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Technical Report 70-1

Development and Evaluation of an Integrated Basic Combat/Advanced Individual Training Program for Medical Corpsmen (MOS 91A10)

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Joseph S. Ward, Nelson I. Fooks, Richard P. Kern, and Robert D. McDonald

HumRRO Division No. 3

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Prepared for:

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HumRRO Division No. 3
Presidio of Monterey, California
HUMAN RESOURCES RESEARCH ORGANIZATION

Technical Report 70-1
Work Unit SUPPORT
Sub-Unit II

The Human Resources Research Organization (HumRRO) is a nonprofit corporation established in 1969 to conduct research in the field of training and education. It is a continuation of The George Washington University Human Resources Research Office. HumRRO's general purpose is to improve human performance, particularly in organizational settings, through behavioral and social science research, development, and consultation. HumRRO's mission in work performed under contract with the Department of the Army is to conduct research in the fields of training, motivation, and leadership.

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FOREWORD

In Work Unit SUPPORT, the Human Resources Research Organization was concerned with the development of improved combat support training programs through human factors research. Work Sub-Unit SUPPORT II was directed toward the development of an integrated Modified Basic Training (MBT) / Advanced Individual Training (AIT) sequence for MOS 91A10, for those Medical Corpsmen who are Conscientious Objectors. Development and evaluation of this experimental integrated program would serve as a test of the concept of integrating Basic Combat Training and Advanced Individual Training on a broader scale in the Army training system.

The SUPPORT II study was conducted by HumRRO Division No. 3 at the Presidio of Monterey, California, and at the U.S. Army Medical Training Center (USAMTC), Fort Sam Houston, Texas. Director of Research during the study was Dr. Howard H. McFann. The research was performed and most of the report preparation completed while HumRRO was part of The George Washington University.

Military support for the study was provided by the U.S. Army Training Center Human Research Unit. LTC Robert J. Emswiler was Military Chief during the study.

Work Sub-Unit Leader was Dr. Joseph S. Ward. He was assisted by Dr. Ernest Montague, and COL Mark Brennan, USA (Ret), of HumRRO Division No. 3. Individuals assisting in the research from the Human Research Unit were SP 4 Christopher Hungerland, SP 4 Jimmy D. Lanier, and SP 4 Philip A. Zuchman.

Individuals at Fort Sam Houston who provided support for the research were MG Chester A. Dahlen (Deputy Commanding General, Fourth U.S. Army, and Commanding General, Fort Sam Houston) and the following USAMTC personnel: COL Carl G. Giesecke (Commanding Officer during the early stages of the research), COL Charles C. Pixley (Commanding Officer, during the later and concluding phases), COL Arthur E. Britt (Executive Officer), COL Anthony W. Urbine (Director of Training Division), LTC Richard E. Bentley and LTC Sigurd Bue (Assistant Directors of Training Division), Mr. Robert Like (Chief TV Section), LTC Mary Buss, MAJ Charles E. Richardson, CPT Edward E. Travis (Project Officer), 1LT Charles R. Stuart, MSG Billey J. Disbennett, MSG Charles A. Chaplin, SFC Overton O. Slatton, SFC Richard V. Huband, SFC Joseph C. Williamson, SFC Robert A. Falconi, SFC John C. McMahon, SFC John M. Liston, SFC John L. Robinson, SSG Harvie T. Stanford, and SP 6 Orece Greer. Support was also provided by the following members of the USAMTC Mobile TV Detachment (6444), Tobyhanna Army Depot: 1LT James E. Welch, Mr. Kenneth D. Coburn, Mr. Robert Manley, and SP 5 Robert M. Goodman.

Publications of this report completes the SUPPORT II reserach. Other work accomplished under Work Unit SUPPORT is reported in "Development and Evaluation of an Improved Radio Operator's Course (MOS 05B20)," by James S. Goffard, Donald F. Polden, and Joseph S. Ward (HumRRO Technical Report in preparation).

HumRRO research is conducted under Army Contract DAHC 19-70-C-0012. Training, Motivation and Leadership research is conducted under Army Project 2Q062107A712.

Meredith P. Crawford
President
Human Resources Research Organization

Military Problem

At the request of the U.S. Continental Army Command, the Human Resources Research Organization undertook a study to determine experimentally the effect of integrating the Basic Combat Training (BCT) and Advanced Individual Training (AIT) sequence of instruction for the Conscientious Objector being trained as a Medical Corpsman (MOS 91A10). It was expected that this study would serve as a test of the possible advantages of the unified BCT/AIT concept to the Army as a whole. Such a program might result in substantial improvements in individual proficiency and/or possible reductions in training time, and reductions in transportation costs.

The Conscientious Objector (CO) training program—consisting of Modified Basic Training and the standard AIT program for Medical Corpsman (MOS 91A10)—at the U.S. Army Medical Training Center was designated by USCONARC for experimental consolidation because this soldier is identified with his potential MOS at the processing center. His classification of 1-A-O automatically channels him into medical training, whereas other trainees, under present procedures, do not receive MOS training classifications until toward the end of BCT.

Research Objectives

The primary research objective was to develop and evaluate the effectiveness of a unified MBT/AIT sequence of instruction for COs in MOS 91A10. The study had the following additional objectives: (a) to develop an improved AIT program for MOS 91A10 personnel, (b) to develop an improved MBT program for CO personnel, and (c) to develop and test training methods that could be applied to other Army training programs.

The effectiveness of the experimental MBT/AIT program was to be evaluated by comparing it with the regular existing programs. This evaluation would determine whether increased efficiency resulted from the combination of MBT/AIT along with a systems engineering of the curriculum. A systems engineering effort would be necessary to determine (a) what to teach during the time saved from combining the two courses, and (b) the most efficient methods for sequencing and presenting the instruction.

Research Approach

The research staff first observed the MBT and AIT programs for the Medical Corpsman to determine the content being taught and the training methods being used. They also interviewed instructors to identify problems and changes considered necessary to improve the programs.

A job activities questionnaire was developed listing the tasks, skills, and knowledges of the Medical Corpsman in two broad clusters: those reflecting emergency medical care and treatment and those reflecting secondary and recuperative treatment. This questionnaire was administered to recent Vietnam returnees and to selected hospital and dispensary personnel. Results indicated that more training emphasis should be placed on the necessary combat field skills of the Company Aidman.

Tasks to be included in training were selected from the job analysis inventory to make up four major clusters of duties: Company Aidman, Evacuation Medic, Aid Station-Dispensary Medic, and Ward Nursing Care Medic. Major criteria for selecting tasks for training were the degree of supervision available in various job assignments, the importance of the task to the accomplishment of the job, frequency of task performance, and opportunity for on-the-job training.

The curriculum emphasized the *field skills* of the Medical Corpsman. A training program was developed around the context of the four major clusters of duties, phased over the entire 16 weeks of training. The consolidation of MBT/AIT permitted an orientation toward the MOS 91A10 objectives on the first day of training, and many of the MBT subjects were modified in this direction (e.g., marches and bivouacs included field sanitation technique; physical training included exercises in individual drags and carries and team litter drills used by the Medical Corpsman in evacuating casualties). Time saved by eliminating superfluous instructional material and duplicate administrative functions permitted additional practice and training in field medical skills.

Training techniques appropriate to presenting various types of medical subjects were developed. Training methods maximized practical work, with essential lecture material condensed and integrated with the practice, and with emphasis given to providing immediate knowledge of the correctness of the practice work. Television was used to present factual and demonstration material; television tapes provided a constant demonstration source to trainees learning and practicing a given medical procedure. This allowed training to be conducted in small groups, made the best instructor available to all trainees, standardized instruction, and to some extent allowed for individualized instruction.

Evaluation instruments were selected or developed to test all phases of MBT and AIT. Basic military skills were tested with standard Army individual proficiency tests. Physical skills were tested by the Army's Physical Combat Proficiency test and by a specially developed litter obstacle course. Medical knowledges and skills were evaluated by tests on the field, military, and nursing medical skills. A motivational-attitudinal questionnaire was constructed to assess trainee attitude toward the Army. Instructors' opinions on the effectiveness of the conventional and experimental programs were obtained through the use of a 22-item Instructors Evaluation Survey.

Trainees who had completed the conventional course were compared with those completing the experimental on all tests. Subjects for the comparison were enlisted men who had been designated as Conscientious Objectors and assigned to Medical Corpsman training at the U.S. Army Medical Training Center, Fort Sam Houston, Texas. Two classes of 80 trainees each were assigned to the conventional and to the experimental programs. All subjects were held over for one week after completing training to participate in the testing.

Results

The results indicated that the experimental program produced substantial increases in trainee effectiveness. On measures of performance of Medical Corpsman skills, the experimentally trained group performed better than those conventionally trained; on other measures the groups performed about equally well.

(1) In the individual proficiency tests for basic military subjects, trainees of both groups performed equally well.

(2) In the performance of physical skills, the results varied according to the test used. Conventionally trained subjects scored significantly better on the Basic Combat Proficiency Test; experimentally trained subjects performed significantly better on physical skills (litter evacuation) used by the Medical Corpsman on the job.

(3) Written knowledge test results on field medical, military medical, and nursing knowledge were not significantly different for the two programs.

(4) Performance tests in these three areas indicated that the experimental program produced trainees who performed their medical duties significantly better, and much more quickly, than the conventionally trained men.

(5) Attitudinal questionnaire results indicated that the experimentally trained had a considerably higher opinion of the Army and its training procedures than did the conventionally trained.

(6) Instructors who had instructed in both programs rated the experimental program as much better or better than the conventional in all 22 areas covered in the questionnaire (e.g., proficiency in performing medical skills, sequence of presenting material, meaningfulness and realism of training, use of trainee and instructor time, correction of trainee errors, evaluation of trainee performance, and methods of instruction).

Conclusions and Implications

(1) The MBT/AIT integration and systems-engineered medical training program resulted in substantial gains in Medical Corpsman trainee effectiveness.

(2) The instructional programs developed in the research, although completed prior to publication of CONARC Regulation 350-100-1, Systems Engineering of Training (Course Design), satisfy the requirements of that regulation.

(3) The implementation of such BCT/AIT integrated programs in other MOSs would require some changes in the Army training and classification system. In spite of this restriction, the concept of integrating BCT/AIT in other MOSs should be considered because of the promise such an integration holds for improving proficiency and reducing training time and transportation costs.

(4) The integrated MOS 91A10 training program for Conscientious Objectors could be substituted for current training to produce more proficient graduates, or could be modified to reduce training time without lowering current proficiency levels.

(5) Since the combined program could not be used at present for non-CO personnel, a modified AIT program for MOS 91A10 was developed on the basis of the systems-engineered MBT/AIT program. This modified AIT program uses the content, instructional techniques, and television tapes developed for the experimental program. Use of this program could be expected to result in substantial increases in trainee proficiency.[1]

(6) A special MBT program for CO personnel was developed for use if implementation of the integrated MBT/AIT program is presently infeasible. This program could be used to train COs in basic skills, before they progress to the modified AIT program for their medical training.

(7) Television and other training techniques used in SUPPORT II could be extended directly, not only to all Army Training Centers, but to service schools and other agencies with instructional missions by (a) cabling TV instruction to practical work areas; (b) tailoring the TV presentation specifically to the needs of the user group; (c) virtually eliminating lectures by combining small segments of explanation and demonstration with practical work; (d) applying the functional context approach to sequencing instruction.

[1]Much of the experimental MOS 91A10 program has already been implemented at U.S. Army Medical Training Center. The Commanding Officer, USAMTC, has indicated the extent of this implementation in correspondence with USCONARC, AKPSH-T-T (18 Apr 68) and U.S. Army Training Center Human Research Unit, AKPSH-T (26 Nov 68). All HumRRO materials and techniques not requiring changes to the Army Subject Schedule have been incorporated into the current AIT program. Of the approximately 120 video tapes produced by HumRRO in coordination with USAMTC, 60% were used as produced; the other 40% were revised at USAMTC following techniques acquired during the HumRRO development. Field training exercises and proficiency testing procedures developed for the HumRRO program have been implemented and are in current use at USAMTC.

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INTRODUCTION

MILITARY PROBLEM

Headquarters, U.S. Continental Army Command (USCONARC) has been interested for many years in the effect that early assignment of trainees' potential Military Occupational Specialty (MOS) would have on training programs. It would be reasonable to expect that assignment to a potential MOS field (or even branch) before trainees started Basic Combat Training (BCT) would make possible more effective training and/or reductions in training time, along with reductions in transportation expenses between BCT and Advanced Individual Training (AIT).

Under present Army classification and assignment procedures, a test of the combined BCT/AIT concept is not feasible for most MOS training programs. However, unlike other recruits, the Conscientious Objector (CO) is identified with his potential MOS at the processing center by being classified 1-A-O by Selective Service; this classification automatically channels this soldier into medical training. The existence of this category of personnel provided USCONARC with an opportunity to test the effects and feasibility of an integrated BCT/AIT program without disrupting existing procedures for processing other MOSs.

The requirement for this research was initiated in the Office of Deputy Chief of Staff for Individual Training (DCSIT), USCONARC, in November 1965 (See Appendix A). HumRRO was asked to initiate a study to determine experimentally the effect of a unified BCT/AIT sequence for the Conscientious Objector Basic Training - MOS 91A10 (Medical Corpsman) sequence at the U.S. Army Medical Training Center at Fort Sam Houston, Texas. Additional guidance for the research specified that (a) tests and other measures used should reflect the objectives of both Basic and Advanced Training, and (b) emphasis should be placed on increasing proficiency rather than reducing training time.

BACKGROUND

Prior to their entry into active military service, inductees and first-term enlistees undergo physical and preliminary mental testing at an Armed Forces Entrance and Examination Station. Additional processing, including final mental and aptitude testing to provide the basis for determining potential MOS, is completed during the four-day period the recruit spends at the reception station at a U.S. Army Training Center (USATC).

Upon completion of reception station processing, the recruit is moved within the Training Center to begin BCT. Normally, the Training Center receives assignment instructions for MOS training from the Office of Personnel Operations (OPO), Department of the Army, during the trainee's sixth week of BCT. After completing BCT, the trainee is shipped (or transferred locally) to his Advanced Individual Training (AIT) station, school, or direct MOS assignment. If it were possible for OPO to develop a system permitting identification of the recruit's future MOS prior to his arrival at or while he is still at the reception station, the adoption of integrated BCT/AIT programs would be feasible.

The training for all MOSs could probably be made more effective by combining BCT and AIT programs. This combination offers the following possible advantages:

(1) The sequencing of instructional material could be designed to provide a better balance between classroom and field training throughout the program.

(2) The reduction of administrative processing and travel between BCT and AIT would not only reduce costs but provide additional time for scheduling and training of essential subject matter.

(3) Many MOS subjects could be integrated with or taught concurrently with BCT subjects.

(4) Essential branch training and indoctrination could be conducted throughout the entire training program, enhancing the professional development of the trainee and facilitating rapid adaptation into the first duty assignment.

(5) BCT subjects not required for a specific MOS could be eliminated, and the time used for training critical MOS skills; other subjects could be reoriented toward the requirements of a given MOS, thus making additional training time available.

(6) One group of trainers could supervise and teach the trainee throughout the entire training program. This would allow increased opportunities to identify and correct individual deficiencies, and to provide a more thorough and valid evaluation of trainee performance than is currently possible.

Currently, all first-term enlisted men except Conscientious Objectors undergo an eight-week BCT program at USATCs. After BCT, these individuals receive MOS training at USATCs (Appendix B), service schools, or on-the-job training with active Army units.

The COs undergo a 6-week Modified Basic Training (MBT) program (Appendix C) and then begin their medical MOS training. The Army states its objectives for the progressive development of the new medical (CO) soldiers as follows:

For BCT: "The objective of basic training is to develop a disciplined, highly motivated soldier who is physically conditioned and drilled in the fundamentals of soldier." (1)

For AIT: "The objective of training under this subject schedule is to qualify a soldier to perform duties in MOS 910 in a unit engaged in combat and/or any medical treatment facility." (2)

RESEARCH PROBLEM

The research problem was essentially to evaluate the implications of the unified BCT/AIT concept for Army training programs. Such an evaluation would require a large "systems engineering" effort in the MOS program used as the research vehicle, in order to determine what should be taught during the time saved by combining the BCT and AIT courses and the most efficient methods for sequencing and presenting the instruction. A further consideration was that the research should provide products of current use to the Army, since possible implementation of the unified concept throughout Army training programs would involve organizational changes that might not be feasible for some time.

The specific objectives were, through application of systems engineering principles, to:

(1) Develop and test the effect of a unified MBT/AIT sequence of instruction for the MOS 91A10 course.

(2) Develop an improved AIT program for MOS 91A10.

(3) Develop an improved Modified Basic Training (MBT) program for Conscientious Objector personnel.
(4) Develop and test improved training methods that could be applied to other Army training programs.

RESEARCH APPROACH

The term "systems engineering" denotes a particular type of approach to the development of training courses, which was applied in this study. During the rapid development of the "systems research" approach to complex man-machine interfaces, this general approach has been applied to planning for the development of human components in these systems and the term "systems engineering" has come into wide usage.

This systems approach to training was described by Crawford (3) in his enumeration of the major steps in the development of training courses: (a) analysis of the operational system, (b) analysis of the particular job, (c) specification of the skills and knowledges needed, (d) determination of the training objectives, (e) construction of the training program, (f) development of measures of job proficiency, and (g) evaluation of the training program. The essential elements of this approach have been applied by HumRRO personnel to many different Army training programs ranging from rifle marksmanship to radio operator.

The "systems engineering" approach to the development of training has produced marked improvements in the effectiveness of training programs. The value of the approach in training development by the Army is evidenced in the recent publication, CONARC Reg. No. 350-100-1, Systems Engineering of Training (Course Design) (4), which establishes procedures for revising existing Army training courses.

The systems approach to training begins with relating the training to the needs of the job. Basically, it asks the question: What are the requirements of the job? This question must be answered to acquire up-to-date information on the instructional goals of the training course. Lack of complete and current information on job requirements limits the development or redesigning of training programs to haphazardly trading hours, shifting subjects, changing words, and compromising subject matter requirements.

After a complete listing of the job requirements is obtained, the relative importance of each of these requirements to the job is determined. Key questions must be asked about each requirement regarding its criticality, similarity to other tasks, proficiency level required, necessity, frequency of use, supervision available on the job, and the number of people using it. Answers to these questions provide the information necessary to select tasks for training, to set up standards of proficiency, and to assist in decisions regarding the allocation of training time.

A training or task analysis of the requirements selected for the training program is carried out at this point. This consists in describing the set of tasks selected in behavioral terms and results in a set of student performance objectives.

Once the training objectives have been derived, along with their underlying skills and knowledges, the training program can be constructed. The complete course of instruction must be designed to determine what subjects can be eliminated as redundant or combined in more meaningful instruction sequences. Content must be ordered so that a meaningful sequence of instruction is presented to the trainee; functional context sequencing provides a means of accomplishing this goal. Methods of instruction appropriate to teaching various subjects are selected on the basis of experimental studies conducted on the various methods and, to some extent, the experiences of teaching personnel.

Achievement tests are constructed to evaluate the individual's training progress throughout the course. Since the training objectives have been stated in behavioral terms, they are readily converted to measurable test items for achievements and for the final evaluation. Primary emphasis is placed on performance rather than verbal or written type tests in evaluating the proficiency trainees attained by the end of the course.

This systems engineering approach was applied to the problem of combining BCT/AIT for MOS 91A10. The training program was developed, administered to two companies of experimental trainees, and evaluated against the performance of two companies of trainees receiving the regular program. The testing of results took place from August through December 1967 at the U.S. Army Medical Training Center (USAMTC), Fort Sam Houston, Texas.

DEVELOPMENT OF THE PROGRAM

ANALYSIS OF CURRENT PROGRAM

The current Modified Basic and Advanced Individual Training Programs were observed[1] in detail by the research staff to become familiar with the content and training methods being used. These observations were supplemented by interviews[2] with instructors responsible for conducting the training to determine existing problems and the changes considered necessary to improve the programs.

These observations and interviews indicated the following:

(1) Content. Much of the current course content was not needed by the Medical Corpsman. A considerable amount of the material being presented was characterized as being "nice to know," but not "necessary to know."

(2) Training Methods. The predominant training method in use was the lecture. Classrooms were oriented toward lecture and writing rather than toward the practice of medical skills. In many cases, information was presented to trainees through lectures but was not applied until much later in the program. Although the job of the Medical Corpsman in the treatment of wounded demands expert, skilled performance of emergency medical techniques, essential practical work in these skills was not allotted enough time for the trainee to attain the necessary degree of proficiency.

(3) Group Size. Lecture groups were too large for efficient instruction. Trainees in the rear of the room had difficulty seeing the fine points of a demonstration or material presented visually. Practical work groups were also too large, despite the use of increased numbers of instructors; as a result, trainees performed medical techniques on each other with only a minimum of guidance. A general critique was given after the practical work had been accomplished, but the immediate knowledge of results while performing, which is so essential to development of proficiency, was virtually nonexistent.

(4) Television. Television was available for the presentation of certain subjects to trainees, but was used primarily to present conventional lecture material via a television set. The potential advantages of its other uses as an instructional medium were not being realized.

