SOME ANALYTICAL THOUGHTS ON ONE ANSWER TO THE ARMED SERVICES TRAINING MANPOWER CRUNCH - TRAINING BY CONTRACTORS

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ABSTRACT

Numerous studies and discussion sessions have focused on the military personnel shortages extending through the year 2000. The manpower problem promises to be acute, according to demographers, as government, industry, and the military compete for a share of the shrinking pool of young work-age personnel. Military personnel and training planners face an increasingly difficult dilemma on how to stretch their manpower to meet pressing combat unit requirements and, at the same time, to deal with greater training loads brought about by new weapons systems and high personnel turnover. The Services, particularly the Army, believe they need to reduce the number of personnel committed to the training function in order to free skilled and experienced key NCOs and officers for field duty.

This paper offers analysis suggesting one answer to this serious training manpower problem--*more training performed by contractors. Training by contractors is certainly not new but it has* been largely utilized in the past for limited, highly specialized, often one-time, training efforts associated with the introduction of new weapon systems. A broader-scaled contractor training effort might offer better training continuity, more professional staffing, ways to meet capital investment costs involving new sophisticated computer-based training equipment, and yet produce a quality trained technician in a cost effective and expeditious manner. A pertinent, limited case study provides illumination in this area. The paper also addresses the disadvantages and problems, such as inflated costs, associated with a contractor developed and run training program and suggests contractor responsibilities in this regard. The anticipated manpower crisis demands a search for solutions. An increased training role for contractors might ease the armed services manpower crunch while reducing the expected industrial competition for some of the same manpower resources.

INTRODUCTION

The demographic predictions about forthcoming national young worker personnel shortages are by now all too familiar. The problem in the 1990s whereby one-third of all 18 year olds will be needed by the military and whereby the military/worker recruiting pool would be 20% less than the 1978 peak has been aired in numerous Armed Services meetings and industry conferences, particularly, those relating to personnel and training. A year ago last May, the problem was an important item of discussion at San Diego during the first Annual Conference on Personnel Training Factors in Systems Effectiveness. At last year's ADPA annual conference, several speakers addressed the subject. The discussion has been so extensive that one of the 1981 papers, by P.D. Maher of Hughes Aircraft Company, had as its title, "Military Personnel Shortages Through the Year 2000 - Enough Talk! Let's Do Something!!!"

As usual, "doing something" is considerably more difficult than reviewing and dissecting the problem. Nevertheless, a number of very positive proposals have been advanced. These include greater utilization of technology, such as simulators, interactive computer based training devices, interactive video disc systems, arcade games, robotics, and personnel electronic aids to maintenance. Such *technology potentially could reduce system manpower* requirements, decrease training times, conserve resources, and trim personnel supporting training.

Other ideas on meeting the manpower crunch have included the expansion or broadening of the workforce by greater use of women, postponed retirements, more extensive use of less capable people and, in the case of the military, the use of the draft.

Still other proposals have called for enhanced worker/serviceman productivity (particularly during the early years), improved selection and retention of personnel, and better engineering design in weapons systems to reduce or eliminate manpower *requirements. At the same time, the weapon system* designers have been urged to incorporate extensive human factors front end analysis with respect to trainability, operability, and maintainability.

Many educators, educational psychologists, and researchers have called for expanded research in the area of training transfer in order to derive the most education/training efficiency possible in the shortest time and for the least money. The goal would be to keep the trainee in the training pipeline as short as possible and to make him more

productive once on the job.

All these ideas have merit and need to be pursued. Obviously, there will not be one answer but a combination of many ideas that will be needed to meet the manpower and training requirements of the 1980s and 1990s.

ANOTHER ANSWER

With the thought that a multiplicity of answers will be necessary, yet another idea is offered toward easing the forthcoming crisis--a greatly increased training effort by contractors. Training by contractors is certainly not new. Many weapon system manufacturers by necessity must provide operability and maintainability training on their products. After all, they know the equipment and can train the technicians because they designed and built it. In addition, companies specializing in training services and training equipment have appeared throughout the country. These training businesses have garnered training contracts from both industry and the military. Primarily, what is being suggested here, however, is that the scope of the current effort be notably increased and that the military consider contracting out their training effort in areas not previously thought appropriate for non-military hands.

Several strong and cogent arguments can be made for this proposal. First, a stronger and more comprehensive contractor training effort would free key, critically needed, experienced, highly skilled non-commissioned officers and officers for field duty. These personnel are usually the "cream-of-the-crop" in the Armed Services and placing them back into field leadership positions greatly enhances military readiness. The services have actively sought ways to reduce their military training staffs, partially to reduce training costs but mainly for the aforementioned reason. Recently, the U.S. Air Force has strenuously complained about the relative high proportion of inexperienced airmen in complex specialties.

