

ARI Research Note 89-16

AD-A207 513

Academic Skills for Non-Commissioned Officer Job Performance and Career Development

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for

**Contracting Officer's Representative
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**Technologies for Skill Acquisition and Retention
Technical Area
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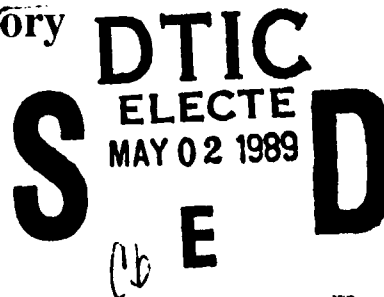
**Training Research Laboratory
Jack H. Hiller, Director**

April 1989



**United States Army
Research Institute for the Behavioral and Social Sciences**

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS -		
2a. SECURITY CLASSIFICATION AUTHORITY -			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for Public release; distribution is unlimited.		
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE -			4. PERFORMING ORGANIZATION REPORT NUMBER(S) -		
5. MONITORING ORGANIZATION REPORT NUMBER(S) ARI Research Note 89-16			6a. NAME OF PERFORMING ORGANIZATION Human Resources Research Organization		
6b. OFFICE SYMBOL (If applicable) -			7a. NAME OF MONITORING ORGANIZATION U.S. Army Research Institute for the Behavioral and Social Sciences		
6c. ADDRESS (City, State, and ZIP Code) 1100 South Washington Street Alexandria, VA 22314-4499			7b. ADDRESS (City, State, and ZIP Code) 5001 Eisenhower Avenue Alexandria, VA 22333-5600		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION Soldier Education Division		8b. OFFICE SYMBOL (If applicable) DAPC-PDE		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-87-C-0735	
8c. ADDRESS (City, State, and ZIP Code) U.S. Army Total Personnel Agency 2461 Eisenhower Avenue Alexandria, VA 22331			10. SOURCE OF FUNDING NUMBERS		
PROGRAM ELEMENT NO. 6007A		PROJECT NO. 794		TASK NO. (313) 3301	
				WORK UNIT ACCESSION NO. C1	
11. TITLE (Include Security Classification) Academic Skills for Non-Commissioned Officer Job Performance and Career Development					
12. PERSONAL AUTHOR(S) Ellen D. Gagne, Daniel T. Hickey, Monica A. Rositol, Roy Campbell, and Kathy J. Dowd Human Resources Research Organization					
13a. TYPE OF REPORT Final Report		13b. TIME COVERED FROM 87/01 to 88/12		14. DATE OF REPORT (Year, Month, Day) 1989, April	
				15. PAGE COUNT 368	
16. SUPPLEMENTARY NOTATION Joan Harman, contracting officer's representative					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Non-Commissioned Officer Education System, Military Education, Basic Skills.		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report describes work carried out to address basic academic skill deficiencies of U.S. Army Non-Commissioned Officers. Researchers reviewed job task descriptions and interviewed Non-Commissioned Officers about on-the-job performance. They also reviewed Non-Commissioned Officer Education System lesson materials and tests, monitored classes, and interviewed instructors, course managers, and students. Findings will be used to develop programs of instruction, the objective of which will be to correct academic skill deficiencies of Army Non-Commissioned Officers.					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Joan Harman			22b. TELEPHONE (Include Area Code) 202/274-5538		22c. OFFICE SYMBOL PERI-IC

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency Under the Jurisdiction
of the Deputy Chief of Staff for Personnel

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Research accomplished under contract
for the Department of the Army

Human Resources Research Organization

Technical review by

Rick Yekovich
Richard P. Kern

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By _____	
Distribution/	
Availability Codes	
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ACADEMIC SKILLS FOR NONCOMMISSIONED OFFICER JOB PERFORMANCE AND CAREER DEVELOPMENT

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ACADEMIC SKILLS FOR NON-COMMISSIONED OFFICER JOB PERFORMANCE AND CAREER DEVELOPMENT

EXECUTIVE SUMMARY

Requirement:

A broad range of authoritative sources stipulate that Army Non-commissioned Officers (NCOs) need to be equipped with academic skills in order to perform all aspects of their jobs. To ensure that those who demonstrate academic deficiencies are provided with appropriate instruction, a necessary first step is to determine the types and levels of skills needed to succeed in training, job performance and career development.

Procedure:

Researchers reviewed job task descriptions and interviewed NCOs about on-the-job performance. They also reviewed Non-commissioned Officer Education System lesson materials and tests, monitored classes, and interviewed instructors, course managers and students.

Findings:

1. The greatest overall need is for lower level academic skills; e. g., adding and subtracting whole numbers, reading and comprehending clearly stated information and speaking and writing in sentences.
2. Of the needed basic skills, reading for the purpose of performing specific functions is required most frequently.
3. Of the three difficulty levels established--basic, intermediate and advanced--most skill requirements are at the basic and intermediate levels.
4. Requirements for advanced skills occur in cases such as assignments to new Military Occupational Specialties or a part of higher grade NCOs' supervisory and leadership duties.
5. Requirements for academic skills increase as soldiers advance from grade E-5 to E-7.

Utilization of Findings:

These findings are needed by the U.S. Army Soldier Education Division and the Training and Doctrine Command to develop appropriate programs of instruction to serve the academic needs of NCOs.

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CHAPTER 1

ACADEMIC SKILLS AND THE NONCOMMISSIONED OFFICER

Among requirements for Noncommissioned Officers (NCOs) listed in The Army Non-commissioned Officer Guide (Headquarters, Department of the Army, 1986) is the need for academic skills. The guide states that "an NCO's ability to learn, teach, train, mentor, solve problems, act independently, have and inspire confidence, and motivate others are all dependent on basic educational skills." Although the claim that NCOs need basic educational skills seems reasonable, we know of no research that has been conducted to confirm it. Possibly the claim is wrong. Possibly the Army's tasks are so codified and the NCO is so experienced at performing these tasks that there is no need for reading, writing, and arithmetic skills. On the other hand, the claim that an NCO needs basic educational skills may be correct. If so, it is important to determine more precisely what skills are needed in what types of situations so that training for these skills can be planned accordingly.

For the past 12 months, our team of researchers examined the academic skill requirements of noncommissioned officers. We visited five posts and talked with 39 NCOs, including 4 Sergeants Major. We reviewed the curriculum materials for the Common Leader Training portions of the Primary Leadership Development Course (PLDC), the Basic Noncommissioned Officer Course (BNCOC), and the Advanced Noncommissioned Officer Course (ANCOC), and for the technical portions of BNCOC and ANCOC for several high-density Military Occupational Specialties (MOS). We monitored 13 NCOES classes, and interviewed 32 instructors, 11 students, and 8 course managers/developers. In all of these activities, our goal was to determine the extent to which NCOs need reading, writing, and arithmetic skills for job performance, classroom success, and career advancement.

We found that NCOs have a substantial need for the most basic of academic skills--including adding and subtracting whole numbers, reading and comprehending clearly stated information, and speaking and writing in sentences. Among NCOs assigned to new MOS, we found a need for the advanced skill of comprehending complex information. We also found indications of the need for comprehending complex information, writing original prose, and preparing original speeches as part of the advanced NCO's supervisory role, but we could not explore these indications in detail because appropriate data were not available for the NCO's leadership tasks.

Before describing our analyses and findings, however, we will first describe our procedure for selecting MOS, define the academic skills we focused on and describe our best estimate as to the general level of academic skill possessed by NCOs. This information will provide a backdrop for the following chapters.

Selection of MOS

The MOS we studied were 11B (Infantry), 13B (Field Artillery), 31C (Single Channel Radio Operator), and 63B (Light Wheel Vehicle Mechanic). We restricted our selection of MOS to the set of 22 MOS studied by Project A (The Selection, Classification, and Utilization of Personnel Project) because Project A data on tasks could then be used in selecting tasks to study. Within the set of Project A MOS we selected two combat (11B and 13B), one combat support (31C), and one combat service support (63B) MOS, so that all Army Branches would be represented. We chose high-density MOS in order to find out information relevant to the greatest number of soldiers possible within resource constraints.

Academic Skills

Academic skills, as the name implies, are skills required for success in formal schooling. They include language comprehension (reading and listening) and language production (writing and speaking). They also include skill in working with quantities (arithmetic and algebra). Academic skills are general in the sense that they are used across a variety of content domains. For instance, one can solve equations for unknowns in economics, physics, or physiology. And one can evaluate the clarity of one's writing whether one is writing about bicycles or butterflies or baseball players. Such skills are in contrast to a myriad of other skills that are domain-specific. For example, one can apply the law of supply and demand to an economics problem but not to a physics problem. And one can apply rules of playing baseball to baseball games but not to bicycle races.

While academic skills are clearly necessary for success in formal schooling, they are also useful in many work environments. Workers must read memos, orders, reports, and technical documentation. They must fill out forms and write reports. They must listen and speak to others in order to complete tasks. They must deal with quantitative information while controlling resources and budgets or working with equipment. All of these activities appear to require academic skills. To the extent that NCO work is like other work, one would expect that performance of NCO duties would require academic skills.

Categories of Academic Skills

In our study of NCOs, we found that it was useful to distinguish among the following categories of academic skills: Mathematics Computation, Writing, Speaking, Reading-to-Do, Reading-to-Learn, Listening-to-Do, and Listening-to-Learn. The first three categories are so obvious they don't require definition; however, the distinctions between Reading-to-Do and -Learn and Listening-to-Do and -Learn may not be clear.

Reading-to-Do and Listening-to-Do refer to activities that are done in the service of performing a task. The main goal is to get the task done, not to learn or understand something new. The goals of Reading-to-Learn and

Listening-to-Learn, in contrast, are to learn or understand some new information (Guthrie & Mosenthal, 1987; Sticht, Fox, Hauke, & Zapf, 1977). Typically, Reading-to-Do involves searching for a specific bit of information while Reading-to-Learn involves reading prose and integrating it with one's prior knowledge. Thus, the major obstacles in the two types of reading are different--in Reading-to-Do the major obstacle is **locating** the information, while in Reading-to-Learn the major obstacle is **connecting** new and known information. Similarly, in Listening-to-Do the hearer is listening for some specific information, while in Listening-to-Learn the hearer is trying to connect the heeded information to something already known.

Thus, we distinguished between these two categories of reading and listening because the mental demands of each category are different. Moreover, since we were examining the skill requirements of on-the-job performance, it was important to include the categories of Reading-to-Do and Listening-to-Do.

In summary, the seven categories of academic skill that we looked for were Mathematics Computation, Writing, Speaking, Reading-to-Do, Reading-to-Learn, Listening-to-Do, and Listening-to-Learn. These categories can be further differentiated into several levels of difficulty, which will be done in the next subsection.

Difficulty Levels for Academic Skill Categories

Because our goal was to obtain a rather detailed picture of academic skill requirements for NCOs, we decided to distinguish three levels of difficulty for each skill category. These distinctions would then allow us to assess not just the requirement for a skill category, but also the level of this requirement. This decision was instrumental in our finding that, whereas there are substantial academic skill requirements for NCOs, the majority of these requirements are at relatively low levels of difficulty.

Table 1.1 shows a Skill-Category by Difficulty-Level matrix. The left-hand column for each category indicates the simplest level we considered for that skill, and the right-hand column for each category indicates the most difficult level. The difficulty levels will be described below for each skill.

Mathematics Computation Difficulty Levels. The Mathematics Computation difficulty levels are: (1) basic arithmetic, (2) advanced arithmetic, and (3) algebra. **Basic arithmetic** consists of the ability to add, subtract, multiply, and divide whole numbers--for example, in determining distances on a map. **Advanced arithmetic** consists of the ability to add, subtract, multiply, and divide fractions, use decimal notation, compute percentages, and work with familiar formulas--for example, in determining the length to cut an antenna. **Algebra** consists of the ability to set up equations to determine unknowns.

Table 1.1

Skill Category by Difficulty Level Matrix

MATHEMATICAL COMPUTATION

<u>Basic Arithmetic.</u> Add, subtract, multiply, and divide whole numbers	<u>Advanced Arithmetic.</u> Work with fractions, decimals, percentages, and formulas.	<u>Algebra.</u> Perform operations that require an understanding of algebra.

WRITING

<u>Words.</u> Give information in words or phrases.	<u>Sentences.</u> Generate whole sentences on forms or formatted narratives. Use correct punctuation, grammar, and spelling.	<u>Prose.</u> Generate paragraph(s) of original prose. Consider compositional elements.

SPEAKING

<u>Words.</u> Give information in words or phrases.	<u>Sentences.</u> Speak in complete sentences, but with no need to prepare in advance.	<u>Prepared.</u> Prepare and give a briefing or other oral presentation.

READING-TO-DO

<u>Basic.</u> Use readily available, simple information on job aid, or follow simple instructions.	<u>Intermediate.</u> Locate easy-to-find information in books, diagrams, etc., and/or follow moderately complex instruction.	<u>Advanced.</u> Interpret tables, graphs, schematics, and/or locate difficult -to-find information in text passages, and/or follow multipath procedures.

READING-TO-LEARN

<u>Basic.</u> Read and learn content at the memorization level.	<u>Intermediate.</u> Read and learn content in a familiar domain at the comprehension level.	<u>Advanced.</u> Read and learn content in an unfamiliar domain at the comprehension level.

LISTENING-TO-DO

<u>Basic.</u> Follow simple instructions and procedures.	<u>Intermediate.</u> Follow moderately detailed instructions and procedures. Listen actively, ask questions.	<u>Advanced.</u> Follow detailed or multipath instructions or procedures.

LISTENING-TO-LEARN

<u>Basic.</u> Learn content at the memorization level.	<u>Intermediate.</u> Learn content in a familiar domain at the comprehension level.	<u>Advanced.</u> Learn content in an unfamiliar domain at the comprehension level.

Writing Difficulty Levels. The first level of difficulty in Writing consists of being able to generate and write down **words** and phrases that capture one's intended meaning--for example, while taking notes at a briefing. This level does not include copying of words, which would be an even simpler level of difficulty.

The second level of difficulty in Writing consists of writing complete **sentences**--for example, while writing comments on a form. Spelling, grammar, and punctuation are more important here than at the first level, although the most important thing is for the intended meaning to be communicated.

The third level of difficulty consists of generating paragraphs of original **prose**. This can happen, for example, when an NCO writes a letter of recommendation.

Difficulty Levels for Speaking. The first two difficulty levels for Speaking are parallel to those for writing. Speaking **words** occurs when an NCO answers simple questions or gives simple orders. Speaking **sentences** occurs when he or she asks questions, gives informal training, or gives instructions.

The third level of difficulty for Speaking is similar to that level for Writing in that larger segments of discourse are involved. In addition, the third level of Speaking consists of **prepared**, as opposed to less formal, speaking. For example, NCOs may prepare for formal instruction for which they are responsible. Too, some higher-grade NCOs are called upon to give formal briefings.

Difficulty Levels for Reading-to-Do. The **basic** level of Reading-to-Do consists of reading readily available, simple instructions such as one might find in a job aid. The **intermediate** level consists of locating easy-to-find information in manuals or diagrams and/or following moderately complex instructions. The **advanced** level consists of interpreting tables, graphs, or schematics, locating difficult-to-find information, and/or following complex branching procedures, such as troubleshooting procedures.

Difficulty Levels for Reading-to-Learn. The first two levels of difficulty for Reading-to-Learn contrast in their goals. The goal of Reading-to-Learn at the **basic** level is to memorize information, for example, for a test. The goal of Reading-to-Learn at the **intermediate** level is to understand information. The **intermediate** and **advanced** levels of Reading-to-Learn have the same goal of understanding, but vary on the familiarity of the domain. The intermediate level involves understanding new information in a familiar domain. For example, when NCOs read about leadership theory the domain is familiar because of their experience as leaders. In contrast, in the advanced level, the individual is trying to understand new information from an unfamiliar domain. For instance, because of personnel shortages, an NCO may be assigned to an unrelated MOS. To learn about this MOS, he or she may have to read a great deal of unfamiliar information.

Difficulty Levels for Listening-to-Do. The **basic** level of Listening-to-Do consists of following simple instructions, such as instructions for where to hold a training session. The **intermediate** level involves following more complex and lengthy instructions, such as instructions for installing a new piece of equipment. At this level, the listener asks questions of the speaker if he or she needs clarification. The **advanced** level of Listening-to-Do requires following complex instructions that include some branching (e.g., "if this happens, do this").

Difficulty Levels for Listening-to-Learn. The difficulty levels for Listening-to-Learn are analogous to those for Reading-to-Learn. Specifically, the first two levels--**basic** and **intermediate**--are distinguished by whether the goal is memorization or understanding, while the second two levels--**intermediate** and **advanced**--are distinguished by whether the content is familiar or unfamiliar.

Reading- and Listening-to-Learn and the Role of Content Knowledge

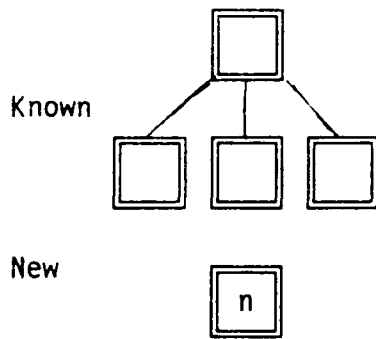
As was just described, the intermediate and advanced levels of difficulty for Reading- and Listening-to-Learn are differentiated on the basis of content familiarity. The reason for doing this is that recent research suggests that comprehension skills are qualitatively different when one is trying to understand new information in a familiar domain and new information in an unfamiliar domain (Walker, 1987; Yekovich, Walker, Ogle, & Thompson, in press). We will illustrate this claim with an example that we encountered while gathering data for this project.

This particular situation occurred in the ANCOC classes at Fort Gordon. Students from several related MOS, including 31C (Single Channel Radio Operator), 31M (Multichannel Communications Systems Operator), 31V (Unit Level Communications Maintenance), and 72E (Tactical Telecommunications Center Operator), attend these classes. One lesson in ANCOC covers MultiSubscriber Equipment (MSE). This topic is familiar to the soldiers from 31C and 31M because they have already worked with the equipment. However, it is unfamiliar to soldiers in the 72E and 31V MOS. Those soldiers spend a great deal more time reading the homework assignment for this lesson than do the soldiers who are already familiar with the content.

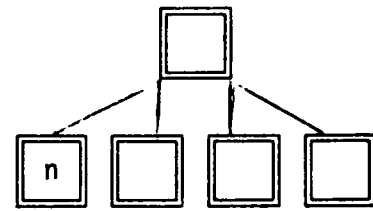
Comprehension of new information in a familiar domain involves several rather simple processes, schematized in Figure 1.1. One process (A) is recognizing the new information as an example of a known concept or principle. Another (B) is recognizing new abstract information as providing a good summary of one's concrete experience. Still another (C) is recognizing new information as similar to known information but different in a small number of ways. Because the domain is familiar, it is easy to bring to mind one's experience and conceptual knowledge--in fact, this happens automatically.

In unfamiliar domains, bringing to mind something relevant to attach the new information to is more difficult. One must consciously form various mental representations of the new information in order to retrieve some

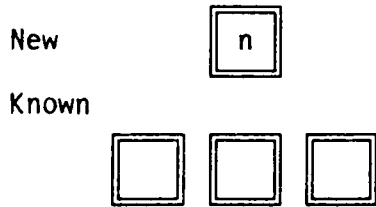
(A)



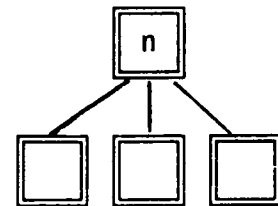
Integration



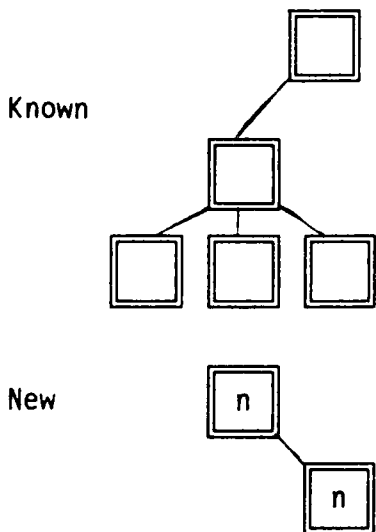
(B)



Integration



(C)



Integration

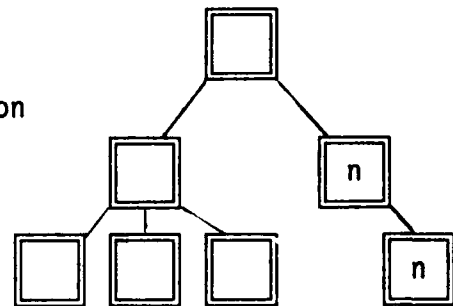


FIGURE 1.1

Processes Involved in Integrating New Information
in a Familiar Domain

related or analogous information from one's memory. This latter process must be learned, whereas the process of memory activation in familiar domains appears to be innate.

Another reason that comprehension in familiar domains is easier is that, once one has recognized how the new information fits into one's knowledge, one immediately knows a great deal about the new entity. For example, when 31C teletype operators learn about a new radio set, they can fit this set into their knowledge of other radio sets. If the new set is most similar to the AN/GRC 106 set with which they are familiar, then they can assume that many of the facts that they know about AN/GRC 106 will be true for the new set.

In contrast, when one is learning about new entities in an unfamiliar domain, one does not inherit "for free" a lot of known information about the entity. Rather one must acquire this information in part by drawing inferences while reading. One must constantly check such inferences against new information to ensure that they remain consistent with all the information being acquired. Thus, reading in unfamiliar domains demands more by way of inferencing and comprehension-monitoring activity.

We are calling attention to the distinction between comprehension in familiar and unfamiliar domains because many people assume that there are general comprehension skills that apply whether one is comprehending a letter from one's brother or a physics text. While there are some general comprehension skills, there are also some skills that are needed much more in unfamiliar than in familiar domains.

The Army places great value on NCOs specifically because of their experience and **familiarity** with their specialties. NCOs are able to understand and solve problems because they "have been there" before. This suggests that much of the comprehension required by NCOs is comprehension in familiar domains. Thus, we would expect that most of the NCO's requirements for Reading- and Listening-to-Learn (i.e., comprehension) will be at the intermediate level (familiar content), rather than at the advanced level (unfamiliar content).

Summary

In this section, we described the Skill Category by Difficulty Level matrix that guided our analysis of NCO job performance and career development. The skill categories include Mathematics Computation, Writing, Speaking, Reading-to-Do, Reading-to-Learn, Listening-to-Do, and Listening-to-Learn. Within each skill-category, there are three difficulty levels. In the next section, we will describe what we know about the academic skill level of NCOs.

Academic Skills Possessed by NCOs

The main purpose of our project was to determine the academic skill requirements for NCO job performance and career progression. It is difficult, however, to obtain a complete understanding of requirements without looking at the competencies of the performing group. Thus in this section, we provide an estimate of NCO competencies in reading and writing. For reading, the estimate is based on data collected in another study of NCOs (Harman, Bell, Sneed, & Sabol, in press). For writing, the estimate is based on our analysis of writing samples from NCOs and reports of writing instructors.