(5) Standardization. Standardization of course content was not in evidence. An instructor would vary the content from presentation to presentation; different instructors would present different content on the same subject and, in many instances, contradict each other's presentations.

[1]The training observation sheet used is shown in Appendix D.
[2]The interview guide used is shown in Appendix E.

JOB ANALYSIS

The current training, conducted under Army Subject Schedule 8-910 (2), is expected to produce a Medical Corpsman (MOS 91A10) qualified to perform in any one of a number of the duty positions for MOS 91B20. The man must serve some minimum period of time as a 91A10 before he can be considered for advancement to the 91B20 MOS. Depending upon the manpower supply, many men with the 91A10 MOS are assigned to 91B20 duty positions within the first three months following graduation from AIT training. Thus, in many cases little relevant job experience intervenes between graduation as a 91A10 and assignment to a 91B20 duty position. For this reason, and because of the absence of any other intervening formal training, the training objectives of Army Subject Schedule 8-910 must, in general, be geared to the skill and knowledge requirements of the 91B20 duty positions.

The training prepares a man to serve in nine different duty positions under MOS 91A10 (in pay grades E-2 and E-3) and is the only formal training for eight different duty positions under MOS 91B20 (in pay grades E-4 and E-5). Many of the supervisory skills in the higher MOS are acquired through experience on the job, but the basic medical skills are acquired during the 10-week course at the USAMTC.

The program of Medical Corpsman training at the Medical Training Center at Fort Sam Houston under Army Subject Schedule 8-910 provides:

(1) Introductory training (two weeks) for those men scheduled for the following school training in specialized Medical MOSs: Dental Specialist (MOS 91E), Clinical Psychology Specialist (MOS 91G), Social Work Specialist (MOS 91H), X-ray Specialist (MOS 91P), Preventive Medicine Specialist (MOS 91S), Medical Laboratory Specialist (MOS 92B), and Dental Laboratory Specialist (MOS 42D).

(2) Prerequisite training (10 weeks) for those men scheduled for advanced school training leading to the following Medical MOSs: Clinical Specialist (MOS 91C), Operating Room Specialist (MOS 91D), NP Specialist (MOS 91F), EEG Specialist (MOS 91M), and Physical Therapy Specialist (MOS 91J).

(3) The only formal qualifying training for those men assigned to duty positions in MOS 91A and the succeeding 91B series listed below (the duty positions of the more Senior Medical Specialist—MOS 91B40 and 91Z50—are not included since they are primarily supervisory):

MOS 91A10 (Pay Grades E-2 and E-3): Ambulance Orderly, Ambulance Driver (Hospital), Ward Orderly, Ward Attendant, Dispensary Attendant, Litter Bearer, Aid Station Attendant, Collecting Station Attendant, and Clearing Station Attendant.

MOS 91B20 (Pay Grades E-4 and E-5): Medical Liaison Agent, Receiving-Forwarding Clerk, Ambulance Driver, Ward Specialist, Dispensary Assistant, Senior Litter Bearer, Medical Aidman, and Company Aidman.

MOS 91B30 (Pay Grade E-5): Senior Ward Specialist, Dispensary Specialist, Senior Medical Aidman, and Air Ambulance Aidman.

The analysis of the job of the Medical Corpsman began with a listing of the duties required on the jobs listed above. Sources of information used by the research personnel in developing the job analysis included the appropriate Army Regulations, field manuals, Army Subject Schedules, lesson plans, and literature available from outside sources. The duties of the Medical Corpsman were listed in two broad categories: Those dealing with the field, and those primarily associated with hospitals. The relevant tasks, along with the requisite skills and knowledges, were included under each duty statement.

A job activities questionnaire was constructed listing the tasks, skills, and knowledges of the Medical Corpsman (Appendix F). Experienced USAMTC personnel contributed to and reviewed this questionnaire.

The questionnaire was administered to enlisted men working on the job—46 supervisors and 50 incumbents, who were questioned additionally on their past and present duty assignments (Appendix G). "Supervisors'" responses reflected supervisors' views of duties performed by incumbents, while "Incumbents'" responses reflected views of duties as actually performed by incumbents. Enlisted men tested were either recent Vietnam returnees or selected hospital and dispensary personnel.

For purposes of curriculum design, subject areas were also grouped into two skill clusters—the first reflecting emergency medical care and treatment (Field Category), and the second reflecting secondary and recuperative treatment (Hospital Category). Medical Corpsmen were asked whether personnel in selected duty positions were required to (a) perform, (b) assume responsibility for, or (c) know the tasks, skills, and knowledges listed in the questionnaire.

The results show the percentage of positive responses to any given question by the supervisory and incumbent subdivisions of the two skill clusters . Data from the questionnaire indicated that more emphasis should be placed on the combat field skills of the Company Aidman, as he must work expertly and without supervision. Job analysis responses were given appropriate weight in selection of training content.

SELECTION OF TASKS FOR TRAINING

Training tasks were selected from the inventory of tasks making up the job analysis. Although the Medical Corpsman must be qualified to perform at an entry level in all of the 91B20 duty positions, the specific job duties—as well as the conditions under which these duties are performed—vary from one duty position to another. In general, job duties performed under conditions permitting only minimal supervision receive priority for higher proficiency objectives during training than job duties performed under close supervision.

When a person is assigned to a hospital after completing training, the hospital typically conducts a relatively formal on-the-job training (OJT) program for all newly assigned 91A10 ward personnel. The hospital ward staff is also able to exercise close jurisdiction and supervision over the patient-care duties the individual is allowed to perform until the staff is satisfied that he is qualified to perform specific patient-care activities. This situation provides for close supervision and flexibility in distribution of the hospital workload, which permits tailoring the inexperienced man's work to his current level of proficiency and progress in on-the-job training.

However, when a person is assigned as a Company Aidman, the opportunities for this type of supervision and flexibility in assignment of duties are virtually nonexistent. The Company Aidman must make life and death decisions and perform life-saving skills without experienced help or supervision, and must also make decisions regarding evacuation which could adversely affect the life or limb of a casualty. For this reason, field skills must be mastered to the highest degree of proficiency, and hence were given the highest priority for inclusion in the training program.

In addition to the potential opportunity for OJT, other factors considered in the selection of tasks for training from the inventory in the job analysis were the

[1]Results are available upon request from HumRRO Division No. 3.

importance of the task to the accomplishment of the job, the frequency of task performance, opportunity for further training, and the time lapse between training and actual performance of tasks on the job.

TASK ANALYSIS

The tasks that were selected for training were subjected to a further analysis to derive the detailed skills and knowledges necessary to their accomplishment. The tasks were stated in behavioral or measurable terms which indicated what the student must be able to do upon completion of training. These formed the training objectives which also specified the conditions under which performance occurs and the standards of performance.

These objectives are presented in the lesson outlines of the Instructor's Guide, Description of Course and Lesson Outlines for (a) an Integrated Modified BCT/AIT Program for Conscientious Objectors (COs) in Training for Medical Corpsman, MOS 91A10, (b) a Modified BCT Program for COs (1AO), and (c) an AIT Program for all Medical Corpsmen, MOS 91A10 (5).

CONSTRUCTION OF THE PROGRAM

UNIFICATION OF BCT/AIT

One of the main advantages of using a unified BCT/AIT concept is that a job-oriented training goal appropriately governs the entire consolidated sequence. This permits some of the BCT subjects to be oriented toward satisfaction of MOS requirements, allows more efficient training of critical tasks, and saves training time by consolidation or elimination of those subjects not necessary to meet the requirements of the MOS. Consolidation frees a great deal of training time which can be used to increase the individual's proficiency in critical job skills. The consolidation of BCT/AIT for the MOS 91A10 program resulted in the following more advantageous uses of allotted time:

(1) The 54 hours of physical training time in the current course were reoriented toward evacuation skills training, which was given each day following preliminary warm-up drills and run. The remaining time was used to learn and practice the various individual drags and carries, and the team carries and litter skills used by the Medical Corpsman in evacuating casualties. These changes were directed toward development of the musculature the man would be using on the job and a much improved development of the evacuation skills he would be using.

(2) The eight hours allotted to first aid training in the current BCT course were eliminated, since the content is treated in considerably more detail in AIT for MOS 91A10. The time saved was used for increasing proficiency in emergency medical treatment skills.

(3) The current instruction given in a 19-hour block of anti-infiltration, field fortifications, and individual tactical training was reduced to 13 hours. Content of this block was made more specific to situations encountered by the Medical Corpsman.

(4) Intelligence training was reduced from 10 hours to two, the amount of time scheduled for this kind of training in regular BCT/AIT.

(5) Dismounted drill time was reduced from 42 to 35 hours. The current schedule involves a repetition of movements after 35 hours, and this repetition can be accomplished during movement between classes.

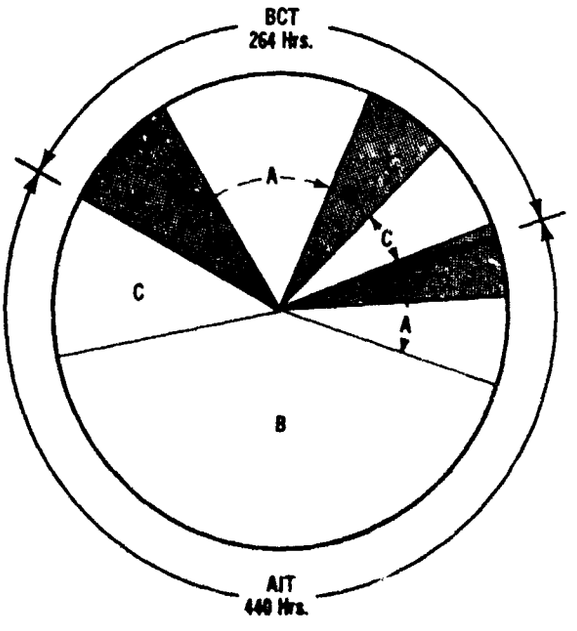
(6) The current program devoted eight hours to care and maintenance of supply and equipment. This subject did not appear in BCT for regular trainees, and there seemed to be no reason to include it in the program for COs. In the new course, this training time was used instead for practical work in emergency medical procedures.

(7) There was a reorientation of marches and bivouacs training toward the requirements of the Medical Corpsman. Field sanitation and sanitary inspection of field facilities was included in this training.

(8) The elimination of the necessity for transferring a trainee from a BCT to an AIT company resulted in a reduction of administrative time from 37 to 29 hours. This time was also used to increase individual proficiency in critical medical skills.

Thus, the elimination of superfluous material, and reorientation of content towards the skills of the Medical Corpsman, allowed much more time to be devoted to training of MOS skills—particularly field medical skills[1]. The time from BCT and AIT that was utilized for or reoriented toward training in Medical Corpsman MOS skills is presented in Figure 1. Shaded portions of the figure show the additional time gained for such training.

Reallocation of BCT/AIT Hours



▽ Training time taken from the normal BCT/AIT sequence and re-oriented toward medical subjects' training

A Troop information/indoctrination, and general military skills

B Tactical/Technical (MOS) training

C Commander's time, proficiency testing, and administrative time

Figure 1

SEQUENCING OF CONTENT

Sequencing of content was accomplished through application of the functional context principle (6). This approach is characterized by two major requirements: First, the context must have some meaning for the trainee in terms of the overall objectives of the course and his concept of the course. Second, the content must

[1]Generally, time for improvement of critical skills could be expected to be available to any MOS undergoing similar integration of BCT/AIT.

be organized so that the relevance of each new topic to those previously learned is readily apparent, with new learning material placed into a background that is already familiar so that the new can be related to the old. The whole act and combinations of whole acts must be practiced in the context of the overall job.

The system of instruction used in the course at the time the research was initiated consisted of blocks of fundamental subjects, taught in progressive sequence, including anatomy and physiology, common drugs and their uses, medical symptomatology, and basic emergency medical treatment. These fundamental blocks were taught in relative isolation from each other and out of the context in which they were to be applied. Knowledges and skills necessary to the solution of medical problems were frequently forgotten by the time they were to be applied. Blocks of subjects taught in this way are less meaningful to the trainee and more difficult to learn.

This sequence was reversed by ensuring that the material to be learned was as closely related to the job requirements as possible. The instruction was developed around what occurs to a wounded or sick man successively and what the Medical Corpsman must know and do to care for him properly through all these phases. Relating the instructional sequence to medical techniques meant teaching essential knowledges and skills in conjunction with these techniques. As an example, small amounts of necessary knowledge of basic anatomy, physiology, and drug use were taught in conjunction with specific medical techniques throughout the course.

The use of the functional context approach assisted in organizing training content so as to maintain the functional identity of the different duty positions while preserving continuity of instruction throughout the training program. Because of overlap in job duties among the various duty positions and because of training time limitations, it was neither feasible nor desirable to design a program consisting of a series of separate training programs for each duty position. However, examination of training doctrine and observations made during the collection of job activities data indicated that the 91A10 and 91B20 duty positions could be functionally classified into four duty-type clusters on the basis of major job activities performed and the conditions under which they are carried out.

This classification allowed the development of a training program consisting of four successive phases, using the functional context principle. The first phase of this program consisted of duties of the Company Aidman, and emphasized instruction in:

(1) The basic field skills utilized by the platoon aidman in combat (e.g., movement under enemy fire, land navigation, platoon relevant signal communications, field sanitation).

(2) Emergency medical treatment skills as practiced by the platoon aidman at the scene of wounding or injury (e.g., control of external hemorrhage, artificial respiration and maintenance of airways, immobilization of fractures, protection of burns and open wounds, administration of drugs and blood volume expanders).

(3) The platoon aidman's duties with respect to preventive medicine (e.g., water purification, waste disposal, insect and rodent control, footcare, prevention of heat and cold injuries, malaria, VD).

The second phase of the program consisted of the duties of the Evacuation Medic and emphasized instruction in:

(1) Preparation of casualties for evacuation from scene of wounding or injury (e.g., sorting, preparation of litters, movement and positioning of casualties on litter).

(2) Treatment of casualties during the evacuation process (essentially a recycling of practice on the emergency treatment procedures learned in the first phase).

(3) Transporting of casualties (e.g., manual carries, motor ambulances, helicopters).

The third phase of the program consisted of the duties of the Aid Station—Dispensary Medic and emphasized instruction on:

(1) Sick call processing and examination procedures (e.g., recording complaints, taking vital signs, physical examination procedures, medical records).

(2) Treatment of minor wounds and injuries (e.g., preparation, use, and after-use care of treatment room equipment typical of Battalion Aid Stations and dispensaries; cleaning and dressing minor wounds; treatment of boils, blisters, skin infections, sprains, dislocations).

(3) Control of hemorrhage, use of resuscitation equipment, and other common emergency treatment room procedures within the capabilities of the Battalion Aid or Dispensary facilities.

(4) Administration of standard Army immunizations.

(5) Recognition and treatment of minor diseases and use of common drugs.

The fourth phase of the training consisted of the duties of the Ward Nursing Care Medic and emphasized instruction in basic Ward Nursing duties:

(1) Lifting and moving semi-helpless and helpless bed patients.

(2) Patient hygiene care (e.g., bed baths, mouth care, skin care and observations, patient's excretory needs and care of the equipment).

(3) Cleanliness of patient's environment (e.g., bed making, damp dusting patient's unit, use of disinfectants, care and cleaning of ward equipment).

(4) Reporting on the patient's condition (e.g., maintaining fluid balance records, vital signs).

(5) Specific treatment procedures (e.g., enemas, catheterization, changing of dressings, irrigation of wounds, use of suction equipment, inhalation treatments, oxygen therapy, intravenous therapy, administration of medications).

DEVELOPMENT OF TRAINING METHODS

The observations and the interviews of instructors by research personnel indicated that the most important training method applicable to medical instruction is "doing" and practicing. All instructors indicated that there was a definite need to increase the amount of practical work so that trainees could become proficient in the application of skills. This approach was employed in five areas:

(1) Integration of lecture material with practical work. As the basic approach to the development of training methods was to maximize practical work, all lecture material not necessary to the performance of a given medical technique was eliminated. The explanatory material retained was integrated with the practical work, keeping this material within the functional context of the skill being learned. For example, the training sequence developed for learning a given medical technique was as follows: (a) short, illustrated presentation of the characteristics of wounds to be treated by the technique, together with applicable anatomy and physiology instruction; (b) talk-through demonstration of the first few treatment steps; (c) supervised trainee application of the first few steps; (d) continued alternation of demonstration and practice until the treatment technique had been completed; (e) practice on the complete treatment technique to acquire proficiency.

(2) Casualty-checker concept. Trainees must become involved in the training process to avoid wasting valuable training time. Generally speaking, the

more actively they become involved, the more effective the learning. The procedure during these periods in the conventional course was to assign one trainee to practice the treatment procedure on another trainee who, without involvement, assumes the role of a casualty. Under this procedure, most trainees assuming the role of casualties quickly lose interest, daydream, or fall asleep.

A simple change in this procedure assured "casualty" participation in the experimental program: Trainees assuming the casualty role were also assigned the role of checker. They were given a checklist of the correct steps in the treatment procedure and thoroughly briefed on the correct procedure. They were then required to observe the treatment as it was being applied to them—checking the steps in the treatment and the sequence of the application, making corrections as necessary from the checklist, and providing immediate knowledge of results to the trainee-aidman. In this way, both trainees became involved in the treatment process, and the casualty-checker acted as an assistant to the instructor. Their use of the checklist provided immediate knowledge of results to the trainee-aidman and facilitated the instructor's critique of a trainee's application.

(3) Television instruction. The ongoing program utilized a number of television sequences in BCT, but in AIT, where all of the medical and nursing skills were taught, the graphic aids used were opaque projections, slides, transparencies, charts, blackboard, and training films. Television is an excellent medium for showing the fine details needed in a program for medical corpsmen. In the experimental program, an Army mobile TV unit was brought in and television, with instructional material tailored to entry-level trainees, was developed and used almost exclusively to present knowledge and demonstration material. Instructor presentations of a given subject were taped, and these tapes were later transmitted to the training practice areas. Most of the television instruction successively presented small segments of demonstrations of medical techniques, and trainees performed practical work along with, or at the end of, each short TV demonstration.

The use of television as an instructional medium offered the following advantages:

(a) Effective use of instructor's time. The lecture and demonstration materials were taped using the best instructors available, and the tapes could be presented over and over again. This essentially released instructors from the job of preparing and presenting this material from day to day, and their time was more effectively devoted to assisting and correcting the practical work being performed by trainees.

(b) Standardization of instructional material. A constant goal in training is standardizing the coverage of instructional material, and the use of live instruction, with the differing abilities of instructor personnel, presents an almost insoluble problem. One remedy is to require the instructors to spend many hours in rehearsal and critique until all cover the same material equally well. However, not only is this a constant drain on the training center's most important resource—instructor time—but also an instructor frequently varies his coverage of the same material from presentation to presentation. Despite the instructors' efforts, there are always instances when one instructor will contradict another in the presentation of difficult material. The result often is a morale problem—trainees become frustrated, disinterested, and withdraw from the learning process. Standardization was accomplished by using the taped instructional material, since the tapes are not subject to the variations in material coverage that occur between instructors and by the same instructor at different times.

(c) Training in small groups. The instruction was transmitted to television receivers serving groups of 10 trainees each[1]. This allowed the TV demonstration to be heard and seen by all trainees.

(d) Use of exceptional instructors. Lessons presented by instructors who were considered outstanding in the presentation of a given subject and were able to make instructional material meaningful to trainees were put on tape. These presentations were then available to all trainees.

(e) Showing fine detail. Showing equipment or complicated technical skills involving small details is a problem because of the large number of trainees in the classroom and the limited instructional personnel and materials. By taping this material and presenting it over television receivers, all trainees could see and hear every detail.

(f) Varying means of presentation. A variety of presentation techniques not available in live presentations were available with the use of television tapes. Lectures were presented with appropriate segments of films to illustrate special points, as in the use of a short segment of film to illustrate lung function while discussing lung function. This is possible using TV tape, as there is no need to dim the lights or run through the complete film to arrive at the segment needed. Another variation in presenting material was the use of panel discussions of experts who would not ordinarily be available on a day-to-day basis for live presentations, but were made available to all trainees by taping their discussions.

(g) Constant demonstration source. Television tapes were produced of step-by-step demonstrations for applying medical techniques, and were presented several times while trainees performed practical work in certain techniques. If trainees missed a step while learning a technique, they saw it again when the demonstration was repeated over the television receiver.

(h) Individualized instruction. To some extent, TV used as a constant demonstration source made it possible to individualize instruction for trainees with various levels of learning ability in the same class. During the first TV presentation of a short instructional sequence, trainees with high ability could perform practical work satisfactorily and continue unaided to achieve a high level of performance. The slow-to-learn trainees observed the TV sequence but could not perform the practical work. The instructor could then assist the slower trainees while re-running the same demonstration sequence; the second TV run, along with individual attention, was usually sufficient to bring these trainees up to a satisfactory level of performance. In the meantime, the quick-to-learn continued practicing and reached even higher levels of proficiency.

