ft. Benning Field Unit, PO Box 2086, Ft. Benning, GA 31905-0686.

Ergonomic Workclothes:

Dare it be dubbed "ergo-fashion?"

Matti Viio, an electrician working in Sweden, was plagued with back and hip discomfort. He traced the discomfort to his work-clothes: He carried 30 or 40 pounds in the familiar leather tool belt strapped around his waist and hips. To remedy the situation, Viio designed a vest and pants with holsters and pockets to replace the tool belt. Most tools could be hung on the vest, which distributed the weight from his shoulders, thus decreasing the strain on his back.

The new workclothes caught on with his coworkers, and Viio was in business. He eventually expanded the line of silicon-coated, 60/40 cotton/nylon workclothes; new designs sport knee pockets with removable pads and zippered gussets that allow the vest to be worn over a heavy jacket. There is even a safety vest with a harness being tested for aerial crews.

The workclothes, which are manufactured in Sweden, Ireland and Finland, have been bought by workers in a variety of occupations. Chiropractors have even referred patients with back and knee problems.

A splendid example of user as designer!

Editor's Note: This little item is reprinted with permission from Hufact Quarterly.

MANPRINT POC List To Be Updated

It's that time again! The MANPRINT Points of Contact List will be updated in July. Mark any changes, additions, and/or deletions to the list on the Reader's Response form located at the back of this issue. Mail the completed form to Automation Research Systems, Limited, ATTN: Ms. Kristy Underwood, 4480 King Street, Alexandria, VA 22302, or telephone (703) 820-9000.

Deadline for changes is June 30, 1989.

The Role of MANPRINT in Non-Developmental Items Acquisition

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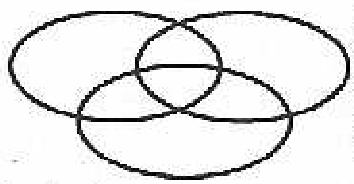
Due to the time consuming nature of the development and test processes currently mandated for the acquisition of new military items and the rapid advances in the basic technologies used, by the time such systems are deployed, they may be close to obsolescence.



Fortunately, there is a process by which the Department of Defense (DOD) and its military services can avoid excessive acquisition delays and their associated costs. The Non-Developmental Items (NDI) procurement process permits the rapid acquisition of materiel that is already available in the civilian/commercial marketplace or in the inventories of other US military services, government agencies or other nations.

The NDI process, by eliminating or reducing development and test time, permits almost immediate access to current state-of-the-art technologies almost as soon as they are reduced to practise, production and operational validation.

In addition to significantly reducing the time required to bring a newly acquired military item to the deployment stage, NDI can generate major cost savings. These savings result from the amortization of research, development, test, and evaluation costs for the new item across a broad market base rather than being totally paid for by DOD or the Army.

It is important to note that items developed for civilian applications are not usually designed for the environment, usage, maintenance, operational scenarios, MPT constraints and requirements, and logistic support structures normally found in military applications. As a result:

a) all NDI candidates must be examined and evaluated to establish their ability to satisfy essential generic and/or mission-specific military needs before the decision to acquire a given item via the NDI route is made, and

b) the evaluative process used must be comprehensive, focus on key concerns, apply relevant criteria, and most importantly, be effectively accomplished in the briefest possible time.

In order to protect the key advantages of NDI's time and cost saving potentials, the NDI candidate search/evaluation and selection process must recognize and honor the need to restrict all research, test and development efforts to minimal levels. Great care must be taken during the product requirement definition that precedes the field search phase to ensure that essential product and product support characteristics are identified and described along with the criteria to be used in the assessment. Candidate systems can be effectively evaluated for acceptability and comparisons made so that the best options may be identified and selected. The identification and quantification of selection criteria must be structured to identify key characteristics needed for the satisfaction of mission and other requirements, as well as to detect those items that would require unacceptable levels of test or development efforts.