Reading

In January 1988, Harman and associates gave a sample of 1346 NCOs from a variety of MOS the Test of Adult Basic Education (TABE) Form D. The percentage of subjects at each rank were 25%, 40%, 28%, and 7%, respectively at E-4, E-5, E-6, and E-7. The average "grade level" performance on the reading was 11.0. Our approximate findings for the MOS we studied showed a similar grade level on this test. However, these findings should be viewed conservatively because this grade level for adults is not strictly equivalent to secondary grade 11 level.

Writing

To evaluate NCOs' writing skills, we obtained writing samples for 41 students enrolled in ANCOC at Fort Benning, Fort Gordon, and Aberdeen Proving Ground. The samples were from work done for the Army Writing Program (AWP) lessons. Samples consisted of compositions from all soldiers enrolled in a particular class section. Because ANCOC classes contain soldiers from several related MOS within a Career Management Field (CMF), these samples are from soldiers in the target MOS for this study, as well as in several related MOS.

The types of assignments for which we obtained samples varied across the three locations. Specifically, for the Infantrymen at Fort Benning we obtained samples of Counseling Statements, an early assignment in the AWP lessons. At Fort Gordon we obtained the first AWP assignment--to write an information paper in preparation for a briefing. At Aberdeen Proving Ground, the sample was for writing a letter of commendation. By far the least structured of these assignments was the information paper.

Analysis Framework. Assessment of written language may be undertaken in two ways. The first method is to use standardized tests of written language that compare individual performance to performance of a normative group. The second, more commonly used method is informal evaluation, which is most beneficial in pinpointing the particular strengths and weaknesses of individuals. We used informal evaluation to assess NCOs' writing competence.

The Test of Written Language (TOWL; Hammill & Larsen, 1983) suggests that writing samples be evaluated in light of five components: mechanics,

production, convention, linguistics, and cognitive components. **Mechanics** refers to the individual's handwriting. Legibility is a crucial factor in thought communication. **Production** refers to the quantity of idea units in a written passage. For written communication to convey the thoughts of the writer, an optimal number of sentences or idea units supporting a given idea or thought should be generated. Typically, longer sentences are thought to reflect well-defined thought units. However, "inefficient writers" often use lengthy sentences which support only a limited number of idea units. "Inefficient writers" typically produce fragmented, disjointed, and/or factually sparse written work. Conversely, "efficient writers" produce a greater number of idea units with fewer words. **Conventions** refers specifically to standard or rule-driven written conventions in language, such as punctuation, capitalization, and spelling. **Linguistics** refers to the semantic and syntactic construction of sentences. Important in this evaluative category is the comprehensibility of the writing. In other words, does the writer convey his or her thoughts in an "easily understandable manner"? Sentence structures, grammatical usage, and effective vocabulary selection are considered under this component as well. **Cognitive components** concerns structural organization, use of coherent arguments and reasoning, and idea development. Collectively, these components provide a conceptual framework for the evaluation of written work.

We focused much of our analysis on the production component because (1) this component could be fairly assessed in the writing samples made available to us, and (2) research supports the importance of this component. Specifically, several studies have found that inadequate writers are more likely to use "immature" connectors such as *and*, *but*, and *so*, and to create run-on sentences and vague, ineffective, or inefficient arguments. Hunt (1967; 1970) indicated that ineffective writers often write sentences equal in length to those written by effective writers, but with a greater number of immature connectors. Similarly, Veal (1974) found that the relative absence of simple coordinators distinguishes "good" from "poor" writers. Supporting this point, Potter (1967) determined that the use of connectors such as *and*, *but*, and *so* account for as much as 91% of the inadequate writers' sentences. Generally speaking, poor writers require as many or more words than effective writers to convey fewer and simpler ideas.

Results. For the purpose of this study, three sets of written samples were evaluated according to the five components outlined above. Each group of writing samples represented a particular career group of NCOs. Analyses of these evaluations for each student are presented in Table 1.2. **Total words** is the total number of written words, excluding names and specific Army terms (such as battalion, commendation medal, CA412 unit, C company). **Undistinguished (Undist.) Words** are commonly used connectives, as identified by Finn (1977); **Percent of Total** is the percentage of total words that are undistinguished with higher percentages suggesting a less efficient, less precise writing style. **Idea Units** are segments of meaningful expression; usually, an idea unit includes a noun and verb that can stand alone. **Spelling** errors are self-explanatory. **Construction and Agreement Errors** are typically run-ons, fragments, verb tense changes, pronoun-antecedent disagreement, and non-use of possessive pronouns.

Table 1.2
Evaluation of NCO Writing Samples

Infantry CMF (Counseling Statements)							
Student Number	Total Words	<u>Undist. Words</u>		<u>Idea Units</u>		Spelling Errors	Agreement, Constr. Errors
		Number	Percent of Total Words	Number	Avg. Wds./ Idea Unit		
1	64	48	75	4	16	3	5
2	77	51	67	7	11	3	7
3	56	35	63	4	14	0	7
4	35	32	91	2	18	0	2
5	80	56	70	6	13	0	9
6	51	32	63	3	17	9	11
7	65	48	74	5	13	2	18
8	32	18	56	2	16	1	4
9	96	63	66	4	24	3	4
10	75	49	65	4	19	0	5
11	97	64	66	5	19	7	7
12	127	83	65	7	18	6	2
13	55	35	64	4	14	1	2
14	110	68	62	7	16	7	6
15	40	23	58	2	20	0	3
16	62	34	55	3	21	0	4
17	33	25	76	2	17	3	3
Group Average	68	45	66	4	17	3	6

(Continued)

Table 1.2 (cont'd)
Evaluation of NCO Writing Samples

Ordinance CMF (Letters of Commendation)							
Student Number	Total Words	<u>Undist. Words</u>		<u>Idea Units</u>		Spelling Errors	Agreement, Constr. Errors
		Number	Percent of Total	Number	Avg. Wds./ Idea Unit		
1	167	37	22	6	28	5	3
2	100	52	52	6	17	4	6
3	103	45	44	6	17	0	3
4	160	92	58	9	18	6	15
5	98	50	51	9	11	5	10
6	60	25	42	3	20	5	8
7	66	33	50	5	13	3	4
8	48	19	40	3	16	0	0
9	88	47	53	6	15	0	6
10	60	23	38	4	15	6	2
11	48	24	50	3	16	5	6
12	55	34	62	3	18	1	7
13	73	35	48	6	12	2	6
Group Average	87	40	46	5	17	3	6

(Continued)

Table 1.2 (cont'd)
Evaluation of NCO Writing Samples

Communications CMF (Written Information Briefing)							
Student Number	Total Words	<u>Undist. Words</u>		<u>Idea Units</u>		Spelling Errors	Agreement, Constr. Errors
		Number	Percent of Total	Number	Avg. Wds./ Idea Unit		
1	208	108	52	14	15	7	10
2	310	182	59	34	9	4	12
3	139	67	48	10	14	1	5
4	109	45	41	9	12	2	10
5	178	82	46	16	11	2	8
6	257	130	51	18	14	2	18
7	193	113	59	16	12	1	14
8	134	59	44	11	12	6	17
9	272	108	40	16	17	3	11
10	127	60	47	8	16	7	12
11	192	89	46	26	7	4	9
Group Average	193	95	49	16	13	3	11

Interpreted in light of the component parts of writing, the results indicated that the Infantry group (counseling statements) performed at a more basic level than the other two groups. They incurred the largest percentage of undistinguished word usage, and the highest average number of words per idea unit. This writing assignment occurs early in the Army Writing Program, as does the information paper assignment. However, it is more structured than the information paper assignment and hence soldiers of equal ability should perform better on it. Since they didn't, this suggests that soldiers in the Infantry CMF have lower writing skills than do soldiers in the Communications CMF, a finding consistent with the aptitude eligibility criteria for the two CMF (discussed in the next chapter).

Construction and agreement errors were consistent between the two groups whose tasks were structured (Infantry and Ordnance). The majority of errors were due to noun/verb disagreement, verb tense changes, and use of nonpossessive pronouns where possessive pronouns should have been used. The comparatively high number of construction/agreement errors by the Communications NCOs may be a function of the unstructured nature of the task. Spelling errors were similar throughout the groups. Most of the misspellings can be attributed to phonetic look-alikes (*thair* for *their* and *there*; *wos* for *was*, *wer* and *wher* for *were*; *wen* for *when*). Other spelling errors occurred in the forms of omission and substitution of letters.

Despite these group differences in performance, all of the groups showed difficulty with consistency in organization and argument presentation, representation of relevant details, and use of structurally sound written form.

Our evaluation of writing samples suggests that the majority of NCOs can perform adequately for the lower two difficulty levels we have defined for Writing. This means they are able to make notes, fill in forms, generate simple statements, and construct simple sentences. It appears that NCOs are not proficient in generating of sentences or prose, although further research is needed to verify this latter conclusion, using tasks that are more unstructured than those we examined.

Summary and Preview

In summary, in this chapter we defined a Skill Category by Difficulty Level matrix (Table 1.1) to be used throughout our report. This matrix consists of seven academic skills at each of three levels of difficulty. We also described an estimate of NCO abilities in reading and writing. From what we know, the average NCO should be able to perform adequately at the two lower difficulty levels for these skills, although his or her writing is likely to be somewhat flawed. The assessment instruments used were not adequate for assessing NCO performance at the highest levels of difficulty although anecdotal reports from NCOs we interviewed suggest that many would perform poorly at these levels. Specific research on NCO performance of sophisticated reading and writing tasks would provide useful information.

The structure of this report is the following. In Chapters 2-4, we will provide detailed information about academic skill requirements for NCO career advancement (Chapter 2), job performance (Chapter 3), and classroom success (Chapter 4). In Chapter 5, we will describe and evaluate current NCOES training as it relates to academic skill issues. Finally in Chapter 6, we will summarize our findings and make recommendations for possible further research to define ways of improving NCO academic capabilities.

CHAPTER 2

CAREER PROGRESSION

In this chapter, we discuss the impact of academic skills on career progression, focusing on the NCO (E-4 to E-9) phase. We also discuss issues relating to recruitment and MOS selections. We give an overview of recruitment, and enlisted and NCO promotion standards in effect during our research activities, including a discussion of the impact of academic skills on each phase. Note that the Army career progression system changes constantly, and a myriad of exceptions exist to the procedures in place. The following discussion applies to the CMF that contain the MOS we are examining. While exceptions do exist, they are mentioned only when they seem to impact on the analysis made.

Enlisted Career Progression

Enlistment

A potential recruit first takes the Armed Services Vocational Aptitude Battery (ASVAB), a collection of 10 subtests, including General Science (GS), Arithmetic Reasoning (AR), Word Knowledge (WK), Paragraph Comprehension (PC), Numeric Operations (NO), Coding Speed (CS), Auto and Shop Information (AS), Mathematics Knowledge (MK), Mechanical Comprehension (MC), and Electronics Information (EI).

Selected subtests are combined to create different composite scores used to evaluate different specific aptitudes. The Armed Forces Qualification Test (AFQT) composite combines the Word Knowledge, Paragraph Comprehension, Arithmetic Reasoning, and Numeric Operations subtests. A recruit's AFQT score could be said to be a measure of his or her "academic skills." AFQT scores and education are used to set minimum qualification standards that the potential recruit must meet to qualify for enlistment.

Minimum aptitude and education standards are relevant to the present study because of their role in screening out many individuals deficient in academic skills. Table 2.1 lists the percentage of the subgroups of the American youth population who are screened out of the Army by minimum aptitude and education standards. (Education is a major factor because non high-school graduates need higher scores to get in.) In the spectrum of aptitude and education of potential recruits, nearly one-fourth of the population are screened out; in the minority population, roughly half don't qualify. While there is much debate of exactly what the ASVAB and the AFQT are actually measuring, and there are many other enlistment criteria, it will suffice to say that the Army screens out the applicants with the lowest academic skills.

Table 2.1

Percentage of American Youth (18-23) Population Ineligible for
Enlistment Based on 1984 Education and Aptitude Standards

<u>Sex</u>	<u>Percent Ineligible</u>
Male	23.7
Female	21.7
Both Sexes	22.7

Adapted from Table 21 (p. 71), in Screening for service: Aptitude and education criteria for military entry, by M.J. Eitelberg, J.H. Laurence, & B.K. Waters with L.S. Perelman, 1984. Washington, DC: Office of the Secretary of Defense (Manpower, Installations, and Logistics).

Job Assignment

Aptitude and education standards represent the minimum requirement for basic enlistment. Most Army job assignments have additional qualifications over and above the basic enlistment standard.

The ASVAB subtests are further grouped into "aptitude area composite scores" used to determine eligibility for specific job assignments. Table 2.2 lists these composites and their associated ASVAB subtests. Each MOS has a minimum qualifying score on one of the subtests, emphasizing the subtests measuring the abilities required for effective training and job performance in that MOS. The higher the individual's ASVAB scores, the more MOS for which he or she will qualify.

Other MOS eligibility factors, depending on the MOS, include sex, citizenship, high school coursework and graduation, color vision, and clearance eligibility. Equally important are the MOS available at the time of recruitment and, of course, what the individual wants or thinks he or she wants.

Compared to other MOS, the four MOS studied in this project have relatively low minimum aptitude area composite requirements. Nonetheless, a portion of the recruits still don't qualify. Table 2.3 lists the percentage of various male populations whose scores disqualify them from each of the MOS in our study. (Data were not available for MOS 31C, so we included in the table the data for a very similar MOS, Multichannel Communications Equipment Operator.)

The numbers in Table 2.3 show that many recruits who qualify for enlistment still don't qualify for one of these four MOS. Table 2.3 also

TABLE 2.2
Army Aptitude Area Composite Scores

<u>Composite</u>	<u>ASVAB Subtest</u>
Mechanical Maintenance (MM)	NO + EI + MC + AS
General Maintenance (GM)	GS + AS + MK + EI
Clerical (CL)	CS + NO + VE
Electronics (EL)	AR + EI + GS + MK
Skilled Technical (ST)	VE + MK + MC + GS
Operators/Food (OF)	NO + VE + MC + AS
Combat (CO)	CS + AR + MC + AS
Field Artillery (FA)	CS + AR + MC + MK
Surveillance/Comm. (SC)	NO + CS + VE + AS
General Technical (GT)	AR + VE
GS = General Science	AR = Arithmetic Reasoning
NO = Numeric Operations	CS = Coding Speed
MK = Mathematics Knowledge	AS = Auto & Shop Information
EI = Electronic Information	MC = Mechanical Comprehension
VE = Word Knowledge and Paragraph Comprehension	

Adapted from Tables 17 and 18 (pp. 70-72) in Manpower for military occupations, by M.J. Eitelberg, 1988, Washington, DC: Office of the Assistant Secretary of Defense (Force Management and Personnel).

TABLE 2.3
Percentage of Populations Unqualified for Four MOS

MOS 11B, Infantryman

Qualification Composite: CO (CO=CS+AR+MC+AS)

% Army Eligible Unqualified	6.3
% Gen. Population Unqualified	28.5

MOS 13B, Cannon Crewmember

Qualification Composite: FA (FA=CS+AR+MC+MK)

% Army Eligible Unqualified	6.4
% Gen. Population Unqualified	28.7

Multichannel Communications Equipment Operator

Qualification Composite: EL (EL=AR+EI+GS+MK)

% Army Eligible Unqualified	15.3
% Gen. Population Unqualified	35.5

MOS 63B, Light Wheel Vehicle Mechanic

Qualification Composite: MM (MM=NO+EI+MC+AS)

% Army Eligible Unqualified	7.8
% Gen. Population Unqualified	29.2

^aAdapted from Appendix A (pp. 201-220), in Manpower for military occupations, by M.J. Eitelberg, 1988, Washington, DC: Office of the Assistant Secretary of Defense (Force Management and Personnel). Also requires a score of 85 or above on the Motor Vehicle Drivers Battery (MVDB).

shows the Multichannel Communications MOS to be much harder to qualify for than the other MOS. This finding is consistent with our subsequent findings which show that the MOS 31C job tasks and training are the most academically demanding of the four MOS we studied.

The ASVAB is not a pure measure of "academic skills." Rather, many subtests measure a combination of domain knowledge and academic skills. Test items evaluate a recruit's ability to read and write (and sometimes compute) using information in a specific domain of knowledge. Thus, some recruits who have fairly good academic skills may perform poorly on the subtests in a composite due to insufficient domain knowledge (e.g., general science knowledge). Others may perform poorly due to poor academic skills. Hence, at least in some cases, the ASVAB composite for specific MOS screens out individuals with low academic skills over and above those already screened out by basic education and aptitude standards.

Individuals with higher ASVAB scores qualify for a wider set of MOS. This allows them more freedom of choice initially, but has little impact on career progression because the major factor determining NCO career progression within an MOS is overstrength or understrength in that MOS. Information about career progression probability is generally not available to recruits when they decide on an MOS.

The "bottom line" concerning academic skills and enlistment is that an applicant's academic skills will impact his or her ASVAB score. A very low score may prevent the individual from enlisting. Higher scores will open more potential military career paths (more MOS) to the recruit, but this increased opportunity has no direct impact on the soldier's promotion opportunities and career progression at the NCO level.

Enlisted Promotion

A recruit comes in as an E-1 and enters Initial Entry Training (IET), lasting from 14 to 32 months, depending on the MOS. Promotion to E-2 (Private) is automatic at 6 months, unless the individual's commander takes steps to prevent it. A commander may promote an E-1 with 4 months' time in service (TIS), but only 20% of the E-2s attached or assigned to a unit may have less than 6 months' TIS. Hence, a soldier's academic skills may factor into career progression at this point, particularly in MOS with extended IET.

A soldier's academic skill problems may manifest themselves during the first tour of duty. The Army directs much of its remedial academic training at soldiers during this phase, and soldiers with more intractable difficulties may "wash out" or choose not to reenlist, eliminating a potential problem at the NCO phase.

Promotion to Private First Class (PFC, E-3) is not automatic. Commanders may promote, without constraint, E-2s with 12 months' TIS and 4 months TIG (time in grade), with 2 months' TIG waivable. Commanders may

grant accelerated promotions to E-2s with only 6 months' TIS, but a unit is allowed to have no more than 20% of its E-3s with less than 12 months' TIS.

Commanders may promote to Specialist (SPC, E-4), without constraint, E-3s with 26 months' TIS and 6 months' TIG, with 3 months' TIG waivable. Accelerated promotions are possible at 12 months' TIS, but only 20% of a unit's E-4s may have less than 26 months' TIS. Promotion boards are not required for E-4s, but they may be used. Also, a security clearance may be required for promotion to E-4 in some MOS.

NCO Career Progression

NCO Promotion

Conversion to Corporal (CPL) from SPC, while still E-4, signifies advancement to NCO status. Commanders may laterally appoint SPC to CPL without constraint when the SPC has completed the Primary Leadership Development Course (PLDC) and has served in an NCO position for 60 days, or when the SPC has served in an NCO position for 120 days.

The promotion process for E-5 and E-6 changes considerably from the lower ranks. The soldier must still meet TIS and TIG requirements, but now he or she must appear before a Promotion Board. Also, promotion is now based on the number of promotion points (out of a potential 1000) that the soldier accumulates, with the minimum being 450. The Department of the Army sets the cutoff for promotion points for each MOS, thereby controlling the number promoted in each MOS. The cutoffs are adjusted to the needs for NCOs in the various MOS at a given point in time. These cutoff points vary a great deal among MOS. For example, an E-5 in MOS 11B may require 750 points for promotion to E-6 within his MOS, while an E-5 in 11M may only need 600 points. Some NCOs change MOS in order to earn a promotion. However, for NCOs who don't change MOS, a major factor in promotion is the overstrength or shortage in each rank in each MOS.

Promotion to Sergeant (SGT, E-5) signifies a substantial change in the soldier's status within the Army. At E-5, the soldier will usually have made both a mental and a tangible commitment to the Army in the form of a reenlistment or an extension. Also, even if he or she has had some experience as a CPL, the E-5 is a full-fledged NCO. While it is difficult to typify across all jobs, what makes E-5 so different is the responsibility, and to some extent, the alienation that comes with NCO status. While the physical job and duties generally do not change drastically from E-4 to E-5, there are new duties and tasks and the individual's peer group changes.

The Army sets two cutoff zones for each MOS. The primary zone allows for normal advancement, while the secondary zone allows for more rapid advancement of a few. To be eligible in the primary zone for promotion to E-5, a soldier must have 36 months' TIS and 8 months' TIG as an E-4, with 4 months of the TIG waivable. The E-5 secondary zone requires 18 months' TIS and 8 months' TIG, with 4 months' TIG waivable. Appearance before a board

is mandatory in both zones, and the soldier is required to have a 60 on his or her Skill Qualification Test (SQT) for the preceding 2 years (however, this requirement may be waived).

To be eligible in the primary zone for promotion to Staff Sergeant (SSG, E-6), a soldier must have 84 months' TIS with 10 months' TIG as an E-5, with 5 months' TIG waivable. The secondary zone is 60 months' TIS, except a soldier who has 575 administrative promotion points may appear before a promotion board at 45 months and be promoted at 48 months if selected. Soldiers must have completed PLDC to be promoted to E-6.

Promotion to E-7, E-8, and E-9 is done by a centralized selection board on an as-needed basis. TIS, TIG, and other requirements are determined before the board convenes. Both primary and secondary zones are used. Soldiers must complete ANCOC for promotion to E-8.

The Army's stated goal is to align NCOES with promotion structure such that PLDC will be required for promotion to E-5, BNCOC for E-6, ANCOC for E-7, and the Sergeants Major Academy for E-8. However, there is still a large gap between the number of NCOs and NCOES slots, so these requirements are not yet mandatory.

Promotion Points Worksheet

DA Form 3355, Promotion Points Worksheet, is used for promotion to E-5 and E-6. It provides a useful outline of the major NCO promotion factors. At the time of our research efforts, a total of 800 Administrative Points is possible on the worksheet, with an additional 200 points entered on the sheet from the Promotion Board results. Administrative point data are extracted from official records in the following areas.

Skill Qualification Test (SQT). The soldier gets two times his or her score for a maximum of 200 points, with a minimum SQT score of 60 required. Anything less than 60 is worth zero points.

Awards and Decorations. Fifty points is the maximum in this category. The maximum award (for a Soldier's Medal or higher) is 35 points and the minimum single entry is five points. Some qualification badges are included, as are official Certificates of Achievement.

Military Education. The maximum in this category is 150 points. Thirty points are awarded for completion of an NCOES course appropriate to grade and MOS. All other NCOES courses are awarded three points per week. Ranger or Special Forces Qualifications Course completion is worth 30 points. All other military courses (except MOS-producing courses such as IET) are worth two points per week. Army correspondence courses are worth one point for each five credit hours.