(i) Knowledge of results. The most important means of improving trainee performance is to provide immediate knowledge of results during and upon completion of a performance by the trainee. This provides feedback on the correctness of the trainees' performance and the information necessary for improving it. The efficiency of the instructor is limited, however, when the performance involves a complicated series of steps and as the trainee/instructor ratio increases. An attempt was made in the experimental program to increase the knowledge of results to the trainee. This was done by using trainees as casualty-checkers and, in some instances, by providing trainees with a constant demonstration source through use of television tapes.

[1]Groups of up to 20 are equally appropriate.

DEVELOPMENT OF TRAINING MATERIALS

Lesson Plans. The lesson plans necessary for the presentation of the experimental program were produced with research staff guidance by teams of instructors from the three instructional branches at USAMTC—Military Science, Professional Science, and Nursing Science—and a committee from the BCT component at USAMTC that dealt with purely military subjects. The lesson plans were produced from the lesson outlines developed by the research staff from the systems engineering of the job of the Medical Corpsman.

Television Tapes. Using the Army mobile television production unit that was made available to USAMTC for producing television tapes from the lesson plans, teams of instructors from the various instructional branches worked with directors from the television unit to produce a total of 113 training tapes for the experimental program. These tapes are presently being used in the Medical Corpsman program at USAMTC.

DEVELOPMENT OF PROFICIENCY TESTS

To determine whether the experimental training system met the training objectives, and to compare the effectiveness of the men trained under the regular course with those who were experimentally trained, measures of proficiency were developed. USAMTC provided instructor personnel to develop a variety of proficiency tests under research staff supervision. The multiple tests were of both knowledge and performance type and dealt with the whole spectrum of training; several attitudinal questionnaires were also devised. These tests are described in the section on Results.

DEVELOPMENT OF TRAINEE LEADERS

A possibly advantageous aspect of the 16-week integrated program was the development of trainee leaders. It was considered desirable to have trainee leaders to assist instructors in the combined course and to give the trainee leaders practice in leadership positions. However, the use of Leadership Preparation Course graduates was not possible because this course is given after the conventional BCT, to prepare graduates for leadership positions while they are in AIT. As the combined program presented some AIT subjects during the first week of combined training, LPC graduates would probably have been required to repeat the entire sequence. If they had been phased into the training program for the last 10 weeks of the program, they would have missed many of their AIT subjects.

The decision was made to set up a program to develop trainee leaders. The integrated program allowed such a development to continue uninterrupted, under a single Platoon Sergeant, for the complete 16-week period. Selection and assignment of trainee leaders to experimental companies was made by the company cadre, on the basis of such qualities as appearance, ability to express themselves, previous military experience, physical condition, intelligence, and absence of marital or financial problems. These trainee leaders were retained throughout the program if they proved capable of handling the responsibilities assigned them.

The program developed for the training of trainee leaders allowed them progressively more and more of the responsibility for handling the day-to-day work of the company. The program was conducted as follows:

(1) Trainee leader candidates were selected by the Platoon Sergeant and his staff prior to the start of the training cycle. His recommendations were followed without exception.

(a) Selection was based on considerations related above.

(b) Leader candidates were thoroughly oriented as to what was expected of them and what they could expect from the unit.

(c) At the formal input orientation, the candidates were introduced by the Company Commander, and brassards with insignia of acting grades were presented.

(2) Trainee leaders were given increasingly higher levels of responsibility as the training cycle progressed. During the early weeks they were closely supervised and assisted by NCO cadre; however, as soon as practicable they were allowed to function with a minimum of supervision.

(a) During the first training week, trainee leaders were allowed to assist the Platoon Sergeant in supervising barracks cleanliness, area beautification (using their own initiative), and maintenance of research staff instruction tents.

(b) By the end of the second week, trainee leaders were allowed to perform these duties on their own and were held personally responsible for seeing that they were performed properly. They were also allowed to assist the Drill Instructor in conducting PT warm-up exercise training.

(c) In the third training week they were allowed to recommend disciplinary action for minor offenses and they were encouraged to assist trainees in solving personal problem. At this time, they were allowed to conduct PT warm-up exercises on their own.

(d) During the fourth and fifth weeks of training, the trainee leaders were not given any further responsibilities but were allowed to increase their efficiency and effectiveness in the areas already mentioned.

(e) In the sixth week, all trainee leaders were given passes on an "as requested" basis and allowed to keep civilian clothing. In the seventh week, trainee leaders were allowed to keep their passes in their possession.

(f) During the seventh week, trainee leaders were allowed to take complete charge of routine formations and activities. This included reveille, noon formations, police call, laundry pick-up, and maintenance of order during class breaks.

(g) During the eighth week, trainee leaders were not given any additional duties or responsibilities.

(h) At the end of the ninth week, trainee leaders were allowed to take complete charge of the class under the broad supervision of the Platoon Sergeant and his assistants. This involved all movement to and from mess halls, training areas, and classrooms. These duties were carried out for the remainder of the 16 weeks.

This program was not formally evaluated against the products of current training programs or by any current leadership tests, so formal conclusions are not possible. However, observations and opinions of company cadre and officers on the experimental trainee leader program pinpointed some possible advantages when training progressed over the entire 16 weeks: continuity of trainee leader-trainee relationship; continuity of cadre-trainee leader relationship; good acceptance and response by trainee leaders to a 16-week program where they are given progressively more responsibility; and high levels of responsibility, loyalty, and effectiveness reached by trainee leaders in the 16 weeks of on-the-job training.

Selection of trainee leaders by company cadre, with the trainees' knowledge that appointment and withdrawal of appointment rests entirely with the Company Commander and cadre, established a cadre-trainee relationship conducive to understanding and cooperation. In this connection, selection of trainees with potential leadership qualities is a responsibility welcomed by the cadre and one which the cadre believed they could perform well. If the integrated BCT/AIT

concept were implemented throughout the Army, such an on-the-job leadership program could be tied to the Leader Preparation Course. This would allow for the development of leadership potential and application of leadership skills on the job over a much longer period than is currently possible.

CONDUCT OF EVALUATION

POPULATION

All subjects were enlisted men who had been designated as Conscientious Objectors and assigned to Medical Corpsman training at USAMTC. Two classes ($\underline{N}$ = 80 per class) were assigned to the experimental training program and two classes to the conventional program. Due to time and personnel limitations in setting up the experimental training program (production of television training films, orienting instructor personnel, and so on), assignment to experimental and conventional classes was not random, but on an availability basis.

It was impossible in many instances to obtain samples of the same sizes on the various tests, because of reassignment and normal attrition. Also, the necessity for a ratio of one tester to one trainee made it impossible to administer all tests to all trainees. Samples of trainees from both groups were tested on as many tests as time and availability of testing personnel permitted. There were no known systematic factors operating in these variations in the number tested that would tend to bias the results.

Responses to a questionnaire administered shortly after the trainees' arrival at Fort Sam Houston indicated that the subjects assigned to each program were comparable with respect to age, education, marital status, and prior medical experience. Mean age of the experimental and control groups was 20 years. About 85% of both groups were high school graduates and about 50% were married. Seventy-nine trainees in the conventional program and 82 trainees in the experimental program either had worked in a hospital or had first-aid experience.

Army GT scores were obtained for 139 conventional trainees and 158 experimental trainees: mean GT scores were 105.7 for the conventional trainees, and 113.1 for the experimental trainees. These differences were statistically significant, but whether these differences were of any practical significance is not known. Such a difference would be expected to have more of an effect on verbal than on performance skills. Since there were few significant differences between the groups on verbal tests, this suggests that the difference in GT scores had little practical effect.

With research staff guidance, the Academic Standards Committee of USAMTC developed a basic anatomy and physiology test to serve as a training screening device. The purpose of this 100-point paper-and-pencil test was to determine the level of trainee knowledge with respect to basic anatomy and physiology prior to formal Medical Corpsman training. Mean score of the conventional trainees was 50.8 and of the experimental trainees, 51.6. No statistically significant difference was obtained between these groups.

PROCEDURE

Presentation of Instruction. The training of the control and experimental groups was conducted by regular instructors assigned by the various branches and the BCT component of USAMTC. No attempt was made to obtain instructors other than those who would normally be teaching a given subject. Preparation for instruction was supervised by selected USAMTC instructors, and instruction was monitored by research staff personnel.

Testing. Testing of both experimental and conventional groups was carried out by committee groups and the Academic Standards Branch of USAMTC during Fall 1967. The standard Army tests (Basic Combat Proficiency Test and Physical Combat Proficiency Test as modified for Conscientious Objectors) were administered by the appropriate committee group. Initially, in-cycle and end-of-cycle medical proficiency tests were administered by the Academic Standards Branch, the Military Science Branch, the Nursing Science Branch, and the Professional Science Branch. Later, a Testing and Evaluation Branch was formed at USAMTC from these other branches and assumed responsibility for all of the testing. All performance testing of medical subjects was on the basis of one tester to one trainee.

RESULTS

The large variety of written and performance tests administered to control and experimental subjects measured differences between the groups in basic military skills, physical skills, and medical skills. The detailed descriptions and results of these tests are presented in Appendix H. For the more general discussion in this section, actual frequencies and scores have been converted to percentages to permit direct comparison of results on the various measures.

BASIC MILITARY SKILLS

In the experimental program, in which training in basic military skills and in professional medical skills was integrated throughout the program, the combination of BCT with AIT made it possible to utilize or reorient many hours of regular BCT for training in MOS skills. This made it imperative to determine whether the utilization of BCT time in this manner would reduce trainee effectiveness in performing BCT skills.

The Standard Army Training Test: Individual Proficiency in Basic Military Subjects (7) was administered to samples of trainees in both programs. The results, as shown in Figure 2, indicated that there were no statistically significant differences between the two groups in terms of their knowledge of

Individual Proficiency Test in Basic Military Subjects

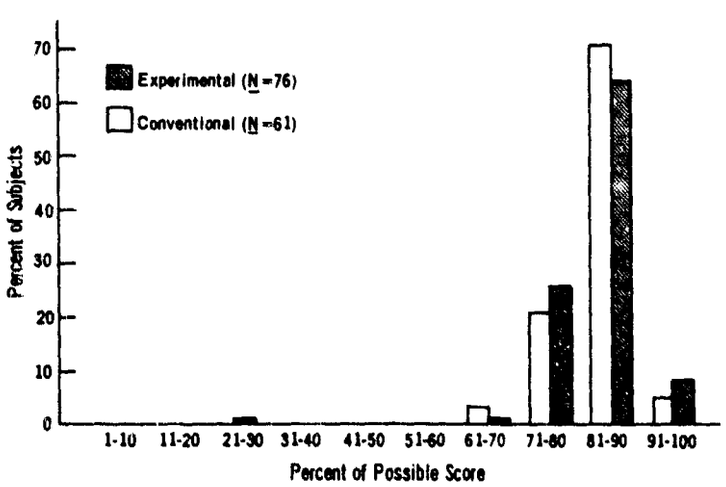


Figure 2

and ability to perform basic military skills, despite the reorientation of BCT subjects toward MOS skills and the use of BCT time for training in MOS skills.

PHYSICAL SKILLS

A large part of the training time normally devoted to physical training was utilized in the experimental program for MOS skills. Approximately 24 minutes of each physical training hour was devoted to warm-up drills and a one- to two-mile run. The remainder of the 50 minutes was devoted to evacuation skills required on the job. These skills included individual drags and carries and two-, three-, and four-man drags, carries, and litter drills.

Physical Combat Proficiency Test

This was the usual test (8) used by the Army to evaluate the trainees' physical condition, except that sit-ups were substituted for grenade throwing. The test was administered to the conventional trainees during their sixth week of BCT and tenth week of AIT, and to the experimental trainees during their sixth and 15th weeks of training (experimental trainees took the test in their 15th week because of scheduling problems in the 16th week).

The results of both tests, as presented in Figures 3 and 4, indicate that the conventional trainees were significantly better than the experimental trainees on both administrations. The relative difference between the two groups remained essentially the same throughout the training cycle. All conventional and experimental trainees, however, exceeded the minimum required score of 300 points on their second test (Figure 4).

Litter Obstacle Course Test

The physical skills necessary to perform job-related evacuation duties were tested on the Litter Obstacle Course test, which consisted of four-man teams negotiating a series of 14 obstacles requiring skill and physical stamina. The test was administered to trainees from the regular course and to experimental trainees during their last week of training. The results in terms of time required to progress through the course and skill in negotiating obstacles are presented in Figures 5 and 6.

The results indicate that the experimental trainees were significantly better than the conventional group in the use of physical skills required in evacuating casualties, and performed these skills in about half the time taken by conventional trainees.

PROFESSIONAL SCIENCE BRANCH SKILLS

Much of the time gained through the integration of BCT with AIT was devoted to improving the field medical skills necessary to the Medical Corpsman. Written and performance tests were developed and administered to groups of conventional and experimental trainees to test these skills.

Written Tests

The experimental program considerably reduced the amount of time spent on lectures and what was considered nonessential medical material. The written tests were designed to determine whether this reallocation of emphasis would decrease the amount of medical knowledge learned and retained by the experimental trainees.

Anatomy and Physiology Test. This was a paper-and-pencil test developed by the Academic Standards Group to measure trainees' basic knowledge of

Physical Combat Proficiency Test, First Administration

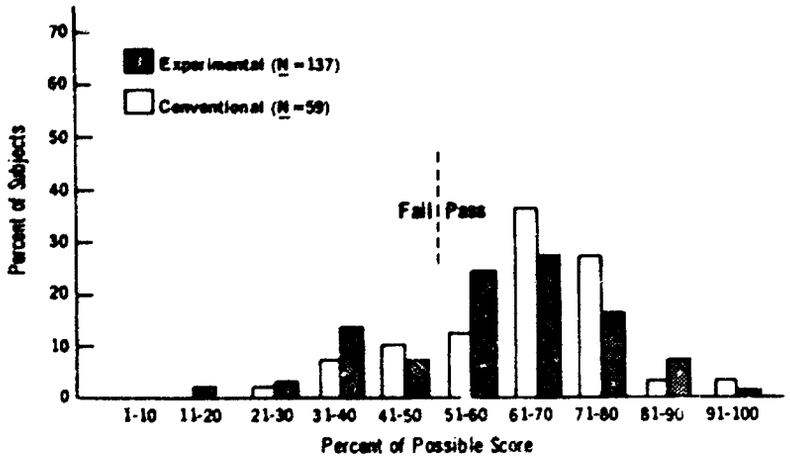


Figure 3

Physical Combat Proficiency Test, Second Administration

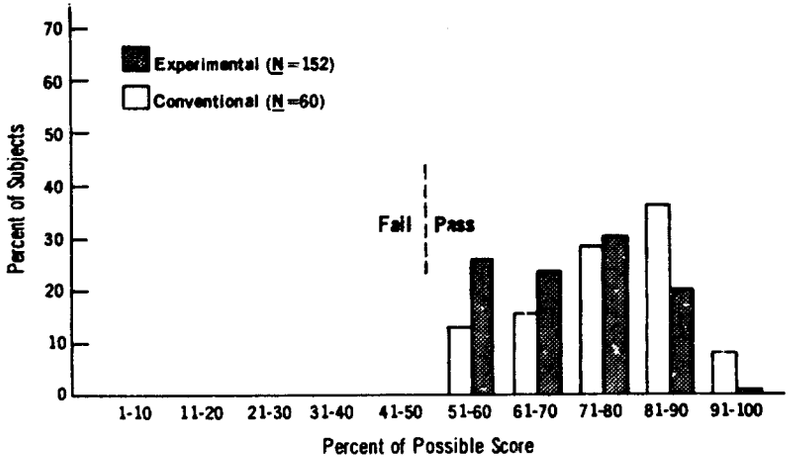


Figure 4

Litter Obstacle Course Test: Time

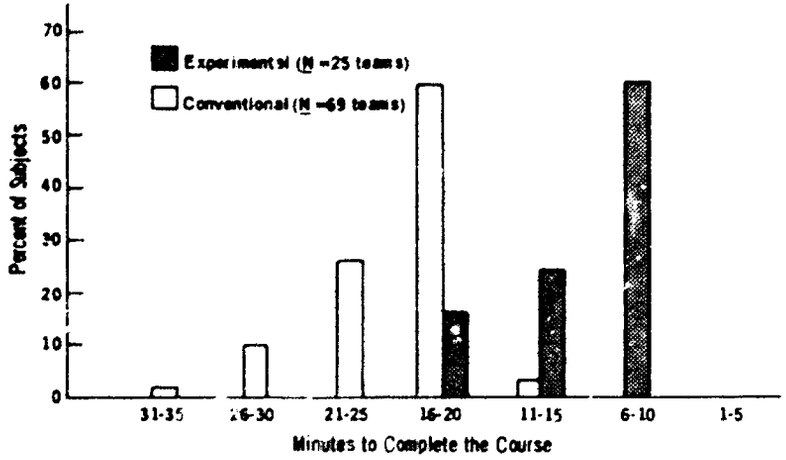


Figure 5

Litter Obstacle Course Test: Skill

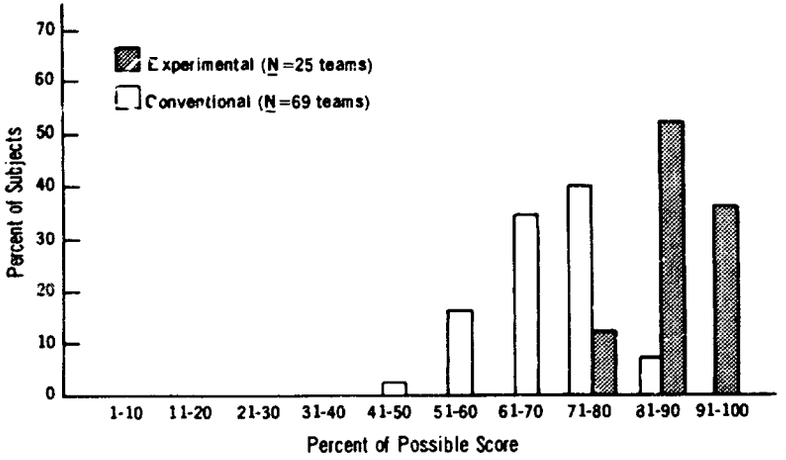


Figure 6

Anatomy and Physiology Test

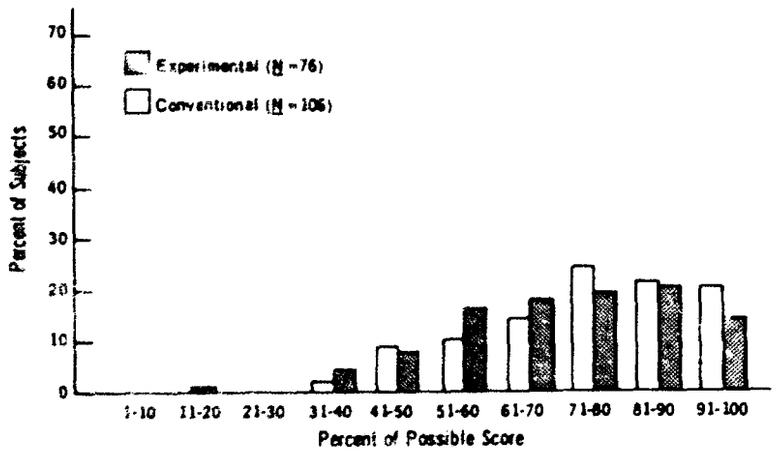


Figure 7

Anatomy Sketch Test

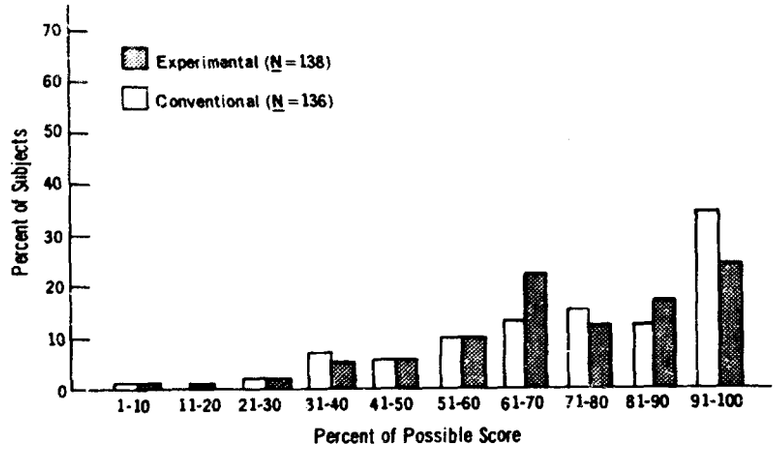


Figure 8

First Aid True-False Test

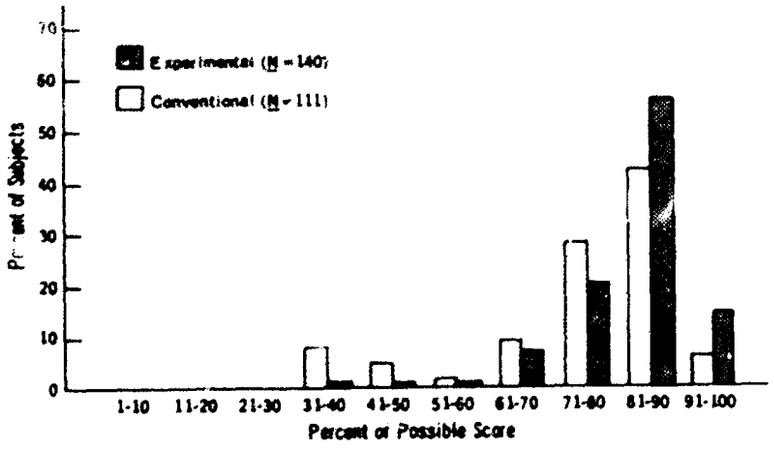


Figure 9

First Aid Multiple-Choice Test

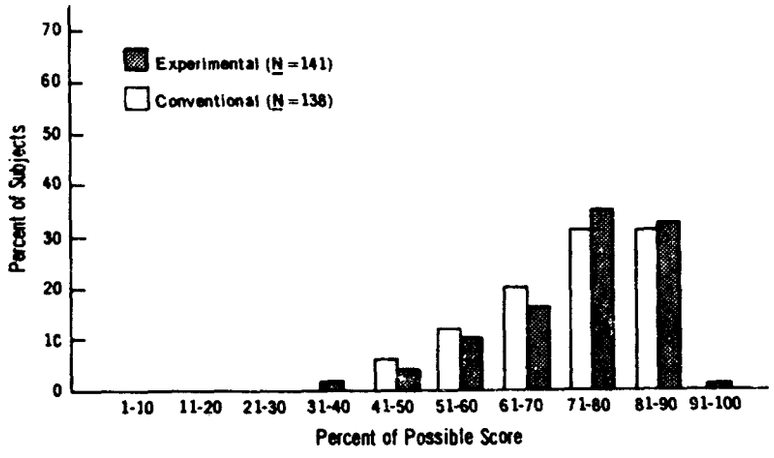


Figure 10

anatomy and physiology. Results of this test, given during the end-of-cycle hold-over, indicated no significant difference between the two groups. The results are presented in Figure 7.

