

Army Training 2007

—a distributive training plan

By Dr. Peggy-Lynn Prescott

The Army faces significant changes over the next decade and a half that provide opportunities to train our Army more effectively and demand that we change the way we do business to train more efficiently. The current complex technologies and new concepts offer a wealth of opportunity to strengthen our training program. However, constrained resourcing demands we reshape the training strategy. We are challenged to preserve the progress made, take advantage of new technologies available, and draw the purse-strings tighter.

Political, social, and economic factors at home and abroad will influence the scope, content, and direction of Army training. There will be competing programs to put pressure on the training dollar. We must, therefore, devise and implement an efficient strategy that yields the highest quality of training for the lowest training dollar.

There is a new emphasis in today's Army:

- Trend to low- and mid-intensity conflicts.
- Expanded joint operations.
- Aid to urban environments.
- Support to law enforcement and curtailment of drug operations.

There are training concepts to back the emphasis:

- Contract/University setting.
- Network/simulation.
- Embedded training.
- Virtual reality.
- Voice input/output.
- Artificial intelligence.
- Paperless manuals.

There are principles to strengthen the training concepts:

- Train as you will fight.
- Centralize training development.
- Decentralize execution.
- Integrate training strategies.
- Facilitate mobilization.
- Contract where cost effective.
- Leverage training technologies.
- Incorporate training requirements in the design of new facilities.

The key to developing our training strategy, with focus centered on the future, is to employ the concept of distributed training. The goal is to teach required courses to soldiers, leaders, and civilians in both the Active Component (AC) and Reserve Component (RC). We must reduce student training time spent in the TRADOC schools and centers by 50% by the year 2007. The capacity for homestation training will be increased. Training aids, devices, and simulators (TADSs) will be integrated into training programs, to include institutions, homestations, and combat training centers (CTC). Command support is directed to integrate new and improved training technologies to facilitate training development and delivery. We are challenged to focus on training that ensures our ability to perform in combat.

Integrated Training Strategy for the future sees Institutional Training and Forces Training moving in the direction of Army Training 21 concepts through four central components:

- Development and implementation of a viable Distributed Training Strategy.

- Movement toward a Device-Based Training Strategy.

- Further development of the Army's Combat Training Centers.

- Upgrading of the Reserve Component Training Strategy.

We will focus in on the Distributed Training Strategy: the concepts, alternatives, and role of USACMLS in the process.

In essence, the distributed training strategy is a plan to deliver training to soldiers, leaders, and civilians when and where they need it. The goals are to increase standardization and reduce the time soldiers spend away from their units. The distribution of training will be to homestations, regional training centers, and selected sites to support AC and RC soldiers Armywide.

Key Policies

There are key policies to which we must adhere when establishing and implementing our distributed training strategy that demand we broaden the base and increase the strength of the Total Force.

Total Force Training

This Total Force is inclusive of the AC, RC, and the Department of the Army Civilians (DACs). The focus is simultaneous on both AC and RC issues. The RC has unique needs and training constraints; therefore, the first policy is to move towards asynchronous (occurring at different times) training technologies (i.e., print and asynchronous computer teleconferencing) that these soldiers can use at home. Asynchronous training technologies don't have to act in unison.

Training can be designed in different ways and go to several locations at the same or at different times. These qualities adapt well to the RC's unique needs and training constraints. The bottom line: our RC needs to be trained up to the same level of proficiency as AC, in case the call to active duty arises.

Implementation

The next policy, implementation, is based on an analysis that identifies the knowledge/skills, environmental, and motivational factors that affect the soundness of the program. Once these factors are assessed, soldiers are provided with access to adequate learning facilities and information centers. "Adequate" means an increase in library facilities to include size of print and periodical collections, as well as expanded access to databases.

Initial Focus

The initial focus for distributed training is on the cognitive tasks, while resident courses concentrate on hands-on performance of wartime tasks. During the mid- and far-terms phases of distributed training, the hands-on tasks, especially in the areas of maintenance and equipment operation, will be dealt with at the homestations. The program requires greater emphasis on Train-the-Trainer and a greater awareness of the psychology of adult learning. Courses will be designed based on a media mix and lessons developed to suit the appropriate medium.

Technology

We must take careful note of this next policy which recognizes that technology takes a front seat in distributive training. This is due to the greater need each year to keep up with the critical updates and rapid changes in training, doctrine, materiel, and organization. The process is especially important in the highly technical fields where the half life of information is short and getting shorter. The NBC arena is one of these fields.

Resourcing and transitions need to be tailored to meet distributed training standards. Resources will be reallocated to enhance the quality and quantity of training at comparable or reduced costs. Addressing the transition phase: we must ensure transition to distributive training is evolutionary, not revolutionary. The plan is for

gradual, but significant changes in the way the Army does business.