The MANPRINT system, with little or no modification, can supply the basic, integrated organizational structure and technological support needed to:

(a) generate and apply the criteria and methods needed to examine and evaluate the essential characteristics of candidate manned NDI acquisitions in respect to manpower, personnel, training, health hazards, safety, and human factors, and

(b) provide the comprehensive and fast response inputs needed by a candidate item to accommodate the human-related concerns of an NDI acquisition via the demonstrated time, cost and operationally effective methods available through procedures and concepts normal to the six domains upon which the MANPRINT process is based.

The NDI acquisition process can be briefly →

described by organizing it into six generic phases:

PHASE I - Mission Requirements and Constraints Identification

This phase is directed at the identification and description of the specific mission-related functional, operational, logistic, scheduling, reliability and other key generic characteristics or capabilities driving item acquisition.

This effort is led by the NDI project manager or TRADOC system proponent using data derived from various baseline documents such as Mission Area Analysis (MAA), Required Operational Characteristics (ROC), and other pertinent directives and instructions provided by relevant sectors of DOD or the Army.

Based on this driving material, the program manager or TRADOC system proponent initiates a MANPRINT Joint Working Group (MJWG) whose membership represents each of the six MANPRINT domains. The MJWG will then generate a System MANPRINT Management Plan (SMMP).

The SMMP, the cornerstone of the MANPRINT-NDI effort, is a dynamic and iterative plan that identifies and triggers the implementation of key MANPRINT events. Both a planning and management guide, the SMMP helps develop and sustain a clear and focused audit trail of all MANPRINT-related concerns throughout the NDI's life cycle at a level appropriate to the needs and complexity of the material acquired. A properly executed SMMP is the single documented source for all nonclassified information or responsibilities associated with the MANPRINT concerns of the NDI process. The "System MANPRINT Management Plan (SMMP) Procedural Guide" (1987) provides an excellent reference source for SMMP concerns (pages 5-7 and 15-17).

If justified by the magnitude of the NDI effort involved, an Operational and Organizational (O&O) Plan may also be generated to detail the primary goals and constraints of the MANPRINT process.

PHASE II - Identification and Description of Item Characteristics and Selection Criteria

In this segment, members of the MJWG identify, describe and quantify the essential characteristics and criteria to be used to evaluate a candidate item's potential to satisfy mission requirements based in the requirements generated in PHASE I.

PHASE III - The Field Search or Survey Process

In this phase, the NDI program manager or his/her designee would conduct an appropriately comprehensive search of the marketplace to identify potential candidates and to gather the quantitative criterion related information (generated in PHASE II) needed to conduct an accurate and discriminating description of the item under consideration.

PHASE IV - Candidate Assessment, Comparison, Selection

Upon completion of the market investigation, the program managers, their designees and participating MANPRINT specialists use the collected data and the identified requirement criteria to assess and compare the essential man-related characteristics of the candidate items. Based on this analytic effort, acceptable systems or items will be identified and ranked according to their ability to meet or exceed key mission and other significant requirements. With these findings, the program manager has the traceable and verifiable information to support a decision to select or reject a specific NDI acquisition in terms of man-related implications.

PHASE V - Test and Development

A specific objective of the NDI process is to eliminate or reduce the test and development requirement of a new system acquisition. In certain exceptional cases, however, a minimal amount of development and subsequent testing may be justified by the improved operational, survivability, cost, scheduling or other potential gains. In such instances, the MANPRINT process can be applied once again to assist in the identification of potential man-related modifications and to provide the test criteria and methodologies which may be used for rapid and effective testing. The use of the MANPRINT process and trained specialists from the relevant domains assures the program manager of competent technological support, and because MANPRINT personnel are already thoroughly versed in the man-related test and development processes of military acquisitions, only a minimal start up and task time requirement is necessary. MANPRINT is particularly useful in respect to identifying, developing

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HARDMAN Analysis: Lessons Learned

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Elaine Kilgore
Michael Kenney

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White Sands Missile Range

In 1980, a methodology was developed under Army contract to assess the impacts of new hardware systems on the Army's manpower, personnel and training (MPT) resources. Called HARDMAN, an acronym of the term "Hardware vs. Manpower," this methodology was designed to identify and quantify, at least in comparative terms, the costs and the stress that new hardware purchases place on the personnel system.