Anatomy Sketch Test. This was a nine-item paper-and-pencil test developed by the research staff which required trainees to indicate the location of certain parts of the anatomy on prepared outline sketches. The results, presented in Figure 8, indicate that there were no significant differences between the two groups on this test.

First Aid True-False Test. This was a 39-item paper-and-pencil test prepared by the research staff from first aid items drawn randomly from USAMTC Academic Standards tests. The items selected were converted from a multiple-choice to a true-false format. The results, presented in Figure 9, show that the difference between the two groups was significant: The experimental group was superior to the conventional group on this test.

First Aid Multiple-Choice Test. This was a 61-item paper-and-pencil test developed by the research staff by drawing items from USAMTC Academic Standards tests at random. The results, presented in Figure 10, show that the difference between the conventional and experimental trainees was not significant. The results of this test, along with the first two in this section (Anatomy and Physiology, and Anatomy Sketch), show that there is little difference in the levels of the medical knowledge achieved by the trainees in both groups.

Evacuation Priority Test. This was a seven-item paper-and-pencil test developed by the Professional Science Branch as suggested by the research staff to measure the trainee's ability to assign evacuation priorities to casualties. Trainees were required to read casualty descriptions and assign an evacuation priority to each. The results are presented in Figure 11. The experimental trainees were significantly better than the conventional trainees in assigning evacuation priorities to casualties. (This result is especially important in view of the increased necessity for ability to assign evacuation priority in conjunction with helicopter evacuation.)

Test 1-H: Written. This test was developed jointly by the Professional Science Branch and research staff personnel. It consisted of fill-in questions

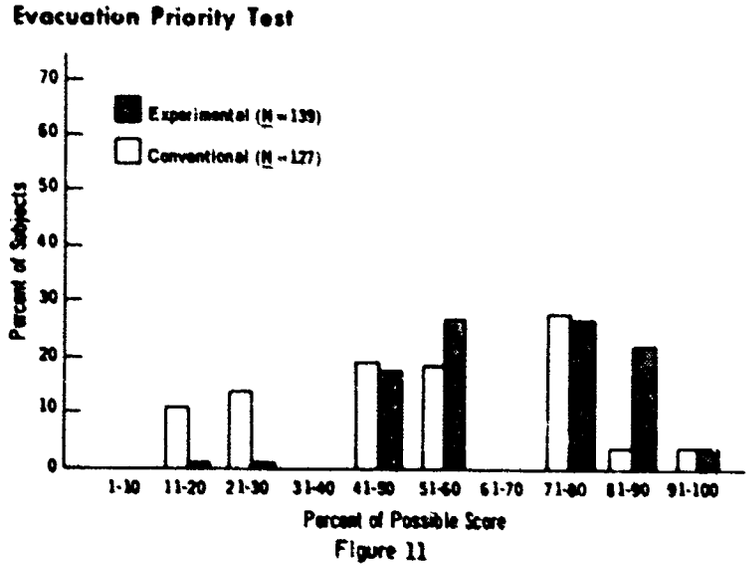


Figure 11

dealing with field casualty treatment. Results are presented in Figure 12. The difference between the groups was not statistically significant.

Performance Tests

The experimental program used much of the time that was saved or reoriented by the integration of BCT/AIT to improve the performance of trainees on field medical skills. Performance tests were developed to measure trainees' ability to carry out treatment of casualties on an individual basis. Casualties were simulated to represent a wide range of wounds and combinations of wounds, requiring a wide range of treatment techniques.

Test 1-H: Performance. This test was a representation of six casualty situations which the trainee was required to treat. Results are presented in Figure 13. The difference between the two groups was statistically significant,

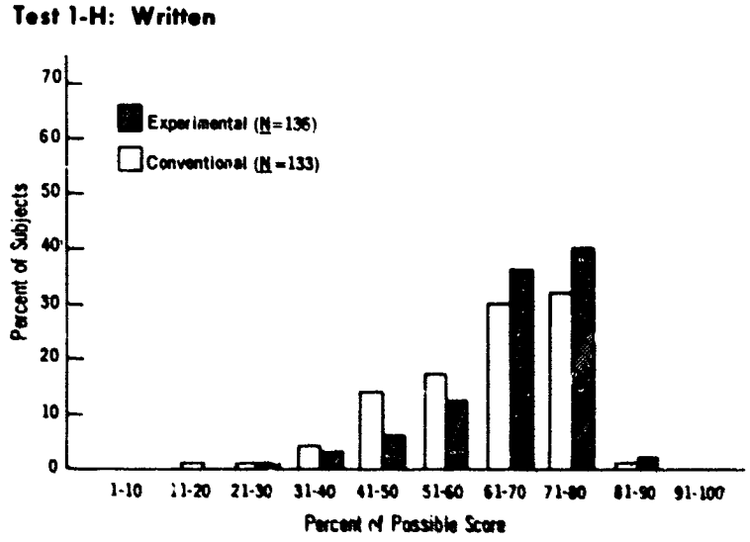


Figure 12

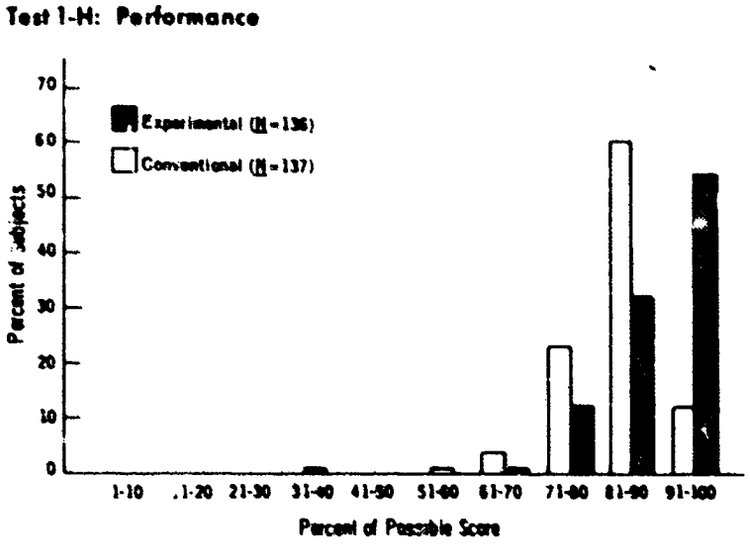


Figure 13

Test 1–8

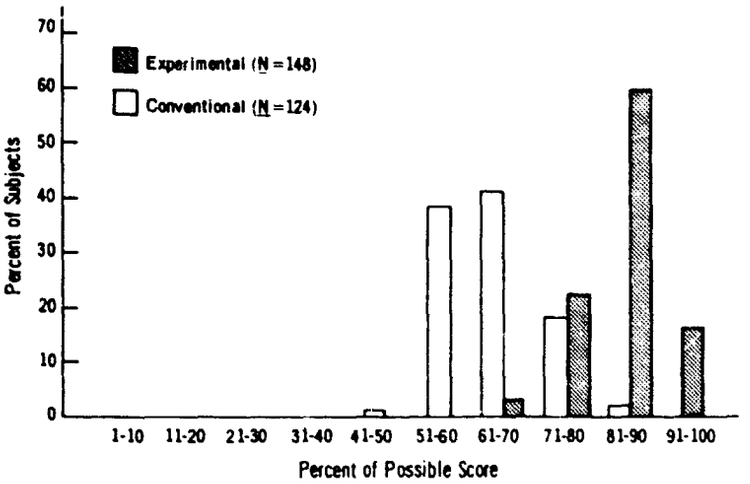


Figure 14

the performance of the experimental trainees being superior to that of the conventional trainees.

Test 1-8. This performance test developed by Professional Science Branch and research personnel contained eight casualty problems likely to occur in combat. Trainees were assigned four of these simulated casualties and required to treat them. Results are presented in Figure 14. The difference between the two groups was statistically significant, the performance of the experimental trainees being superior to that of the conventional trainees.

Field Medical Skills Test. This test, also prepared by Professional Science Branch with research staff guidance, consisted of 12 performance stations. Eleven of these stations dealt with complicated casualty problems, and the 12th with water purification. The results of these tests are combined in Figure 15. The differences in performance between the experimental and conventional

Field Medical Skills Test

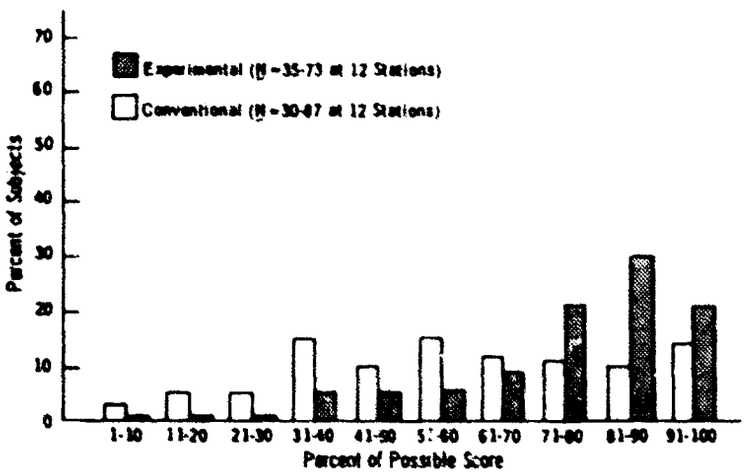


Figure 15

trainees were statistically significant on all tests; the performance of the experimental group was superior to that of the conventional group.

MILITARY SCIENCE BRANCH SKILLS

This test, a written and performance test prepared by the Military Science Branch with research staff guidance, covered the movement of casualties, tentage, improvised litters, and other items.

The written test portion was a paper-and-pencil test with 50 multiple-choice items. Results are presented in Figure 16. The differences were not statistically significant, indicating that the knowledge of these skills was essentially the same for both groups.

The performance section consisted of eight stations which required trainees to load casualties in helicopters and other vehicles for evacuation, improvise

Military Science Branch Written Test

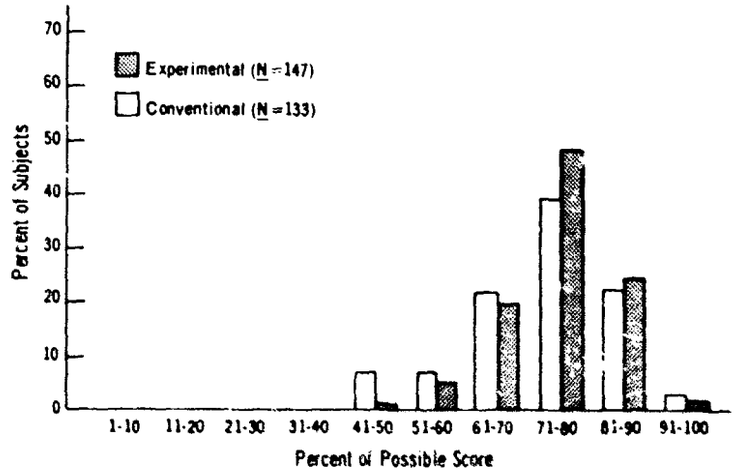


Figure 16

Military Science Branch Performance Test

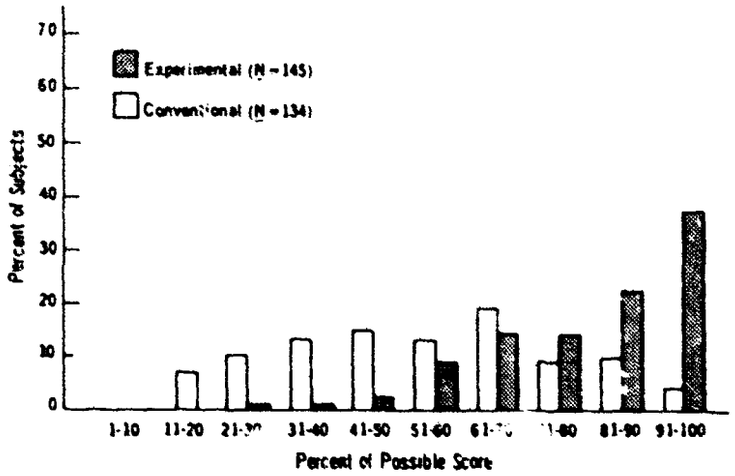


Figure 17

and dress litters, and use a variety of carries in evacuating casualties. Results are presented in Figure 17. The difference between the means of the two groups was statistically significant, the experimental trainees' performance being superior to that of the conventional trainees.

NURSING SCIENCE BRANCH TEST

This test, prepared by the Nursing Science Branch with research staff guidance, contained written and performance sections dealing with general nursing skills such as giving injections, applying sterile technique, and taking temperature and blood pressure.

The written section consisted of 50 multiple-choice items covering general nursing knowledge. Results are presented in Figure 18. The difference between the performance of the two groups was statistically significant, as the

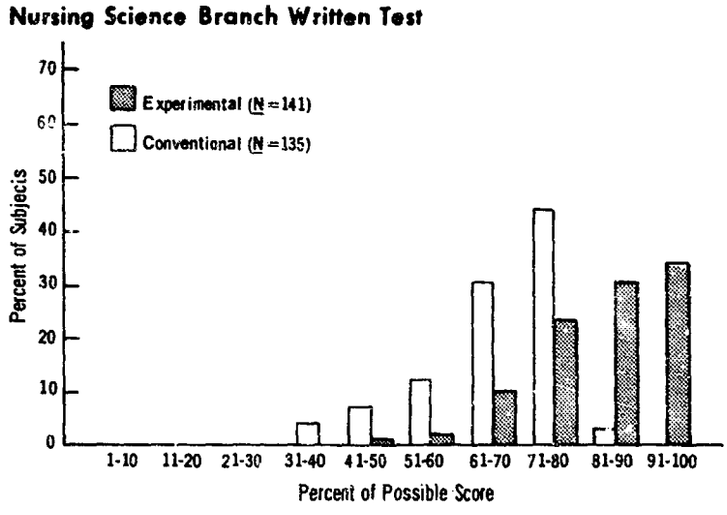


Figure 18

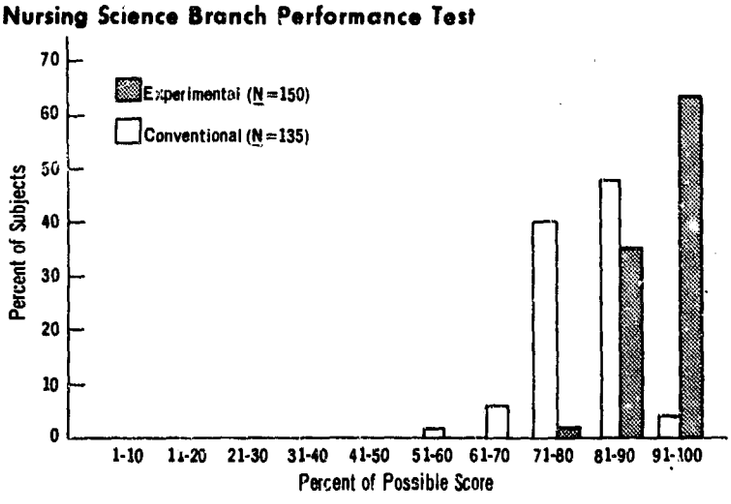


Figure 19

experimental trainees apparently learned and retained more knowledge about general nursing procedures and techniques than did the conventional trainees. This was unexpected, since the training time devoted to lectures was substantially reduced in the experimental program. The difference possibly may be due to the close integration of lecture material with practical work in the experimental program. Knowledge material was kept to the minimum necessary to perform a given medical technique and was presented immediately prior to the practical work in the technique.

The performance section consisted of 14 major stations which required the trainee to prepare injections; take temperatures, pulse, and respiration; complete records; set up sterile fields; and perform other tasks. Results are presented in Figure 19. The difference in performance between the two groups was statistically significant, the experimental trainees being superior to the conventional trainees in the performance of nursing techniques.

MOTIVATIONAL-ATTITUDINAL SURVEY

This questionnaire,[1] developed by the research staff to assess attitudes toward the Army, the medical training program, and other aspects, was administered to samples of trainees from both programs during their first week of BCT and again during the end-of-cycle holdover. Statistically significant differences were obtained (see Appendix H) between responses of subjects trained by the experimental and conventional programs in the following areas:

(1) Experimental subjects felt that Army training was better, more job-oriented, and more attentive to individual differences than did conventional subjects (questions 3.5, 3.6, 4.7, 4.21, 4.31).

(2) Experimental subjects felt more strongly identified with their platoons than did the conventional subjects (question 3.17).

(3) Experimental subjects felt that living conditions and food were better than did conventional subjects (questions 3.13d, 3.13e, 4.35).

(4) Experimental subjects had more respect for NCOs and officers, thought their leaders were more understanding, felt the Army did a better job of leading men, and thought that the Army's rules and conventions made more sense than did the conventional subjects (questions 3.9, 4.9, 4.17, 4.22, 4.24, 4.30).

INSTRUCTOR'S EVALUATION SURVEY

This 22-item questionnaire was developed by research staff personnel to obtain opinions comparing the conventional and experimental training programs. Instructors experienced with both programs compared the effectiveness of the programs in specific areas along a five-point rating scale. This questionnaire was administered to 29 instructor personnel during the last weeks of the program. (The results of the instructors' ratings on the questions asked are presented in Appendix F.)

Instructors rated the experimental program as much better or better than the conventional in all 22 areas concerned with proficiency in performing medical skills, sequence of presenting material, meaningfulness and realism of training, use of trainee and instructor time, correction of trainee errors, evaluation of trainee performance, and methods of instruction.

[1]Information on this type of questionnaire is discussed in a report on HumRRO Work Unit TRANSITION (9).

CONCLUSIONS AND IMPLICATIONS

DISCUSSION

In interpreting the results of the research, a summary of the orientation that governed the development of the experimental program is an appropriate starting point. Lecture-conference instruction was cut drastically and supplemented with instructional methods geared toward practical application. In turn, using improved instructional methods, field medical skills that are performed on the job without supervision were given preference in training time and trained to a higher proficiency level than skills that were likely to be performed under supervision. Also, time allocated to acquisition of military skills and physical development was job-oriented, where possible, with emphasis being placed on skill acquisition and improved instructional methods.

The results reflect this orientation. Results of all the performance tests indicated that the integrated program produced trainees who were superior to the regular trainees in the performance of their medical skills. They were also more physically fit to perform their medical jobs in combat, although regular trainees performed better on the Physical Combat Proficiency Test. There were no significant differences between the two groups in most of the written knowledge tests or in the general military skills tests. The significant difference in the knowledge tests occurred in nursing, where the experimental trainees were superior.

Responses to questions on attitude questionnaires indicated that experimentally trained personnel developed a significantly higher opinion of the Army than did the conventionally trained personnel. Instructors involved in both programs rated the experimental program as being much more effective than the regular program on a variety of training dimensions.

The results of the performance tests indicate that the experimental trainees perform better and more trainees reach higher levels of performance.[1] This means that the experimental training program produced trainees who were more alike in their ability to perform medical skills than did the conventional program.

One of the problems of any Army training program has been the heterogeneity of the training population. A standard training program attempts to produce a standard training product during a limited period of time with students of widely varying abilities. The effectiveness of a training program can be determined by the level of proficiency achieved by each student and the percent of students achieving the course standards. The performance graphs indicate that the experimental training program was much more effective than the conventional in reducing the variability in performance between trainees and improving the level of performance of all trainees.