Second, better training continuity will result with a more stable contractor staff. The Armed Forces with their rotation of personnel to overseas positions, and even with stateside assignments, inherently have a continuity problem. Considerable effort must be expended to prepare military instructors for their training responsibilities. Often the new military instructor must be sent to special contractor offered courses (sometimes called Type I training) on new equipment. Thus, maintaining continuity is a costly and time-consuming problem for the military.

Third, a contractor training effort would provide a high technology, state-of-the-art approach to training without the large capital investment in similar programs being required by the Armed Services. Many companies and corporations have heavily invested in sophisticated interactive computer based video disc training systems both for commercial selling of training and to strengthen their own internal training programs. The 31 May 1982 issue of Aviation Week provided an excellent example in its article concerning Boeing Company's approach to flight and maintenance training for its new generation of transports. The thrust of the article was Boeing's efforts to use new technology (simulators and computers) to simplify the training of pilots and mechanics. Most companies, like Boeing, would welcome greater use of their expensive instructional systems at company training centers. The military could contract with a commercial firm, utilizing their advanced computer based, video disc equipped learning centers to accomplish specific training tasks. Contract training, however, should not be viewed as simply sending the military trainee to a company. There may be many times when travel costs or other economic factors would dictate having the contractor administer training on a military installation. During the NSIA sponsored Army Training Technology Conference at Williamsburg, Virginia, in February of this year, a tour of the Army's helicopter maintenance training at Ft Eustis revealed several prime candidates for a contractor training effort.

Going one step further, taking training to the trainee in the field could, at times, best be performed by a contractor. Lt Gen Julius Becton of TRADOC has called for more study of reducing school time by field training. Dr. Davis S. C. Chu, Director, Plans, Analysis and Evaluation for the Secretary of Defense, has talked about contract support (which could include training) on board aircraft carriers, even in forward areas. Obviously, such contractor training would occur most frequently where small numbers of high skill technicians need training on a sophisticated piece of equipment. It is here that a contractor can make his most valuable contribution while holding down time in the training pipeline.

Still another argument for contract training is the more professional staffing that is possible. This is not to say that there are not quality military and civil service instructors, there are. However, the turnover problem often reduces the concept of training professionalism. Currently, in the ICBM force, as an example, training at the operating command level is being accomplished by technicians selected from the work force and designated "instructors." The fallacy of this procedure is (1) that manning documents are not structured to provide additional manning for "instructors," (2) the work force is effectively reduced and (3) although the "instructors" may be exceptional technicians, their abilities as qualified instructors may be seriously lacking and they may, in fact, be adding to the unit's training burden. In the military schools, the instructor is typically identified as a skilled technician first and foremost and only secondarily assumes the role as a trainer/educator. He frequently has only one stint as an instructor. In contrast, a business involved in providing training services recruits and hires an experienced instructor who is expected to continuously exhibit the trademarks of a competent training professional.

Turning more to contract training during the manpower crunch period would also ease the industrial/military competition for the same individuals in the dwindling pool of technicians and training professionals. The numbers might not be large but, because of the skills involved, they would be significant. Any stretching of the manpower resource will be important.

Unfortunately, as with most proposals of this nature, there are disadvantages that must be

weighed. Most formidable, at least at first glance, is the cost that contractor training would entail. Because training would be openly purchased, costs would become supremely visible, like other parts of a weapon system. Some training associated with the introduction of a sophisticated new equipment, say a killer satellite, would be expensive indeed. A word of caution, however, Dr. David Chu points out that the cost of training conducted by the military does not always reflect indirect costs such as personnel retirement and inflationary (COL) increments.

Another disadvantage, associated with most procurement actions, is the loss of some flexibility. Changes in training programs could become more difficult because of contractual rigidities. Planning and requesting training would assume greater significance because time would have to be allowed for procurement procedures.

In addition, some will argue that the contractors cannot respond to wartime expansion requirements or, perhaps, not effectively train for war situations.

There may be other disadvantages but, like the aforementioned, they are not likely to counterbalance the gains offered by increased contractor training.

A CASE IN POINT

How might more contractor training work? Let us take the new M-X ICBM as an example. Currently, by contract considerable training planning is underway by various corporations working on this new missile. This large four stage ICBM incorporates new technology requiring extensive training for the training of ISD developers; instructors for Air Training Command, Strategic Air Command, and Air Force Logistics Command; Missile Test personnel; and the initial cadre for the operational base of the deployed missile. The military ISD developers, instructors, and initial cadre personnel are expected to plan, to assemble, and to execute a training program to satisfy the manning needs for the new weapon system by 1986. This is essential and good but it doesn't go far enough.