One of several MANPRINT methodologies, HARDMAN is used while a hardware system is still in development so that any problems affecting the personnel system can be identified, and their relative impact assessed. This impact can sometimes be lessened either through design changes or fixes to the personnel system before the system is fielded. Within the Army, the Training and Doctrine Command (TRADOC) has responsibility for performing HARDMAN analyses on systems prior to Milestone 1 in the materiel acquisition cycle. Army Materiel Command (AMC) has the charter for HARDMAN analyses after that point.

HARDMAN analysis aims to identify by numbers and military occupational specialty (MOS) the operators and maintainers needed to support the system in the field, the impact on the personnel pipeline, and the resulting training requirements in terms of instructor load and training man-days. HARDMAN uses a comparative analysis approach, which entails comparing the MPT requirements for the system being replaced with the estimated requirements of the proposed system. The Operational and Organization (O&O) Plan and the Required Operational Capabilities (ROC), coupled with analytical assumptions, form the basis for the system description. To assist in further defining the proposed system, the HARDMAN process creates a baseline comparison system (BCS). This notional system consists of a group of fielded components which, when configured together on paper, approximate the operational requirements of the proposed system. HARDMAN then derives MPT requirements for the three configurations, allowing the customer to focus on the changes between the quantities rather than the raw numbers.

HARDMAN Methodology

The HARDMAN procedure is under constant revision. The current six-step HARDMAN method is briefly explained below.

Systems Analysis. The system's battlefield functions and functional requirements are derived from existing documentation, which includes the Mission Area Analysis (MAA), the O&O Plan and the ROC. Equipment configurations are then developed that meet the requirements for the predecessor, proposed system, and the BCS. Finally, Reliability and Maintainability (R&M) parameters and operator and maintainer task lists are developed for each configuration.

Manpower Requirements Analysis. This step uses the output from the Systems Analysis to generate operator and maintainer MOS and grade, workload, and manpower requirements. Manpower requirements for the BCS provide a basis for calculating the demand on the Army's personnel and training resources.

Personnel Requirements Analysis. This step determines the number of soldiers by MOS and grade level that the Army must have in the personnel pipeline to support the manpower requirement for each configuration. Through application of personnel rates, this analysis provides the personnel requirements, annual number of recruits, and number of trainees.

Training Requirements Analysis. This step interacts significantly with the Systems Analysis. →

Manpower Requirements Analysis, and Personnel Requirements Analysis steps to develop training cost and resource requirements. Training parameters normally estimated include training man-days, instructor requirements, and annual course costs.

Impact Analysis. This analysis uses the results of the manpower, personnel, and training requirements analyses of the proposed system to determine those configuration-unique MPT "high driver" requirements that will put a demand on the Army's limited resource pool. This step allows the analyst to backtrack to the source of the demand and identify possible areas for trade-off analysis.

Trade-Off Analysis. This step identifies alternatives that may reduce or alleviate MPT high drivers. Based on customer desires, trade-off analysis may be performed as changes to system requirements, including hardware, manning, training, recruiting, operational scenarios and deployment, are made.

Lessons Learned

The TRADOC Analysis Command, White Sands Missile Range (TRAC-WSMR) recently completed a HARDMAN analysis on a weapon system. During this study, we learned a few lessons about HARDMAN analyses and in the process also tried some new approaches not covered in the existing guide.

Maintenance Data. One of the biggest headaches to anyone doing an analysis of combat service support functions is the availability or credibility of maintenance data. For fielded systems there is a readily captured source called Manpower Requirements Criteria (MARC). This is a microfiche listing, by Line Item Number, of the annual manhour requirement, by MOS and echelon of maintenance, needed to perform unscheduled maintenance on a piece of equipment. That generally works fine for predecessor equipment, but for some systems, including the one we studied, the usage rate on which that data was generated was unavailable. We reasoned that a comparison of maintainer requirements for the predecessor system and the proposed system was not complete unless those figures were derived using the same usage rates of miles driven, rounds fired and hours operated. In other words, we wanted to exercise the predecessor in the same scenario that we were using for the proposed system; the maintenance requirement could then be figured based on scenario-driven usage. Fortunately, we were able to acquire predecessor maintenance ratios from the Logistics Center and were able to do the comparison desired.