Civilian Education. The maximum in this category is 100 points. Ten points are awarded to anyone who obtains a high school diploma or a General Equivalency Diploma (GED), only if done while on active duty. Ten points

are granted for improving GT (General Technical) ASVAB composite score; this can be achieved only once. One point is awarded for each semester hour of any business/trade/college course.

Military Training. The maximum for military training is 100 points. Fifty points maximum is possible for assigned weapons qualification and 50 points is possible for performance on the physical fitness readiness test.

Duty Performance. The commander may award up to 200 points for evaluation of the soldier's "attitude, responsibility, initiative, adaptability, expression, and potential for advancement."

Promotion Board Award. In addition to the above 800 points, the aspirant E-5/E-6 must appear before a Promotion Board which awards up to 200 points (individual board members award points independently and points are averaged). Points are awarded in the following areas:

A. Personal appearance, bearing, and confidence	1-30 pts.
B. Oral expression and conversation skill	1-35 pts.
C. Knowledge of world affairs	1-25 pts.
D. Awareness of military programs	1-25 pts.
E. Knowledge of basic soldiering	1-45 pts.
F. Soldier's attitude	1-40 pts.

Enlisted Efficiency Report

All NCOs, E-5 through E-9, are required to be formally evaluated by their superiors at least annually. The process is formalized by the commander's completion of an Enlisted Efficiency Report (EER) for each soldier evaluated. The EER is then referred to by both the commander and the promotion board when awarding discretionary promotion points. The EER system is currently in transition. In the new system, evaluation is done in five areas: Competency, Physical Fitness and Military Bearing, Leadership, Training, and Responsibility and Accountability. In each of these areas the soldier receives one of four ranks: Exceeds standards, Meets standards, Needs some Improvement, or Needs much Improvement.

Academic Skills and NCO Promotion

While the individual has no control over the number of points required for promotion (the DA cutoff points), he or she has some control over the number of points accumulated. The soldier's academic skills will have some impact on this number, but the connection is not direct.

First of all, a possible 200 points can be earned by SQT performance. However, academic skills may not play an important role in SQTs. The NCOs we interviewed described how experienced NCOs tend to know the types of questions that will be asked on SQTs. Since the performance of their soldiers is a reflection on them, these NCOs hold SQT classes in which soldiers drill each other in preparation for the test. Thus, most NCOs

don't need to read in order to study for SQTs. The exception is an individual with a unique MOS who may have to engage in independent study.

A second source of points that does appear to have academic skill requirements is civilian education. Getting a high school diploma or GED requires the use of academic skills; however, this event counts a mere 10 points out of 1000. Improving one's ASVAB score requires academic skills but again it counts only 10 points. All other points in this category are for college or trade or business school credits. We were told that college and trade schools spring up around military posts to serve military clientele, and that many of the courses in these schools can be passed doing little reading or writing. The lecturers cover all tested materials thoroughly in class and tests are multiple-choice. Thus we are skeptical that there is much of an academic skill requirement even in this most academic-sounding of promotion criteria.

A third source of points is military training and duty performance, which count for 300 points. As will be discussed in Chapters 3 and 4, we did not find much need for advanced academic skills in order to succeed in job performance or in NCOES courses (PLDC through ANCOC). However, there may be a major academic skill component involved with leadership tasks; that has yet to be determined. So, until additional research is performed, it is difficult to say to what extent academic skill contributes to duty performance. Some senior NCOs stated that attitude is probably the most important factor in duty performance ratings.

Finally, the promotion board appearance accounts for 200 points. One Sergeant Major we interviewed, who has participated on a number of boards, said that academic skill played only a minor role in these evaluations. The knowledge displayed by the individual was due to experience rather than academic skill. Other than knowledge, the Sergeant Major said that the most important factor was how the applicant withstood the pressure of the situation.

Summary

In summary, the factor that weighs most in NCO promotion is the cut-off score determined by the DA, and this cut-off has nothing to do with academic skills. The next most important factor appears to be motivation (e.g., to drill for SQTs) and attitude (leading to awards, positive evaluations, etc). Finally, a rather minor factor is the minimal academic skills required for civilian education points.

It must be emphasized that we do not yet know the extent to which typical NCO leadership tasks require academic skills. Indications discussed in Chapter 3 are that these tasks have a significant academic skill requirement. If further research finds this to be the case, then our estimate of the size of the effect of academic skills on career progression would increase.

CHAPTER 3

JOB PERFORMANCE

In this chapter, we examine how academic skills impact NCO job performance. Job performance relates back to some issues raised in the preceding chapter, as performance does have some impact on promotion (e.g., 200 points for duty performance). Job performance is also tied to the contents of the chapter that follows (NCOES Training) since effective job performance is the objective of training. Table 3.1 shows how career phases, job duties, and the training system correspond to one another.

We first describe the overall Army occupational environment, including MOS, duty assignment, and the Army job task structure. Readers already familiar with these topics may wish to skip to page 3-12, where the discussion of academic skill requirements begins. The discussion of academic skill requirements for job performance focuses on common tasks, MOS-specific tasks, and leadership tasks.

Army Occupational Environment

Military Occupational Specialty (MOS)

A soldier's MOS defines his or her role in the Army. Similar MOS are grouped into Career Management Fields (CMF). Currently there are 33 CMF and a total of 396 individual MOS. Different CMF contain different numbers of individual MOS; the MOS may not exist at all ranks, and makeup of both the MOS and the CMF is constantly changing. Figure 3.1 illustrates the makeup of CMF 63, which includes the 63B MOS. As in many CMF, several of the MOS merge at the higher supervisor ranks.

MOS Assignment

Upon meeting qualifications for an MOS, a soldier is officially awarded the MOS. The most prevalent MOS qualification processes are completion of an MOS-producing service school or completion of on-the-job training (OJT) of at least 60 days. Of the 396 MOS, 297 (including the four we are studying) can be awarded at the E-3 level or at the completion of IET. The MOS awarded after minimum training is referred to as the Primary MOS or PMOS, and is most important to the Army in terms of training, experience, demonstrated qualifications, and Army needs.

In addition to the PMOS, the Army awards each soldier a Career Progression MOS (CPMOS). This is the next higher pay grade in the normal line of progression from the PMOS. The CPMOS outlines what a soldier must know and do next. Regulations specify that a soldier can be required to perform in his CPMOS two grades higher than current grade at any time.

Table 3.1
Army Career Phases, Duties, and Training System

	Grade	Skill Level	NCOES	Position
NCO	E-9	SL 5	SNCOC	Sergeant Major
	E-8			First Sergeant/ Master Sergeant
	E-7	SL 4		Sergeant First Class
	E-6	SL 3	ANCOC	Staff Sergeant
	E-5	SL 2	BNCOC	Sergeant
Enlisted	E-4	SL 1	PLDC	Corporal
	E-3			Private First Class
	E-2		OSUT or BCT/AIT	Private
	E-1			

CAREER PROGRESSION CHART

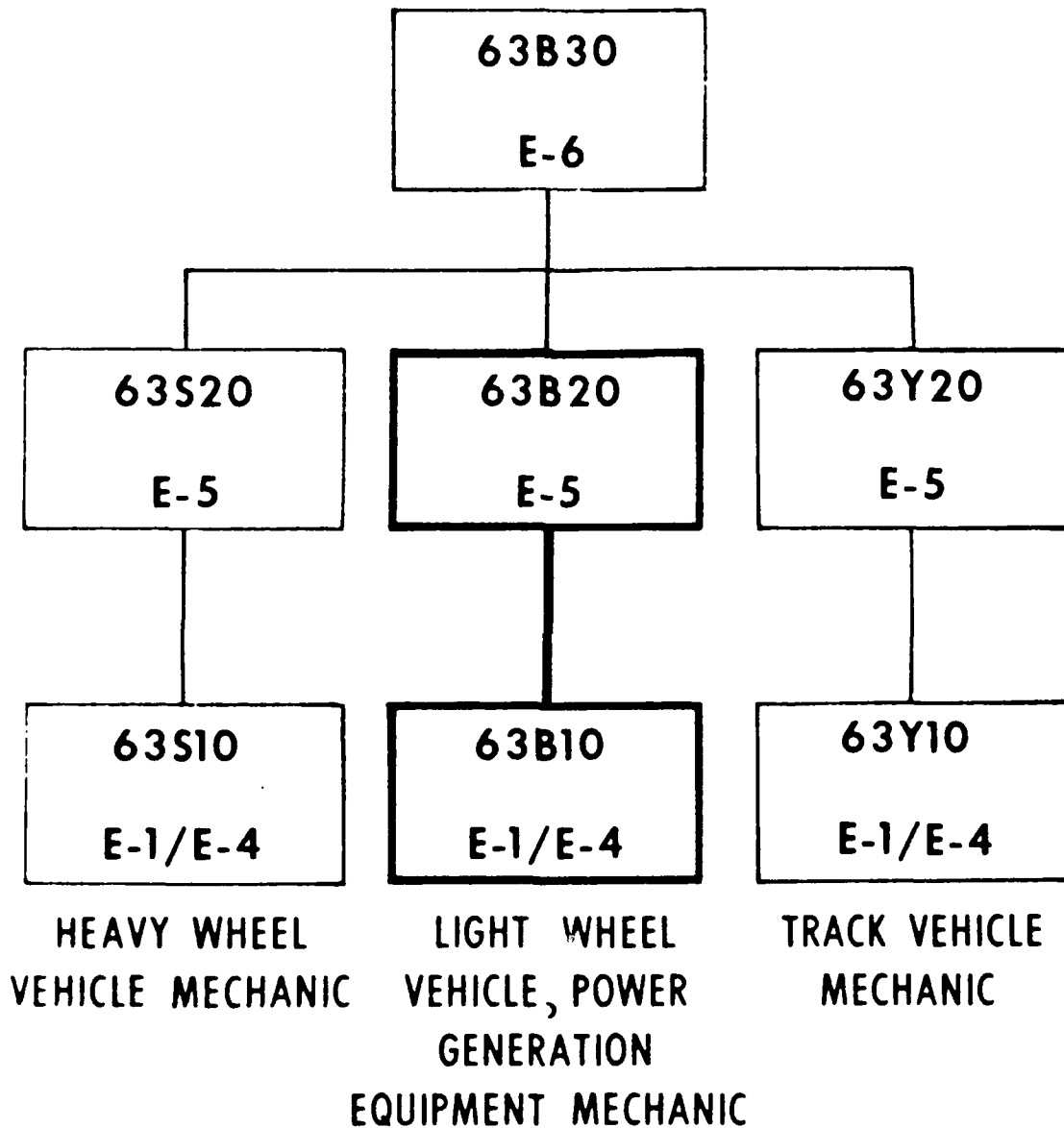


Figure 3.1

Career Tree for CMF 63, Ordnance

The Army also requires E-6 and E-7 soldiers to select and meet the requirements for a Secondary MOS (SMOS). The Army no longer tests proficiency in SMOS, and soldiers can be assigned to work in their SMOS only when they cannot be used in their PMOS or CPMOS. A few soldiers will also have an Additional MOS (AMOS), but it is not required.

Duty MOS (DMOS) refers to the authorized position to which a soldier is assigned and in which he or she is performing duty. Each soldier is assigned a Skill Level (SL) corresponding with rank, with numbers 1 (for E-1 through E-4), 2, 3, and 4 (for E-5, E-6, and E-7), and 5 (E-8 and E-9). The soldier's skill level corresponds with job task skill levels.

Changing MOS

It is common for soldiers to change MOS within a CMF, and many soldiers choose or are assigned a new MOS in an entirely different CMF. MOS changes are most commonly associated with promotion. In some cases, MOS don't exist beyond a certain rank, as in CMF 63. The MOS 63S, 63Y, and 63B all merge into 63B at the E-6 level. This reflects the emphasis on supervisory responsibilities at the E-6 level. While the E-6 63B must be familiar enough with 63S and 63Y job tasks to supervise subordinates, he or she does not have to perform the tasks personally.

Sometimes soldiers must change MOS to be promoted because of limited promotion opportunities in their present MOS. As described in the preceding chapter, relative shortages or overstrengths in MOS at each rank are the predominant factor in promotion. By changing to a new MOS, a soldier may substantially reduce the time he or she must wait for a promotion and may increase the likelihood of timely promotions in the years to come.

MOS changes are a particular concern relating to academic skills. In order to pass SQTs, perform on the job, and complete MOS-specific training, the soldier in a new MOS must rely more on academic skills than the soldier who has been in the MOS all along. Without the extensive job-specific knowledge base of more experienced counterparts, a soldier in a new MOS may have to read background material during training courses in order to stay up with classmates. Without the job and task familiarity, the soldier in the new MOS may have to refer to field manuals and regulations to perform tasks that more experienced colleagues have long since mastered. Because this situation represents one of the most academically demanding for NCOs in our study, it is important for future work to determine how frequently it happens.

Army Job Tasks

All individual job tasks in the Army are codified by MOS, skill level, and training site. All tasks have a number and a title. Tasks may be "common" to all soldiers regardless of MOS, they may be shared among two or more MOS, or they may be unique to a single MOS.

MOS-Specific Duty Environment

Army duty environments vary enormously. Initially, all soldiers start at the lowest apprentice level in their MOS, and as their experience accumulates they are given more responsibility. But beyond that, duty environment will depend on whether they are combat arms, combat support, or combat service support. Moreover, their environment depends on whether their assignment is in the U.S. (CONUS) or overseas (e.g., USAREUR or 8th Army), and whether they are in a tactical versus special administrative type of unit.

Within an MOS, the duty environment changes substantially from SL 1 to SL 4. Even within MOS and skill level, there is a variety of potential job tasks to which a soldier may be assigned. For example, an SL 1 MOS 11B is typically a Rifleman, but he could also be a Security Guard, an Ammunition Handler, a Messenger, a Radiotelephone Operator, a Scout Gunner, an Ammunition Specialist, or an Operations Assistant--each with very different corresponding duties. The same holds true at all of the higher skill levels in 11B and a similar situation exists in 13B. (The more technical 31C and 63B MOS are more narrowly definable because they are developed around a specific set of technical equipment.)

The following is an overview of the typical duty environment for SL 1 through SL 4 soldiers in the four MOS.

MOS 11B--Infantryman

At SL 1 (E-1 - E-4), the typical 11B will be a Rifleman (although other duty assignments of Automatic Rifleman, Machine Gunner, and Grenadier are also common assignments within the squad) performing as a member of a four-man Fire Team in a Light (on foot) or Heavy (Mechanized) Infantry unit. At this level, he could be characterized as a "hole-digger and shooter" because he is basically concerned with performing individual tasks associated with basic weapons and battlefield survival. He is responsible for maintaining his individual weapon (or crew-served weapon if so assigned) as well as maintaining other personal items of equipment. He performs basic first aid and field sanitation, and must be proficient in operations under chemical and nuclear conditions. He employs individual techniques of camouflage, construction of fortifications, and basic land navigation. He uses and cares for his individual weapon, machine gun, squad assault weapon (SAW), light anti-tank weapon (LAW), anti-personnel and anti-tank mines, and grenades. He is a member of the Fire Team in the offense and defense and in movement formations and a member of different types of patrols. Virtually all of his tactical employment will be under close monitoring and supervision.

At SL 2 (E-5), the 11B is a Fire Team Leader (Assistant Squad Leader in Light Infantry units) responsible for himself and three subordinates. He is responsible for providing tactical and technical guidance for these men. He leads, supervises, and provides training for his team, and still performs the individual combat and survival tasks. He evaluates terrain and selects

weapons' emplacement positions. He interprets maps, supervises small force field operations, and implements combat orders. He generally performs under the direct supervision of the Squad Leader, although he can perform limited missions independently with his team.

At SL 3 (E-6) the 11B is a Squad Leader, responsible for himself and two Fire Teams (and a carrier if in a Mechanized Unit). He is responsible for providing tactical and technical guidance to his squad and directly supervising and controlling his two Fire Team leaders. He leads and controls the execution of the tactical mission, receiving and issuing orders. He coordinates actions with adjacent and supporting elements, and must understand the overall specific mission of the platoon. He performs under indirect supervision, increasingly in independent missions, and is often physically separated from his platoon.

At SL 4 (E-7) the 11B is a Platoon Sergeant, responsible, with the Platoon Leader (a commissioned officer), for about 40 men. He must be able to function both with and without a Platoon Leader. He provides technical and tactical planning and guidance to subordinates and professional support to higher grade personnel. He plans for and conducts sustained independent operations with all or part of his platoon.

In summary, the progression from E4-E7 for 11B soldiers is one of increasing supervisory responsibility for infantry units.

MOS 13B--Cannon Crewmember

The SL 1 (E-1 - E-4) MOS 13B is normally a Cannoneer. He may be assigned to either a towed or a self-propelled Artillery unit and to one of five types of howitzers. He is a member of a howitzer crew (Section) which consists of from 9 to 12 crewmembers including the SP or prime mover (towing vehicle) driver. He participates in emplacing, laying, firing, and displacing of the cannon. The Cannoneer is primarily responsible for doing the things necessary to bring the gun into position and to prepare it for firing. He performs maintenance on the howitzer and prime mover. He lays field wire and assists in setting up the gun emplacement point. He may be assigned as the SP/prime mover driver. He maintains and prepares ammunition, and loads the cannon. The Assistant Gunner will set and lay for quadrant elevation. During missions, each Cannoneer has a specific job he must perform. All tasks are performed under direct supervision.

The 13B SL 2 (E-5) is normally a Gunner. There is one Gunner per Section (howitzer). He prepares the weapon to fire on targets, using indirect and direct firing methods. The Gunner lays the weapon for direction and fires the gun. He measures the angle of site to crest and conducts boresighting and basic periodic tests on the gun and fire control system. He supervises the Cannoneers in maintenance of the gun, the carrier/prime mover, and other Section equipment. When not actually engaged in a fire mission, he assists the Section Chief (Chief of Section) in supervising of Section activities as directed.

The 13B SL 3 (E-6) is normally a Section Chief (Chief of Section) responsible for himself and 8 to 11 crewmembers, plus one howitzer (and its prime mover if towed) plus all Section equipment. The Section Chief supervises emplacing, laying, firing, and displacing of the howitzer. He trains and instructs Section crewmembers, including the Gunner, in gunnery procedures and techniques. He directs construction and camouflage of Section emplacements, and supervises overall maintenance of howitzer and Section equipment. He also reports and updates weapon and ammunition status, and receipts for ammunition. Finally, he assures that safety procedures are followed during weapon firing.

The 13B SL 4 (E-7) is normally a Platoon Sergeant or a Gunnery Sergeant (Chief of Firing Battery), responsible for four Sections (six Sections in some towed units). The duties of the Platoon Sergeant and Gunnery Sergeant somewhat overlap. (Platoons have both Platoon Sergeants and Gunnery Sergeants.) Each must be prepared to take over the duties of the other and both must be prepared to assume the duties of the Platoon Leader. Duties include reconnaissance and selection of the gun position, control of the advance party, and supervision of the gun guides. The Gunnery Sergeant uses the aiming circle to lay the howitzer, and determines the initial deflection, distances, and vertical angle. He supervises the gun line during firing. The Platoon Sergeant is the technical advisor to the Section Chief and is responsible for Section proficiency. He is responsible for Platoon defensive planning, for ammunition distribution to the Sections, and for ammunition accountability.

In summary, as with 11B, the duties of the 13B become increasingly supervisory from E-4 through E-7. Moreover, some of the duties assigned to different grades are simply a way to apportion the responsibilities associated with artillery equipment.

MOS 31C--Single Channel Radio Operator

The SL 1 (E-1 - E-4) MOS 31C is either a Single-Channel Radio Operator, a Radio Teletype Operator, or a Single-Channel Satellite Terminal Operator, depending on the unit to which he or she is assigned. Assignment may be to the headquarters of a maneuver unit or to a Signal unit, to operate the type of equipment to which he or she is assigned. Depending on the type of equipment, two or more operators are assigned to each radio. The operator positions vehicles and trailers, erects antennas, installs and operates generators, and connects power equipment components. He or she receives and transmits messages under supervision and maintains station logs. He or she installs cryptographic devices and maintains radios and associated equipment. The operator at this level works under supervision, although not always direct or constant supervision.

The 31C SL 2 (E-5) is either a Senior Radio Operator or a Radio Team Chief, depending on the type of equipment. There is normally a minimum of one E-5 per radio (or system) and sometimes three (one per shift). The E-5 supervises the operation of a radio system or a satellite team. He or she selects team sites, and operates the equipment to process outgoing/incoming

messages. He or she prepares and disseminates work schedules and instructions, enters the radio net, and functions as an NCO (when required). He or she corrects and instructs subordinates' work performance, and checks operational logs, maintenance schedules, and station files for completeness and accuracy.

The 31C SL 3 (E-6) is a Section Chief, or in some organizations a Radio Team Chief. The Section Chief normally supervises two to four teletypes (TTY) Satellite Terminal Teams, or Radio Teams. He or she supervises the installation, operation, and maintenance performed by the teams, selects sites, and supervises installation of equipment. He or she prepares and conducts training programs, and prepares and disseminates work schedules for the teams. He or she requisitions supplies and prepares technical and administrative reports. For TTY, he or she serves as both an operator and direct supervisor, as required.

At SL 4 (E-7) MOS 31C ceases to exist. It merges with 12 MOS to form MOS 31Y, which at SL 4 is a Communications Electronics Chief. The E-7 is in charge of all of the communications issues for the unit to which he is assigned. This involves a great deal of coordination, monitoring of message accounting, and ensuring the security of communications.

In summary, the progression from E-4 to E-6 for 31C is from team member to team chief to supervisor of several teams, again illustrating the increasing supervisory load for NCOs.

MOS 63B--Light-Wheel Vehicle Mechanic

The MOS 63B SL 1 (E-1 to E-4) is a Light-Wheel Vehicle Mechanic. Another duty position, Recovery Vehicle Operator, is available only to those who have a school-produced Additional Skill Identification (ASI). It is difficult to typify the kind of organization in which the 63B will work. He or she could be assigned to Organizational, Direct Support (DS), or General Support (GS) Maintenance. Further, DS and GS units are often mission-tailored. There might be only one or two Light-Wheel Vehicle Mechanics in the unit or there could be 30 or more. Regardless of unit, however, the job of the Light-Wheel Vehicle Mechanic is to perform unit maintenance on internal combustion engines and accessories, powertrain, and chassis components of light-wheeled (5-ton or less) vehicles. He or she uses common hand and power tools, reads technical manuals (TMs) and interprets schematic diagrams, adjusts operating mechanisms, and tunes engines. He or she employs Test, Measuring, and Diagnostic Equipment (TMDE) in conjunction with electrical circuit checks, and does some minor troubleshooting based on ability and experience. He or she primarily removes and replaces components as directed. Typically, the E-1 through E-4 works directly with, and under the supervision of, a more senior mechanic.