Evaluation

The final key policy for implementation of distributed training is evaluation. Evaluation is an on-going process, and the driving force of every phase of a training program, from analysis through implementation. Adhering to this policy will provide the breadth and sustain the life of the program. We must continually and systematically evaluate distributed training programs to ensure training and cost effectiveness. Note the familiar ring in these policies that address program development: the systems approach to training (SAT) process. We have used analysis, design, development, implementation, and evaluation (which enters during any phase) to create the new distributed training concept!

Distributive Training

What's the status of distributed training in the private and public school sectors and industry?

Schools

Distributive training focuses on the individual as the center of contact for all training. Educational technology literature alludes to the individual learner as the crux of all phases of the SAT process and final products are geared to the individual learner, to include ability level, interests, and personal restrictions (time, resources, job, and home responsibilities).

Many colleges and universities have evidenced the needs of students for some sort of away-from-home-campus response to initial and continuing education. As with the military, the universities' budgetary, and the students' both monetary and job/home related constraints are preventing attendance in the normal classroom setting. The problems are now being solved using the concept of distributed training products, which these institutions of higher learning refer to as "Distance Education."

Distance education is becoming a significant instructional delivery system that is highly dependent upon state-of-the-art educational technology to reach its goals. Delivery systems often require a combination of media technology and communicative devices to reach the learner. Material preparation for distance education requires a systematic approach to instructional design and a focus on the individual student rather than group teaching. The key is use of a variety of media which provide optimum participation by the learner. The programs allow more working adults to pursue degrees in higher education.

One distance education course uses computer graphics to deliver instruction to students at remote sites. The static graphic material is sent over phone lines, while the interactive aspect of instructor/students communication is provided by an audio-conferencing network.

In the public school sector, some school districts are literally using the community as a classroom. The program has proven to be an effective way to prepare students for careers in marketing and distributive education (MDE). MDE instructors use cooperative vocational education, vocational work experience, and the community classroom to bridge the gap between the classroom and the world of work. Students enrolled in the program attend classes and complete learning activities at an actual job site under careful supervision of the instructor. Graduation is often rewarded by continuation in that job as a full-fledged, paid employee.

Industry

In industry, distributed training is fast being recognized as a cost-effective procedure to upgrade the skills and standards of living of employees. Some American companies are taking on a new look, which requires rapid organizational changes. These changes require development of new managerial skills. Trainers skilled in

training, consulting, organizational behavior, and adult learning have proven to industry that training and development are a catalyst for change.

There's a new mandate forthcoming in Australia that will require Australian firms to show the government they are investing a minimum of one percent of their payroll on training. This new edict further demands that Australian companies track the employees trained and measure the impact of the training. Australia wants to be competitive in the global marketplace and sees great value in making better use of its human resources. There are forces in this country that would like to see the same demand put upon some American companies.

Professional training specialists from within the private sector are hired by industries to design, develop, and present the training materials. These training sessions are usually brought to the industrial site for presentation. Another source of training and training packages is our colleges and universities. Seminars and classes are presented at the homestation (industrial site). The programs boast of a 25-35% savings in travel costs and decreased interruption within the work force. These offerings feature tailoring the course material to the organization's specific needs, and confidentiality, so that specific in-house company issues can be addressed.

A multitude of courses are offered: leadership skills, computer systems skills, sales and marketing, and finance and accounting. Some schools offer to develop courses tailored to the specific needs of the requesting business. More and more these trainers and/or their training packages are going to the requesting unit's site (homestations) for presentation of the training. USACMLS is now appraising the use of this "homestation" concept, with increased use of various media to upgrade training, while

reducing the price tag of the program.

Those companies that now recognize the long range net profit gained from ongoing training programs for their employees are using computer programming and teleconferencing with great success. Other media used includes: independent study, peer-to-peer training, and mini units that are tailored to individual needs and fit efficiently within the work schedule. Recent studies have shown that if the employees are of the MTV generation (ages 18-25), as students, they are more receptive to "instruction with a punch," which must include video, visuals, and variety. Evaluation has shown that these programs not only are profitable to the company, but are well-received by the employees for the knowledge gained and the mediums and homestation environments used for their training. Virtually all Army initial accessions meet the MTV generation profile.

Training Environments

The Army has foreseen the need to distribute training throughout the force as a cost-effective means of advancing training, while staying abreast of the latest in technology and ever-increasing changes in doctrine. We will now address the surroundings where our new training plans will take place.