Maintainer Requirements

MOS	Pred	Pred (R)	BCS	Prop
31V	11	11	33	33
45T	176	319	220	209
63T	528	869	308	286
27E	30	63	5	5
29E	5	7	14	14
29J	--	--	1	1
29S	--	--	1	1
41C	0	0	2	2
43M	0	0	--	--
44B	5	5	5	4
45K	15	23	27	23
63H	42	148	136	105

Figure 1

Figure 1 shows the maintainer requirements derived using predecessor MARC data, the predecessor maintenance ratios with scenario usage applied, and the maintenance ratios for the BCS and proposed system. As shown, the comparison of the MARC data with the maintenance ratios for the BCS and proposed system shows a large increase in the number of maintainers in several MOSs. When one applies the scenario-driven usage rates, however, the story is quite different. The lesson learned here is that a comparative analysis must compare on an equal basis and without usage rate information or maintenance ratios. This is extremely difficult. We in HARDMAN analysis would like to see the Logistics Center continue with its plan to provide maintenance ratios for all major Army weapon systems. In addition, we would like to see the sample data collection programs active at some AMC locations integrated into a common R&M data system.

Scenario Effects. This is sort of a corollary to the point made above. As we have seen, the usage rates of the hardware affected the maintainer requirements of the system; this was directly attributed to the scenario. Comparing columns two and three of Figure 1 brings this point home. We saw this phenomenon again in deriving operator workload. The predecessor vehicle has a three-man crew. The proposed system ROC called for two-man crew desired, three man acceptable. Because of the

Continued on page 8

HARDMAN (continued from page 7)

scenario, workload computations resulted in a four-operator predecessor and proposed system. The workload for the predecessor, when exercised in the new system's scenario, was only slightly higher than that generated by the new system, as displayed in Figure 2.

The absence of real manpower savings is related to the fact that the added gadgetry allows for machines to do what muscle does in the predecessor but still requires monitoring by crew members. As a result of these findings, the customer requested a trade-off using a less intensive scenario.

Customer Needs

The kinds of issues that our customers seem to be most interested in are discussed below. This information may prove useful to those involved in MANPRINT types of studies.

(1) **Crew size for a crew-served system or numbers of operators and optimal shift length for a non-crew system.** The Army wants to reduce manpower without jeopardizing mission accomplishment. The customer is also interested in work distribution among crew members as this information guides any tactical changes to make distribution equitable.

(2) **Maintainability and its strain on the maintainer pool in the Table of Organization and Equipment (TOE).** There is a fairly prevalent opinion in the maintenance schools that there aren't enough positions authorized to support the equipment already out there.

(3) **Stress that the system will place on the existing share of the authorization pool.** The future holds only a redistribution of the pool, not an increase in overall Army strength.

(4) **Details concerning course revisions to accommodate new hardware.** This information helps plan for new courses and provides data concerning the drain on the instructor population.

Army decision makers are interested in hidden costs in fielding new hardware and the general supportability of the systems as designed. HARDMAN analysis highlights potential problems and explores alternatives early in system development.

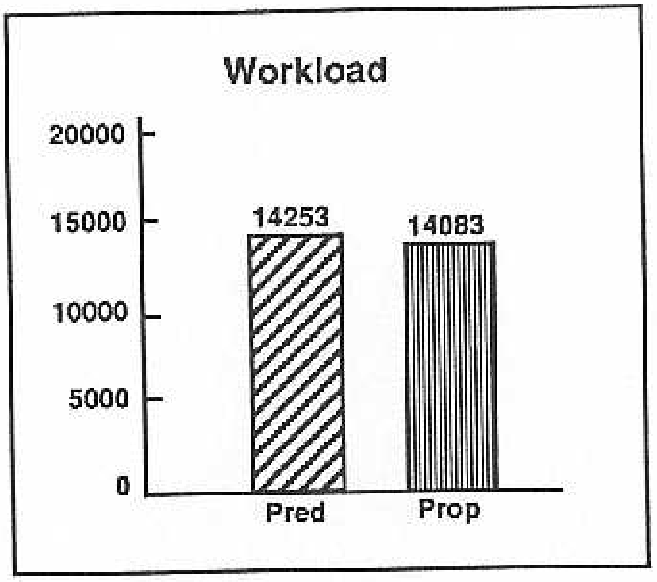


Figure 2

Like all analytical methods, however, it must be expertly applied to assure that questions are addressed using valid comparison methods.