The 63B SL 2 (E-5) is also a Light-Wheel Vehicle Mechanic. (SL 2 can also be a Recovery Vehicle Operator if he or she possesses the ASI.) The primary difference between the SL 1 and the SL 2 is that the SL 2 diagnoses malfunctions. He or she is the primary user of the TMDE. He or she

troubleshoots to component level, interprets complex schematic diagrams, and aligns and adjusts assemblies to prescribed tolerances. He or she provides technical guidance and supervision to subordinate personnel, and conducts on-the-job training for SL 1 personnel.

The 63B SL 3 (E-6) is a Senior Mechanic. Two other MOS merge with 63B at this Skill Level, the Heavy Wheel Vehicle Mechanic (63S) and Track Vehicle Mechanic (63Y). The Senior Mechanic must be able to perform "wrench-on" maintenance tasks. He or she plans and organizes work schedules and assigns duties. He or she supervises TAMMS (The Army Maintenance Management System), PLL (prescribed loading list), and automated systems. He or she performs approval inspections prior to release of repaired equipment. The Senior Mechanic is responsible for establishing and administering the safety program for the shop.

The 63B SL 4 (E-7) is a Motor Sergeant Maintenance Supervisor. The Motor Sergeant supervises unit maintenance, shop operations, and recovery operations. He or she plans and organizes workroom layout and work flow. He or she establishes and controls the unit's file of maintenance technical publications, and performs all maintenance-related administrative functions. He or she initiates necessary maintenance management and repair parts actions.

Academic Skill Demands of NCO Job Tasks

In our analysis of NCO job performance we focused on identifying the academic skill demands of NCO job tasks--common tasks, MOS-specific tasks, and leadership tasks. The following sections include discussion of the analysis method, results of the analysis of the data, and conclusions drawn from the results. Our findings include the academic skill demands for all common tasks for skill levels 1 through 4 and a sample of MOS-specific tasks for 11B, 13B, 31C, and 63B (also skill levels 1 through 4). We discuss, but don't specify, the skill demands of leadership tasks. We compare the academic skill demands of NCO job tasks (common and MOS-specific) at each skill level and also compare the four MOS with respect to their academic skill demands for MOS-specific tasks.

Analysis Method

To analyze the academic skill demands of NCO job tasks we examined all of the common tasks for skill levels 1, 2, 3, and 4 and selected MOS-specific tasks for skill levels 1 through 4 of 11B, 13B, 31C, and 63B. Our method for analyzing the academic skill demands of job tasks required five steps: (1) selecting tasks to include in the analysis, (2) using documentation in Soldier's Manuals to rate tasks with respect to our Skill-Categories by Difficulty Level matrix (see Table 1.1), (3) verifying researcher ratings with subject matter experts (SMEs) in the field, (4) analyzing the verified ratings, and (5) presenting the results of the analysis.

We also examined leadership tasks; however, the analysis method differs from that used for the common tasks and MOS-specific tasks. Therefore, the method for analyzing leadership tasks will be explained in the section following the discussion of the common and MOS-specific tasks.

Selection

Project staff examined all common tasks in the Soldier's Manual of Common Tasks--Skill Level 1 (79 tasks) and the Soldier's Manual of Common Tasks--Skill Levels 2/3/4 (50 tasks). We decided to review all of the common tasks to provide a complete picture of the academic skill demands common to all NCOs at skill levels 1-4, thereby avoiding problems of task selection bias.

For MOS-specific tasks, we decided to select tasks rather than review them all because of the large number of tasks involved (e.g., an E-5 11B is responsible for 36 SL 2 and 50 SL 1 MOS-specific tasks). Our goal was to select tasks that are critical and frequently performed, and represent the entire variety of MOS-specific tasks.

With skill levels 1 and 2 tasks, we used Project A task data to identify tasks meeting these criteria. Project A is a large-scale study funded by the Army Research Institute (ARI) to validate the Armed Services Selection and Classification Battery against job performance. In the development of job performance tests, Project A researchers used Subject Matter Experts (SME) ratings and judgment to identify a set of 45 tasks for testing in each MOS. These tasks were perceived to be some of the most critical, and/or frequently performed, and/or difficult for a given MOS. They also represented the full range of tasks for that MOS (Campbell, Campbell, Rumsey, & Edwards, 1986).

From the Project A list of 45 critical tasks, our project staff selected approximately 10 to 25 representative tasks that appeared to be among the more demanding academically. In other words, we did not randomly select from critical tasks, but selected with a bias toward academically demanding tasks. Thus, our task samples overrepresent such tasks, and our results should be interpreted with this selection bias in mind.

In selecting MOS-specific tasks at skill levels 3 and 4, we did not have the advantage of previous research efforts to determine MOS-critical tasks. Therefore, project researchers familiar with Army tasks selected skill levels 3 and 4 tasks from Soldier's Manuals and MOS-specific lesson material, using the same criteria used for skill levels 1 and 2 selection when possible.

Rating

Step two in the analysis method involved researcher rating of selected tasks with respect to the academic skills in our Skill Categories by Difficulty Level matrix (see Table 1.1). Soldier's Manual documentation of the conditions, standards, and performance measures for training and

evaluation of the tasks generally provided enough information as to what academic skills were required and at what level. When Soldier's Manual documentation was not available, relevant information from technical manuals, field manuals, and lesson materials provided information to rate the tasks. In the case of MOS 31C skill level 4, which has no documented tasks, researchers obtained skill level 4 tasks from ANCOC material. Then subject matter experts provided step-by-step descriptions of performing the task. We used these descriptions to rate the tasks.

In addition to MOS-specific tasks, some common tasks were identified as critical to NCOs. So, our task selection method resulted in assigning "critical" common tasks to the MOS-specific task lists. All four MOS have several "critical" common tasks assigned to the MOS-specific task lists for skill levels 1 and 2, and 11B and 13B also have selected "critical" common tasks in their skill level 3 task lists. Inclusion of common tasks with MOS-specific tasks is based on Project A research for skill levels 1 and 2, and expert Army task analysts for skill level 3. To sum it up, any common tasks identified as "critical" for an MOS were considered MOS-specific tasks during analysis of the MOS tasks.

Verification

Verification, and in a few cases rating and verification, was conducted during our site visits to Fort Benning (11B), Fort Sill (13B), Fort Gordon, (31C), and Aberdeen Proving Ground (63B). In general, SMEs briefly described how a task was conducted, suggested what academic skills it required from their point of view, and/or reviewed our preliminary task ratings. Further questions to better understand a task were possible during the open-ended interviews. From the information reported by the SMEs, researchers were able to verify the ratings made from the documentation. When a question occurred after a site visit, telephone calls to our contacts at the sites cleared up any confusion with respect to the ratings. Our method of researcher rating and subject matter expert verification ensured accurate ratings based on researchers' understanding of the skill categories and SMEs' experience in performing the tasks. The results of our NCO job task analysis for common tasks and MOS-specific tasks are presented in the following sections.

Academic Skill Demands of Common Tasks

Analysis of all of the common tasks for skill levels 1 through 4 did not reveal many academic skill demands for these tasks. Across all skill levels, Reading-to-Do is the most prevalent skill required, with 16% of the tasks requiring it. Speaking skills are demanded by 13% of the common tasks and 12% require Mathematics Computation. Only 7% of the tasks require Writing and even fewer tasks require Listening-to-Do--6%. None of the common tasks demand Reading-to-Learn or Listening-to-Learn skills of the NCOs. All tasks requiring Reading and/or Listening are performed with an immediate goal in mind, therefore any reading and listening requirements are rated as Reading/Listening-to-Do.

Table 3.2 shows the percentage of common tasks requiring academic skills and Table 3.3 shows the percentage of common tasks requiring academic skills at each of the three difficulty levels. Marked variations exist between the percentage of tasks requiring the academic skills at each skill level. The data for academic skill demands at each skill level will be presented in the following sections. Appendix A contains lists of task elements requiring each academic skill and ratings for each task element.

Skill Level One

Of the 79 skill level 1 common tasks, very few require academic skills. Only 10% require Reading-to-Do, 8% require Math, 5% require Speaking, 4% require Writing, and only 1% require Listening-to-Do. NCOs performing in skill level 1 positions are not responsible for many common tasks with academic skill demands on them. Only 16 of the 79 skill level 1 tasks have academic components. Thus, 80% of these tasks require technical and military knowledge, but no academic skills. Moreover, what academic skill demands there are, are almost all at the lowest difficulty level.

To be more specific, for Writing the demands are confined to the lowest level--writing words and sentences in formatted narratives. For example, to mark an NBC contaminated area, an NCO must write required information, such as date, time, and rads per hour, on the NBC marker. To prepare a range card for an M60 machine gun the NCO must make appropriate annotations on the range card. These tasks require writing skills at only the most basic level.

Mathematics Computation and Speaking skill demands are also rated at the lowest level. All the tasks involving arithmetic calculations are rated at the basic level. Only one task involving speaking requires the second or intermediate level, while the remainder require the lowest level.

Reading-to-Do requirements are concentrated at the intermediate level, with 6% of the skill level 1 common tasks involving reading of sentences. All but one of the six tasks with Reading-to-Do requirements at the intermediate level are map reading/land navigation tasks which require NCOs to locate information on military maps. The other intermediate reading task is using a TM, if necessary, to maintain a protective mask with hood.

In summary, of the 79 skill level 1 common tasks the map reading tasks pose the most academic skill demands on NCOs, and even these demands are not very high.

Table 3.2

**Percentage of Common Tasks Requiring Academic Skills,
by Skill Level^a**

Skill Level	Math	Writing	Speaking	Reading-to-Do	Reading-to-Learn	Listening-to-Do	Listening-to-Learn
1 (N=79)	8% (6)	4% (3)	5% (4)	10% (8)		1% (1)	
2 (N=21)	24% (5)		19% (4)	33% (7)		14% (3)	
3 (N=18)	22% (4)	17% (3)	33% (6)	22% (4)		17% (3)	
4 (N=11)	9% (1)	27% (3)	27% (3)	18% (2)		9% (1)	
TOTAL (N=129)	12% (16)	7% (9)	13% (17)	16% (21)		6% (8)	

^aNumbers in parentheses indicate number of tasks.

Table 3.3

Percentage of Common Tasks Requiring Academic Skills
at Three Difficulty Levels*

Skill Level	Math			Writing			Speaking			Reading-to-Do			Listening-to-Do		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 (N=79)	8 (6)			3 (2)	1 (1)		4 (3)	1 (1)		4 (3)	6 (5)		1 (1)		
2 (N=21)	19 (4)	5 (1)					10 (2)		10 (2)		24 (5)	10 (2)	10 (2)	5 (1)	
3 (N=18)	22 (4)			6 (1)	6 (1)	6 (1)	6 (1)	22 (4)	6 (1)	6 (1)	17 (3)		17 (3)		
4 (N=11)	9 (1)			18 (2)	9 (1)		18 (2)	9 (1)		18 (2)			9 (4)		
TOTAL (N=129)	12 (15)	1 (1)		4 (5)	2 (3)	1 (1)	5 (6)	5 (7)	3 (4)	3 (4)	12 (15)	2 (2)	2 (3)	4 (5)	

*Numbers in parentheses indicate number of tasks.

Skill Level Two

There are far fewer skill level 2 common tasks, 21, and more of them require academic skills than do the skill level 1 tasks. Thirty-three percent of the skill level 2 tasks involve Reading-to-Do and 24% require the NCO to complete relatively simple mathematical calculations. Nineteen percent and 14% of the tasks require Speaking and Listening-to-Do skills, respectively. None of the skill level 2 tasks involves Writing.

The 33% of the tasks requiring Reading-to-Do are divided into 24% at the intermediate level and 10% at the highest level. The two task elements with advanced Reading-to-Do requirements involve working with the automatic chemical agent alarm system. When the start-up test on the chemical alarm system fails, NCOs need to use troubleshooting tables in TM 3-6665-225-12. Although the start-up test should not fail every time, the need to be able to read the troubleshooting tables is important when the system does fail. The task elements requiring Reading-to-Do at the intermediate level include reading maps, technical manuals, Army Training and Evaluation Programs (ARATEPS), and other Army documents.

Nineteen percent of the skill level 2 tasks involve basic arithmetic and 5% (one task element) demand advanced arithmetic skills (intermediate level). The advanced arithmetic involves calculating the grid azimuth on a military map from the starting point to the destination and converting the grid azimuth to a magnetic azimuth to navigate from one point on the ground to another point. To convert a grid azimuth to a magnetic azimuth requires the NCO to use a grid-to-magnetic conversion ratio, which involves mathematical calculations with fractions. The simple arithmetic calculations involve adding distances for map reading/land navigation tasks, reading meters to measure radiation levels, and determining how many hours a piece of equipment has been in operation to schedule service or replacement.

The Speaking and Listening-to-Do task elements generally appear together. For example, using automated Communications Electronic Operations Instructions (CEOI) requires both Speaking and Listening-to-Do, as does the task to prepare and operate FM radio sets. Both tasks at the basic level, running through a series of steps to communicate on a radio network. Additional Speaking and Listening-to-Do task elements include rehearsing a training session, incorporating feedback from the practice training session in final lesson plans, and conducting training. Since rehearsing and conducting training sessions require the NCO to prepare a lesson, these elements demand Speaking skills at the highest level. Listening to feedback on the practice training session requires Listening-to-Do at the intermediate level (it is not advanced because the NCO is presumably familiar with the content of the lesson being prepared).

Analysis of skill level 2 common tasks did not uncover many academic skill demands for NCOs. There are more Reading, Math, Speaking, and Listening-to-Do requirements than for skill level 1 tasks, but no Writing skills are required. Slightly less than one-half of the skill level 2 common tasks had no academic skill demands.

Skill Level Three

While there are even fewer skill level 3 common tasks (18) than skill level 2 common tasks, and the academic skill demands of the common tasks at skill level 3 show a different emphasis than do those at skill levels 1 and 2. The dominant academic skill is Speaking, with 33% of the tasks requiring this skill. Twenty-two percent of the tasks require Mathematics and Reading-to-Do. Seventeen percent require Writing and Listening-to-Do.

The primary reason for the emphasis on Speaking at skill level 3 is the introduction of more leadership-oriented tasks which require the NCO to issue orders, thus the increased demand for speaking. For example, skill level 3 NCOs are responsible for initiating unmasking procedures, directing squad-size elements' fires in defense, and conducting training. Of the 33% of the tasks which require Speaking, 6% demand simple speaking in words and phrases, 22% demand intermediate speaking skills, while only 6% involve prepared speaking. The task element demanding NCOs to prepare a briefing is to recommend needed training to unit leaders based on evaluation of the status of training. The other task elements requiring Speaking skills at the basic and intermediate levels include asking a subordinate questions during a performance counseling session and ordering soldiers to unmask according to the proper steps for the specific situation. Both involve speaking in sentences (intermediate level). More of the task elements which require Speaking occur at the basic level than at the intermediate and advanced levels.

The 22% of the tasks demanding Mathematical Computation only require the NCO to perform simple calculations, such as comparing, adding, and subtracting numbers. For example, skill level 3 NCOs are responsible for checking the expiration date of their M256 chemical detector kits to determine when to order a new kit. Or, they must compare all readings taken with the IM-174 series radiacmeter and select the highest reading to record as the radiation level.

The Reading-to-Do task elements occur at the basic and intermediate levels, 6% and 17%, respectively. At the basic level, NCOs review scores and performance evaluations on SQTs, ARTEPs, and field training exercises (FTXs) to evaluate the status of training. This task does not require the NCO to locate any specific information or learn any of the information with the intent to remember. Reviewing the scores and evaluations is done to get a general idea of overall unit performance. Three of the task elements require intermediate reading skills. One element demands reading a TM, if necessary, while operating an AN/PDR-27 Radiac Set. The other elements involve map reading to analyze terrain using the five military aspects of terrain, and reviewing FM 22-100 and FM 22-101 before conducting a performance counseling session.

The three task elements requiring Writing abilities range from basic writing of phrases, to forming grammatically correct sentences and prose. At the low end of the spectrum is writing pertinent information to submit an NBC-1 report. In the middle is completing a written report of a counseling session, which involves writing stereotypical statements on the appropriate

form. Preparing a written report to unit leaders on recommended training requires Writing skills at the advanced level. Thus at skill level 3, NCOs are expected to be able to write in a variety of styles and formats. However, writing tasks don't appear to be performed frequently.

The three Listening-to-Do task elements occur at the intermediate level. For example, NCOs at skill level 3 are responsible for observing training sessions to evaluate the conduct and status of training. They must also conduct performance counseling sessions with subordinates, requiring them to listen to their subordinate questions and comments to effectively counsel them.

NCOs at this level must be able to effectively and clearly issue orders to direct their subordinates, and as a counterpart must be able to effectively and actively listen to their subordinates. In addition, skill level 3 NCOs are expected to be able to communicate through written channels when necessary and to read appropriate manuals and maps to complete their mission. On the technical side, simple arithmetic calculations may be necessary to perform their everyday functions. Thus at skill level 3, NCOs are expected to possess academic skills at the basic and intermediate levels in all areas--Reading, Writing, Math, Speaking, and Listening--in order to successfully fulfill the Army mission. Minimum requirements exist for Reading, Speaking, and Writing at the advanced level for skill level 3 NCOs. We now move to the question of whether progression from skill level 3 to skill level 4 demands more by way of academic skills, at least for the common tasks.

Skill Level Four

There are only 11 skill level 4 common tasks and the emphasis changes from Reading-to-Do for skill levels 1 and 2 and Speaking for skill level 3 to Speaking and Writing for skill level 4. Twenty-seven percent of the skill level 4 common tasks require Speaking and Writing. The reason appears to be an emphasis on communicating with both subordinates and superiors, using both oral and written methods. For example, skill level 4 NCOs are responsible for completing NBC-4 reports (Writing) and briefing their platoon on the plan for night defense (Speaking). The skill level 4 writing requirements are all at the basic levels of completing and annotating forms. On the other hand, the Speaking demands at this skill level occur along the higher end of the scale--from issuing orders, which requires speaking in complete sentences, to preparing briefings.

Reading-to-Do requirements occur in 18% of the tasks, and Math and Listening-to-Do demands appear in only 9% of the tasks. The Reading task elements at this skill level involve map reading. The task element "Receive orders in the form of an operations order or fragmentary order" requires Listening skills at the intermediate level. The Math element, however, is rated at the lowest level of basic arithmetic. Skill level 4 common tasks only demand simple addition and division calculations to determine average radiation dose. Overall, skill level 4 tasks are not any more demanding academically than skill level 3 or even skill levels 1 and 2.

Summary of Academic Skill Demands in Common Tasks

In summary, common tasks make some academic skill demands on NCOs at skill levels 1 through 4, but few of these demands are at the most difficult level. The primary skill required is Reading-to-Do, with Speaking and Math also being important. Writing skills are required to successfully complete a handful of the common tasks, but these demands are generally at the lowest level. While Listening-to-Do is required by only 5% of all common tasks, it appears to be somewhat important for skill levels 2 and 3.

The limited academic skill demands of the common tasks for skill levels 1 through 4, however, do not provide a complete picture of the academic skill demands of NCO job tasks, since each MOS has MOS-specific tasks for which NCOs at each skill level are responsible. Therefore, the next section will present the academic skill demands of the MOS-specific tasks by MOS and skill level within each MOS.

Academic Skill Demands of MOS-Specific Tasks

The overall results of the MOS-specific task analysis are in agreement with the results of the common task analysis. Primary academic skill demands in the MOS-specific tasks emphasize Reading, Writing, and Mathematics Computation. Speaking is also important with respect to tasks that are supervisory in nature. While the type and levels of skills required showed the same pattern in common and MOS-specific tasks, more of the MOS tasks had an academic requirement--perhaps due to our conscious selection bias in favor of academic tasks and in part due to the more technical nature of MOS-specific tasks. Across all of the MOS, 65% of the tasks require Reading-to-Do compared to 16% of the common tasks. As many as 42% of the tasks involve Mathematics Computation, 34% demand Writing, 33% require Speaking, and 15% include Listening-to-Do. None of the MOS-specific tasks at any skill level include Reading-to-Learn or Listening-to-Learn, for the same reasons stated in the previous section on academic skill demands of common tasks.

Table 3.4 illustrates the percentage of MOS-specific tasks with academic skill demands for each MOS. Table 3.5 provides the percentage of MOS-specific tasks with academic skill demands at each difficulty level. Appendix B provides example lists and rating tables for each. Comparative data for the four MOS are provided below.

In interpreting Tables 3.4 and 3.5, as well as the following discussion of MOS-specific tasks, the reader should bear in mind that we selected, from a pool of critical and/or frequently performed tasks, those that seemed to have academic skill components. Thus, the percentages reported do not give a valid estimate of the percentage of all critical, frequently-performed tasks that have an academic skill component. However, the percentages can be used to make relative comparisons about academic skills across skill levels, MOS, or difficulty levels.

Table 3.4
Academic Skill Demands of MOS-Specific Duty Tasks^a

Course			Percentage of Tasks Containing Academically Demanding Elements of each Type ^c						
MOS	Skill Level	No. Tasks ^b	Math	Writing	Speaking	Reading-To-Do	Reading-To-Learn	Listening-To-Do	Listening-To-Learn
11B	1 & 2	13	31 (4)	0	15 (2)	62 (8)	0	15 (2)	0
	3	7	29 (2)	43 (3)	29 (2)	29 (2)	0	14 (1)	0
	4	4	50 (2)	100 (4)	50 (2)	50 (2)	0	50 (2)	0
	All	—	—	—	—	—	—	—	—
13B	1 & 2	24	33 (8)	29 (7)	25 (6)	50 (12)	0	21 (5)	0
	3	10	20 (2)	20 (2)	20 (2)	30 (3)	0	10 (1)	0
	4	6	67 (4)	33 (2)	17 (1)	83 (5)	0	17 (1)	0
	All	11	100 (11)	9 (1)	18 (2)	45 (5)	0	27 (3)	0
31C	1 & 2	—	—	—	—	—	—	—	—
	3	27	63 (17)	19 (5)	19 (5)	48 (13)	0	19 (5)	0
	4	24	13 (3)	29 (7)	29 (7)	63 (15)	0	0	0
	All	3	33 (1)	67 (2)	67 (2)	100 (3)	0	0	0
63B	1 & 2	23	61 (14)	26 (6)	70 (16)	78 (18)	0	39 (9)	0
	3	—	—	—	—	—	—	—	—
	4	50	36 (18)	30 (15)	50 (25)	72 (36)	0	18 (9)	0
	All	15	33 (5)	7 (1)	20 (3)	60 (9)	0	7 (1)	0
All	1 & 2	11	55 (6)	82 (9)	36 (4)	82 (9)	0	0	0
	3	10	30 (3)	90 (9)	20 (2)	100 (10)	0	0	0
	4	—	—	—	—	—	—	—	—
	All	36	39 (14)	53 (19)	25 (9)	78 (28)	0	3 (1)	0
All	1 & 2	62	23 (14)	16 (10)	23 (14)	56 (35)	0	6 (4)	0
	3	27	48 (13)	59 (16)	33 (9)	70 (19)	0	7 (2)	0
	4	48	63 (30)	42 (20)	46 (22)	73 (35)	0	29 (14)	0
	All	—	—	—	—	—	—	—	—
All	1 & 2	137	42 (57)	34 (46)	33 (45)	65 (89)	0	15 (20)	0
	3	—	—	—	—	—	—	—	—
	4	—	—	—	—	—	—	—	—
	All	—	—	—	—	—	—	—	—

^a Sets of MOS-specific tasks determined to be most critical to NCOs at corresponding rank.