The environments for which we must design our distributed training strategy for the USACMLS include training at the homestations, regional training centers, contract/university settings, and selected sites for the AC and RC. The delivery means are to be drawn from print, video tape, computer-based training, interactive video disc, and televideo (both worldwide and teleconferencing). We will incorporate full use of the trainers and simulators provided by TADSS. The training environment we develop will begin with simulation and progress to virtual reality which melds the real world with a computer-generated world.

Many of our courses and selected

classes within other courses lend themselves to distribution through distributed training media. Only entry level courses up to twelve weeks in length and those courses teaching unique military skills requiring a high degree of personal involvement will remain in residence. All others are candidates for distribution. NBC training will be integrated into other MOS specialties wherever possible thus implementing the dual training concept. The backbone for success of these measures is to put the emphasis on: Train the Trainer!

The backbone of a well-trained trainer is effective communication and our ultimate goal is a well-trained soldier in the Chemical Corps. This soldier is trained through instruction, which is defined as "the arrangement of information to produce learning." Effective training cannot take place unless effective communication takes place. Crucial to the process is the "successful transfer of information from a source to a receiver," which is the definition for effective communication. Training can be defined as "effective communication specifically designed to broaden and extend the field of experience of the soldier." If the signal (the message) is within both you (the trainer) and your students' (the soldiers) field of experience, there is optimum level opportunity for communication.

Of paramount importance is consideration of the meaning of the message and how the message is interpreted when we design and develop our training. Keep in mind that the "meaning" of the message cannot be transmitted. What is transmitted are "symbols" of meaning, such as printed words and pictures. The most we can do is to transmit verbal and visual symbols from which the soldiers must evoke their own "meanings." Our success in designing effective and standardized training materials that develop a combat-ready chemical soldier depends upon our skill in

encoding symbols that are meaningful to the soldiers (the receivers) and upon their skill level in decoding them.

There is one final factor in the field of communication to take into consideration: the important distinction between any medium as a communication medium and as a training medium is feedback from the receiver (the soldier). Feedback helps ascertain the success of the training and tends to take the burden off the soldier and place it, more appropriately, with the instructor. This is another plug for "Train the Trainer!"

Now, couple these training/communicative factors with our commitment to use the SAT process. Our training is designed to put our knowledge of learning into practice in a predictable, effective manner to attain specific training objectives. We focus on the scientific principles of learning, especially upon the soldier. With these factors in mind, we'll now explore the options available for Army Training 2007 for the Chemical Corps.

Training 2007

The plan is to effectively use all media at our disposal and utilize the less resource intensive homestation concept for all basic tasks and small equipment training. Soldiers will report to the schoolhouse setting for assessment of homestation instruction, large equipment training, introduction to new equipment and doctrine, and Threat briefings (where applicable). Final evaluation for expertise at each skill level will rest with the NBC NCO and/or chemical officer at the designated training site.

Our distributed training strategy will be designed and developed for three phases of expertise and experience:

Phase One

Phase One is based at the homestation. Cognitive tasks will be broken down into concepts, calculations, and reports, enhanced with performance-based practical exercises. Larger motor skill tasks will be broken down

into capabilities, components, PMCS, operation, and troubleshooting procedures (as applicable). Hands-on practice with the equipment is vital to success of the training. When the desired level of competence is reached, exercises using the newly acquired skills will be performed in a realistic training environment.

Phase Two

Phase Two will be based in the schoolhouse. Events begin with precise assessment of tasks mastered prior to entry. Schoolhouse training will include: entry level training for new equipment and doctrine, leadership skills, plus Threat briefings (where applicable). As in Phase One, the newly acquired expertise will be evaluated through exercises in a realistic training environment.

Implementation of Phase Two will require the development of our new battlefield simulation center and upgrading of our ranges to more realistic training environments. Realistic training will also be implemented through on-job-training assessments (OJTA). The basic premise of OJTA stems from public education's marketing and distributive education, and cooperative education programs.

OJTA is based upon the concept: "practice your newly trained expertise with the cadre at your next assignment during their training exercises, but, under some guidance and supervision until graduation." For example, an NCO/officer's change of station upon graduation is as the chemical NBC NCO/officer in an infantry unit. As a Phase Two student, this individual will take part in the schoolhouse course of study. The soldier then reports immediately to receiving unit, and, under supervision, takes part in that unit's training exercises, in his/her future assigned role. Proper fulfillment of the new duties is the final requirement for graduation.

OJTA is to be utilized during the basic non-commissioned officer's

course (BNCOC) and the chemical officer basic course (COBC). The program requires utilization of training evaluators to assess student expertise and retrain those who fail to meet the standards. Yet, another plug for Train the Trainer! This program provides a realistic training environment that is cost effective: (1) the soldier is transferred to the new assignment at an earlier date, saving TDY and schoolhouse operating funds, and (2) the training area and opportunities for training are already in existence, reducing needs for more area training sites.