For more information, contact Ms. Diana Massengale, US Army TRADOC Analysis Command, White Sands Missile Range, NM 88002-5502.

NDI (continued from page 5)

and testing training and maintenance documentation and related support systems that are necessary and unique to the military environment, and, as such, are rarely provided for civilian consumption.

PHASE VI - Post Deployment Evaluation

When justified by the complexity of the NDI acquired, the program manager must make provisions for post deployment follow-up in terms of the ability of the item to meet its mission and other objectives, as well as to assess and update training and support documentation. In both these cases, the utilization of MANPRINT processes and personnel will help assure comprehensive, accurate, effective and timely implementation of the required tasks.

For more information, contact Dr. Ted Marton or Linwood Toomer, Dynamics Research Corp., 1755 Jefferson Davis Hwy., Ste. 802, Arlington, VA 22202.

Army Acquisition Executive (AAE) Policy Memorandum #89-2, Treatment of MANPRINT in Solicitations and the Source Selection Process.

29 March 1989

The purpose of this memorandum is to recap, amplify and reemphasize Army policy and procedures for treatment of MANPRINT considerations in major systems acquisitions and designated acquisition programs, especially in identification and statement of MANPRINT requirements and their emphasis in Army solicitations and the source selection process.

a. The Solicitation:

(1) The statement of work and the specification shall contain appropriate MANPRINT requirements. In particular, the specification shall describe how the system is to look and act to the user (Section 3.0, Requirements) and how the requirements will be verified (Section 4.0, Quality Assurance Provisions). AMC-P 602-1, MANPRINT Handbook for Request for Proposal (RFP) Development, Section 3.3.1, MANPRINT in the Statement of Work, and Section 3.3.2, MANPRINT Inputs to the System Specification, should be used as a guide.

(2) Offerors will be instructed by the solicitation to address MANPRINT in every applicable portion of their offers and as a separate major area. AMC-P 602-1, Section 3.3.4, MANPRINT Paragraph in the Instruction to Offerors, should be used as a guide.

(3) Offerors will be informed in the evaluation and award factors section of the overall position of MANPRINT evaluation importance relative to other separate major areas.

b. The Evaluation Criteria

MANPRINT shall be a separate major area of the same visibility as technical, management and cost, and shall be evaluated throughout all aspects of design, development, Integrated Logistics Support and program management. Using this basic philosophy, treatment of MANPRINT shall be tailored to suit the nature and priorities of the program/contract effort. Because MANPRINT is evaluated separately and throughout, evaluators are cautioned to avoid double counting.

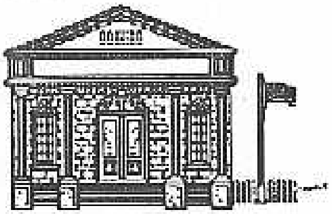
c. Structure of the Source Selection Evaluation Board (SSEB):

The SSEB shall be structured so as to establish and maintain MANPRINT considerations as a visible part of the process. There shall be a MANPRINT entity at the area level and MANPRINT expertise applied throughout the remaining organization where appropriate.

d. Exceptions to Policy:

Exceptions to this policy may be granted by the cognizant Program Executive Officer (PEO) in coordination with the HQDA, MANPRINT Directorate when it can be compellingly demonstrated that MANPRINT is not a major consideration in design or selection. A copy of approved waivers, including rationale and alternative treatment, will be sent to HQDA, ATTN: DAPE-MR.

Michael P. W. Stone
Army Acquisition Executive



Schedule of Upcoming MANPRINT Courses

MANPRINT Senior Training Course

19-23 June 89 (Aberdeen, MD)
24-28 July 89 (Ft. McClellan, AL)
21-25 Aug 89 (Warren, MI)
25-29 Sep 89 (Ft. Eustis, VA)

MANPRINT Staff Officers Course*

5-23 June 89
7- 25 Aug 89
11-29 Sep 89

*All courses will be held at Ft. Belvoir, VA.