What makes greater sense, particularly in light of the anticipated shortage of skilled technicians, is for the contractors to carry their training planning into action. When the Air Force lets the weapon system contract or contracts, a complete training package should be included. Not only would contractors plan but they would complete the ISD process and then conduct the training. The contractors, like Martin Marietta in M-X, have by necessity organized and administered a training program for their own personnel. The training staffs and courses have been assembled and training initiated. Instead of training Air Force personnel to train other Air Force personnel, the contractor would then build on the contractor training already underway and assume the whole training burden. In addition, the current System Requirements Analysis and Logistics Support Analysis contribute greatly to the ISD effort in effect negating the need for the long, costly ISD development by the military. In the case of M-X, the contractors would provide the training for the initial operational base personnel and any necessary follow-on training to support the operational missile. In other words, the contractor or contractors would provide complete educational training services thereby freeing military men and women for other duties.

In brief, what is being suggested is that the Armed Services let the contractors build their training program as they also build the hardware.

IMPORTANT CONSIDERATIONS

Whether the contractor training effort is part of the development and deployment of new weapon systems or the contracting out of an on-going military training program, certain elements must be stressed to insure success.

First, contractors must deliver and maintain professional, quality training. As with any purchase agreement, the customer, in this case the nation and the Armed Services, has a right to expect that, after training, defense personnel will be able to perform their ever increasingly complex tasks. This means the contractors must institute rigorous quality controls over training just as expected on hardware or software. No slipshod training can be tolerated. Because of the nature of the educational process and the sensitivities of educators to the imposition of quality standards, this is not as easy as it sounds.

Second, contractors must implement stringent cost disciplines in their training programs. As previously noted, businesses involved in training can often take greater advantage of new technology to strengthen, speed, and enhance the efficiency of their training. At the same time, restraints must be exercised in continual procuring of newest state-of-the-art training equipment, thereby constantly escalating costs. Similar to designing, the temptation of over-engineering must be avoided. To make it possible for the Defense Department to contract for training, costs must be kept realistic and with appropriate justification. Also, contractors need to be prepared to offer "life cycle" costs in their training proposals.

On the other side of the coin, the Defense Department should fully consider and weigh all costs associated with military manpower, including such elements as retirement and inflationary pay increases. This becomes important when assessing or comparing the economics of training conducted by the military with training conducted by industry.

A fourth consideration is the matter of responsiveness to training requirements. Not only must contractors plan and prepare to offer training packages, along with their weapon systems, they need a receptivity and capability to adjust to changes in on-going training programs. One of the major problems in military training has been the many fluctuations in the flow of personnel through the training pipeline. It should be kept in mind that training people will forever be a dynamic enterprise and contractors involved in this enterprise must recognize this and maintain a greater flexibility than normally considered

with contractual specifications.

A fifth factor needing consideration is the outlook of Defense personnel toward contracting training. Defense officials will need to be more open to proposals in this regard, including training exclusively and traditionally thought of as administered only by military units. In some cases, traditional military training programs could be broken down into parts, some of which, especially combative or security sensitive, would remain militarily conducted, while others would be handled by commercial firms. In the last few years, there has been a definite gain in the receptiveness of high officials but this must be extended to lower levels in order to make a bigger impact on the manpower problem.

Sixth, serious thought must be given to more automated tutorial type training for recurring and long-range programs. The military services commit important resources to administering training that is required on an annual basis. Contractors could step into this picture with a valuable service. Because of the often low priority of these training programs and the need for the most economical training possible, commercial firms would need to rely on technology intensive (individualized interactive video disc) versus labor intensive approaches to this training area. In concept, a contractor run learning center would offer a self-paced training package to the trainee who progresses with little supervision to a test and final fulfillment of the training requirement.

Finally, contractors, just as their military counterparts, must continually tie training to mission effectiveness. Since we are talking basically about military training, the question should forever be raised, "What happens in a wartime situation?" Is the training pertinent to war needs? Can readiness be maintained and can a fighting effort be sustained? What about surge training capacity to support larger war forces? Some individuals have called attention to this point, like Dr. Arthur Siegel of Applied Psychological Services Corporation, who takes a dim view of all the talk about simulation behavioral modeling that cannot reflect wartime requirements. Likewise, all contractors must look critically at their training in the same regard. To paraphrase an oft quoted remark, "We don't want to build the best training system that can be built and then have a war come along and ruin the whole thing."

The foregoing discussion suggests yet another way to respond to the nation's forthcoming manpower crisis. It is clear a multifaceted solution to this difficult problem is needed and training by contractors can be part of the overall, workable response. It does offer a number of significant advantages. At the same time, its effectiveness could depend on a variety of factors. With their careful consideration, contractor training could help promote teamwork, instead of deadly competition, between government, the military, and industry in stretching limited people resources. A far broader-scaled contractor training effort could thus be a significant contributor to a solution of a national problem while producing quality trained technicians or operators in a cost effective and expeditious manner.

ABOUT THE AUTHOR

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