^b Refers to number of tasks analyzed in project (not the total number performed by soldiers in the MOS).

^c Number of tasks given in parentheses.

Table 3.5

Academic Skill Demands of MOS-Specific Duty Tasks, by Difficulty Level^a

Course			Percentage of Tasks Containing Academically Demanding Elements at Each Type and Difficulty Level																				
MOS	Skill Level	No. Tasks ^b	Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do			Listening-To-Learn		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
11B	1 & 2	13	31						8	8		31	31					8	8				
	3	7	29			43			29			29						14					
	4	4	50			50	50				50	25	25					50					
	All	24	33			21	8		4	13	8	21	29					4	17				
13B	1 & 2	10	20			20			20			20	10					10					
	3	6	50	17		17	17			17		17	67					17					
	4	11	100			9			9	9		45						27					
	All	27	59	4		15	4		11	7		11	37					19					
31C	1 & 2	24	4	8		29			25	4		4	46	13									
	3	3	33			67			67			100											
	4	23	35	26		22	4		70			74	4					39					
	All	50	20	16		28	2		48	2		2	62	8				18					
63B	1 & 2	15	33			7			13		7	27	33					7					
	3	11	55			36	36	9	36			27	36	18									
	4	10	30			40	10	10	10	10		40	50	10									
	All	36	39			25	14	14	6	14	6	19	36	22				3					
All	1 & 2	62	19	3		5	11		8	11	3	11	32	13				5	2				
	3	27	44	4		30	26	4	33			15	48	7				4	4				
	4	48	50	13		15	17	10	2	38	6	10	58	4				6	23				
	All	137	35	7		13	16	4	4	25	4	12	45	9				5	9				

^a Sets of MOS-specific tasks determined to be most critical to NCOs at corresponding rank.^b Refers to number of tasks analyzed in project (not total number in MOS).

MOS 11B--Infantryman

Academic skill demands for infantry NCOs reflect the general trend across all MOS. Half of the tasks selected for analysis require Reading-to-Do. Math skills come in second, with 33% of the tasks requiring basic or advanced arithmetic calculations (i.e., the first and second levels of difficulty for Mathematics Computation). Writing skills are identified in 29% of the selected tasks, and 25% of the tasks involve speaking. Twenty-one percent of the Infantry tasks analyzed had Listening-to-Do components. Because we found wide variations between the skill levels, we will describe each level separately.

Skill Levels 1 and 2. Thirteen of the 24 MOS 11B tasks are identified as skill level 1 or 2. Sixty-two percent of the selected Infantry tasks at skill levels 1 and 2 require Reading-to-Do. Examples of Reading tasks include reading directions to install or disarm an M21 metallic antitank mine, referring to a manual while practicing preventive medicine, and reading maps. Thirty-one percent of the Reading tasks occur at the basic level and 31% at the intermediate level. And 31% of the tasks involve Math skills, all at the level of basic arithmetic calculations.

Speaking and Listening-to-Do occur in 15% of the selected tasks. The Speaking task components are divided equally between the basic and intermediate levels. The Listening task elements are also divided between the basic and intermediate levels demanding passive and active listening to familiar material, respectively. For example, skill levels 1 and 2 Infantrymen are responsible for adjusting indirect fire, a task that involves giving and receiving commands. The NCO must actively use oral communication (Speaking--sentences) and listen to incoming commands (Listening-to-Do--intermediate). On the other hand, sending a radio message without using a CEOI requires these skills only at the basic level.

None of the 11B skill levels 1 and 2 tasks demand any Writing skills, and none of the other academic skill demands occur at the highest level. There are fewer academic skill demands at skill levels 1 and 2 than at the higher skill levels, as will be illustrated in the following sections.

Skill Level 3. Researchers analyzed seven 11B skill level 3 tasks. For these tasks, there are more Writing demands than demand for any other skills. Forty-three percent of the tasks require Writing at the basic level. The reason for the emphasis on Writing is that skill level 3 Infantry are responsible for preparing and issuing oral squad operations orders and squad-size element's defensive sector sketches, which involve jotting down information and annotating the sector sketches.

In addition to Writing demands, skill level 3 Infantry are also required to perform tasks that use Reading, Math, Speaking, and Listening skills. Only 14% of the selected tasks involve Listening-to-Do, while each of the other skills (Reading, Math, Speaking) occur in 29% of the tasks. All of the task elements with Math requirements involve simple arithmetic operations, such as checking the expiration date on the M256 chemical detector kit to determine when to order a new kit and calculating ranges and

zones when preparing a squad-size defensive sector sketch. Reading, Speaking, and Listening task elements are performed at the intermediate level. For example, issuing an oral squad operations order requires speaking in sentences, and preparing a squad-size element's defensive sector sketch and analyzing terrain require map reading skills.

A higher percentage of the academic skill demands at skill level 3 occur at the intermediate level than the basic level, as was also the case for the skill levels 1 and 2 tasks. Even more academic skill demands occur in the selected skill level 4 tasks, as shown below.

Skill Level 4. Because of the difficulty in finding doctrinal skill level 4 tasks, only four skill level 4 Infantry tasks were analyzed. With such a small sample, caution must be taken in interpreting these data. Our data indicate very high proportions of tasks with academic skill demands. All of the selected tasks involve Writing and half require Math, Reading, Speaking, and Listening. Only simple arithmetic calculations are required by the tasks with Math elements. The Reading and Writing task elements occur at the basic and intermediate levels. The Listening task requires active listening at the intermediate level. Speaking demands occur at the highest level.

Examples probably better illustrate the extent of the academic skill demands. Infantry NCOs at the E-7 level (skill level 4) are responsible for preparing and issuing oral operations orders for offensive missions and preparing fragmentary orders. These tasks require the NCO to prepare operations and fragmentary orders for oral briefings or issuing of orders. The E-7 must listen attentively (intermediate level) and take notes (basic level) during oral platoon operations orders to determine relevant information for oral squad operations orders. In addition to preparing and issuing operations orders, skill level 4 NCOs in Infantry units must prepare route reconnaissance reports and maintain accountability of personnel. Both tasks require the three R's--Reading, Writing, and Arithmetic. Preparing a route reconnaissance report demands map reading (Reading-to-Do--intermediate), calculating distance and coordinates (Math--intermediate arithmetic), and taking notes to orally issue the route reconnaissance report (Writing--basic level). Maintaining accountability of personnel requires counting the number of personnel (Math--basic), and reading and completing all information, including remarks, on the appropriate form requires Reading (basic) and Writing (intermediate).

The small sample of skill level 4 tasks contains substantial academic skill demands ranging from basic to intermediate to advanced. Infantry NCOs progressing to skill level 4 are responsible for all tasks from skill levels 1 to 4. Thus, it appears that skill level 4 Infantrymen are responsible for more tasks requiring academic skills than their counterparts at the lower skill levels.

MOS 13B--Cannon Crewmember

We selected 27 Cannon Crewman tasks for academic skills analysis. More than half, 63%, of these tasks involve Mathematical Computations and 48% require Reading-to-Do skills. Nineteen percent of the selected tasks demand Writing, Listening-to-Do, and Speaking. The emphasis on Math skills is due to calculations required to accurately aim a weapon at the target. Differences between the skill levels will be presented in the following paragraphs.

Skill Levels 1 and 2. Ten of the 27 13B tasks are skill level 1 or 2 and less than half of these (40%) have academic skill demands. Of the tasks with academic skill demands, the emphasis is on Reading-to-Do, with 30% of the tasks requiring this skill. In addition to Reading-to-Do, 20% of the tasks require Math, Writing, and Speaking, and 10% require Listening-to-Do.

All of the academic skill demands are at the lowest level, except for 10% of the tasks which require Reading-to-Do at the intermediate level. Examples of 13B skill levels 1 and 2 tasks include recording fire mission data on DA Form 4513 (Record of Missions Fired), and preparing ammunition for firing.

There are relatively few academic skill demands for 13Bs at skill levels 1 and 2, especially in comparison to the skill levels 3 and 4 tasks analyzed next.

Skill Level 3. Only six of the selected 13B tasks are skill level 3. The emphasis here is again on Reading-to-Do, with five of the tasks requiring this skill. Math is second with four of the tasks requiring some mathematical calculations, followed by Writing, required in two of the tasks. Only one of the selected tasks demands Speaking and Listening.

Four of the Reading-to-Do skill requirements occur at the intermediate level, while the other 17% occurs at the basic level. Examples of intermediate Reading-to-Do task elements are reviewing a Preventive Maintenance Checks and Services (PMCS) form when verifying PMCS, looking up information in a manual to perform prefire checks, and looking up information from firing tables to prepare a range card. The task component with basic Reading-to-Do skill requirements is reading DA Form 2408-4 (Weapons Record Data).

The four tasks with Mathematics Computation requirements demand only simple arithmetic abilities, such as calculating range of fire and adding numbers to compute totals for the Weapons Record Data Form. Writing requirements are divided evenly between basic writing of words (filling out DA Form 2408-4) and intermediate writing of sentences (annotating range cards). In the only task that calls for Speaking and Listening skills, verifying PMCS on a Howitzer, the NCO must observe and interact with subordinates and give orders regarding corrections based on the observations.

Skill Level 4. Since the primary function of the Cannon Crewman is to sight, aim, and fire at the enemy our sample of skill level 4 tasks indicates that the Cannon Crewman NCOs often perform simple mathematical computations. In fact, all 11 of the selected tasks (100%) require simple mathematical computations. The Math demands, all at the lowest level, include reading a compass to measure orienting angle, adding distances to determine range of fire, subtracting to measure the azimuth, and declinating an M2 aiming circle.

Reading-to-Do occurs in 45% of the selected tasks. The task elements with Reading demands require the NCO to read manuals, firing tables, and maps, which all are rated as intermediate. Examples of the Reading requirements of skill level 4 13B NCOs are read and follow the -10 manual to perform fire control alignment test, and read rapid fire tables to compute the executive officer's minimum quadrant elevation (MIN QE).

Other academic skill demands include Listening-to-Do in 27%, Speaking in 18%, and Writing in 9% of the selected tasks. All of these academic skill demands occur at the lowest level, except for 9% of the tasks which involve speaking in sentences (intermediate) rather than just words and phrases. With respect to Speaking, the Cannon Crewman is responsible for issuing oral commands to lay a firing battery with M2 aiming circle using the grid azimuth method (sentences--intermediate) and reporting confirmation of an azimuth (words--basic). Artillery NCOs in skill level 4 positions are also responsible for acting on commands from superiors, which requires Listening-to-Do at the lowest level.

To sum up the 13B findings, there is a change in emphasis from Reading-to-Do for skill levels 1, 2, and 3 to the lowest level of Mathematics Computation for skill level 4. Very few academic skill demands are beyond the lowest level. The only exception is the Reading-to-Do skill where there are more intermediate reading requirements than basic requirements, at least for skill level.

MOS 31C--Single-Channel Radio Operators

Researchers selected 50 MOS 31C tasks for analysis. However, the distribution between the skill levels is very uneven. The sample of tasks contains 24 skill levels 1 and 2 tasks, only 3 skill level 3 tasks, and 23 skill level 4 tasks. The skill level 4 tasks are for the 31Y MOS, which replaces 31C at this level. With such a small selection of skill level 3 tasks, conclusions about skill level 3 are tentative.

For this MOS, the emphasis across the skill levels is on Reading-to-Do, with 72% of the tasks requiring reading at some level of difficulty. The next most important skill is Speaking, occurring in 50% of the tasks. The other academic skill demands are Mathematics Computation, Writing, and Listening-to-Do in 36%, 30%, and 18% of the selected tasks, respectively. The following paragraphs will provide examples of the task elements for the different academic skills at each skill level of 31C.

Skill Levels 1 and 2. The emphasis of the skill levels 1 and 2 tasks is on Reading-to-Do, with 63% of the tasks requiring this skill. Another 29% of the tasks require Writing and Speaking, and 13% require Mathematics Computation. There are no requirements for Listening-to-Do in the skill levels 1 and 2 tasks for this MOS.

The Reading-to-Do requirements include task elements at each level--4% basic, 46% intermediate, and 13% advanced. One Reading requirement for skill levels 1 and 2 NCOs in 31C is reading a job aid, if necessary, to decontaminate self and equipment (basic level). Most of the tasks requiring reading are rated intermediate and they involve such task elements as using a CEOI to extract appropriate information, reading TMs and log sheets, and locating information on a map. The advanced reading requirements for 31C NCOs in skill levels 1 and 2 positions are reading troubleshooting charts for various equipment used in single-channel radio operations.

For example, 31C NCOs are responsible for troubleshooting radio teletypewriter and AN/GRC-106 sets, and 5KW generators. Using troubleshooting charts to locate the cause of malfunction or failure in the equipment involves following multipath procedures. This requires the NCO to read the troubleshooting chart and use the information to accurately locate the problem in the equipment. The multipath procedure demands the ability to read information, act on it, interpret the results of the action, and follow the appropriate path through the troubleshooting chart to determine the root of the problem. Single-channel radio operators use a variety of simple to complex communications equipment which can require troubleshooting when it fails to operate properly. Thus, even skill levels 1 and 2 NCOs in 31C are responsible for performing tasks requiring reading at the most difficult level. Although these advanced Reading demands may not occur frequently, when problem situations arise it is extremely important that the NCO rectify the problem so that the communication equipment, the lifeline of the Army during combat, will be operational.

Speaking also has task components at the advanced level, with 4% at the level of prepared speaking, while the other 25% of the speaking tasks require oral communication skills at the intermediate level. The intermediate speaking demands of 31C NCOs in skill levels 1 and 2 positions include issuing instructions and correcting subordinates, and reporting problems to superiors. Prepared speaking demands involve conducting performance-oriented training sessions for subordinates, a task common to all MOS which has been identified as critical to 31C by Project A researchers.

The writing requirements include writing and submitting reports or completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), during troubleshooting. The reports on station/network operation follow specific formats and DA Form 2404 includes listing faults found during troubleshooting procedures and any relevant information in the remarks section, so the Writing requirements are rated intermediate. The Math skill demands include basic and advanced arithmetic (intermediate difficulty level), such as correctly using the appropriate mathematical formula to cut a doublet antenna during installation of communication equipment.

Skill levels 1 and 2 NCOs in MOS 31C appear to have a higher level of academic skill demands than their counterparts in 11B and 13B. This issue will be further explored in a later section which specifically compares MOS.

Skill Level 3. With only three skill level 3 tasks, the results must be treated with caution. Rather than comparing the percentages obtained with these data to the other skill levels within 31C and to other skill level 3 MOS data, the findings should be examined on their own.

All three of the tasks analyzed have Reading requirements while two have Speaking and Writing requirements. Only one includes Math calculations. There were no Listening-to-Do requirements. The academic skill demands are rated at the intermediate level except for the task element requiring only basic math skills.

Skill Level 4. Researchers selected and analyzed 23 skill level 4 31C tasks. This number of tasks allows for comparison of the skill level 4 findings with the skill levels 1 and 2 results. The emphasis at skill level 4 is on Reading, with 78% of the selected tasks requiring reading skills. Close behind Reading are Speaking requirements, with 70% of the tasks involving this skill. A large percentage of the skill level 4 tasks have a Math component and a smaller number involve Listening and Writing, 61%, 39%, and 26%, respectively. The order of emphasis of the skill level 4 tasks mirrors the academic skill demands across all skill levels for 31C NCOs.

Taking a closer look at the level of academic skill demands shows a few tasks requiring the highest level of Reading and Writing skills. The ratings of the Reading tasks are 74% at the intermediate level and 4% at the advanced level. The majority of the Reading requirements are rated as intermediate; they involve using maps and reading TMs and CEOIs. The task element rated at the advanced level requires the NCO to read schematics to check the installation of power generating equipment. Proper installation is important for equipment operations, thus it is important that NCOs are able to read the schematics to perform this task. However, most of the Reading requirements are geared toward the intermediate level of Reading skill.

The 70% of the tasks with Speaking components require actively communicating in sentences without preparation. For example, several of the skill level 4 tasks involve directing subordinates to install and operate communication equipment, which requires the NCO to orally issue instructions and orders. Other Speaking skill demands include asking questions of appropriate personnel to plan and monitor field operations. Thus, oral communication skills at an intermediate level are important for successfully conducting single-channel radio operations.

Listening-to-Do skill demands occur at the intermediate level of active listening to familiar material. All of the tasks which require the NCO to ask questions while planning and installing equipment also have a listening counterpart with respect to understanding the answers and acting on the information received from the respondent.

Other academic skill demands of skill level 4 31C NCOs are Mathematics and Writing. Mathematics task elements involve basic and advanced arithmetic operations, such as calculating total distance by addition when planning and installing communication networks (basic arithmetic) and using formulas to cut antennas to correct length (advanced arithmetic). The use of the formula to cut antennas appears in several tasks and so inflates the estimate of mathematics skill requirements.

The Writing task elements include writing after-action reports (sentences--intermediate) and completing a detailed report of communications insecurities if any are identified during an inspection (prose--advanced). The intermediate level of writing occurs in 22% of the tasks while advanced writing skills are required in only 4% of the tasks. The dominant level of writing is definitely at the intermediate level, which only demands writing in complete sentences on forms and completing formatted reports. The overall emphasis on reading and other skills is at the intermediate level, with a few infrequently performed tasks requiring advanced skills.

The tasks selected and analyzed for single-channel radio operators indicate the presence of more academic skill demands for the 31C MOS than for the 11B and 13B MOS previously described, an issue which will be analyzed in a later section.

MOS 63B--Light Wheel Vehicle Mechanics

Light wheel vehicle mechanics tend to do more reading than any other academic skill. Seventy-eight percent of the selected MOS 63B tasks require Reading-to-Do. Additionally, 53% of the tasks require Writing, 39% involve Mathematics Computation, 25% have Speaking demands, and 3% include Listening-to-Do task elements. The following analysis will present the results by skill level and difficulty level for each academic skill demand.

Skill Levels 1 and 2. At the lower skill levels the major emphasis is Reading-to-Do, as it is across all skill levels, but secondary emphasis is on Math skills rather than Writing. In fact, more of the tasks require Speaking than Writing, 13% and 7%, respectively.

More than half of the tasks with Reading skill demands are rated as having advanced Reading-to-Do requirements and the remainder are rated as intermediate. The 33% of the tasks with advanced Reading-to-Do skill demands involve using multipath troubleshooting charts in TMs for identifying malfunctions in various components of the vehicles, such as the fuel system, generator, engine, and brakes. In addition to Reading requirements, each of the vehicle system troubleshooting tasks requires the NCO to use meters to check the various components of the malfunctioning system. Thus, 33% of the selected skill levels 1 and 2 tasks involve the ability to read multimeters during troubleshooting. Note that the troubleshooting tasks of vehicle systems for 63B NCOs are very similar in academic skill demands to the troubleshooting tasks of communication equipment for 31C NCOs.

The Speaking demands are rated at the extremes; 13% require speaking at the lowest level and 7% at the highest level. The task elements include orally communicating information of enemy soldier sighting (speaking with phrases--basic) and conducting performance-oriented training of subordinates (prepared speaking--advanced).

Only one task, completing a written report of enemy soldier sighting, demands Writing ability. The routine format of this report is such that it requires only writing relevant phrases to communicate the important information. Thus, this task element is rated as demanding only the lowest level of writing.

Across the academic skill demands, the majority of the requirements for academic skills are concentrated at the lowest level. The two exceptions are using troubleshooting charts and conducting performance-oriented training.

Skill Level 3. A different pattern of emphasis is evident with the selected skill level 3 tasks, where the most prevalent academic skills are Reading and Writing, with 82% of the tasks requiring reading and written communication skills. The other academic skill demands identified in the skill level 3 tasks are Math and Speaking, in 55% and 36% of the tasks, respectively. None of the skill level 3 63B tasks require Listening skills. Analysis of the academic skill ratings indicates more low-level skill requirements than intermediate and advanced.

The specific Writing requirements are primarily rated at the lower levels, with 36% basic, 36% intermediate, and 9% advanced. Examples of Writing tasks include filling out a PMCS schedule (basic), making changes to information on DA Form 2404 (basic), completing a publication request form (basic), completing DA Form 2404 after troubleshooting (intermediate), and writing Standard Operating Procedure (SOP) for tool control procedures (advanced). Light wheel vehicle mechanics are responsible for writing a variety of information, from filling out forms to writing SOPs.

Twenty-seven percent of the tasks require reading simple material, 36% involve reading at the intermediate level, and 18% require advanced reading skills. The majority of the Reading tasks are at the middle level, not requiring advanced academic skills. The typical Reading demands, basic and intermediate, include referring to manuals and other familiar documents. The advanced Reading-to-Do requirements are following multipath troubleshooting charts of power plants and electrical systems, as seen in 31C tasks and 63B skill levels 1 and 2 tasks.

All of the Math skill demands are at the lowest level of simple arithmetic and all of the Speaking skill demands are at the intermediate level of active oral communication. The Math requirements involve reading multimeters while troubleshooting, as was also seen in the skill levels 1 and 2 tasks. Skill level 3 NCOs are responsible for supervising subordinates in vehicle maintenance and repair tasks, which involves giving instructions, orders, and feedback. Therefore, there are requirements to

orally communicate information to subordinates for successful completion of vehicle maintenance and repairs.

Overall, the skill level 3 Light Wheel Vehicle Mechanic is responsible for documenting mechanical work, referring to appropriate manuals and troubleshooting charts, as well as doing simple arithmetic and directing maintenance and repairs on vehicles. Most of the academic skill demands are at a low level, but several intermediate and even advanced requirements were identified in this sample of 63B tasks.

Skill Level 4. The dominant academic skill demand at skill level 4 is Reading-to-Do, where all of the 10 tasks (100%) have a reading component. Writing is also frequently required at this level, with 90% of the tasks including some form of written communication. In comparison, only 30% and 20% of the tasks have Math and Speaking elements, respectively. The emphasis is on the lower levels.

Examples of the Reading requirements at this skill level are reading and correcting information on the Maintenance Request Form (DA Form 2407) and other official forms related to vehicle maintenance, locating and reviewing references to organize an on-the-job-training program, and reviewing log forms and reading printouts to monitor the unit oil analysis program. Only one of the 10 tasks requires the NCO to read at the advanced level. Specifically, 63B NCOs in skill level 4 positions are responsible for reviewing an existing SOP to develop a new SOP for vehicle maintenance and repair procedures. Because this task is not frequently performed, a high level of Reading-to-Do does not appear to be required on a daily basis by skill level 4 NCOs in 63B.