The question may be asked, "How much of the increase in proficiency was due to the integration and how much was due to the curriculum engineering effort?" The integration and the curriculum engineering were necessary partners in making it possible to place emphasis on the more essential skills, apply more effective training methods, and develop a more effective program. It was obvious from the inception of the research that consolidation of the programs would make a considerable amount of time available for additional training; the curriculum engineering effort dealt essentially with how to use this time most effectively.

[1]The performance graphs presented in the results section provide information on the spread of scores on each test.

CONCLUSIONS

The results obtained in this study suggest that consideration should be given to implementing the following elements:

(1) Integrated MBT/AIT Programs for Conscientious Objectors for MOS 91A10 (Appendix I). This program, tested in this study, was further tested by USAMTC on another company of trainees.

(2) Advanced Individual Training Program for MOS 91A10 (Appendix J). As a result of the experimentation conducted by USAMTC and HumRRO on SUPPORT II, a revised AIT program for all trainees in MOS 91A10 was developed and submitted to USCONARC for consideration. Revision of the current Army Subject Schedule could be accomplished by USAMTC, with HumRRO assistance if desired.

(3) Modified Basic Training for Conscientious Objector Personnel (Appendix K). If implementation of integrated MBT/AIT programs for Conscientious Objectors is not feasible, an alternative would be adaptation of the revised MBT program for COs developed in this study.

Lesson outlines for the above course elements, corresponding to Army Subject Schedules, have been published separately (5). Lesson Plans supporting these Lesson Outlines are available at USAMTC and HumRRO Division No. 3.[1]

IMPLICATIONS

As the modified BCT/AIT integration and curriculum engineering accomplished through the joint efforts of USAMTC and HumRRO resulted in substantial gains in trainee effectiveness, it is reasonable to believe that comparable gains would accrue in other BCT/AIT programs from similar integration and curriculum engineering treatment.

Whatever problems and difficulties might be involved in such an integration, it is evident that the integrated concept has considerable potential for other Army Training Programs. Some major changes would be necessary in the Army training and classification systems before such a concept could be implemented, but cause of the potential benefits, further consideration should be given to this ncept through additional study involving a heavy-density combat arms MOS.

The training methods tested in this program also could result in substantial improvement in other Army Training Programs. The TV techniques developed and tested in this research can be extended not only to all training centers but to service schools and other agencies and units with instructional missions by cabling TV instruction to practical work areas, tailoring the TV presentation specifically to the needs of the user group, and interspersing small segments of demonstration and explanation with practical work.

The functional context approach employed in the experimental program has considerable applicability to other Army courses of instruction. This concept, along with the systems engineering approach advocated in CON Reg. 350-100-1, could result in substantial improvements in the effectiveness of all Army Courses.

[1]Much of the experimental MOS 91A10 program has already been implemented at the U.S. Army Medical Training Center. All HumRRO materials and techniques not requiring changes to the Army Subject Schedules, have been incorporated in the current AIT program. USAMTC assigned selected instructors for duty with HumRRO; these instructors then returned to teaching branches of the Training Division to further develop and implement the HumRRO techniques in the current AIT program. Of the approximately 120 video tapes produced by HumRRO in coordination with USAMTC, 60% were used as produced; the other 40% were revised subsequently at USAMTC following techniques acquired during HumRRO development. Field training exercises and proficiency testing procedures developed for the HumRRO program have been implemented and are in current use at USAMTC.

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AND
APPENDICES

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Appendix A

COPY OF LETTER FROM HEADQUARTERS, USCONARC

HEADQUARTERS
UNITED STATES CONTINENTAL ARMY COMMAND
FORT MONROE, VIRGINIA

ATIT-SCH-TRD-TR 26 Nov 1965

SUBJECT: Requirement for HumRRO Research

TO: Chief of Research and Development
Department of the Army
Washington, D.C. 20310

1. It is believed that increases in proficiency, and eventually reductions in training time, might result from an integration of Basic Combat and Advanced Individual Training into a unified sequence based on functional context principles. However, the procedures used in assigning trainees preclude the application of this concept on a broad scale in combat arms training. A test of this concept in a training program which is free of the problems of assignment will provide data upon which to base a recommendation to change administrative procedures so that the concept may be more fully utilized.

2. Accordingly, it is requested that HumRRO initiate a study to determine experimentally the effect of a unified BCT-AIT sequence for the Conscientious Objector Basic Training - MOS 91A10 sequence - at Fort Sam Houston, Texas. The following additional guidance is provided:

a. Tests and other measures used in the research should reflect the objectives of both basic and advanced training.

b. Emphasis should be placed upon increasing proficiency rather than reducing training time.

FOR THE COMMANDER:

W.K. STAMEY
Captain, AGC
Asst Adj Gen

Appendix B

EXTRACT FROM ARMY SUBJECT SCHEDULE 8-910, MOS TECHNICAL TRAINING OF MEDICAL CORPSMEN MOS 91A

Section II. ADVANCED INDIVIDUAL TRAINING

6. Master Schedule. *a. Peacetime.*

Subject	Week									
	1	2	3	4	5	6	7	8	9	10
Commander's time	6	4	4	5	2	4	5	6	2	2
Administrative time	2	---	---	---	---	---	---	---	4	8
Character guidance	1	---	---	---	---	---	1	---	---	---
Command Information	---	1	---	---	1	1	---	---	1	---
Counterinsurgency	---	---	---	---	1	---	---	---	---	---
[1]Drills and ceremonies	2	2	2	2	2	2	2	2	2	---
Graduation exercises	---	---	---	---	---	---	---	---	---	2
Inspections	1	1	1	1	1	1	1	1	1	1
Map reading	---	---	---	---	---	---	---	---	---	2
[1]Physical training	2	3	3	3	1	3	2	3	3	4
Commander's orientation	1	---	---	---	---	---	---	---	---	---
Military courtesy	1	---	---	---	---	---	---	---	---	---
Program orientation	2	---	---	---	---	---	---	---	---	---
Preventive dentistry	1	---	---	---	---	---	---	---	---	---
Interpersonal relations	---	---	---	---	1	---	---	---	---	---
Medical intelligence	---	---	1	---	---	---	---	---	---	---
Medical service tentage	2	3	2	---	---	---	---	---	---	---
Introduction to organization and functions of AMEDS	1	1	---	3	---	---	---	---	---	---
Basic anatomy and physiology	11	6	---	---	---	---	---	---	---	---
Military sanitation and prevention of disease	---	---	1	3	---	2	2	2	---	2
Basic emergency medical treatment	---	8	14	12	16	6	1	---	---	1
Field exercise	---	---	---	---	---	---	---	---	14	---
Individual medical records	---	---	2	---	---	---	---	---	---	---
Common drugs and their uses	---	---	---	---	---	3	2	2	2	---
Care of supplies and equipment	---	---	---	---	1	---	---	---	---	---
Transportation of the sick and wounded	---	2	2	7	2	2	3	---	---	---
Medical symptomatology	---	---	---	---	---	---	---	1	3	8
Field surgery	---	---	---	---	---	1	10	6	---	---
Combat psychiatry	---	---	---	---	---	---	---	2	---	---
[2]Basic nursing procedures	11	11	12	6	16	14	15	15	14	10
[3]Examinations, critiques and proficiency tests	---	2	---	2	---	5	---	4	---	2
Total	44	44	44	44	44	44	44	44	[3]46	[3]42

[1]A total of 9 hours of drills and ceremonies and 7 hours of physical training, which are in addition to those listed under general subjects (para 7*d* and *h*), have been included under technical training (para 8*r* and *u*).

[2]Twenty-four hours in this series have been devoted to proficiency testing in basic nursing procedures (see para 8*r*(20), (21), and (36)).

[3]Two-hour overage and shortage due to continuation of fourteen-hour field problem.

Appendix C

EXTRACT FROM ARMY TRAINING PROGRAM 21-111, MODIFIED BASIC TRAINING PROGRAM FOR CONSCIENTIOUS OBJECTORS (1-A-0) WIT' 'UT PRIOR SERVICE

Section II. MASTER SCHEDULE

15. Basic Training Phase.

Subject schedule or other training literature*	Instruction presented	Hours
	a.[10] *Troop information and indoctrination.*	
21–39; FM 21–13	(1) Achievements and traditions.[1]	4
21–14 - - - - - - -	(2) Military courtesy and customs.**	3
DA Pam 16–5, DA Pam 16–7, DA Pam 16–8, AR 600–30.	(3) Character guidance - - -	4
21–15; DA Poster 21–100, DA Poster 21–100–1 through 6; FM 21–13, FM 21–77, FM 27–10.	(4) Code of Conduct and Geneva Convention.	2
21–10; Manual for Courts Martial.	(5) Military Justice - - - - -	3
AR 360–81 - - - -	(6) Troop information - - - -	1
	b. General military subjects.	
21–2 - - - - - - - -	(1) Drill and ceremonies - -	24
21–3, 21–11; FM's 21–10, FM 21–13.	(2) Field sanitation and personal hygiene.	2
21–19- - - - - - -	(2) Field fortifications - - -	4
TC 21–( ) (when published); FM 21–75.	(3) Infiltration course - - -	3
21–20 - - - - - - -	(4) Individual tactical training.	11
21–22	(5) Marches and bivouacs -	24
	e. Commander's time - - - - - -	20
ATT 21–2- - - - -	*f. Proficiency testing* - - - - -	6
	g. Administrative processing -	23
	Total hours - - - - - - -	364
21–2 - - - - - - - -	*h. Drill and ceremonies* (increase from 24 to 27 hrs.).[4]	27
21–7; FM 30–5- -	*i. Intelligence training* (increase from 10 to 12 hrs.).[4]	12
21–37- - - - - - - -	*j. Physical training* (increase from 27 to 30 hrs.).[4]	30
21–4; TB MED 246; FM 21–11; TM 8–230.	(3) First aid- - - - - - - - - -	8
FM 21–6; FM 101–31–1, FM 101–31–2; FM 101–31–3; FM 3–12.	(4) CBR (Individual Protective Measures).	4
21–17- - - - - - - -	(5) Inspections[2] - - - - - - -	20
21–5 - - - - - - - -	(6) Guard duty - - - - - - - -	4
21–7 - - - - - - - -	(7) Intelligence training - -	10
21–37- - - - - - - -	(8) Physical training - - - -	27
31–1 - - - - - - - -	(9) Orientation in counter-insurgency opns.	1
21–21- - - - - - - -	(10) Land navigation - - - - -	22
21–13- - - - - - - -	(11) Signal communications	12
21–150; FM 21–150.	(12) Unarmed defense (hand-to-hand combat).[3]	8
33–1 - - - - - - - -	(13) Psychological warfare -	2
21–8; Unit SOP -	(14) Care and maintenance of supplies, equipment, barracks and area.	8
	c. Tactical training.	
33–11- - - - - - - -	(1) Anti-infiltration and anti-guerrilla warfare training.	4 1
21–150; FM 21–150.	*k. Unarmed defense (hand-to-hand combat)* (increase from 8 to 10 hrs.).[4]	10
	l. Commander's time (increase from 20 to 30 hrs.).[4]	30
	Total hours during mobilization.	284

*Subject schedule numbers should be inserted as they are published.

**Subjects so marked will be integrated daily.

[1] Formal training; also integrated throughout all tactical training by the use of combat examples.

[2] Training evaluation has been added to inspection time to provide weekly progress checks. A "county-fair" system in which each man is required individually to demonstrate his proficiency in the week's training should be utilized.

[3] Unarmed defense is optional training. If the trainee chooses not to take this instruction the time allotted for this training will be added to his physical training (pars. 15*h*(8) and 15*l*).

[4] Subjects added or increased during mobilization.

Appendix D

MOS 91A TRAINING OBSERVATION SHEET

Date:_____

Place:_____

Observer:_____

1. Subject:_____
2. Period:_____ Total Time:_____
3. Instructor(s):_____

   Comments:_____
4. Assistant Instructor(s):_____

   Comments:_____
5. Trainees (Number):_____ Student/Instructor Ratio:_____
6. Facilities:

   a. Instructor Equipment:_____

   _____

   b. Student Equipment:_____
7. Conduct of the Instruction:_____

   a. Lecture:_____ Comments:_____

   _____

   b. Demonstration:_____ Comments:_____

   _____

   c. Practical work:

      (1) Time allotted to group of trainees:_____

      Comments:_____

      _____

      (2) Time allotted to each trainee:_____

      Comments:_____

      (3) How many times did a given trainee actually practice the skills and knowledges covered?_____ Comments:_____

      _____

      (4) Amount of supervision per trainee:_____

      _____

(5) Good points:_____

_____

(6) Comments:_____

_____

d. Critique of trainee's performance:

(1) How was the critique handled (individual, group, continuous) ?_____

_____

(2) Good points:_____

_____

(3) Comments:_____

_____

e. Testing of individual performance:

(1) What sort of test was given?_____

(2) Good points:_____

(3) Comments:_____

f. Motivation: High_____Moderate_____ Poor_____

(1) What means were used to maintain trainee motivation?_____

_____

(2) Good points:_____

(3) Comments:_____

g. Realism in training:

(1) Good points:_____

(2) Comments:_____

h. Comments on instructor:_____

_____

i. Combining BCT/AIT suggestions:_____

_____

j. Content of subject (Instructor's view): Must know:_____

Nice to know:_____

(1) List of skills:_____

(2) List of knowledges:_____

(3) Superfluous material:_____

(4) Material that should be added:_____

Appendix E

MOS 91A INSTRUCTOR INTERVIEW SHEET

Date:_____

Place:_____

Observer:_____

1. Subject:_____
2. Background information:
   a. Length of service:_____
   b. Combat time:_____
   c. Combat assignment:_____
   d. Instructor experience:
      (1) What instructor training have you received here:_____
      _____ Elsewhere?_____
      (2) Apprenticeship here:_____
      Elsewhere?_____
      (3) Instructor experience here:_____
      Elsewhere?_____
      (4) Present instructor duties:_____
      (What part of what subject do you teach?)
      _____
      (5) In all instructor experience, what is the average length of actual instructor time per each assignment?_____
      _____
3. How would you improve the training in your subject?_____
   _____
4. How would you improve other parts of MOS 91A Training?_____
   _____
5. When you were assigned to teach your present subject, what materials were you given to teach from?_____
   _____
6. Did you write your own lesson plans or were these supplied from other sources?_____
   If you used sources other than those supplied, what were they?_____
   _____

7. When you are given lesson plans, do you usually consult the references listed, appropriate A Subj Scds, FM's, and Training Center guidance to obtain background materials, or do you rely on your own military experience to obtain these source materials? _____

_____

8. Would you prefer to teach from:
   a. An instructor's guide from which you could make your own lesson plans? _____ Why? _____
   b. Lesson plans in outline form? _____ Why? _____
   c. Complete lesson plans that could be read to trainees, if necessary?

      _____ Why? _____
   d. Other (specify) _____

9. How much time do you spend, on the average, in preparing to teach your assigned course? _____

10. How is this preparation time broken down? _____

_____

11. Are you responsible for the lecture, demonstration, and practical work in your subject? _____ If not, how is this responsibility divided? _____

_____

12. How much time is spent on the lecture-demonstration phase of your subject?

_____

13. How much time is spent on practical work? _____

14. How do you evaluate trainee performance in your subject? _____

_____

15. If you do not conduct this evaluation, who does? _____

_____

16. In your subject, what skills and knowledges do trainees find difficult to learn? _____

Why? _____

17. In your subject, what skills and knowledges do trainees find easy to learn? _____

Why? _____

_____

18. Are there any parts of your course that could be omitted because of adequate previous training? _____

Give examples: _____

_____

19. Are the facilities available for conducting training in your subject adequate? _____ (Explain, if not): _____

_____

Facilities: _____ Equipment: _____ Personnel: _____

20. Is there any loss of training time in your subject due to inadequate facilities? _____

If so, specify: _____

21. How much of the training time in your subject is spent on concurrent training? _____

22. Is the time spent on concurrent training related to your subject (specify training in both cases)? _____

_____

Appendix F

JOB ACTIVITIES QUESTIONNAIRE

Section 1—Field Category

In this booklet we have listed activities performed by medical soldiers in field units. They are divided into five (5) sections or sets. We would like you to help us by selecting from this list the job activities performed by individuals having specific jobs in your unit (litter bearer, company aid man, etc.). It is important that you indicate how the activity is actually done in your unit and not how it might be done or how you wish it were done.

Now, look at your answer sheet [p. 48]. Be sure that you fill in all identification information asked for before beginning this questionnaire. In the box to the left, under the heading "Job or Duty Position," is the specific job for which you have been asked to select specific job activities.

You will notice that at the top of each column there is a page number. These page numbers correspond with the pages in your booklet. For each activity we would like you to do the following:

(1) First, indicate whether this activity is actually performed by the person having this duty in your unit. If this duty is actually done, circle the "Y" for yes under the word "DOES"; if this duty is not done, circle the "N" for no.

(2) How much supervision does this person need in doing this activity? If he does the activity listed primarily on his own without quickly available supervision or guidance, circle the "Y" under the word "RESPONSIBLE"; if he needs supervision or guidance easily available, circle the "N."

(3) Finally, for each activity that this person actually does, indicate whether he must be able to do it when he is first assigned to this duty position. If he must know how to do this activity when first assigned, circle the "Y" under the word "KNOWS"; if he does not need to know how to do this activity when first assigned, circle the "N."

PAGE 1

Set 1

1.1 Checks casualty to determine type and priority of emergency life-saving steps to be taken.

1.2 Clears airway of casualty having wounds that obstruct breathing and of casualty with difficult breathing.

1.3 Administers artificial respiration and external cardiac massage.

1.4 Positions casualty to assist breathing and maintain airway.

1.5 Uses special devices to maintain airway—tongue traction, air channels.

1.6 Applies pressure dressings to control external hemorrhage.

1.7 Elevates injured part to assist in controlling hemorrhage.

1.8 Applies digital pressure as temporary control of arterial bleeding.

1.9 Applies tourniquets to control external hemorrhage.

1.10 Immobilizes limbs with massive wounds in order to reduce hemorrhage.

1.11 Protects wounds by applying dry sterile dressings.

1.12 Applies airtight pressure dressing to sucking chest wounds.

1.13 Covers area of burns with dry sterile dressings.

1.14 Secures sterile dressings by applying triangular bandage.

1.15 Secures sterile dressings by applying cravat bandage.

1.16 Secures sterile dressings by applying roller bandages.

1.17 Secures sterile dressings by applying tailed bandages.

1.18 Secures sterile dressings by applying tubular gauze bandages.

- -

PAGE 2

Set 2

2.1 Applies wire ladder splint to suspected fracture.

2.2 Applies wire fabric splint to suspected fracture.

2.3 Improvises high collar to immobilize suspected neck fracture.

2.4 Applies basswood splints to suspected fractures.

2.5 Applies Army leg splint to suspected fractures.

2.6 Immobilizes fractures by binding fractured part to uninjured parts.

2.7 Improvises splints as necessary from boards, sticks, weapons, etc.

2.8 Supports and immobilizes injured parts by applying triangular bandage.

2.9 Supports and immobilizes injured parts by applying cravat bandage.

2.10 Supports and immobilizes injured parts by applying roller bandages.

2.11 Supports and immobilizes injured parts by applying adhesive tape.

Set 2 (continued)

2.12 Treats for shock and dehydration by administering fluids orally.

2.13 Treats for shock and dehydration by intravenous dextran or other similar blood volume expanders.

2.14 Treats for pain by administering APC or aspirin.

2.15 Examines for contraindications to use of intramuscular morphine.

2.16 Treats for pain by morphine syrette administration of morphine, intramuscularly.

2.17 Administers treatment for casualties of chemical agents: tear, vomiting, blister, blood, choking, and nerve agents.

2.18 Treats victim of white phosphorus by removing particles and treating burn.

Set 3

3.1 Gives emergency treatment to victims of venomous snake bites.

3.2 Gives emergency treatment to victims of animal bites.

3.3 Gives emergency treatment to victims of insect bites or stings.

3.4 Gives emergency treatment to victims of human bites.

3.5 Gives emergency treatment to victims of cold injuries.

3.6 Gives emergency treatment to victims of heat injuries.

PAGE 3

3.7 Gives emergency treatment to victims of fainting or loss of consciousness.

3.8 Gives emergency treatment to victim of swallowed poison.

3.9 Gives emergency treatment to victim of eye injury.

3.10 Gives emergency treatment to victim of foreign object in the ear.

3.11 Gives emergency treatment to victim of foreign object in the nose.

3.12 Prepares a litter for transportation of a casualty.

3.13 Moves casualty to litter, positions and secures him for evacuation.

3.14 Assigns priority for treatment and/or evacuation.

3.15 Initiates and/or makes entries on patient's Field Medical Card.

3.16 Uses drags or other one-man carries as emergency means of moving casualties.

3.17 Uses various two-man hand carries as emergency means of moving casualties.

3.18 Assists in carrying casualties on litter.

Set 4

4.1 Loads, secures in place, and unloads litters using 1/4 ton ambulance, 3/4 ton ambulance, and helicopter.

4.2 Drives and performs operator maintenance on 1/4 ton ambulance and 3/4 ton ambulance.

4.3 Converts standard military vehicles into casualty carriers and uses them.

4.4 Constructs and employs improvised raft to transport casualties over water.

4.5 Receives sick call patients and takes and records initial complaints, signs, and symptoms.

4.6 Disinfects and sterilizes medical instruments and equipment and assembles equipment required for specific treatment procedures.