As an aside, this will challenge our various units to integrate expanded NBC activities into their own training programs. The Threat is mainly the Third World countries who rely heavily on the "cheaper-than-bullets" bio-chemical form of warfare! This new concept in training will make our Army better trained to face today's type of conflicts and save the extensive resources that would be required to upgrade the regional training centers referred to in the original premises set forth as a guide to changing the way the Army trains!

Phase Two training should be seriously considered for refresher training geared to both AC and RC personnel beyond the advanced non-commissioned officer (ANCOC) and chemical officer's advance course (COAC) levels. A streamlined and exportable package would support one of the key policies previously noted, the need to keep up with the critical updates and rapid changes so prevalent in the NBC arena.

Phase Three

Phase Three training will take place at the area training site. Prior training and newly acquired skills will be reviewed and evaluated using the most applicable medium (video/computer), followed by task training using a realistic training environment with leadership and supervisory duties both performed and evaluated.

Let's focus in on the development of the distributive training concept by addressing the five categories of delivery means for distributing training to homestations for Phase One training. Delivery means will be based on consideration of the target audience capabilities and motivation, Army lessons learned from previous failures and successes, and cost.

Delivery Systems

Regardless of the category for delivery means, each medium is a method of communication, and most types are dependent upon effective visual literacy abilities on the part of the soldier. Visual literacy is the learned ability to interpret visual messages and create such messages. Training developers are challenged to develop materials within the field of experience of the student and training packages that motivate a visually literate audience.

Effective verbal communication is based upon the assumption that both the sender (instructor) and the receiver (soldier) have a field of mental concepts in common, enough to ensure that the message is understood as intended. We have learned, however, that understanding verbal communication is a sometimes occurrence. The process often fails due to differences in language, age, experience, cultural and social differences, etcetera. This leads us to the use of visuals to enhance communication. Visuals provide a more concrete reference to meaning than the spoken or written word. There is a lot of truth in the phrase, "A picture is worth ten thousand words." Words are arbitrary symbols, while visuals normally resemble the item they represent.

No media form, of course, is totally realistic. The real object or event will always have various aspects that cannot be captured pictorially. But, visual representation will enhance and improve most training materials, especially when addressing equip-

ment, environments, charts, etcetera. The NBC arena has an abundance of equipment, therefore use of the visual mediums of communication provides a viable training device. Remember, when developing the distributed training packages the closer the teaching materials (visuals) represent the thing (or concept) being referred to, the better the communication and the more effective the training. The bottom line: the likelihood of successful communication is increased when a concrete reference is present.

We'll now explore the five media options available for use in distributed training:

Paper

First on the list is paper. Paper-based instruction is cheaper and usually easier to develop. Print by 2007 will take on a new status. The total number of pages that are used will remain the same, but, not the percentage of the whole. By 2007, the amount of material distributed via print will be only 10% out of all types of media. At present, it stands at 99%!

Videotape

Videotape provides a standardized method of presenting training of cognitive skills and demonstration of processes. Through repetitive viewing, coupled with evaluations to assess progress, the soldier can train to the desired level of proficiency.

Computers

Computer-based instruction is divided into two forms: computer-assisted and computer-managed. Computer-assisted instruction (CAI) is interactive. The computer assumes a direct instructional role. The student responds to a stimulus and increases in proficiency through practice. Computer-managed instruction offers both prescriptive and diagnostic guidance. For example, students are pretested and their performance is assessed. The program then identifies the appropriate media for training. Students train on the identified media, then return to the terminal and take a

posttest. Students then receive a new diagnosis with prescriptive plan tailored to their previous performance. The computer-managed system does not provide all instructional material; therefore, only a few terminals of this type are needed.

Interactive Videodisc

Interactive Videodisc (IVD) uses optical disc technology as the training strategy. This medium offers perceptions students cannot receive through passive watching, or even CAI. IVD combines the realism of video with the power of the microcomputer and is used to instruct, reinforce skills, and enhance positive feelings of accomplishment and achievement.

Televideo

Televideo is one-way video: from instructor to student. This system features two-way audio teleconferencing with broadcast quality and characteristics similar to network television.

What's Ahead?

The definitions, prescriptions, and policies are laid out. The products are placed within the designated levels; the technology for use in design and development is defined. Army Training 2007 for the USACMLS will be ready for processing and performance once the last step of planning is complete. We must now select a team to sit down with our task lists, task by task, and designate the skill levels and the medium that will best result in "Training for Excellence."

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