The Writing requirements can be separated into the following ratings: 40% at the basic level of writing words and phrases, 10% at the intermediate level of writing in complete sentences, and 40% at the advanced level of generating original cohesive paragraphs. Examples of writing at the lowest level generally involve correcting entries on forms. Other writing demands require light wheel vehicle mechanics to write performance measures for an on the job training program (advanced), recommend individuals for favorable personnel actions (advanced), and write a complete training plan with objectives to train subordinate NCOs in administrative tasks (advanced). Skill level 4 light wheel vehicle mechanics are required to communicate with a variety of written techniques.

One of the 10 selected tasks is to direct the organization of an on the job training program, which requires active speaking at the middle level, and another task involves training subordinates in administrative tasks, which requires the NCO to prepare a training plan and lecture, the highest level of Speaking. Other academic skill demands identified during analysis include three task elements requiring simple arithmetic calculations, such as computing the hours and miles a vehicle has been driven to monitor the need for oil analysis according to the unit oil analysis program schedule.

The Light Wheel Vehicle Mechanic in skill level 4 positions is responsible for MOS-specific tasks which require academic skills at all

difficulty levels, with an emphasis on the lower levels. However, 63B tasks selected for analysis tend to indicate more academic skills are required of the Light Wheel Vehicle Mechanic than the other MOS examined.

Summary of Academic Skill Demands in MOS-Specific Tasks

In summary, MOS-specific tasks make more academic skill demands on NCOs at skill levels 1 through 4 than do common tasks, possibly due to biased sampling of MOS-specific tasks. The emphasis across the four MOS is on the two lower levels of academic skill. The primary MOS-specific skill is Reading-to-Do with Mathematics Computation second. Writing and Speaking are required to successfully complete a substantial number of the MOS-specific tasks. Additional comparative analyses of common and MOS-specific tasks are presented below.

Relative Requirement for Each Academic Skill Across Tasks and MOS

NCO job tasks require five of the seven academic skills examined during this study. Reading-to-Learn and Listening-to-Learn are not required skills for NCO job tasks because all of these tasks are performed with an immediate goal in mind and are therefore rated as Reading-to-Do and Listening-to-Do. Of the five academic skill demands occurring in the NCO job tasks, Reading-to-Do is by far the most prevalent.

Reading-To-Do

Reading-to-Do task elements occur in 16% of the common tasks and 65% of the selected MOS-specific tasks. Although only 16% of the common tasks were rated as having Reading-to-Do, it was the highest rated skill for all of the common tasks. Examining each skill level of the common tasks shows that reading tasks dominate skill levels 1 and 2 and are the second and third most needed skills at skill levels 3 and 4. At each skill level of the MOS-specific tasks, Reading occurs more frequently than any of the other skills. For both common and MOS-specific tasks the majority are rated at the intermediate level. Thus, across all of the tasks--common and MOS-specific--Reading-to-Do skill demands are the most important for successfully completing the Army's mission.

Mathematics Computation

Mathematics skills are the second most frequently demanded academic skill. As many as 12% of the common tasks and 42% of the MOS-specific tasks involve math. At skill level 4 for the MOS-specific tasks, almost two-thirds of the task elements, 63%, require arithmetic skills. The math task elements are almost exclusively rated at the basic arithmetic level. Only 1 of 129 common task elements requires advanced arithmetic, such as working with fractions, and 9 out of 137 MOS-specific task elements involve advanced arithmetic operations--the intermediate level of Mathematics Computation.

None of the task elements examined for the job task analysis required algebraic manipulations, the highest difficulty level. So in addition to Reading-to-Do, NCOs are responsible for performing tasks using simple arithmetic.

Writing and Speaking

In addition to the important Reading and Math skill demands are requirements to communicate through both written and oral communication. In the common tasks, oral communication is required in 13% of the tasks while written communication is needed for only 7% of the tasks. However, most of the common tasks are devoid of academic skill demands and rely only on technical and military knowledge, so the low percentages should not be interpreted as an indication of unimportance. These numbers should be interpreted along with those from the MOS-specific tasks, where the percentages are considerably higher. In fact, across the four MOS and skill levels, written communication is used almost as frequently as oral communication. Thirty-four percent of the selected MOS-specific tasks demand Writing skills while 33% use oral communication skills. And at skill level 3 more than half of the tasks, 59%, include Writing.

In general, the difficulty level of Writing and Speaking tasks is basic or intermediate. Only 4% of the common and 8% of the MOS-specific tasks require advanced Writing or Speaking.

Listening-to-Do

Another academic skill demand seen in several task elements is Listening-to-Do. This skill is emphasized in fewer tasks than the other academic skills. For example, only 6% of the common tasks and 15% of the MOS-specific tasks require this skill. Listening-to-Do appears to be most important for the skill level 4 MOS-specific tasks, where 29% of the tasks require Listening skills. This is due to the fact that supervisors must listen carefully to subordinates as they monitor activities.

Academic Skill Demand Progression from Skill Level 1 through 4

The academic skill demands generally increase from skill level 1 to 4. Table 3.6 shows the progression from skill levels 1 and 2 to 3 to 4 for the MOS-specific tasks and Table 3.7 shows the progression from skill level 1 to 4 for the common tasks. For the MOS-specific tasks, all academic skills except Writing increase from skill level 3 to 4. The greatest overall increase was 40 percentage points--for Math from skill levels 1/2 to 4. The overall increases for the MOS-specific task elements are much larger than the changes with the common tasks, which show a variety of increases and decreases across skill levels. All academic skills did show overall positive changes of at least one percentage point from skill level 1 to 4. The lower percentage of academic skill demands in the common tasks and

Table 3.6
Progression of Demand for Academic Skills
for MOS-Specific Tasks

<u>Academic Skill</u>	<u>Skill Level</u>			<u>Overall Change</u>
	<u>1 and 2</u>	<u>3</u>	<u>4</u>	
Reading-to-Do	56%	70%	73%	+17
Mathematics Computation	23%	48%	63%	+40
Speaking	23%	33%	46%	+23
Writing	16%	59%	42%	+26
Listening-to-Do	6%	7%	29%	+23

Table 3.7
Progression of Demand for Academic Skills
for Common Tasks

<u>Academic Skill</u>	<u>Skill Level</u>				<u>Overall Change</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
Reading-to-Do	10%	33%	22%	18%	+8
Mathematics Computation	8%	24%	22%	9%	+1
Speaking	5%	19%	33%	27%	+22
Writing	4%	0%	17%	27%	+23
Listening-to-Do	1%	14%	17%	9%	+8

negative changes from skill level 3 to 4 may account for the lack of stable increases across the skill levels.

Another way to look at the progression of skill demands is to ask what percentage of all tasks at each skill level require some academic skill. We can ask this question only for common tasks because it is only for these tasks that the entire set was examined.

Table 3.8 displays the dramatic differences in academic skill requirements of the common tasks for skill levels 1 through 4. There is a complete reversal from skill level 1 to skill level 4, where 20% and 82% of the tasks require academic skills, respectively. The most striking point is the lack of academic skill demands in the skill level 1 tasks. Less than one-quarter of the skill level 1 tasks involve academic skills but more than one-half of the skill level 2 tasks require academic skills. And then at skill level 4, more than three-quarters of the tasks require academic skills.

Comparison of the Academic Skill Requirements of the Different MOS

Analysis of the NCO job tasks allows comparison of the four MOS--11B, 13B, 31C, and 63B. Since job tasks frequently contain several elements that involve several academic skills, there is overlap in the total percentages for each academic skill in each MOS. Therefore, one approach is to determine the number of MOS-specific tasks that require academic skills. This approach is somewhat biased in that we attempted to select MOS-specific tasks which would exhibit academic skill demands. However, this approach in conjunction with a second method of comparing the MOS provides a relatively clear picture of the ranking of the four MOS with respect to NCO job tasks. The second method of comparing the MOS is to determine the ordinal rankings of the MOS for each academic skill and compute averages for each MOS. The lower the overall average is, the more academic skill demands there are for the MOS, with one being the greatest requirement and four being the least.

While the number of MOS-specific tasks with academic skills is much larger than the number of common tasks with the same skills, there are some tasks that do not appear to require any academic skills. Slight differences between the percentages of academic skill demands for each MOS are apparent. The results are illustrated in Table 3.9, which indicates that MOS 63B and 31C have more tasks with academic skill demands than do 11B and 13B. The ordinal rankings resulted in the same order--63B, 31C, 11B, 13B. These results are shown in Table 3.10.

Table 3.8
Percentage of Common Tasks With Academic Skill Demands,
by Skill Level

Skill level 1	20%
Skill level 2	57%
Skill level 3	61%
Skill level 4	82%

Table 3.9
Percentage of MOS-Specific Tasks With Academic Skill Demands,
by MOS

MOS 11B	79%
MOS 13B	78%
MOS 31C	86%
MOS 63B	89%

Table 3.10
Ordinal Rankings and Overall Average Ranking,
by MOS

<u>MOS</u>	<u>Math</u>	<u>Writing</u>	<u>Speaking</u>	<u>Reading</u>	<u>Listening</u>	<u>Average</u>
11B	4	3	2.5	3	1	2.7
13B	1	4	4	4	2	3.0
31C	3	2	1	2	3	2.2
63B	2	1	2.5	1	4	2.1

Conclusion

Across all tasks, common and MOS-specific, Reading-to-Do was reported as the most frequently needed academic skill. And for all of the MOS except 13B (Cannon Crewman), Reading occurred in more tasks than any other academic skill. For 13B, the major academic skill demand was Mathematics and Reading-to-Do was second. For the other MOS, arithmetic computations occurred second (11B) and third (31C and 63B). Writing was rated second for 63B, third for 11B and 13B, and fourth for 31C. The major academic skill demands--Reading, Mathematics, and Writing--are the top three rated skills for all of the MOS, except for 31C where Speaking is second and Math and Writing become third and fourth. In conclusion, the primary academic skill demands of NCO job tasks are the traditional three R's--Reading, Writing, and Arithmetic.

Academic Skill Demands of Leadership Tasks

Approaches

The Soldier's Manual of Common Tasks and the Soldier's Manuals for MOS-specific tasks include only a few leadership/supervisory tasks. Since many leadership tasks performed by NCOs on the job are not documented in Soldier's Manuals as are common tasks and MOS-specific tasks, our method for analyzing the academic skill demands of leadership tasks differs from our general method for identifying and verifying academic skill demands of NCO job tasks.

At first we tried to assess the academic skill demands of leadership/supervisory tasks by using supervisory tasks identified by Project A for skill levels 1 and 2. Since there is no formal documentation for these tasks, we had to rely on our subject matter experts to provide their own definitions. To say the least, these tasks are vague. For example, supervisory tasks identified by Project A researchers as critical for 13B soldiers at skill level 1 include "assist soldiers with personal problems" and "resolve disputes among subordinates." The subject matter experts whom we interviewed did not have consistent ideas of what these tasks involved and were unable to adequately identify precisely the academic skill demands of these nebulous tasks.

Our general method of identifying academic skill demands of NCO job tasks by reviewing documentation could not be used on these non-soldier's manual tasks. Without documentation and SME verification of academic skill demands, using the supervisory tasks identified by Project A did not yield sufficient data for analysis. Interestingly, the difficulty in defining the non-soldier's Manual tasks eventually led Project A researchers to exclude these tasks for reasons similar to ours.

The next approach we took to leadership tasks was to use selected data from The Army Leader Requirements Task Analysis: Noncommissioned Officer Results (Steinberg & Leaman, 1988). The NCO portion of the Leader

Requirements Survey report presents data about the criticality and percent performing 560 leadership tasks and 20 knowledge, skills, and abilities (KSAs) of the NCO's job, by rank and CMF, for sergeant (E-5) through command sergeant major (E-9). The task list was constructed using an iterative interview strategy and the final set of tasks was agreed on by a review committee consisting of representatives from CAL, USASMA, and ARI.

Steinberg and Leaman analyzed the task list on two dimensions--criticality and frequency of performance (defined as percent performing). The criticality ratings are based on the following 7-point Likert scale:

Part of Position--

1. Insignificant
2. Slightly significant
3. Somewhat significant
4. Moderately significant
5. Quite significant
6. Highly significant
7. Extremely significant

Critical tasks were defined as "those tasks which received a mean rating of 5.00 or more on the 7-point 'Part of Position' scale, for one or more grades."

In presenting the data, Steinberg and Leaman divided tasks into two categories-- relatively stable and not relatively stable tasks. Relatively-stable tasks had less variance in criticality ratings across grades than did not-relatively-stable tasks. This delineation produced 382 relatively stable critical tasks and 50 not-relatively-stable critical tasks.

Findings

We have focused on the data for ranks E-5 through E-7 since this treatment parallels our other analyses. These data are based on the responses of 1530 NCOs identified as E-5, E-6, or E-7. These NCOs were from a variety of MOS, not just the four MOS examined in this study. Thus, in what follows, we are discussing leadership tasks perceived to be critical and frequently performed across MOS, not specifically within 11B, 13B, 31C, and 63B.

Stable, Critical, Frequently Performed Tasks

Table 3.11 presents 81 stable, grade-critical leadership tasks that are frequently performed by E-5, E-6, and E-7 NCOs. For this analysis we defined frequently performed tasks as those performed by 50% or more of E-5, E-6, and E-7 NCOs; grade-critical tasks are tasks with an average criticality rating for a particular grade of 5 (quite significant) or higher on the 7-point Likert scale; we defined stable tasks as tasks whose mean criticality rating changed less than one scale point across the three grades E-5, E-6, and E-7.

Because of the lack of formal definitions of these tasks, no attempt has been made by the researchers of this project to determine which tasks require academic skills, much less the difficulty level of the skill. It appears that many leadership tasks require communication with subordinates, and thus involve speaking at some level of difficulty. However, it is up to the individual reader to assess the amount of academic skills required by the leadership tasks identified by the Leader Requirements Survey study as critical to the performance of NCO jobs.

Non-stable, Critical, Frequently Performed Tasks

Criticality Rating Changes. Table 3.12 and Figure 3.2 illustrate the criticality ratings for eight tasks that (1) received unstable criticality ratings across the grades E-5 through E-9; (2) were performed by 50% or more of E-5 through E-7 NCOs; and (3) were perceived to be quite critical by at least one of these three grades. We report the criticality ratings for E-8 and E-9, as well as E-5, E-6, and E-7 for these tasks to illustrate the trends in these ratings across the entire NCO spectrum.

Table 3.11

Stable Grade-Critical Leadership Tasks for E-5, E-6, and E-7 NCOs^a

Improve performance of subordinates
Develop good work habits in soldiers
Train soldiers to be technically and tactically proficient
Train soldiers to meet time requirements
Train soldiers to do their jobs without supervision

Train soldiers to check their own work
Train soldiers to maintain equipment
Train soldiers for the skills required to pass SQTs
Train soldiers to operate equipment
Train soldiers in common soldier tasks

Teach enlisted soldiers to do their jobs
Teach enlisted soldiers proper wearing of the Army uniform
Teach soldiers personal discipline
Teach enlisted soldiers basic military skills
Train subordinates to take initiative

Provide soldiers the opportunity to receive formal training
Allow subordinate leaders to learn from their mistakes
Recommend military training
Support decisions of subordinate leaders
Train soldiers in leadership

Identify potential leaders
Recommend civilian education
Provide time for subordinates to participate in self-development programs
Train people who are lower in rank than you
Train junior enlisted soldiers

Train your own replacement
Train by demonstrating how it's done (e.g., demonstrate counseling)
Give technical training to subordinates whose MOS/Specialty Area is the same as yours
Conduct individual soldier training
Motivate soldiers to carry out the mission

Motivate subordinates
Motivate soldiers to perform maintenance
Motivate soldiers who have attitude problems
Maintain troop interest in training in garrison
Set the example

(Continued)

Table 3.11

Stable Grade-Critical Leadership Tasks for E-5, E-6, and E-7 NCOs^a

Recognize soldier accomplishments
Demonstrate Army values
On daily basis, have face-to-face contact with immediate subordinates
Remain available to immediate subordinates until they finish for the day
Conduct inspections

Provide challenges to keep up motivation
Give pep talks
Arrange for soldiers to get time off
Explain why tasks need to be done
Give detailed guidance to get the task done

Motivate subordinates by helping them with their tasks
Accompany immediate subordinates on unpleasant tasks
Develop close working relationship with subordinate
Tell soldiers when they are performing well
Recommend subordinates for promotion

Give formal positive counseling statements
Counsel subordinates about potential disciplinary action
Make the decision to give a soldier time off
Recommend disciplinary actions
Report discipline problems to superiors

Request time off for a soldier
Promote physical fitness
Ensure that subordinates follow good health/hygiene practices in garrison
Assist subordinates with their personal problems
Prepare subordinates for promotions

Provide time for subordinates to do personal errands (e.g., haircut)
Manage time
Manage people/manpower
Manage information
Seek ways to improve productivity

Manage things (money, supplies, equipment, etc.)
Solve each problem in order of priority
Supervise U.S. soldiers
Supervise male soldiers
Keep soldiers informed about the current situation

(Continued)

Table 3.11

Stable Grade-Critical Leadership Tasks for E-5, E-6, and E-7 NCOs^a

Encourage upward communication
Provide positive feedback to higher-ranked individuals
Check that subordinates accomplish assigned tasks
Monitor troop appearance
Check that subordinates are at their appointed place of duty

Counsel male soldiers on their performance
Communicate performance standards to subordinate
Make on-the-spot corrections
Write counseling statements
Counsel soldiers on wearing the proper uniform

Counsel soldiers on military courtesy

Adapted from Appendices A and C, The Army leader requirements task analysis: Noncommissioned officer results by A. G. Steinberg & J. A. Leaman, 1988.
Alexandria, VA: U.S. Army Research Institute.

^aOnly tasks performed by 50% or more of E-5, E-6, and E-7 NCOs are reported. In addition, they must be stable and grade-critical. Stable is defined as those tasks with mean criticality ratings by E-5, E-6, and E-7 NCOs not differing by more than 1.00. Grade-critical is defined as those tasks with mean criticality ratings by E-5, E-6, and E-7 NCOs greater than or equal to 5 with the following rating scale:

Part of Position

1. Insignificant
2. Slightly significant
3. Somewhat significant
4. Moderately significant
5. Quite significant
6. Highly significant
7. Extremely significant

Table 3.12

**Mean Criticality Ratings for Non-Stable Grade-Critical Leadership Tasks
for E-5 through E-9 NCOs^a**

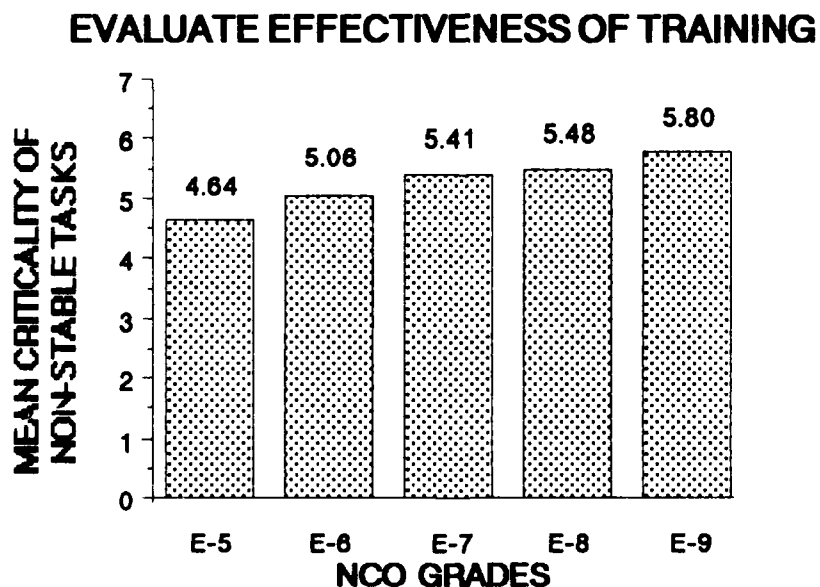
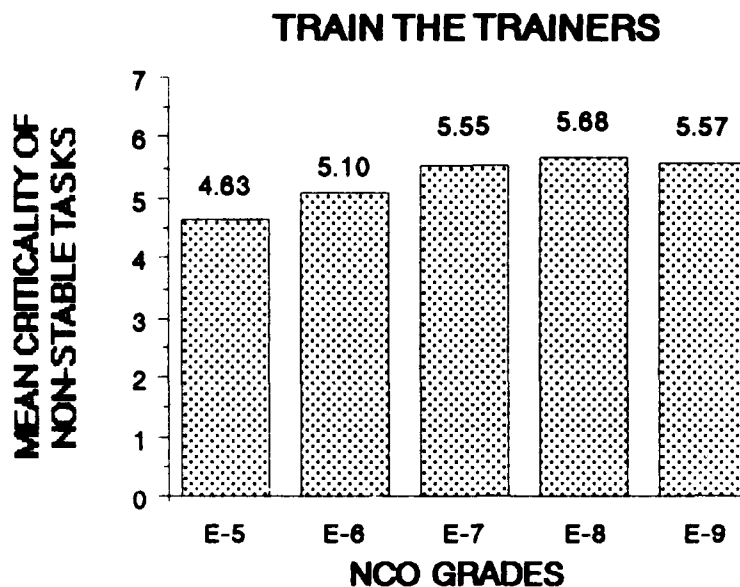
<u>Tasks</u>	<u>E-5</u>	<u>E-6</u>	<u>E-7</u>	<u>E-8</u>	<u>E-9</u>
Advise superiors on leadership issues	4.70	4.99	5.23	5.71	6.01
Develop counseling skills of subordinate leaders	4.71	5.12	5.27	5.58	5.71
Train NCOs	4.90	5.40	5.73	5.88	6.03
Evaluate the trainers	4.68	5.05	5.48	5.78	5.72
Train the trainers	4.63	5.10	5.55	5.68	5.57
Evaluate effectiveness of training	4.64	5.06	5.41	5.68	5.80
Evaluate training programs	4.45	4.75	5.24	5.56	5.58
Write EERs	4.86	5.61	6.00	6.03	5.96

Adapted from Appendices B and D, Steinberg, A. G. & Leaman, J. A. (1988). The Army requirements task analysis: Noncommissioned officer results (Leadership and Management Technical Area Working Paper 88-07). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

^a Only tasks performed by 50% or more of either E-5, E-6, or E-7 NCOs are reported. In addition, these tasks must be non-stable and grade-critical for one or more of the grades reported (E-5, E-6, E-7). Non-stable is defined as those tasks with mean criticality ratings differing by more than 1.00 across all grades (E-5 through E-9). Grade-critical is defined as those tasks with mean criticality ratings of 5.00 by one or more of the grades reported (E-5, E-6, E-7) with the following rating scale:

Part of Position

1. Insignificant
2. Slightly significant
3. Somewhat significant
4. Moderately significant
5. Quite significant
6. Highly significant
7. Extremely significant



Note: Adapted from Appendix B, The Army Requirements Task Analysis: Noncommissioned Officer Results, by A. G. Steinberg and J. A. Leaman, 1988, Alexandria, VA: U.S. Army Research Institute.