4.7 Administers antibiotics and tetanus toxoid to casualties.

4.8 Assists medical officer in doing debridement of wounds.

4.9 Maintains medical records on sick call patients.

4.10 Screens out sick call patients with minor ailments and administers medication or treatment for these conditions.

4.11 Supervises or assists in pitching and striking tentage in field medical facilities.

4.12 Assembles and operates tent stove (M194) as required with different fuels.

4.13 Cares for tentage to avoid mildew and performs repairs with canvas repair kit.

4.14 Makes sanitary inspection of food, food service, and food handlers.

4.15 Inspects or supervises water handling and purification.

4.16 Advises or assists in supervising establishment, maintenance and closing of field facilities for garbage and kitchen waste disposal.

4.17 Advises or assists in supervising establishment, maintenance and closing of field facilities for human waste disposal.

4.18 Advises or assists in supervising use of insecticides for control of disease-bearing insects.

Set 5

5.1 Reads and utilizes information appearing on a map.

5.2 Uses the compass and natural aids to determine direction.

5.3 Reads and utilizes information appearing on aerial photographs and photomaps.

Set 5 (continued)

5.4 Lays communications field wire.

5.5 Splices telephone wire.

5.6 Installs field telephone switchboard (S-22/PT) in field medical facilities as required.

5.7 Makes calls on telephones and operates switchboard.

5.8 Writes messages on standard message form.

5.9 Prepares AN/PRC6 radio for operation, operates it, and performs preventive maintenance on it in accordance with standard procedures.

5.10 Prepares AN/PRC-10 radio for operation, operates it, and performs preventive maintenance on it in accordance with standard procedures.

5.11 Sends, receives, and relays messages by voice radio AN/PRC-6 and AN/PRC-10.

Section 1a Answer Sheet

JOB OR DUTY POSITION

ANSWER SHEET

NAME_____
Last First Middle

ASN_____ Date_____

PAGE 1

	DOES		RESPONSIBLE		KNOWS	
1.1	Y	N	Y	N	Y	N
1.2	Y	N	Y	N	Y	N
1.3	Y	N	Y	N	Y	N
1.4	Y	N	Y	N	Y	N
1.5	Y	N	Y	N	Y	N
1.6	Y	N	Y	N	Y	N
1.7	Y	N	Y	N	Y	N
1.8	Y	N	Y	N	Y	N
1.9	Y	N	Y	N	Y	N
1.10	Y	N	Y	N	Y	N
1.11	Y	N	Y	N	Y	N
1.12	Y	N	Y	N	Y	N
1.13	Y	N	Y	N	Y	N
1.14	Y	N	Y	N	Y	N
1.15	Y	N	Y	N	Y	N

PAGE 2

	DOES		RESPONSIBLE		KNOWS	
2.1	Y	N	Y	N	Y	N
2.	Y	N	Y	N	Y	N
2.3	Y	N	Y	N	Y	N
2.4	Y	N	Y	N	Y	N
2.5	Y	N	Y	N	Y	N
2.6	Y	N	Y	N	Y	N
2.7	Y	N	Y	N	Y	N
2.8	Y	N	Y	N	Y	N
2.9	Y	N	Y	N	Y	N
2.10	Y	N	Y	N	Y	N
2.11	Y	N	Y	N	Y	N
2.12	Y	N	Y	N	Y	N
2.13	Y	N	Y	N	Y	N
2.14	Y	N	Y	N	Y	N
2.15	Y	N	Y	N	Y	N
2.16	Y	N	Y	N	Y	N
2.17	Y	N	Y	N	Y	N
2.18	Y	N	Y	N	Y	N
3.1	Y	N	Y	N	Y	N

Section 2—Hospital Category

In this booklet we have listed activities performed by medical soldiers in military hospitals. They are divided into eight (8) sections or sets. We would like you to help us by selecting from this list the job activities performed by individuals having specific jobs in your ward (ward attendant, ward specialist, etc.). It is important that you indicate how the activity is actually done in your ward and not how it might be done or how you wish it were done.

Now, look at your answer sheet. Be sure that you fill in all identification information asked for before beginning this questionnaire. In the box to the left, under the heading "Job or Duty Position," is the specific job for which you have been asked to select specific job activities.

You will notice that at the top of each column there is a page number. These page numbers correspond with the pages in your booklet. For each activity we would like you to do the following:

(1) First, indicate whether this activity is actually performed by the person having this duty in your ward. If this duty is actually done, circle the "Y" for yes under the word "DOES"; if this duty is not done, circle the "N" for no.

(2) How much supervision does this person need in doing this activity? If he does the activity listed primarily on his own without quickly available supervision or guidance, circle the "Y" under the word "RESPONSIBLE"; if he needs supervision or guidance easily available, circle the "N."

(3) Finally, for each activity that this person actually does indicate whether he must be able to do it when he is first assigned to this duty position. If he must know how to do this activity when first assigned, circle the "Y" under the word "KNOWS"; if he does not need to know how to do this activity when first assigned, circle the "N."

PAGE 1

Set 6

6.1 Lifts, moves, and adjusts position of bed patients (helpless and semi-helpless).

6.2 Administers or assists patients with baths and mouth care and observes and reports on condition of bed-patient's skin.

6.3 Provides bedpan and urinal for bed-patients and observes and reports characteristics of patient's urine and feces.

6.4 Cleans and sterilizes bedpan and urinal after each use.

6.5 Observes and reports characteristics of vomited material and sputum.

6.6 Changes and straightens linens on occupied beds.

6.7 Cleans and re-supplies patient's units.

6.8 Does ward care and cleaning duties as assigned on ward detail roster.

6.9 Prepares bed patients for meals and assists helpless patients.

6.10 Admits new patients to ward.

6.11 Obtains patient care assignments from ward nursing care assignment records.

6.12 Obtains information regarding care and treatment procedures for assigned patients from ward conferences and medical records.

6.13 Maintains patient's fluid balance record.

6.14 Observes and reports signs, symptoms, and general behavior of patient which might suggest changes in his condition.

6.15 Takes and records patient's vital signs.

6.16 Disinfects and prepares thermometers and trays for re-use.

6.17 Prepares request slips for diagnostic tests and collects and labels urine, stool, or sputum specimens and sends them to lab.

6.18 Sterilizes equipment, using standard medical sterilization procedures, including electric or field instrument sterilizer, chemical sterilization, or autoclave.

PAGE 2

Set 7

7.1 Prepares catheterization tray or assembles catheterization equipment.

7.2 Carries out catheterization.

7.3 Cleans catheterization equipment.

7.4 Assembles equipment for administering enema.

7.5 Prepares enema solution.

7.6 Administers enema.

Set 7 (continued)

7.7 Notes and reports results of enema treatment.

7.8 Cleans enema equipment.

7.9 Prepares individual medications from stock supply in ward medicine cabinet.

7.10 Assists nurse or clinical specialist in passing medications to patients.

7.11 Records administration of medicine.

7.12 Cleans medicine cart or tray.

- -

Set 8

8.1 Prepares individual dressing tray for use at patient's bedside.

8.2 Obtains sterilized items from covered containers, using transfer forceps.

8.3 Assembles, on sterile field, sterile items for doctor's treatment of patients.

8.4 Irrigates wound and applies new dressing.

8.5 Removes old dressing, cleans around wound, applies new dressing.

8.6 Reports condition of wound as observed while changing dressing.

8.7 Disassembles and cleans dressing cart.

8.8 Disassembles and cleans used dressing tray.

8.9 Stocks dressing cart, including replacement of clean and sterile supplies.

8.10 Assembles and prepares equipment for gastric or intestinal intubation.

8.11 Introduces or passes gastric or intestinal tube into patient.

8.12 Connects patient to gastrointestinal suction equipment.

8.13 Sets up and operates three bottle improvised Wangensteen suction device.

8.14 Sets up and operates hand operated (as Phelan) pump.

PAGE 3

8.15 Sets up and operates electrical suction devices.

8.16 Accomplishes "after-use" care of gastrointestinal tubes.

8.17 Dismantles and cleans gastrointestinal suction equipment.

- -

Set 9

9.1 Assembles and prepares equipment for feeding patient through gastric tube.

9.2 Introduces or passes gastric tube into patient's stomach.

9.3 Administers feeding through gastric tube (and records such feeding).

9.4 Removes gastric tube from patient.

9.5 Dismantles and cleans gastric feeding equipment.

Set 9 (continued)

9.6 Changes dressing around patient's tracheotomy incision.

9.7 Administers tracheal suction.

9.8 Removes and cleans inner cannula of tracheotomy tube installed in patient.

9.9 Assembles equipment for oral/nasal suction.

9.10 Administers oral or nasal suction.

9.11 Carries out "after-use" care of oral/nasal suction equipment.

9.12 Inspects closed-chest-drainage equipment while in place in patient for critical signs of malfunction.

9.13 Prepares oxygen tent and operates oxygen therapy equipment.

9.14 Removes oxygen tent and equipment from patient unit and prepares it for return to Central Materiel Section.

9.15 Assembles and prepares equipment for administration of oxygen by nasal catheter.

9.16 Prepares patient and administers oxygen therapy by means of nasal catheter.

9.17 Removes and provides "after-care" for equipment used in nasal catheter administration of oxygen.

9.18 Assembles and prepares equipment for administration of oxygen therapy by means of mask.

9.19 Disassembles and provides "after-care" for mask and oxygen equipment.

- -

PAGE 4

Set 10

10.1 Assembles necessary equipment and instills eye drops or eye ointment.

10.2 Assembles equipment for eye irrigation.

10.3 Positions patient and administers eye irrigation.

10.4 Applies eye dressing to immobilize eye.

10.5 Assembles and prepares equipment for instillation of ear drops.

10.6 Positions patient and administers ear drops.

10.7 Assembles and prepares for ear irrigation.

10.8 Carries out ear irrigation.

10.9 Prepares equipment and solution for throat irrigation.

10.10 Administers throat irrigation.

10.11 Positions patient and administers nose drops.

10.12 Prepares for steam inhalation treatment.

Set 10 (continued)

10.13 Improvises steam inhalation equipment.

10.14 Supervises patient during steam inhalation.

- -

Set 11

11.1 Assembles equipment and prepares solution for intradermal injection.

11.2 Administers intradermal injection.

11.3 Removes and cleans up intradermal injection equipment.

11.4 Assembles and prepares equipment for subcutaneous injection.

11.5 Administers subcutaneous injection.

11.6 Carries out after-use care of equipment for subcutaneous injection.

11.7 Assembles and prepares equipment for intramuscular injection.

11.8 Administers intramuscular injection.

11.9 Provides after-use care of intramuscular injection equipment.

11.10 Assembles and prepares equipment for intravenous injection.

11.11 Administers intravenous injection.

11.12 Performs after-use care on venipuncture equipment.

11.13 Carries out venipuncture to collect blood samples.

11.14 Labels blood samples and sends them to laboratory.

11.15 Assembles and prepares equipment for administering intravenous solution.

11.16 Inserts needle into vein and starts infusion.

11.17 Regulates flow of infusion in IV according to doctor's orders.

11.18 Changes bottles during infusion as necessary, and records or reports changes of bottle and condition of patient.

11.19 Disassembles IV or transfusion equipment, and provides after-care.

- -

Set 12

12.1 Assembles equipment and prepares for immunizations.

12.2 Administers standard Army immunizations.

12.3 Records immunizations on Permanent Medical Record (SF 601) and on Individual Immunization Certificate (DD 737).

12.4 Carries out after-use care of immunization equipment.

12.5 Assembles and prepares equipment for dry heat application.

12.6 Administers dry heat application to patients.

Set 12 (continued)

12.7 Assembles and prepares equipment for moist heat application.

12.8 Administers moist heat application to patients.

12.9 Cleans and returns heat equipment to storage area.

- -

Set 13

13.1 Sets up isolation unit.

13.2 Utilizes mask and gown and sterile gloves when caring for isolation patient.

13.3 Dismantles isolation unit.

13.4 Assembles and prepares post-operative care equipment.

13.5 Receives patient returning from surgery and helps place him in bed.

13.6 Provides continuous observation of post-operative patient during recovery.

13.7 Disassembles and gives after-use care to post-operative special equipment.

Appendix G

DUTY ASSIGNMENT QUESTIONNAIRE

Section 1—Supervisor

Do not write in this column

Questionnaire ID#:

Present Unit: _____
(Unit) (Army Post or APO)

Rank: _____ Primary MOS _____

Present Duty MOS _____

Present Duty Position (check one):

1. Senior Medical Aidman ____
2. Senior Litter Bearer ____
3. Senior Ward Specialist ____
4. Wardmaster ____
5. Chief Wardmaster ____
6. Dispensary Specialist ____
7. Chief Dispensary Specialist ____
8. Medical Assistant ____
9. Hospital Medical Assistant ____
10. Senior Hospital Medical Assistant ____
11. Section Sergeant ____
12. Detachment Sergeant ____
13. Platoon Sergeant ____
14. Medical Senior Sergeant ____

Other (write in) _____

Number of months in present duty position: _____

What was the last duty position you held before being assigned to your present duty position? _____

How many months did you serve in this previous duty position? _____

How long have you been on active duty in the Army? _____
(years) (months)

Do not write in this column

Where did you receive your first MOS training at the time you entered Army Medical Service?

a) Medical Training Center, Ft. Sam Houston, Texas:
____ 2 week program only

____ the full program (currently 10 weeks) for Medical Corpsman (MOS: new, 91A10; old, 910.00)

b) In an Army unit other than the Medical Training Center:
Unit designation: _____
MOS received at end of training: _____

When did you complete your initial Medical MOS training?

Month: _____ ; Year: _____

What was your first job or duty assignment after completing your initial medical MOS training?

Job position: _____
Name of unit: _____

Check all of the duty positions you have held since your entry into the Army Medical Service:

1. Ambulance Orderly ____
2. Ambulance Driver ____
3. Ward Orderly ____
4. Ward Attendant ____
5. Ward Specialist ____
6. Senior Ward Specialist ____
7. Dispensary Attendant ____
8. Dispensary Assistant ____
9. Dispensary Specialist ____
10. Litter Bearer ____
11. Senior Litter Bearer ____
12. Aid Station Attendant ____
13. Collecting Station Attendant ____
14. Clearing Station Attendant ____
15. Medical Aidman ____
16. Company Aidman ____
17. Senior Medical Aidman ____
18. Air Ambulance Aidman ____

Other (write in) _____

Do not write in this column

Have you attended any of the following Medical Service Schools? If so place a check mark after the name of the school course or courses you have attended. In addition, write in the approximate month and year in which you graduated from each course you attended.

SCHOOL COURSE	MOS Upon Graduation (New #)	(Old #)	Schools Attended	Graduation Month	Year
Clinical Specialist	91C20	911.30			
Operating Room Procedures	91D20	913.10			
NP Procedures	91F20	914.10			
Clinical Psychology Procedures	91G20	915.10			
Social Work Procedures	91H20	91 .10			
Physical Therapy Assistant	91 J20	921.10			
Optical Laboratory Specialist	42E20	453.10			
Medical Laboratory Procedures (Basic)	92B10	931.10			
Medical Laboratory Procedures (Advanced)	92B20	931.20			
Pharmacy Specialist	91Q10	932.10			
Radiographic Procedures	91P20	935.10			
Food Inspection Procedures (Basic)	91R10	934.10			
Food Inspection Procedures (Advanced)	91R20	934.20			
Food Inspection Procedures (Refresher for MOS 91R20)	- - -	- - -			
Preventive Medical Procedures (Basic)	91 S10	933.10			
Preventive Medical Procedures (Advanced)	91 S20	933.20			
Dental Assistant (Basic)	91E20	917.10			
Dental Assistant (Advanced)	91E30	917.20			
Dental Laboratory Procedures (Basic)	42D10	452.10			
Dental Laboratory Procedures (Advanced)	42D20	452.20			

Do not write in this column

Have you served in Viet Nam? Yes No
(Circle One)

If you have served in Viet Nam complete the following questions:

1. Served in Viet Nam from _____ _____ to _____ _____
   month year month year

2. Last Duty Position Held while in Viet Nam:

   _____ _____
   (Duty Position Title) (Duty MOS and Pay Grade)

   _____ _____
   (Number of months in this Duty Position) (Unit)

3. Other Duty Positions Held while in Viet Nam:

   A. _____ _____
   (Duty Position Title) (Duty MOS and Pay Grade)

   _____ _____
   (Number of months in this Duty Position) (Unit)

   B. _____ _____
   (Duty Position Title) (Duty MOS and Pay Grade)

   _____ _____
   (Number of months in this Duty Position) (Unit)

Section 2—Incumbent

Questionnaire ID#:

Do not write in this column

Present Unit: _____
(Unit) (Army Post or APO)

Rank: _____ Primary MOS _____

Present Duty MOS _____

Present Duty Position (check one):

1. Ambulance Orderly _____
2. Ambulance Driver _____
3. Ward Orderly _____
4. Ward Attendant _____
5. Ward Specialist _____
6. Senior Ward Specialist _____
7. Dispensary Attendant _____
8. Dispensary Assistant _____
9. Dispensary Specialist _____
10. Litter Bearer _____
11. Senior Litter Bearer _____
12. Aid Station Attendant _____
13. Collecting Station Attendant _____
14. Clearing Station Attendant _____
15. Medical Aidman _____
16. Company Aidman _____
17. Senior Medical Aidman _____
18. Air Ambulance Aidman _____

Other (write in) _____

NOTE: Remainder of Incumbent questionnaire is identical to that of the Supervisor.

Appendix H

DETAILED DESCRIPTION OF TESTS AND RESULTS

BASIC MILITARY SKILLS

During the sixth and last week of Basic Combat Training (BCT), in the regular course, the conscientious objector takes an end-of-cycle test in order to determine his competence in a number of military subjects such as dismounted drill, military justice, and so on. This test differs from the usual BCT test in that hand-to-hand combat and bayonet are omitted. A complete description of the test is given in U.S. Army Training Test 21-2 and revisions (7).

This test was given to a sample of trainees ($N = 61$) in the conventional program during their sixth week of BCT and to a sample of trainees ($N = 76$) taking the experimental program during their 12th week of integrated BCT/AIT training. By the start of the 12th week in the experimental program, the majority of military subjects had been covered. Maximum possible score on this test was 100 points.

Mean score for the conventional or control trainees was 84.3 and for the experimental trainees, 83.0. No statistically significant difference was obtained between these samples ($t = 1.37$, $df = 135$, NS); that is, the performance of the trainees in the two programs was comparable with respect to their competence in military subjects.

PHYSICAL SKILLS

Physical Combat Proficiency Test (PCPT)

During the sixth (last) week of BCT and the tenth (last) week of AIT, the conscientious objector takes the PCPT for an evaluation of his physical condition. The usual test consists of five subtests given in a sequential fashion and scored manually by the test committee. At the time of the study, these subtests included the one-mile run, the 40-yard low crawl, the horizontal ladder, the dodge-run-jump, and sit-ups. Each subtest had a possible 100 points and a total combined score of 300 points was required to pass (7).

The PCPT was administered to samples of conventional trainees during the sixth week of BCT ($N = 59$) and their tenth week of AIT ($N = 60$) and to samples of trainees taking the experimental integrated program during the sixth ($N = 152$) and 15th ($N = 137$) weeks of training.

Mean PCPT score for the conventional trainees at the sixth week was 352.6 and for the experimentals, 333.6. Mean PCPT score for the conventional trainees during the tenth AIT week was 402.6 and for the experimentals during the 15th week, 372.9. Both mean differences (the sixth week difference, and the tenth AIT week versus the 15th BCT/AIT week) were statistically significant (for the first administration, $t = 2.01$, $df = 209$, $p < .05$; for the second, $t = 3.79$, $df = 195$, $p < .001$). In both instances the conventional trainees' performance was superior to the experimentals'; however, all trainees in both groups passed the PCPT.

Litter Obstacle Course Test

This test of physical stamina and skill in handling litters was prepared by the Military Science Branch. Four-man teams carried a litter, complete with

"casualty," over 14 obstacles. These obstacles included mine fields, high logs, barbed wire, culverts, trenches, fences, blown bridges, steep terrain, and others. Teams were scored on their skill in negotiating these obstacles and the time required to complete the course.

The test was administered to samples of regular and experimental trainees during the last week of training. Maximum possible score on the litter skill portion of this test was 45 points.

Mean score for the regular trainees (N = 69 teams) was 30.9 and for the experimentals (N = 25 teams) was 39.2. The mean difference was statistically significant (t = 14.05, df = 92, $p < .01$). Mean time to complete the course for conventional trainees was 20.8 minutes and for the experimentals was 11.0 minutes. The mean difference was statistically significant (t = 27.8, df = 92, $p < .01$). These results indicate the superiority of the experimental trainees as compared to those conventionally trained.

PROFESSIONAL SCIENCE BRANCH SKILLS

Anatomy and Physiology Test. This paper-and-pencil test of basic knowledge of anatomy and physiology was specifically developed for this research project by the Academic Standards Group.[1] The test was administered to samples of trainees in both programs during their first week of training as a screening device and again to samples from both groups during the end-of-cycle holdover. Maximum possible score on this test was 100 points.