MANPRINT INFORMATION

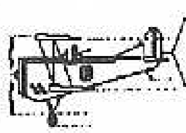
POLICY - MANPRINT Directorate, HQDA (DAPE-MR). Washington, DC 20310-0300. AV 225-9213, COM (202) 695 9213.

MANPRINT TRAINING - Soldier Support Center-National Capital Region, ATTN: ATNC-NM, 200 Stovall St., Alexandria, VA 22332-0400. AV 221-3706, COM (703) 325-3706.

PROCUREMENT & ACQUISITION - US Army Materiel Command, ATTN: AMCDE-PO, 5001 Eisenhower Ave., Alexandria, VA 22333-0001. AV 284-5696, COM (202) 274-5696.

HUMAN FACTORS ENGINEERING STANDARDS AND APPLICATIONS - Human Engineering Laboratory - MICOM Detachment, ATTN: SLCHE-MI, Redstone Arsenal, AL 35898-7290. AV 746-2048, COM (205) 876-2048

MANPOWER, PERSONNEL AND TRAINING RESEARCH - Army Research Institute, ATTN: PERI-SM, Alexandria, VA 22333-5600. AV 284-9420, COM (202) 274-9420.



MEETINGS OF INTEREST

27-29 June 1989

International Test and Evaluation Association Conference. Monterey, CA. To be held at the Naval Postgraduate School. Contact: Dr. Russell Coile, VRC Corp., 2150 Garden Road, Suite B-3, Monterey, CA 93940-5327. Telephone: (408) 372-3439.

13-16 Nov 1989

Interservice/Industry Training Systems Conference: "Training Through Teamwork - Meeting the User's Needs." Ft. Worth, TX. Sponsored by the American Defense Preparedness Association. Contact: Capt. Jackson or Ms. Amy Enwright, ADPA, TMAS, Rosslyn Center, 1700 N. Moore St. Arlington, VA 22209. Telephone: (703) 522-1820.

GENERAL INFORMATION

- Proposed articles, comments, and suggestions are welcomed, and should be mailed to: MANPRINT Bulletin, ATTN: HQDA (DAPE-MR), Washington, DC 20310-0300. Telephone: AV 225-9213, COM (202) 695-9213, or to Nan B. Irick (Editor), ARS, 4480 King Street, Alexandria, VA 22302..

- Additions, deletions, or changes to the MANPRINT Bulletin and MANPRINT Points of Contact mailing list should be sent to ARS, Attn: Ms. Kristy Underwood, 4480 King Street, Alexandria, VA 22302. Telephone: (703)820-9000.

LTG Allen K. Ono, Deputy Chief of Staff for Personnel

MG Stephen R. Woods, Jr., Commander, Soldier Support Center (Proponent for Army MANPRINT Training)

Mr. Harry Chipman, ODCSPER Coordinator

Ms. Nan B. Irick, Editor, ARS

Harold R. Booher
Director for MANPRINT

The MANPRINT Bulletin is an official bulletin of the Office of the Deputy Chief of Staff for Personnel (ODCSPER), Department of the Army. The Manpower and Personnel Integration (MANPRINT) program (AR 602-2) is a comprehensive management and technical initiative to enhance human performance and reliability during weapons system and equipment design, development, and production. MANPRINT encompasses the six domains of manpower, personnel, training, human factors engineering, system safety, and health hazard assessment. The focus of MANPRINT is to integrate technology, people, and force structure to meet mission objectives under all environmental conditions at the lowest possible life-cycle cost. Information contained in this bulletin covers policies, procedures, and other items of interest concerning the MANPRINT Program. Statements and opinions expressed are not necessarily those of the Department of the Army. This bulletin is published bimonthly under contract by Automation Research Systems, Ltd., 4480 King Street, Alexandria , Virginia 22302, for the MANPRINT Directorate, Office of the Deputy Chief of Staff for Personnel under the provisions of AR 310-2 as a functional bulletin.