Figure 3.2
Mean Criticality Ratings for Non-Stable Grade-Critical Leadership Tasks
(Page 1 of 4)

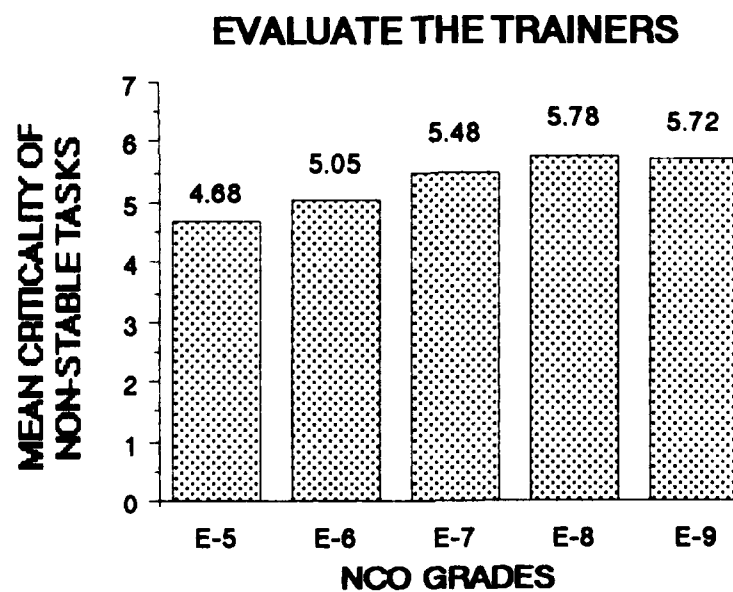
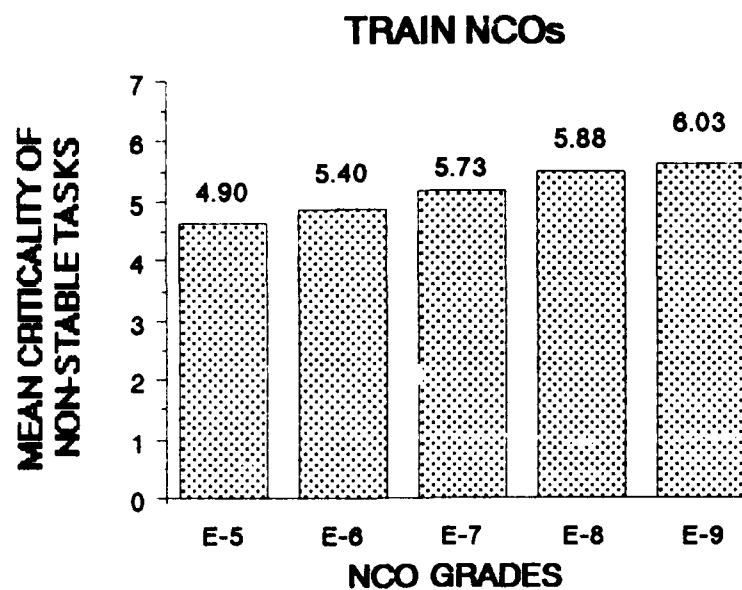


Figure 3.2
Mean Criticality Ratings for Non-Stable Grade-Critical Leadership Tasks
(Page 2 of 4)

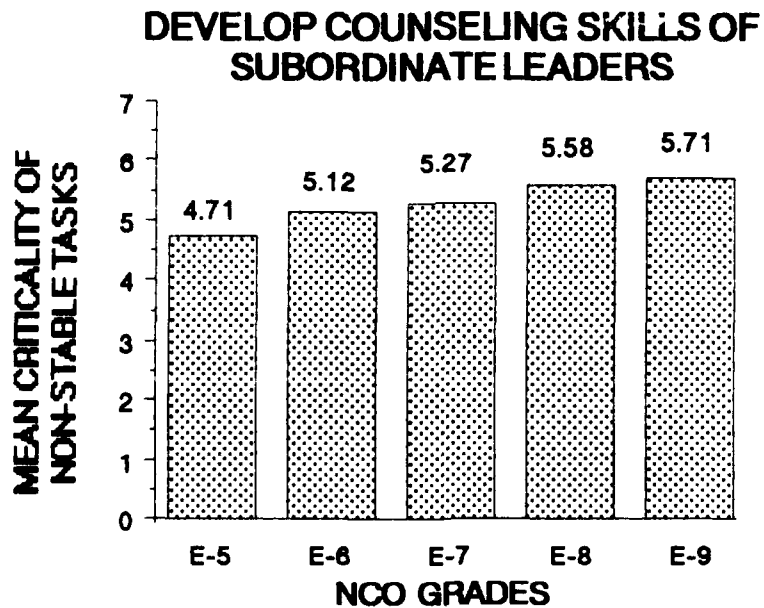
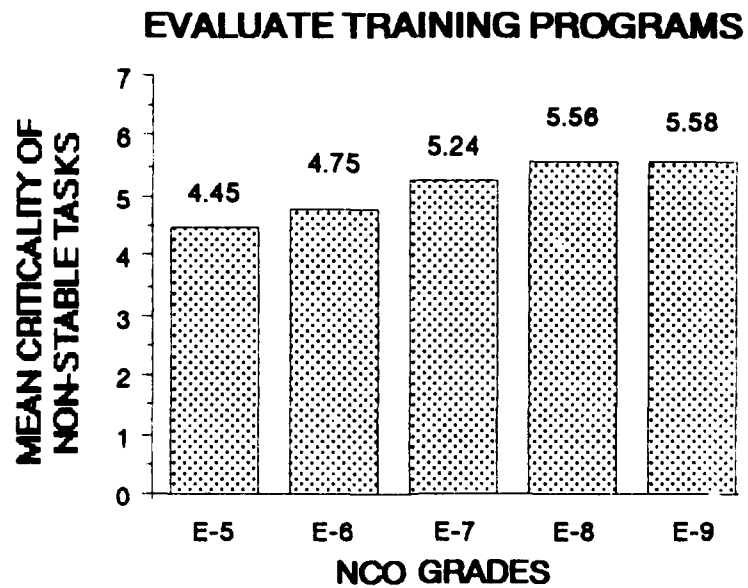


Figure 3.2

**Mean Criticality Ratings for Non-Stable Grade-Critical Leadership Tasks
(Page 3 of 4)**

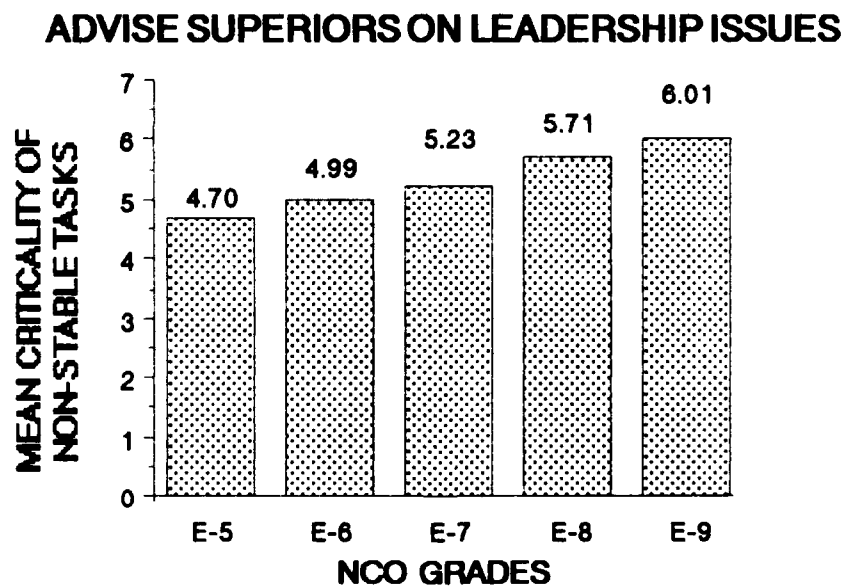
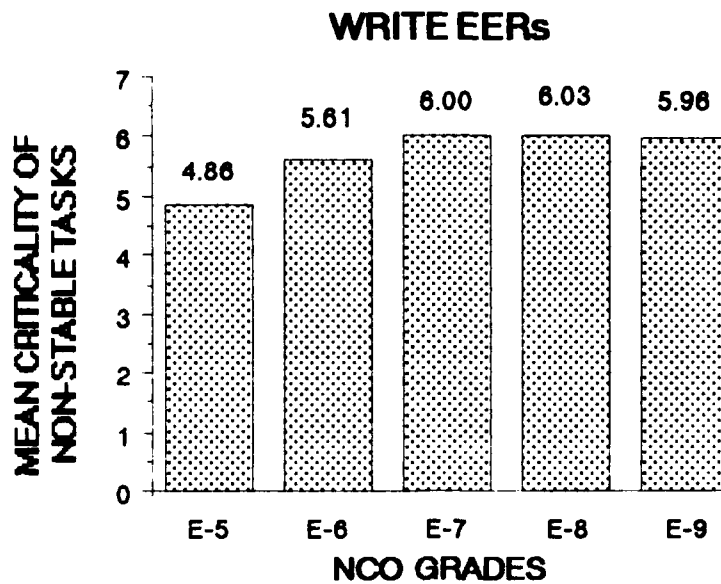


Figure 3.2

**Mean Criticality Ratings for Non-Stable Grade-Critical Leadership Tasks
(Page 4 of 4)**

As can be seen in Table 3.12, six of the eight tasks involve some aspect of training, one involves responsibilities of NCOs with respect to their superiors, and one involves writing Enlisted Evaluation Reports (EERs). These eight tasks clearly demand academic skills at the intermediate and advanced difficulty levels of our Skill Category by Difficulty Level matrix (see Table 1.1). Training requires the NCO to prepare lectures (Speaking--prepared, and Writing--phrases or prose) and is likely to involve reading appropriate field, technical, and Soldier's Manuals as well as Army regulations (Reading-to-Do--intermediate to advanced). Training also requires the NCO to present a prepared lecture and address any questions from the students (Speaking--prepared, and Listening-to-Do--intermediate). Evaluation of training requires the NCO to observe training (Listening-to-Do--intermediate) or review training materials (Reading-to-Do--intermediate to advanced). Evaluation may also involve presenting the results of the evaluation in a written report or a briefing to others (Writing--prose, and Speaking--prepared).

Writing EERs requires reviewing a soldier's record to rate his/her performance during the rating period (Reading-to-Do--intermediate), completing the appropriate forms (Writing--sentences), and discussing the EER with the subordinate (Speaking--sentences, and Listening-to-Do--intermediate). The EER form has recently been redesigned to eliminate inflated evaluations and flowery writing in the comments/justifications sections. The new form--Noncommissioned Officer Evaluation Reporting System (NCO-ERS)--includes both an NCO counseling checklist/record and NCO evaluation report, and two pages of examples of standards for values and competence ratings. The updated NCO evaluation report has less space for comments than the old EER since clear and concise "bullet comments" are stressed for the new system of evaluating subordinates. The change in form does not reduce the difficulty level of writing, since the previous form allowed stereotypical cliché statements and the new form requires brief and to-the-point "bullet comments" (Writing--sentences).

Another non-stable grade-critical task identified for E-5, E-6, and E-7 NCOs was "Advise superiors on leadership issues." It is not as clear to us what this involves; however, advising superiors implies communication either written or oral (Speaking--prepared, or Writing--prose). This task also suggests that some reading and/or observing may take place in order for the NCO to be knowledgeable about the leadership issues on which advice will be given (Reading-to-Do--intermediate to advanced, and Listening-to-Do--intermediate).

Thus, it appears that all of the eight leadership tasks which are of increasing criticality across NCO ranks have intermediate or advanced levels of skill requirements. From this analysis, we conclude that the academic skill requirements for NCOs increase with rank.

Percent Performing Changes. Some non-stable grade-critical tasks have an increasing percent performing across ranks. Tasks for which the percent performing differences between E-5 and E-6 are greater than or equal to 10% and as high as 30% are shown in Table 3.13. Tasks where the percent performing differences between E-6 and E-7 are greater than or equal to 10%

Table 3.13**Percentage Performing Leadership Tasks:
E-5 and E-6 Differences Greater Than or Equal to 10%**

Task	E-5	E-6	Difference
Determine the amount of training time	43.6	53.7	10.1
Counsel soldiers on their careers	44.5	55.2	10.7
Monitor instructor/trainer preparation	23.7	34.6	10.9
Train the trainers	27.1	38.0	10.9
Evaluate the trainers	27.3	38.3	11.0
Instruct NCO development classes	25.7	37.6	11.9
Counsel subordinate leaders on correcting their subordinates	28.3	43.6	15.3
Supervise soldiers who supervise others	20.7	36.5	15.8
Train NCOs	43.7	59.9	16.2
Write EERs	17.2	47.4	30.2

^aAdapted from Appendix H, The Army leader requirements task analysis: Noncommissioned officer results, by A.G. Steinberg and J.A. Leaman, 1988. Alexandria, VA: U.S. Army Research Institute.

(and as high as 18%) are shown in Table 3.14. As illustrated by comparison of the two tables, more tasks have differential percent performance statistics from the E-6 to E-7 level than from the E-5 to E-6 level. These data suggest that NCOs at the rank of E-7 are required to perform more of the leadership tasks more of the time than NCOs at E-5 and E-6 levels. The percentage performing differences from E-5 to E-6 range from 10.2% to 30.3%, and from E-6 to E-7 range from 10.1% to 18.1%. The three tasks that show progressive differences greater than 10% from E-5 to E-6 and then from E-6 to E-7 are "Train the trainers," "Evaluate the trainers," and "Write EERs." Of these, "Write EERs" shows the most dramatic differences. Only 17.2% of E-5s report writing EERs as part of their jobs, but 47.4% of E-6s and even more E-7s, 65.5%, indicate that they are required to write EERs as part of their jobs. Thus, Tables 3.13 and 3.14 illustrate an increase in the number of supervisory or leadership tasks with increasing rank.

Summary. Tables 3.10 through 3.14 present information indicating that many NCOs perform numerous leadership/supervisory tasks that are considered "critical" to their jobs. In addition, the percentage of NCOs performing such tasks increases with rank. Our estimations of the academic skill requirements of the leadership/supervisory tasks leads us to the conclusion that more of the higher-level academic skills, as we have defined them, are required by the supervisory tasks than by the common tasks or the MOS-specific tasks. However, caution must be observed in this conclusion as the method for selecting and analyzing the supervisory tasks was different from the method for selecting and analyzing the common and MOS-specific tasks.

Academic Knowledge, Skills, and Abilities (KSAs) Perceived by NCOs to be Important

Steinberg and Leaman (1988) also reported assessments of the importance of 20 KSAs, by grade and CMF, to NCO jobs, using the following 7-point Likert scale:

Importance to current job--

1. Not important
2. Of little importance
3. Somewhat important
4. Moderately important
5. Quite important
6. Very important
7. Extremely important.

Table 3.14

**Percentage Performing Leadership Tasks:
E-6 and E-7 Differences Greater Than or Equal to 10%**

Task	E-6	E-7	Difference
Act as the commander's eyes and ears	29.7	39.8	10.1
Write letters of instruction	23.4	33.5	10.1
Act as a buffer between enlisted and officers	42.4	52.6	10.2
Monitor instructor/trainer preparation	34.6	44.5	9.9
Establish SOPs for your unit	25.4	35.8	10.4
Hold group planning sessions with subordinates	34.7	45.3	10.6
Evaluate training programs	43.5	54.1	10.5
Identify alternative courses of action	28.6	39.3	10.7
Supervise completion of reports	24.1	34.9	10.8
Decide on changes in scheduled activities	42.4	53.2	10.8
Give information briefings	39.6	50.8	11.2
Submit after-action reports	29.3	40.9	11.6
Supervise administrative services	16.5	28.1	11.6
Provide positive feedback to higher-ranked individuals	54.1	65.7	11.6
Write status reports	28.9	40.8	11.9
Evaluate effectiveness of training	46.5	59.1	12.6
Train the trainers	38.0	51.1	13.1
Keep commander informed about people-problems	34.1	47.3	13.2
On a regular basis, respond to direct taskings from several individuals	29.4	42.7	13.3
Revise SOPs	26.9	40.3	13.4
Evaluate the trainers	38.3	51.9	13.6
Supervise soldiers who supervise others	36.5	50.3	13.8
Serve on selection and/or promotion boards	19.2	33.7	14.5
Edit and proofread written materials	33.1	48.3	15.2
Act as senior advisor	24.2	39.7	15.5
Conduct meetings	38.7	54.6	15.9
Conduct crisis management (put out fires)	40.7	57.5	16.8
Write EERs	47.4	65.5	18.1

Adapted from Appendix H, The Army leader requirements task analysis: Noncommissioned officer results, by A.G. Steinberg and J.A. Leaman, 1988. Alexandria, VA: U.S. Army Research Institute.

Ten of the 20 KSAs appear to clearly involve academic skills. Table 3.15 provides the mean ratings for the 10 "academic" KSAs by grade. Mean importance ratings increase for all of the "academic" KSAs with progression from E-5 to E-6 to E-7. Six of the 10 "academic" KSAs were rated quite important to very important by NCOs at all three grades. Nine of the ten "academic" KSAs were rated quite important to very important by E-7s. "Ability to use computers for statistical analyses," which appears to require some mathematical abilities, was rated only somewhat important by all three grades. Thus, the 10 "academic" KSAs further reinforce the notion that supervisors are required to Read, Write, Speak, Listen, and do Arithmetic, and that these requirements increase with rank.

Table 3.16 provides the mean ratings for the 10 "academic" KSAs by CMF. In Table 3.16, Infantry is the CMF in which MOS 11B is found, Artillery is the CMF for 13B, Signal is the CMF for 31C, and Ordnance is the CMF for 63B. The "academic" KSA rankings by CMF do not show substantial differences between and among CMF. For example, Infantry NCOs rated "Ability to listen effectively/actively" (6.14) and "Ability to speak effectively/clearly" (6.12) very important to their jobs. Artillery NCOs also rated those two KSAs very important (6.16 and 6.23 respectively), but also rated "Ability to read technical manuals" very important to the job (6.04). Signal CMF rated only one KSA as very important, "Ability to speak effectively/clearly" (6.01). However, several other KSAs, including those rated very important by Infantry and Artillery, received high ratings (5.93, 5.81, 5.74, 5.72). Ordnance NCOs rated "Ability to read technical manuals" as very important (6.22). In fact, this was the highest rating of any KSA by any CMF reported in Table 3.16, complementing our finding in the analysis of MOS-specific tasks of a strong Reading-to-Do requirement for 63B.

Averaging the mean importance ratings provides a comparison index for the four CMFs. The calculations indicate that all CMFs average ratings fall between 5.51 and 5.52--not much of a difference. Infantry CMF averaged 5.39, Artillery CMF 5.51, Signal CMF 5.30, and Ordnance CMF 5.22. Thus, the four CMFs averaged in the quite important range, with slight differences in emphasis on which KSAs are more important for particular CMFs. While it is more important for Ordnance NCOs to read technical manuals than to speak and listen effectively, it is still important for them to be able to speak and listen effectively and clearly. And although Infantry and Artillery NCOs didn't rate "Ability to read technical manuals" very important, it received ratings at the high end of the quite important point on the scale. In general, the abilities to Read, Write, Speak, and Listen appear to be quite important to NCOs in the CMFs in this study.

Math seems to be absent from most of the leadership tasks and KSAs of the Leader Requirements Survey (Steinberg, 1987). Perhaps the critical leadership tasks don't directly involve mathematics, but indirectly require an understanding of mathematical principles and/or applications. For example, any task involving the training of NCOs or trainers may require Math skills if the task being trained uses mathematical calculations or formulas, such as in map reading or setting up radio networks with antennas cut to the proper lengths. So although Math skills don't appear to play any direct role in the critical leadership tasks from the Leader Requirements

Table 3.15
Mean Ratings of Academic Knowledge, Skills, and Abilities (KSAs), by Grade

KSA	Ratings ^a by Grade		
	E-5	E-6	E-7
Ability to speak effectively/clearly	5.68	5.96	6.15
Ability to listen effectively/actively	5.67	5.86	6.04
Knowledge of spelling	5.38	5.67	5.92
Knowledge of grammar	5.27	5.63	5.93
Ability to communicate effectively in writing	5.21	5.47	5.90
Ability to read technical manuals	5.62	5.75	5.82
Ability to analyze data	4.73	4.90	5.20
Ability to deliver talks before large audiences	4.14	4.78	5.18
Ability to read aloud clearly/fluentlly	4.61	4.91	5.01
Ability to use computers for statistical analyses	3.22	3.38	3.45

Adapted from The Army leader requirements task analysis: Noncommissioned officer results, by A.G. Steinberg and J.A. Leaman, 1988. Alexandria, VA: U.S. Army Research Institute.

^aRating scale:

Importance to current job

1. Not important
2. Of little importance
3. Somewhat important
4. Moderately important
5. Quite important
6. Very important
7. Extremely important

Table 3.16

Mean Ratings for Academic Knowledge, Skills, and Abilities (KSAs) by CMF

KSA	ALL ^{a, b}	Infantry	Artillery	Signal	Ordnance
Ability to speak effectively/clearly	6.05	6.12	6.23	6.01	5.88
Ability to listen effectively/actively	5.97	6.14	6.16	5.81	5.65
Knowledge of spelling	5.82	5.65	5.81	5.72	5.57
Knowledge of grammar	5.80	5.63	5.73	5.74	5.45
Ability to communicate effectively in writing	5.75	5.75	5.76	5.72	5.58
Ability to read technical manuals	5.70	5.79	6.04	5.93	6.22
Ability to analyze data	5.14	4.92	5.15	5.11	5.11
Ability to deliver talks before large audiences	4.96	5.43	5.37	4.62	4.68
Ability to read aloud clearly/fluentlly	4.92	5.27	5.35	4.73	4.80
Ability to use computers for statistical analyses	3.47	3.18	3.52	3.60	3.22

Adapted from A.G. Steinberg & J.A. Leaman 1988. The Army leader requirements task analysis: Noncommissioned officer results, Alexandria, VA: U.S. Army Research Institute.

^aOverall mean rating (not just these four CMFs). The overall mean rating and the mean ratings for each KSA by CMF include responses of NOOs in grades E-5 through E-9.

^bRating Scale:

Importance to current job

1. Not important
2. Of little importance
3. Somewhat important
4. Moderately important
5. Quite important
6. Very important
7. Extremely important

Survey data, they may play an important indirect role for some situations. Therefore, although the data don't point to any specific Mathematical skill demands, there isn't enough data from the leadership tasks and KSAs to completely rule out the need for Math skills. In fact, common sense indicates that, at the very least, basic Math skills would be required on the job.