Mean score on the first administration of this test to samples of conventional trainees (N = 104) was 50.8 and to samples of experimental trainees (N = 156), 51.6. These results indicated that the initial knowledge of the trainees with respect to basic anatomy and physiology was comparable.

Mean score on the second administration of this test to samples of trainees in the conventional program (N = 106) was 75.1 and to samples of experimental trainees (N = 76), 73.5. No statistically significant difference was obtained between these mean scores (t = 0.61, df = 180, NS). It should also be noted that the relative increase in score (about 20 points) from the first to the second testing within a group paralleled a similar increase for the other group.

Anatomy Sketch Test. A nine-item paper-and-pencil test was developed by HumRRO personnel which required the trainee to draw, on outline sketches, such items as the air passage, the bones of the leg, and the location of the heart. Maximum score was nine and no passing level was determined. This test was administered to samples of trainees in both programs during the end-of-cycle holdover.

Mean score for the conventional trainees (N = 136) was 6.9 and for the experimental trainees (N = 138), 6.6. This mean difference was not statistically significant (t = 1.32, df = 272, NS).

First Aid True-False Test. A 39-item paper-and-pencil test was constructed by HumRRO personnel by randomly drawing first aid items from the USAMTC Academic Standards Tests #1 through #5 and converting them from the multiple-choice format to true-false. The test was administered to samples of trainees in both programs during the end-of-cycle holdover. Maximum possible score was 39 points and no passing score was determined.

[1]Copies of this test are on file with the Test and Evaluation Group at the U.S. Army Medical Training Center, Fort Sam Houston, Texas.

Mean score for the conventional trainees (N = 111) was 30.3 and for the experimentals (N = 140), 32.3. The mean difference was statistically significant (t = 3.24, df = 249, p < .01); that is, the performance of the experimental sample was superior to that of the conventional sample.

First Aid Multiple-Choice Test. A 61-item paper-and-pencil test was constructed by HumRRO personnel by drawing multiple-choice items at random from Academic Standards Tests #1 through #5. Maximum score was 61 and no passing score was determined. The test was administered to samples of trainees in both programs during the end-of-cycle holdover.

Mean score for the conventional trainees (N = 138) was 44.9 and for the experimentals (N = 141), 44.3. No statistically significant difference was found between these means. Since this test was a part replication of multiple-choice items used on the Academic Standards Tests, these results suggest that the medical knowledge levels of trainees in both programs were similar.

Evacuation Priority Test. In this seven-item paper-and-pencil test developed by the Professional Science Group, the trainee read seven casualty descriptions, one at a time, and assigned an evacuation priority (one through four) to each. Maximum score was seven and no passing score was determined. This test was administered to samples of trainees from both groups.

Mean score for conventional trainees (N = 127) was 3.8 and for the experimental trainees (N = 139) was 4.6. This difference was statistically significant (t = 4.84, df = 264, p < .01), with experimental trainees superior to conventionals.

Test 1-H. This test had both a written and a performance section developed jointly by HumRRO and USAMTC personnel.[1] The written section consisted of 50 paper-and-pencil fill-in questions dealing with field casualty treatment. The performance section consisted of six casualty problems wherein the aidman physically treated simulated casualties and was scored individually by an NCO tester using a checklist. Maximum possible score for the written section was 50 points and for the performance section, 60 points. No passing score was determined. This test was given as a graded practical exercise to samples of trainees in both programs during the end-of-cycle holdover.

Mean score on the written section for the conventional trainees (N = 133), was 37.5 and for the experimentals (N = 136), 39.9. There was no statistically significant difference between these means.

Mean score on the performance section for the conventional trainees (N = 137) was 50.4 and for the experimentals (N = 136), 53.7. This mean difference in performance between experimental and conventional trainees was statistically significant (t = 5.02, df = 271, p < .01); that is, the performance of the experimental trainees was superior to that of the conventional trainees.

Test 1-8. This performance test, developed jointly by HumRRO and Professional Science Branch personnel, consisted of four casualty problems.[2] The trainee was required to treat four individual casualty problems that were likely to occur in combat. A total of eight simulated casualties were available; the trainee was assigned four, and scored individually with a checklist. Maximum possible score was ten and no passing score was determined. The test was administered to both groups as a graded practical exercise during the end-of-cycle holdover.

[1] A complete description of this test is given in Lesson Plan 1-H of the experimental program.
[2] A complete description of this test is given in Lesson Plan 1-8 of the experimental program.

Mean score for the conventional trainee sample ($N = 124$) in physically treating simulated battlefield casualties was 6.8 and for the experimentals ($N = 148$), 8.9. This mean difference was statistically significant ($t = 22.17$, $df = 270$, $p < .01$); that is, the performance of the experimental trainees was superior to that of the conventional trainees.

Field Medical Skills Test. This 12-station performance test was prepared by the Professional Science Branch with HumRRO guidance. Eleven of the stations dealt with individual casualty treatment problems (such as a sucking chest wound, traumatic amputation, and application of telescopic splint) and the 12th with water purification. Each trainee performed each station task individually, carrying out treatments physically on simulated casualties. Scoring was manual and was carried out with a checklist. Trainee error in treatment that would likely kill a casualty was scored as zero; example, administration of morphine to a casualty suffering from a sucking chest wound. Each station had a specific number of possible points and was scored separately; no passing score for the various stations was determined. The test was administered to samples of trainees in both programs during the end-of-cycle holdover. "Time to complete" successful performance was obtained at some stations and is also presented. Performance scores on each station are shown separately.

Wound of scalp and shoulder: The trainee treated the described wounds on a simulated casualty. Maximum possible score was 11 points. Mean score for a sample of conventional trainees ($N = 87$) was 6.2 and for a similarly tested sample of experimentals ($N = 62$), 9.9. The mean performance of the experimental trainees was significantly better than that of a comparably tested sample of conventional trainees ($t = 13.04$, $df = 147$, $p < .01$). These data indicate that trainees in the experimental program are more competent than those conventionally trained.

Wound of the upper arm (wire fabric splint): At this station the individual trainee treated the described wound on a simulated battlefield casualty. Maximum possible score was 12 points. Mean score for a sample of conventional trainees ($N = 87$) was 6.2 and for a similarly tested sample of experimental trainees ($N = 62$), 10.1. The mean performance of the experimental trainees on treating the wound was significantly better than that of the conventional trainees ($t = 9.05$, $df = 149$, $p < .01$). These data indicate the superior performance of trainees in the experimental program.

Sucking chest wound: Each trainee treated a simulated battlefield sucking chest wound. Maximum possible score was nine points. Time required to administer successful treatment was obtained. Mean performance score for a sample of conventional trainees ($N = 86$) was 4.6 and for a sample of comparably tested experimental trainees ($N = 61$), 7.5. The performance of the experimentals was significantly better than that of the conventionals ($t = 10.89$, $df = 146$, $p < .01$).

Mean time for successful treatment of this simulated chest wound for a sample of conventional trainees ($N = 52$) was 203 seconds and for a sample of experimental trainees ($N = 58$), 85 seconds. The mean time for successful treatment of the sucking chest wound was significantly shorter for the experimental trainees than for the conventional trainees ($t = 12.81$, $df = 108$, $p < .01$).

These data indicate that the experimental trainee's performance was superior to that of the conventional trainees as measured by treatment score and treatment time. A number of conventional trainees administered morphine in this situation, a procedure that was contraindicated in treatment of this wound.

Traumatic amputation of arm: Each trainee treated the described wound on a simulated battlefield casualty, and time required for successful completion of treatment was obtained. Maximum possible performance score was 16 points. Mean performance score for a sample of conventional trainees ($N = 86$) was 9.5 and for comparably tested experimental trainees ($N = 60$), 12.5. The mean performance of the experimentals was significantly better than that of the conventional trainees ($t = 4.58$, $df = 144$, $p < .01$). Mean time to successful treatment of the casualty for a sample of conventional trainees ($N = 43$) was 249 seconds and for a sample of experimentals ($N = 59$), 137 seconds. The experimental trainees successfully completed the wound treatment in a significantly shorter time than did the conventional trainees ($t = 5.40$, $df = 100$, $p < .01$). These data indicate the superior performance of the experimental trainees as compared to those conventionally trained.

Wounds of buttock and thigh: Each trainee treated a simulated battlefield casualty as described above, and maximum possible score was 18 points. Mean performance score for a sample of conventional trainees ($N = 57$) was 14.8 and for a sample of experimental trainees ($N = 69$), 16.3. The performance of the sample of experimental trainees was significantly better than that of the conventionals ($t = 4.75$, $df = 124$, $p < .01$).

Wounds of lower leg and thigh: At this station, maximum possible score was 14 points. Mean performance score for a small sample of conventional trainees ($N = 30$) was 7.8 and for a larger sample of experimental trainees ($N = 69$) was 12.9. The performance of the experimental sample was significantly better than that of the conventional trainee sample ($t = 10.77$, $df = 97$, $p < .01$).

Wounds of abdomen and pelvis: At this station, maximum possible score was 16 points. Mean performance score for a sample of trainees in the conventional program ($N = 58$) was 10.9 and for a sample of experimental trainees ($N = 73$), 14.7. The mean performance of the experimental trainees in treating simulated wounds of this nature was significantly better than that of conventional trainees ($p < .01$).

Wounds of the spine and pelvis (fractured back): At this station, maximum possible score was eight points, and the station was retested on additional samples of trainees from both programs. Time to successful treatment completion was also obtained. Mean performance score for a sample of conventional trainees ($N = 86$) was 3.4 and for a comparably tested sample of experimental trainees ($N = 61$), 7.0. The mean performance difference between these samples of conventionals and experimentals was statistically significant ($t = 11.93$, $df = 145$, $p < .01$); that is, the experimentals' performance was better than that of the conventionals.

Mean time to successful treatment completion for a sample of conventional trainees ($N = 30$) was 283 seconds and for a sample of experimentals ($N = 35$), 238 seconds. The time to successful treatment completion was significantly shorter for the experimental sample than for the conventional sample ($t = 3.57$, $df = 63$, $p < .01$). Performance of the experimental trainees was significantly superior to that of the conventionals. One factor leading to the lower scoring of the conventional trainees was their use of morphine, which was contraindicated.

Army leg splint (telescopic splint): Each trainee applied this splint to a simulated casualty with the assistance of two untrained soldiers. Maximum possible score at this station was 19. Mean score for a sample of conventional trainees ($N = 46$) was 3.6 and for a sample of experimentals ($N = 73$) was 13.8.

The performance of the experimentals was significantly better than that of the conventionals ($t = 33.21$, $df = 117$, $p < .01$). These data indicate that the experimental trainees were superior to the conventional trainees in actual application of the telescopic splint.

Pelvis fracture: Each trainee, with the assistance of three untrained soldiers, treated and loaded a simulated casualty on a litter at a collecting point. Maximum possible score at this station was 23 points. Data on time to successful treatment were obtained.

Mean score for a sample of trainees in the conventional program ($N = 87$) was 17.6 and for a sample of experimental trainees ($N = 61$), 21.8. The performance of the experimental sample was significantly better than that of the conventional sample ($t = 6.12$, $df = 146$, $p < .01$). Mean time to successful completion of treatment for a sample of conventional trainees ($N = 51$) was 258 seconds and for a sample of experimental trainees ($N = 49$), 140 seconds. The performance time for the experimentals was significantly better than that of the conventionals ($t = 9.69$, $df = 98$, $p < .01$).

These data indicate that the trainees in the experimental program were able to treat and evacuate a pelvic fracture faster and more competently than trainees in the conventional program.

Fractured neck (evacuation): At this station, each trainee found a casualty with a simulated fractured neck already treated with a wire fabric splint. The trainee treated and evacuated this casualty with the help of three untrained soldiers. Maximum possible score was nine points. Mean score for a sample of conventional trainees ($N = 57$) was 4.5, and for a sample of experimental trainees ($N = 73$), 5.7. The performance of the experimentals was significantly better than that of the conventional trainees ($t = 4.16$, $df = 128$, $p < .01$). These data indicate the superior performance of the experimental trainees as compared with the conventionals.

Water purification: Each trainee was required to purify water in a canteen under two conditions and in a lyster bag. Maximum possible score was 19 points. Mean score for a sample of conventional trainees ($N = 63$) was 8.6, and for a sample of experimentals ($N = 49$) was 11.3. The performance of the experimental trainees was significantly better than that of the conventional trainees ($t = 3.13$, $df = 130$, $p < .01$).

MILITARY SCIENCE BRANCH TEST

This test, prepared by the Military Science Branch with HumRRO guidance, contained both written and performance sections. The subject matter dealt with the movement of casualties, tentage, improvised litters, and other items.

Written Section: This section consisted of 50 paper-and-pencil multiple-choice items. Maximum possible score for the written section was 50 points, and no passing score was determined. This test was administered to samples of trainees in both programs during the end-of-cycle holdover. Mean score for the conventional trainees ($N = 133$) on the written section was 36.5 and for the experimental trainees ($N = 147$), 37.4. No statistically significant difference was found.

Performance Section: This section consisted of eight major stations with substations, administered sequentially, where each trainee was required to load a "casualty" on helicopters and various vehicles, to improvise and dress litters, and to transport simulated casualties with a variety of carries. Performance

testing was individual, and scored by using checklists. Maximum possible score was 100 points, and no passing score was determined. The test was administered to samples of trainees in both programs during the end-of-cycle holdover.

Mean score for the conventional trainees (N = 134) was 59.2 and for the experimentals (N = 145), 88.5. The mean difference in performance was statistically significant (t = 11.59, df = 277, $p < .01$); that is, the performance of the experimental trainees was superior to that of the conventional trainees.

NURSING SCIENCE BRANCH TEST

This test was prepared by the Nursing Science Branch with HumRRO guidance. It dealt with general nursing skills such as giving injections, sterile technique, and taking temperature and blood pressure. This test contained a written and a performance section.

Written Section: This section consisted of 50 paper-and-pencil multiple-choice items.[1] Scoring was carried out with checklists. The written test was administered to samples of trainees in both programs during the end-of-cycle holdover. Maximum possible score was 60 points, and passing scores were not determined. Mean score for trainees in the conventional program (N = 135) was 39.8 and for experimental trainees (N = 141), 50.2. This mean difference was statistically significant (t = 12.79, df = 274, $p < .01$); that is, the experimental trainees demonstrated superior knowledge of nursing skills as compared to trainees in the conventional program.

Performance Section: This section consisted of 14 major stations (with substations), where the trainee individually carried out such actions as filling out hospital records, setting up sterile fields, preparing immunizations, and so on.[1] Checklists were used for scoring. Maximum possible score on the performance section was 346 points, and passing scores were not determined.

Mean score for the conventional trainees (N = 135) was 280.7, and for the experimentals (N = 150), 314.7. This mean difference was statistically significant (t = 14.28, df = 283, $p < .01$), indicating that the experimental trainees were significantly better than the conventional trainees in the physical performance of nursing skills.

MOTIVATIONAL-ATTITUDINAL SURVEY

This questionnaire was developed by HumRRO in order to assess attitude and attitude change over time toward the Army, the medical training program, and other aspects.[2] This questionnaire was administered to samples of trainees from experimental and conventional groups during the first and last weeks of training. A summary of the significant differences in the responses of the two groups indicated the following:

Question Number

3.5 Conventionals felt that they could have learned more in military training, whereas experimentals did not feel this as strongly ($p < .01$).

[1] A complete description of this test is given in revised experimental BCT/AIT medical training program Lesson Plan 4-B-19.

[2] Its rationale is discussed in detail in a report of HumRRO Work Unit TRANSITION (9).

Question Number (continued)

3.6 Experimentals felt that military training was better than did the conventionals ($p < .05$).

3.9 Experimentals felt that the cadre respected them more than did the conventionals ($p < .01$).

3.13. d. Experimentals thought the food was better than did the conventionals ($p < .01$).

3.13. e. Experimentals thought the living conditions were generally better than they had expected, whereas the conventionals did not ($p < .01$).

3.17 Experimentals' opinion of their platoon was better than that of the conventionals ($p < .01$).

4.7 Experimentals were more likely than the conventionals to think the Army tried to put men in the proper job ($p < .01$).

4.9 Experimentals thought the Army led men better than did the conventionals ($p < .05$).

4.17 Experimentals thought the Army officers were willing to do what their men did more so than did the conventionals ($p < .05$).

4.21 Experimentals thought the Army trained the man for the job better than did the conventionals ($p < .05$).

4.22 Experimentals thought NCOs were more understanding of problems than did the conventionals ($p < .05$).

4.24 Experimentals thought Army rules made more sense than did the conventionals ($p < .05$).

4.26 Experimentals thought that the Army group suffered less for foul-ups of individuals than did the conventionals ($p < .05$).

4.30 Experimentals believed NCOs respected the Army more so than did the conventionals ($p < .05$).

4.31 To a greater degree than the experimentals, conventionals believed the Army would be better if more attention were paid to individual differences ($p < .05$).

4.35 Experimentals were more likely than conventionals to believe the Army feeds its men well ($p < .01$).

INSTRUCTOR'S EVALUATION SURVEY

This 22-item questionnaire was developed by HumRRO in order to obtain considered opinion regarding the conventional and the experimental training programs. Twenty-nine instructors, experienced with both programs, compared these programs in specific areas on a five-point rating scale. This questionnaire was administered to instructor personnel during the last week of the program.

The results of this survey are given in the following frequency of response tabulations to the questions:

	Much More	More	Same	Less	Much Less	Have no Information
1. Would the Experimental trainees be more or less proficient in carrying out the duties of a company aidman with an infantry platoon on the battlefield?	12	14	1	0	0	2
2. Would the Experimental trainees be more or less proficient in functioning as a member of a forward medical evacuation team?	12	13	1	0	0	3
3. Would the Experimental trainees be *more* or *less* proficient in functioning as a member of a dispensary or battalion aid station assisting with sick call and immunization?	7	15	3	0	0	4
4. Would the Experimental trainees be *more* or *less* proficient in carrying out patient care and treatment procedures as a member of a hospital ward team?	6	10	4	0	0	9
5. Are the skills taught in the Experimental program *more* or *less* related to actual field skills?	17	8	4	0	0	0
6. Was the sequence of teaching the skills in the Experimental program *more* or *less* effective than that used in the AIT program?	15	10	3	0	0	1
7. Did the trainees learn to integrate individual skills into meaningful actions *more* or *less* effectively in the Experimental program than in the AIT program?	15	13	0	0	0	1
8. Did the trainees learn to coordinate their skills with those of the medical support unit members *more* or *less* effectively in the Experimental program than in the AIT program?	9	9	5	0	0	6
9. Did the trainees learn to carry out their duties *more* or *less* effectively in the Experimental program than in the AIT program?	15	11	2	0	0	1
10. Did the trainees learn *more* or *less* about being a member of the medical team in the Experimental program than in the AIT program?	9	13	4	0	0	3
11. Was *more* or *less* efficient use made of trainees' time in the Experimental program than in the AIT program?	20	8	0	0	0	1
12. Was *more* or *less* efficient use made of instructor time in the Experimental program than in the AIT program?	15	7	3	2	0	2

	Much More	More	Same	Less	Much Less	Have no Information	No Mark
13. Was the training conducted in a *more* or *less* realistic setting in the Experimental program than in the AIT program?	16	8	2	3	0	0	
14. Do you consider the training *more* or *less* realistic in the Experimental program than in the AIT program?	17	11	1	0	0	0	
15. Were *more* or *less* trainee errors corrected in the Experimental program than in the AIT program?	15	11	2	1	0	0	
16. Was there *more* or *less* immediate correction of trainee errors in the Experimental program than in the AIT program?	14	11	4	0	0	0	
17. Were the instructors able to give *more* or *less* individual attention to trainees who required it in the Experimental program than in the AIT program?	16	12	0	0	0	1	
18. Were instructors able to evaluate trainee learning *more* or *less* accurately in the Experimental program than they had been able to do in the AIT program?	14	11	3	0	0	1	
19. Were the "televised" phases of the Experimental program *more* or *less* effective in teaching skills to the trainees than training of these same skills in the AIT program?	10	11	1	2	0	4	1
20. Were the Experimental lesson plans and instructor's guides *more* or *less* effective than AIT training guidance?	11	11	6	0	0	0	1
21. Do you think the use of television in the Experimental program produced *more* or *less* motivation of the trainees than methods used in the AIT program?	10	10	2	1	0	2	4

22. If you as a Medical NCO were to receive new medics fresh from MTC, under which program would you prefer that they have been trained?

0 Conventional BCT and AIT
28 Experimental Program
1 Did Not Mark

Appendix I

MASTER SCHEDULE, REVISED EXPERIMENTAL PROGRAM, INTEGRATED MBT/AIT TRAINING TO QUALIFY CONSCIENTIOUS OBJECTORS IN MOS 91A

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
	1. General Military Indoctrination		
009-1-H	a. Achievements & Traditions	2	
115-1-H; 115-3-H	b. Mil Customs & Courtesies	4	
A-3-H	c. Character Guidance	6	
128-1-H	d. Code of Conduct & Geneva Convention	2	
116-1-H thru 116-3-H	e. Military Justice	3	
Co Comdr	f. Troop Information	5	
105-1-H thru 105-29-H	g. Drill & Ceremonies	33	
110-1-H thru 110-20-H	h. Inspections	27	82
	2. Army Medical Service Indoctrination		
Comdrs	a. Commanders Orientation	1	
100-3-H	b. Program Orientation	2	
J-1-H	c. Preventive Dentistry	1	
119-1-H thru 119-3-H	d. Organization & Functions of AMEDS	5	9
	3. Field Support Skills for the Medical Corpsman		
109-1-H; 109-2-H	a. CBN (Indiv. Protect. Measures)	4	
108-1-H; 108-2-H	b. Guard Duty	4	
111-1-H	c. Intelligence Training	2	
311-1-H thru 311-67-H	d. Phys Tng (Incl Litter/ Man Carries)	68	
111-9-H	e. Counterinsurgency	1	
113-1-H thru 113-8-H	f. Land Navigation	25	
123-1-H thru 123-5-H	g. Communications	9	
200-1-H	h. Infiltration Course	3	
117-1-H thru 117-7-H	i. Individual Tactical Training	13	
110-21-H; 112-1-H thru 112-9-H	j. Marches & Bivouacs	27	
117-8-H thru 117-11-H	k. Survival, Evasion & Escape	10	
114-3-H	l. Medical Service Tentage	6	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
301-1-H thru 301-5-H; 301-7-H thru 301-10-H	m. Military Sanitation & Prevention of Disease .	14	
117-1-H thru 117-4-H	n. Unarmed Defense	8	
311-76-H; 311-77-H	o. Litter Obstacle Crs (Day & Night).	4	
117-12-H	p. Patrolling.	5	
120-1-H	q. Civic Actions & Handling of POWs or Other Detained Persons	2	
120-2-H	r. Rotary Wing Aircraft & Support	2	207
	4. Technical Training: Phase 1 - Basic Skills of the Company Aidman		
300-1-H thru 300-5-H	a. Anatomy & Physiology .	8	
304-1-H; 304-2-H	b. Intro to Mil Emerg Med Treatment	2	
	c. Basic Emergency Treatment Techniques:		
304-8-1-H thru 304-8-6-H	1) Assisting Breathing & Heart Action. . . .	10	
304-3-1-H thru 304-3-7-H	2) Control of External Hemorrhage	13	
304-20-1 H thru 304-20-8-H; 304-21-1-H; 304-21-3-H; 304-21-5-H	3) Immobilization of Injured Parts & Prevention of Shock . . .	27	
304-11-H thru 304-13-H	4) Securing & Protecting Sterile Dressings. .	5	
306-1-H; 315-1-H thru 315-5-H & 304-14-H	d. Application of Basic Techniques to Treatment of Casualties, PE, and Field Medical Card	24	89
	e. Field Treatment of Special Types of Casualties & Phase 1 Prof Test		
315-6-H	1) Emerg Treatment of Burn Casualties . .	3	
315-7-H	2) Emerg Treatment of CBN Casualties . .	3	
304-33-H	3) Emerg Treatment of Snake, Animal & Insect Bites.	2	
304-34-H	4) Emerg Treatment of Heat & Cold Injuries	2	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
304-35-H	5) Combat Exhaustion . .	2	
304-36-H	6) PE: Prof Test for Phase 1	4	16
	5. Technical Training: Phase 2 - Basic Skills of the Evacuation Aidman		
315-11-H thru 315-13-H	a. Lifting & Positioning of the Casualty on the Litter	5	
311-78-H	b. Preparation & Use of the Litter; Dressing Litters & Preparing Improvised Litters	2	
315-14-H	c. Review PE: Application of Army Leg Splint . . .	2	
315-15-H	d. Determining Evacuation Priority & Need for Evacuation	4	
315-16-H thru 315-18-H	e. PE: Prep of Casualties for Evac from the Battlefield	10	
311-79-H	f. Conversion of Mil Vehicles to Casualty Carriers	2	
311-81-H; 311-82-H	g. Removal of Injured from Vehicles	6	
311-80-H	h. River Crossing (Combat Evacuation) Exercise . .	3	
315-19-H; 315-20-H	i. Treatment of Casualties & Prep. for Evac. Under Limited Visib. Conditions	6	40
	6. Technical Training: Phase 3 - Basic Skills and Duties of the Aidman		
325-1-H	a. Dispensary/Bn Aid Station Medical Functions & Duties of the Aidman	1	
307-1-H thru 307-5-H	b. Introduction to Pharmacy and Common Drugs	6	
325-15-H thru 325-19-H; 301-6-H	c. Common Medical Disorders & Complaints . .	7	
325-2-H	d. Temperature, Pulse & Respiration	4	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
325-3-H	e. Blood Pressure	4	
325-14-H	f. Diagnostic Tests	2	
325-15	g. Sterile Technique	4	
325-24	h. Surgical Dressings I . . .	2	
325-23	i. Methods of Sterilization & Disinfection.	4	
325-7-H	j. Subcutaneous Injections .	2	
325-8-H	k. Intramuscular Injections.	2	
325-9-H	l. Intradermal Injections . .	2	
325-12-H	m. Army Immunization Program	1	
325-13-H	n. Smallpox Vaccination . . .	2	
325-11-H	o. Intravenous Therapy Including Blood Transfusion	4	
325-10-H	p. Venipuncture	2	
325-55-H; 325-56-H	q. Advanced Med Procedures	6	
325-20-H	r. Emerg Resuscitative Equipment	2	
325-21-H	s. Emergency Birth.	2	
325-54-H	t. Field Autoclave.	2	
325-22-H	u. Prof Test - Basic Patient Care.	4	65
	7. Technical Training: Phase 4 - Basic Ward Skills for the Medical Corpsman		
	a. Basic Ward Procedures		
325-53-H	1) The Patient & The Medical Service Team	1	
325-54-H	2) Introduction to Ward Duties	1	
325-24-H	3) Basic Ward Orientation.	2	
325-25-H	4) Preparation of the Unit for Reception of the Patient	1	
325-3	5) Cleanliness for the Patient's Safety. . . .	1	6
	b. Ward Treatment Procedures I		
325-26-H	1) Positioning of the Patient	2	
325-27-H	2) Patient's Bed Bath. . .	1	
325-28-H	3) Bed Bath & Occupied Bed (PE)	4	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
325-29-H	4) Administration of Enemas.	2	
325-30-H	5) Hot & Cold Applications	2	
325-34-H	6) Hospital Diets	1	
325-35-H	7) Fluid Balance Records	1	
325-37-H	8) Observation of the Patient	2	
325-32-H	9) Integrated Ward Session I.	4	
325-33-H	10) Prof. Test: Adv. Patient Care I	4	
325-23-H	11) The Army Medical Svc	2	25
	c. Ward Treatment Procedures II		
325-25	1) Surgical Dressings II	2	
325-36-H	2) EENT Procedures. . .	2	
325-38-H	3) Intro to Communicable Diseases. . . .	2	
325-39-H	4) Intro to Isolation Technique	4	
325-40-H	5) Admin of Oral Medications.	2	
325-41-H	6) Sterile Glove Technique	1	
325-42-H	7) Catheterization (Male)	2	
325-45-H	8) Gastrointestinal Intubation & Suction . . .	2	
325-46-H	9) Special Suction.	2	
325-47-H	10) Oxygen Therapy	2	
325-48-H	11) Care of the Orthopedic Patient	1	
325-49-H	12) Turning Frames. . . .	2	
325-50-H	13) Care of the Pediatric Patient	2	
325-51-H	14) Pre and Postoperative Care.	2	
325-52-H	15) Integrated Ward Session II	4	
325-44-H	16) Prof Test: Adv Patient Care II	4	36

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
	8. Program Administration		
Co Comdr	a. Commanders Time	60	
121-14-H; GW-6; GW-7; GW-8	b. Proficiency Testing	28	
Co Comdr	c. Administrative Processing	29	
102-1-H	d. Graduation	2	119
	9. Field Exercise		
305-1-H (J-11-3)	Medical Treatment, Evacuation & Nursing Exercise. . .	10	10
GRAND TOTAL HOURS			704

Appendix J

MASTER SCHEDULE FOR REVISED EXPERIMENTAL ADVANCED INDIVIDUAL TRAINING FOR ALL MEDICAL CORPSMEN (MOS 91A)

At the completion of the research at the Medical Training Center, it was apparent that the innovations in the Experimental MBT/AIT Program for Conscientious Objectors could be used advantageously by the Medical Training Center for its AIT course in MOS Technical Training of Medical Corpsmen (MOS 91A). This would extend the benefits of the research to the entire trainee population of the Training Center (Conscientious Objectors constitute only about 5% of the trainee population). Accordingly, representatives of the Training Center and HumRRO researchers, acting jointly, extracted the periods of instruction applicable to AIT from the Experimental MBT/AIT Program (Appendix I) and made other minor adjustments to develop the Master Schedule for Revised Advanced Individual Training for All Medical Corpsmen (MOS 91A).

Detailed Revised Lesson Plans are available from USAMEDTC and HumRRO Division No. 2 (Recruit Training).

Master Schedule - Proposed Advanced Individual Training Program
For All Medical Corpsmen, MOS 91A*

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
	1. General Military Indoctrination		
A-3-H	a. Character Guidance	2	
Co Comdr	b. Troop Information	4	
105-21-H thru 105-29-H	c. Drill & Ceremonies	10	
110-11-H thru 110-20-H	d. Inspections	10	26
	2. Army Medical Service Indoctrination		
Comdrs	a. Commanders Orientation.	1	
100-3-H	b. Program Orientation. . . .	1	
J-1	c. Preventive Dentistry. . . .	1	
104-1-H	d. Interpersonal Relations. .	1	
119-1-H thru 119-3-H	e. Organization & Functions of AMEDS.	5	9
	3. Field Support Skills for the Medical Corpsman		
**311-1-H thru 311-45-H	a. Phys Tng (Incl Litter/Man Carries)	45	
114-3-H	b. Med Svc Tentage	6	
301-1-H thru 301-5-H; 301-7-H thru 301-10-H	c. Mil Sanitation & Prev of Disease	14	
311-76-H; 311-77-H	d. Litter Obstacle Crs (Day & Night)	4	69
	4. Technical Training: Phase 1 - Basic Skills of the Company Aidman		
300-1-H thru 300-5-H	a. Anatomy & Physiology. . .	8	
304-1-H; 304-2-H	b. Intro to Mil Emer Med Treatment.	2	
	c. Basic Emerg Treatment Techniques:		
304-8-1-H thru 304-8-6-H	1) Assisting Breathing & Heart Action.	10	
304-3-1-H thru 304-3-7-H	2) Control of External Hemorrhage	13	

*This program is recommended for use at USAMEDTC in the event that the Center does not possess the capability of presenting an integrated BCT/AIT Program.

**In order to conform to P.T. background of trainees entering AIT, Litter Drill, Man Carries and Loadings will be carried out in accordance with appropriate portions of LPs 1-45 while Army Drills and Runs will be carried out in accordance with LPs 26-70 respectively.

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
304-20-1-H thru 304-20-8-H; 304-21-1-H; 304-21-3-H; 304-21-4-H; 304-21-5-H	3) Immobilization of Injured Parts and Prevention of Shock	27	
304-11-H thru 304-13-H	4) Securing & Protecting Sterile Dressings . . .	5	
315-1-H thru 315-5-H; 306-1-H; 304-14-H	d. Application of Basic Techniques to Treatment of Casualties, PE and Field Medical Card.	24	89
	e. Field Treatment of Special Types of Casualties & Phase 1 Prof Test		
315-6-H	1) Emerg Treatment of Burn Casualties	3	
315-7-H	2) Emerg Treatment of CBN Casualties	3	
304-33-H	3) Emerg Treatment of Snake, Animal & Insect Bites.	2	
304-34-H	4) Emerg Treatment of Heat & Cold Injuries	2	
304-35-H	5) Combat Exhaustion . . .	2	
304-36-H	6) PE: Prof Test for Phase I.	4	16
	5. Technical Training: Phase 2 - Basic Skills of the Evacuation Aidman		
315-11-H thru 315-13-H	a. Lifting & Positioning of the Casualty on the Litter. .	5	
311-78-H	b. Preparation & Use of the Litter; Dressing Litters & Preparing Improvised Litters	2	
315-14-H	c. Review PE: Application of Army Leg Splint.	2	
315-15-H	d. Determining Evacuation Priority & Need for Evacuation	4	
315-16-H thru 315-18-H	e. PE: Prep of Casualties for Evac from the Battlefield	10	
311-79-H	f. Conversion of Mil vehicles to Casualty Carriers.	2	
311-81-H; 311-82-H	g. Removal of Injured from Vehicles	2	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
311-80-H	h. River Crossing Exercise.	3	30
	6. Technical Training: Phase 3 - Basic Skills and Duties of the Aidman		
325-1-H	a. Dispensary/Bn Aid Station Med Functions & Duties of the Aidman.	1	
307-1-H thru 307-5-H	b. Introduction to Pharmacy & Common Drugs	6	
325-15-H thru 325-19-H; 301-6-H	c. Common Medical Disorders & Complaints . .	7	
325-2-H	d. Temperature, Pulse & Respiration	4	
325-3-H	e. Blood Pressure.	4	
325-14-H	f. Diagnostic Tests.	2	
325-15	g. Sterile Technique	4	
325-24	h. Surgical Dressings I . . .	2	
325-23	i. Methods of Sterilization & Disinfection.	4	
325-7-H	j. Subcutaneous Injections.	2	
325-8-H	k. Intramuscular Injections.	2	
325-9-H	l. Intradermal Injections.	2	
325-12-H	m. Army Immunization Program	1	
325-13-H	n. Smallpox Vaccination	2	
325-11-H	o. Intravenous Therapy including Blood Transfusion	4	
325-10-H	p. Venipuncture	2	
325-20-H	q. Emergency Resuscitative Equipment	2	
325-21-H	r. Emergency Birth.	2	
325-54-H	s. Field Autoclave.	2	
325-22-H	t. Proficiency Test - Basic Patient Care.	4	59
	7. Technical Training: Phase 4 - Basic Ward Skills for the Medical Corpsman		
	a. Basic Ward Procedures:		
325-24-H	1) Basic Ward Orientation.	2	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
325-25-H	2) Preparation of the Unit for Reception of the Patient	3	
325-3	3) Cleanliness for Patients' Safety	1	6
	b. Ward Treatment Procedures I		
325-26-H	1) Positioning of the Patient	2	
325-27-H	2) Patient's Bed Bath . . .	2	
325-28-H	3) Bed Bath & Occupied Bed (PE)	4	
325-29-H	4) Administration of Enemas	2	
325-30-H	5) Hot & Cold Applications	2	
325-34-H	6) Hospital Diets	1	
325-35-H	7) Fluid Balance Records	1	
325-37-H	8) Observation of the Patient	2	
325-33-H	9) Prof Test: Adv Patient Care I	8	24
	c. Ward Treatment Procedures II		
325-25	1) Surgical Dressings II .	2	
325-36-H	2) EENT Procedures . . .	2	
325-38-H	3) Intro to Communicable Diseases	2	
325-39-H	4) Intro to Isolation Technique	4	
325-40-H	5) Admin to Oral Medications	2	
325-41-H	6) Sterile Glove Technique	1	
325-42-H	7) Catheterization (Male)	2	
325-45-H	8) Gastrointestinal Intub & Suction	2	
325-46-H	9) Special Suction	2	
325-47-H	10) Oxygen Therapy	2	
325-48-H	11) Care of the Orthopedic Patient	2	
325-49-H	12) Turning Frames	2	
325-50-H	13) Care of the Pediatric Patient	2	

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
325-51-H	14) Pre and Post-operative Care	2	
325-44-H	15) Prof Test: Adv Patient Care II	8	37
	8. Program Administration		
Co Comdr	a. Commanders Time	29	
121-14-H; GW-6; GW-7; GW-8; 325-22-H	b. Proficiency Testing.....	20	
Co Comdr	c. Administrative Processing.....	14	
102-1-H	d. Graduation.....	2	65
	9. Field Exercise		
305-1-H (J-11-3)	Medical Treatment, Evacuation & Nursing Exercise...	10	10
GRAND TOTAL HOURS			440

Appendix K

MASTER SCHEDULE FOR REVISED MODIFIED BASIC TRAINING PROGRAM FOR CONSCIENTIOUS OBJECTORS (1-A-0) WITHOUT PRIOR SERVICE

As was the case with AIT (see Appendix J), it was apparent at the completion of research that the innovations in the Experimental MBT/AIT Program for Conscientious Objectors could be used advantageously by the Medical Training Center in its MBT course. This would extend the benefits of the research to Conscientious Objectors in MBT, if it were found that the Center could not practically initiate MBT/AIT Course for the relatively small Conscientious Objector trainee population (about 5% of all trainees). Accordingly, representatives of the Training Center and HumRRO researchers, acting jointly, extracted the periods of instruction applicable to MBT from the Experimental MBT/AIT Program (Appendix I) and made other minor adjustments to develop the Master Schedule for the Revised Modified Basic Training Program for Conscientious Objectors (1-A-O) without Prior Service.

Detailed Revised Lesson Plans are available from USAMEDTC and HumRRO Division No. 3 (Recruit Training).

Master Schedule - Proposed Modified Basic Training Program
for Conscientious Objectors (1-A-O) Without Prior Service*

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
	1. General Military Indoctrination		
009-1-H	a. Achievements & Traditions	2	
115-1-H; 115-3-H	b. Mil Customs & Courtesies	3	
A-3-H	c. Character Guidance	4	
128-1-H	d. Code of Conduct & Geneva Convention	2	
116-1-H thru 116-3-H	e. Military Justice	3	
Co Comdr	f. Troop Information	1	
105-1-H thru 105-29-H	g. Drill & Ceremonies	22	
110-1-H thru 110-20-H	h. Inspections	18	55
	2. Field Support Skills for the Medical Corpsman		
A Subj Scd 21-4	a. First Aid	8	
109-1-H thru 109-3-H	b. CBR (Indiv. Protective Measures)	4	
108-1-H; 108-2-H	c. Guard Duty	4	
111-1-H	d. Intelligence Training	2	
311-1-H thru 311-25-H	e. Phys Tng (Incl Man Carries)	25	
111-8-H	f. Counterinsurgency	1	
113-1-H thru 113-5-H; 113-7-H; 113-8-H	g. Land Navigation	25	
123-1-H thru 123-5-H	h. Communications	9	
200-1-H	i. Infiltration Course	3	
117-1-H thru 117-7-H-A	j. Individual Tactical Tng**	19	
A Subj Scd 21-3	k. Field Sanitation & Personal Hygiene	2	
110-21-H; 112-1-H thru 112-9-H	l. Marches & Bivouacs	27	
117-8-H thru 117-11-H	m. Survival, Evasion & Escape	10	
118-1-H thru 118-4-H	n. Unarmed Defense	8	
117-12-H	o. Patrolling (Ambush & Counter Ambush)	5	
120-1-H	p. Civic Action & Handling of POWs & Other Detained Persons	2	

*This program is recommended for use at USAMEDTC in the event Modified BCT is given to COs separately from AIT.

**Includes 4 hours Field Fortifications and 4 hours Guerrilla and Anti-guerilla Operations.

Revised Lesson Plan Numbers (Unless Otherwise Indicated)	Instruction Presented	Hrs	Totals
120-2-H	q. Rotary Wing Aircraft Control & Support	2	156
	3. Program Administration		
Co Comdr	a. Commanders Time	20	
FM 21-20	b. Proficiency Testing. . . .	10	
Co Comdr	c. Administrative Processing	23	53
GRAND TOTAL HOURS			264

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13. ABSTRACT

A study was conducted to determine the effect of integrating the Basic Combat Training (BCT) and Advanced Individual Training (AIT) of the Medical Corpsman (MOS 91A10) for Conscientious Objector personnel. It was expected that the study would serve as a test of the combined BCT/AIT concept of training for broader application in the Army training system.

The curriculum for COs was redesigned to provide a continuous MOS-oriented 16-week training sequence. Redesign included introduction of new training techniques, such as TV geared to the rate of learning and arrangement of instructional material in functional context. Two sample classes (N = 80 each) were trained with this redesigned curriculum, and were tested against comparable classes trained in the normal two-stage sequence. In all subjects related to medical training, the experimental group performed significantly better on performance tests than trainees in the control group and did as well on written tests of military and medical knowledge.

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Conscientious Objectors						
Curriculum Engineering						
Educational Television						
Field Medical Skills						
Functional Context						
Integrated MBT/AIT						
Job Analysis						
Job-oriented Physical Training						
Job-oriented Television						
Medical Corpsman						
Modified Basic Training						
Nursing Skills						
Tests for Medical Corpsman						

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ERRATUM

SUBJECT: HumRRO Technical Report 70-1, *Development and Evaluation of an Integrated Basic Combat/Advanced Individual Training Program for Medical Corpsmen (MOS 91A10)*, by Joseph S. Ward *et al.*, January 1970 (SUPPORT II)

In the list of military personnel (Foreword, par. 5, line 9) who provided support for the research described in this report, a typographical error resulted in the omission of three names: MAJ Robert L. Miller, MAJ Louise M. Moody, and MAJ Irene T. Haupert. Their assistance was very much appreciated by the research team and by HumRRO, and we regret the error.

Lola M. Zook
Publications Manager