Subject Matter Expert Questionnaire

So far in this chapter, we have described the academic skill requirements of common and MOS-specific tasks, derived from task analyses; and an estimate of academic skill requirements for leadership tasks, using the Steinberg and Leaman (1988) report as a data source. One final perspective on academic skill requirements for NCO job performance comes from two questions that we put to SMEs in the field.

The main focus of our interviews with subject matter experts was verification of the doctrinal task analyses. In addition, for 22 of these NCOs (across the four MOS and across the E-5, E-6, and E-7 grades) we asked the following two questions:

1. We have been talking to you about several specific tasks that you perform and their requirements for Reading, Writing, Speaking, and Arithmetic skills. It is possible that we have missed some important parts of your job that require more by way of these basic skills than the tasks we have discussed. What other things do you do in your job that demand good Reading, Writing, Speaking or Arithmetic skills? Please describe these things.
2. Please think about someone who performs adequately in your job assignment and then think about the best person you have ever seen in your job. What is it that the best person does that the adequate person doesn't do?

The results of this questionnaire are described below.

Additional Tasks

Table 3.17 lists the job duties that SMEs thought we missed. As can be seen these include writing counseling statements (46% mentioned this), performing counseling, writing reports, instructing, and reading technical manuals. Most of these duties fall in the leadership category, a category that is underrepresented in doctrinal tasks. This finding supports the findings culled from the Steinberg and Leaman (1988) data in suggesting that leadership tasks of NCOs have requirements for academic skills.

Table 3.17

**Tasks Requiring Academic Skills that SMEs Said We Missed
in the Review of Doctrinal Tasks (N=22)**

Task	Percent Mentioning
Write counseling statements	46
Counsel soldiers	36
Write reports	23
Instruct	18
Read Technical Manuals	14

Differences Between Adequate and Superior Performance

The NCOs' answers to the question comparing adequate and superior performance were coded into three categories--motivation, knowledge/experience, and academic skill. An example of a response suggesting that motivation is the critical difference between adequate and superior performance of NCOs is: "Best person put more in and has pride." An example of a response suggesting that experience is crucial is: "He knows everything about his vehicle and his job." An example of a response suggesting that academic skill accounts for the difference is: "The best person has a better academic background."

Forty-one percent of the SMEs thought that motivation was a key difference, 32% thought that knowledge and experience were key, and 27% thought that academic skills were key. Thus more than one-fourth of the NCOs considered academic skills to be important for excellent performance as an NCO. Academic skills may also contribute to motivation and knowledge as well since more academically skilled individuals may acquire knowledge more quickly and may experience more success, leading to higher motivation. Thus, academic skills may be more important to excellent performance than their third-place rank suggests.

Summary

In this chapter, we described the findings for academic skill requirements for NCO common tasks, MOS-specific tasks, and leadership/supervisory tasks. For common and MOS-specific tasks we used doctrinal task descriptions to rate the categories and levels of academic skills required and then verified ratings with subject matter experts. We found that for

common tasks the most frequently required skill was Reading-to-Do, required by 16% of all common soldier tasks. The level of skill required by the vast majority of common tasks was either basic or intermediate.

For MOS-specific tasks, we again found that the skill in greatest demand was Reading-to-Do, required by 65% of the tasks selected. Math computation was required in 42% of the MOS-specific tasks, Writing in 34%, Speaking in 33%, and Listening-to-Do in 15%. Compared to common tasks, a greater percentage of MOS-specific tasks required academic skills. This is probably due to two factors. First, MOS-specific tasks are generally more technical than common tasks. Second, from a pool of critical, frequently-performed MOS-specific tasks, we consciously selected those that we guessed would have academic skill components.

As with common tasks, so too with MOS-specific tasks, by far the most frequent demands were at the basic and intermediate difficulty levels. The greatest demand for an advanced skill level was for Reading-to-Do, with 9% of MOS-specific tasks having this advanced requirement.

We used Steinberg and Leaman's (1988) data on Leadership Requirements to analyze leadership tasks. From these data we culled a list of 81 leadership tasks reported to be both of high criticality and performed by over half of NCOs. Inspection of this list of tasks revealed many that might have academic skill requirements although it is hard to tell from available data. We also identified eight leadership tasks whose perceived criticality increased across the ranks of E-5 to E-7. All eight of these tasks clearly have either intermediate or advanced level academic skill requirements. Finally, we identified 38 highly critical tasks that increased in percent performing across the ranks of E-5 to E-7. Many of these tasks also appear to have intermediate or advanced academic skill requirements. Thus, although additional data are needed, it appears that leadership tasks are more likely to require advanced academic skills than are common and MOS-specific tasks and that this requirement increases across the NCO ranks.

Given the estimate in Chapter 1 that most NCOs perform adequately at the basic and intermediate difficulty levels we have defined, one can conclude that they should be able to perform adequately in all but a handful of common and MOS-specific tasks since these tasks require only basic- and intermediate-level skills. On the other hand, if our best guess about the requirement for advanced-level skills for leadership tasks turns out to be correct, then many NCOs may not be able to perform some important leadership tasks without additional grounding in academic skills.

CHAPTER 4

NONCOMMISSIONED OFFICER TRAINING

According to the Department of the Army, "The Army's only training goal is to develop a combat ready force which is physically and psychologically prepared to fight and win global war" (Headquarters, Department of the Army, 1981a). While a great deal of Army training and education may seem far removed from combat readiness, it is all oriented towards the common goal of fielding and supporting the combat force.

This chapter examines the academic skill requirements of NCO training. We begin with a description of enlisted training to provide a context. Those readers already familiar with Army training may wish to skip to p. 4-6. We then focus on the skill requirements for PLDC, BNCOC, and ANCOC, for both Common Leader Training (CLT) and the MOS-specific technical lessons for each of the four MOS.

Training Prior to NCOES

Initial Entry Training

Incoming recruits are detailed to Initial Entry Training (IET), which is structured differently for Combat and Combat Services Support CMF. Recruits in Combat Support and Combat Services Support CMF (e.g., 31 and 63) first go to Basic Combat Training (BCT) where they learn basic soldiering skills and selected SL 1 common combat tasks. BCT emphasizes teamwork and adjustment to military life. Following BCT, these soldiers attend Advanced Individual Training (AIT), lasting from 8 to 26 weeks. AIT teaches soldiers the basic technical aspect of their MOS, focusing on the SL 1 tasks. Recruits in Combat CMF (e.g., 11 and 13) attend One Station Unit Training (OSUT), lasting 14 weeks, which combines BCT and AIT.

Upon completing of IET, soldiers are considered ready to perform in an apprentice or beginner position in the MOS to which they are assigned. The first assignment after AIT should provide the necessary experience to fine-tune technical skills and fully integrate the soldier into military life.

On-the-Job Training

Overall, the greatest training emphasis and time in the Army is spent on collective training. Collective training starts with section or squad and continues up through the battalion level. Most collective training is embodied in ARTEP (Army Training and Evaluation Program). ARTEP tasks (called ARTEPs) are mission statements and can be performed under a variety of conditions (night, NBC, etc.). Almost all Army units have unit-specific ARTEPs and every subunit task fits into higher unit tasks; thus ARTEPs are

cumulative. In addition, individual training tasks are "cross-walked" into the structured hierarchy of ARTEPs.

Remedial Training

The Army provides remedial academic instruction to soldiers who are deemed deficient or those who wish to improve their basic academic skills. Although soldiers may request remedial instruction voluntarily, few do so. However, a soldier can be counseled into remedial instruction in a number of different ways. For example, the following signs can lead a commander to channel a soldier into a remedial program: training problems attributed to reading deficiencies, low TABE scores when the test is administered prior to a training course, or the desire to increase GT scores for promotion purposes.

Basic Soldiers' Educational Program (BSEP) is one Army instructional program designed to teach remedial skills in the context of the Army task and training environment. The program is self-paced and completion frequently depends on the individual's motivation and on availability of materials at the education center, where classes are held. Therefore, soldiers with low academic skills may be identified prior to (as well as during) the NCO phase of their careers, and that once they are identified remedial instruction is available to them. Remedial instruction is discussed further in Chapter 5.

Training at the NCO Level

The Noncommissioned Officer Educational System

The Noncommissioned Officers Educational System (NCOES) is considered professional development training. It is a relatively new system, and was developed by pulling together existing training resources under the auspices of the Sergeants Major Academy (SMA). NCOES provides military leadership and technical instruction through four courses--PLDC (Primary Leadership Development Course), BNCOC (Basic Noncommissioned Officer Course), ANCO (Advanced Noncommissioned Officer Course), and SNCOC (Senior Noncommissioned Officer Course).

The core NCOES courses with which this project is concerned are PLDC, BNCOC, and ANCO. All three courses include a standardized Common Leader Training (CLT) component developed and maintained centrally by the SMA, but delivered and managed through a number of proponent schools. BNCOC and ANCO also include MOS-specific instruction developed and maintained by the appropriate proponent school. All three courses are typically taught in a full-time residential setting. While there is a great deal of variation among the courses, there are some common elements. Each course will be discussed below with respect to differences and similarities.

NCOES Common Leader Training

Primary Leadership Development Course (PLDC)

According to the PLDC Course Manager's Guide (USASMA, 1986a), PLDC is a 4-week (14 hours/day and 5 1/2 days/week) residential course taught in regional NCO Academies worldwide. Most students are primarily newly-appointed or prospective Sergeants (E-4/5) and are being prepared to perform as "Junior Leaders" at Skill Level 2.

PLDC is a basic leadership, management, and supervisory course that has no MOS-specific component. PLDC teaches junior leaders about the responsibilities of NCOs, fundamental leadership techniques, the NCO's role in training and leading subordinates, NCO professional standards, and how to train subordinates. PLDC attempts to instill self-confidence and responsibility in the students, and the ability to develop and sustain discipline in subordinates.

The PLDC curriculum consists of six blocks of instruction: Leadership, Communications, Resource Management, Training Management, Professional Skills, and Military Studies. The Military Studies unit includes map reading/land navigation, tactical communication, preparation for combat operations, and conduct of defensive/offensive operations. In addition to the broad range of training received in PLDC, students are given various leadership positions and are required to present training sessions in classroom and field environments.

Basic Noncommissioned Officer Course (BNCOC)

The Common Leader Training portion of BNCOC consists of 45 lesson hours covering certain SL 3 common tasks and leadership subjects defined by the Sergeants Major Academy. BNCOCs are presented in both resident service schools and extension mode by both CONUS and USAREUR. In all four MOS studied, BNCOC was carried out in resident service schools.

BNCOC CLT consists of five units (annexes): Leadership, Military Skills, Professional Skills, Resource Management, and Training Management. The CLT portion of BNCOC includes training in the same areas as PLDC, except there is no communications unit. However, BNCOC CLT is taught as a part of (and in some cases embedded in) the MOS-specific instruction delivered by the MOS proponent schools. Thus, BNCOC is more performance-oriented than PLDC.

Advanced Noncommissioned Officer Course (ANCOC)

ANCOC CLT is a 14-day course emphasizing technical tasks and advanced leadership knowledge required to train and lead other soldiers at the platoon or comparable level, corresponding to the duties associated with First Class Sergeant (E-7). ANCOC attendance is determined by a centralized

DA selection board. Attendees must have more than 2 but less than 5 years' TIG as of the convening month of the board. ANCOC usually precedes promotion to Sergeant First Class. Soldiers selected for promotion to Sergeant First Class who have not previously attended ANCOC are scheduled to attend the course. ANCOC courses are presented in both resident service schools and extension mode by CONUS. In all four MOS studied, ANCOC was presented in resident service schools.

ANCOC CLT consists of six annexes: Leadership, Effective Communications, Resource Management, Professional Skills, Military Studies, and Training. These annexes are taught together with the MOS-specific instruction delivered by the MOS proponent school and hence a typical ANCOC course lasts 8-10 weeks.

NCOES MOS-Specific Training

Both BNCOC and ANCOC include MOS-specific instruction training. In the four MOS we examined, this training was delivered in a residential environment. Typically the MOS-specific instruction is divided into several annexes and different "departments" at the proponent school are responsible for writing lesson material for different annexes.

For example, the MOS 63B BNCOC course consists of 10 annexes which include the CLT, technical lessons, and exams. Annex A is the CLT unit, annexes B through I are for MOS-specific instruction, and annex J is the end-of-course exam. The annexes cover basic management techniques related to light wheel vehicles as well as the various components of the vehicles and repair procedures. The MOS-specific annexes are as follows: B--supply and maintenance management, C--spark ignition and compression ignition engines, D--wheeled and tracked vehicles, E--power generation, F--hydraulic systems, G--battle damage assessment and repair (BDAR), H--rigging and recovery, I--maintenance management, and J--review and comprehensive exam.

The number of annexes varies from course to course depending on the number of lessons and length of the course. The instruction in each of the NCOES technical schools for the MOS studied is examined below.

MOS 11B--Infantryman

The proponent school for MOS 11B instruction is the U.S. Army Infantry School (USAIS) at Fort Benning. 11B BNCOC is a 5-week course taught at 13 sites. According to the Program of Instruction (POI), 11B BNCOC's purpose is "to train Infantry Squad Leaders to lead, train, and direct subordinates to maintain, operate, and employ weapons and equipment" (USAIS, 1987b, p.1). The course documentation lists 138 hours of technical instruction.

11B ANCOC is a 10-week course whose purpose is "to prepare Infantry NCOs to lead and Infantry Platoon to fight as part of the company team in combat; through formal classroom and field training, develop an understanding of the battalion task force concept and how it fights; and

maintain high physical fitness" (USAIS, 1987a, p.1A01) The course documentation lists 384 hours of technical instruction focusing on Skill Level 4 duties of the Infantryman.

MOS 13B--Field Artillery Cannon Crewmember

The proponent school for MOS 13B is the U.S. Army Field Artillery School (USAFAS) at Fort Sill. 13B BNCOC is a 4-week 4-day course taught at 10 sites worldwide. Its purpose is "to train Field Artillery Cannon section chiefs to lead, train, and direct subordinates to maintain, operate and employ weapons and equipment" (USAFAS, 1986, p.3).

13B ANCOG is a 7-week 4-day course whose purpose is "to train the Cannon NCO to perform in the rank of Sergeant First Class and be able to accomplish the duties of the Platoon Sergeant, Gunnery Sergeant, or Chief of Firing Battery, and to assume the duties of the executive officer or platoon leader in his absence" (USAFAS, 1987, p.3).

MOS 31C--Single-Channel Radio Operator

The MOS 31C proponent school is the U.S. Army Signal Center (USASC) at Fort Gordon. 31C BNCOC is a 6-week course whose purpose is "to provide enlisted personnel with the skills and knowledge to supervise, assist subordinate MOS personnel in, and direct the proper installation, operation, and maintenance of tactical radio and radio teletype equipment" (USASC, 1986, p.3). Its course documentation lists 166 hours of technical instruction.

31C ANCOG is the longest course we examined. It is an 18-week course whose purpose is to prepare selected NCOs to direct and supervise the use of electronic communications equipment; to perform duties at Skill Level 4. Its course documentation lists 512 hours of technical instruction.

MOS 63B--Light Wheel Vehicle Mechanic

The MOS 63B proponent school is the U.S. Army Ordnance Center and School at Aberdeen Proving Ground. 63B BNCOC is a 12-week course whose purpose is "to train enlisted personnel to supervise and perform unit maintenance on wheeled and tracked vehicles, tactical power generation equipment, and materials handling equipment (MHE) at Skill Level 3 (USAOC&S, 1987b, p.3). Its documentation lists 298 hours of technical instruction.

63B ANCOG is an 8-week 2-day course whose purpose is "to provide selected noncommissioned officers in MOS 63B with technical and advanced leadership knowledge and skills of military subjects required to function effectively at SL 4 as unit maintenance supervisor and/or platoon sergeant" (USOC&S, 1987a, p.11). Its documentation lists 81 hours of technical instruction.

NCOES Academic Skill Requirements

This section details the demands that NCOES courses make on the academic skills of soldiers attending them. A brief description of the analysis method is followed by a description of the overall ratings of the academic skill demands, and a discussion of how these course demands relate to the soldier's academic skills.

Analysis Method

Our analysis attempted to quantify the academic skill demands of the various courses presented in NCOES. Our goal was to identify the relative amount of course content that made demands on the different categories of academic skills at each of the three levels of difficulty. Specifically, our analysis proceeded as follows.

First, we identified the set of academic skills with which we would be working. This resulted in a set of seven different skills, each divided into three levels of difficulty (see Table 1.1 in Chapter 1.) We determined that the skill Listening-to-Learn was present in virtually all lessons because soldiers have to listen to instructors. Therefore, we decided not to rate lessons on Listening-to-Learn because this rating would be uninformative.

Second, we assembled all available course documentation, including syllabi, lesson plans, course outlines, supplementary readings, etc. Every attempt was made to work with the most current documents available. As the course contents are in a constant state of revision, we were unable to incorporate some minor changes that were made after we had begun our analysis.

Third, we reviewed the course material, focusing on the lesson plans. The lesson plans gave a detailed breakdown of lesson content, allowing identification of the academically demanding lesson elements. A critical part of this process was determining the length of the lesson portion that contained a lesson element with a particular academic demand. Since the instructors we observed varied in their adherence to course documentation, quantification from lesson plan materials at the lesson-hour level appeared to be the best method of standardizing the amount of academic skill demands.

Because differences occur in the nature of the course documentation for CLT and MOS-specific instruction, slightly different quantification procedures apply to the two types of lessons. The CLT curriculum (supplied by the SMA and standardized throughout) includes time-indexed "lesson scripts" giving the instructor very precise guidance throughout the course. These detailed lesson plans (Figure 4.1) allowed us to quantify the CLT components of all three courses in terms of lesson minutes.

The course documentation for the MOS-specific courses (BNCOC and ANCOC) varies in its specificity. Therefore, quantifications were made at the lesson-hour level since the lesson plans were not specific with respect

PCO-05	MAY 83	LESSON OUTLINE/NARRATIVE	INSTRUCTIONAL TACTICS
TIME			
		b. During the practical exercise, you will be issued the platoon warning order for the FIX. c. The troop leading procedure will be initiated upon receipt of the warning order. d. During the remainder of the practical exercise, we will work through the steps of the troop leading procedure in preparation for the FIX.	
01:02-		2. INITIATE THE TROOP LEADING PROCEDURE.	
03:50		a. Instruct the students to take notes as you read the platoon warning order. b. Read the platoon warning order for the FIX. c. Guide the students as they work together through each step of the procedure, as appropriate. d. Take the necessary time to ensure the students develop an understanding of how the troop leading procedure works when put into practice.	Use the platoon warning order for the field training exercise developed by each individual NCO academy for their FIX. The remaining time is devoted to preparing for the FIX, using the steps of the troop leading procedure. Answers ELO 2b.
		3. APPLY THE TROOP LEADING PROCEDURE.	
		a. Throughout the FIX, changes in the operation order will be in the form of FRAGOs.	

Figure 4.1
Sample Page from Common Leader Training (PLDC)
Lesson Guide

to time allotments for the various lesson elements. Every effort was made to apply the decisions consistently across the analysis.

After identifying and quantifying the academic lesson elements, we verified our ratings. Verification included several different elements. First, we reviewed the lesson plans and assigned academic skill ratings. The lesson reviewer made a total of three complete passes through the element ratings, each time re-examining the ratings and the documentation in light of decisions made throughout the process, to keep the ratings consistent across the analysis. Second, project staff reviewed each other's lesson ratings, checking for consistency across the individual's ratings as well as across the ratings of different project staff. Third, an in-house subject matter expert, a retired NCO with extensive knowledge of NCOES, reviewed the ratings. Where possible, we had instructors and managers at the service schools teaching the courses review the ratings.

The outcome of our lesson analysis is a detailed listing of the academically demanding elements of each lesson, including the length of the element and the type and level of academic skill it demands. Listings of the academic skill demands and ratings of the CLT lesson elements are contained in Appendix C. Listings of the academic skill demands and ratings of the MOS-specific lesson elements are contained in Appendix D.

Academic Skill Demands of Common Leader Training Courses

Table 4.1 shows the percentage of CLT course hours containing academically demanding elements for each skill. Table 4.2 shows the same information for the three levels of difficulty for each skill. In addition to averages across all three courses and all of the skills, Tables 4.1 and 4.2 also provide average demand for the "critical three" skills--Mathematics, Writing, and Reading-to-Do. These skills represent the more classic academic requirements--the traditional three Rs: Reading, Writing, and Arithmetic.

The "critical three" skills are more easily isolated from content-specific skills and aptitudes than are Speaking and Listening. This makes it easier to test, teach, and remediate a student's skills in these areas. In short, these three skills generally tend to be of more concern to those interested in "academic skills."

Nature of the Demands

The few explicitly academic CLT lessons are concentrated in the communications skills lessons and the Army Writing Program. So, many of the academic skill demands found during our analyses are embedded in the context of other lessons. A substantial portion of these requirements are classroom-generated as opposed to content-generated. That is, the requirements are unique to classroom activities. For example, NCOs must follow scoring procedures to grade in-class exercises. However, the Math

Table 4.1

Academic Skill Demands of Common Leader Training Courses

NCOES Courses		Percentage of Course Hours Containing Academically Demanding Elements ^c							
Course	Hours ^{a, b}	Math	Writing	Speaking	Reading-To-Do	Reading-To-Learn	Listening-To-Do	Average, All 6	Average, "Critical 3" ^d
PLDC	137 (53.15C; 68PE; 1.8TV; 6PEX; 4D; 4E)	2.3 (3.1)	1.4 (1.9)	3.3 (4.6)	8.8 (12.1)	-	2.7 (3.7)	3.1	4.2
BNCOC	38 (28.25C; 3.75PE; 3TV; 3E)	2.6 (1.0)	4.6 (1.8)	3.7 (1.4)	13.4 (5.1)	-	0.7 (0.3)	4.2	6.9
ANCOC	104 (56C; 34PE; 6PEX; 8E)	1.4 (1.4)	8.9 (9.3)	2.2 (2.3)	14.3 (14.8)	-	1.4 (1.5)	4.7	8.2
All Courses	279 (137.4C; 105.75PE; 4.85TV; 12PEX; 4D; 15E)	2.1 (5.5)	5.0 (12.9)	3.1 (8.2)	12.2 (32.0)	-	1.6 (5.4)	4.0	6.4

^a Totals are from lesson review sheet, not POIs.

^b Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^c Number of hours given in parentheses.

^d "Critical Three" skills are Math, Writing, and Reading-To-Do.

Table 4.2

Academic Skill Demands of Common Leader Training Courses,
by Difficulty Level

NCOES Courses		Percentage of Course Hours Containing Academically Demanding Elements at Each Difficulty Level																							
Course	Hours ^{a, b}	Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do			Average, All 6			Average, "Critical 3"		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
PLDC	137 (53.15C; 88PE; 1.8TV; 6PEX; 4D; 4E)	2.3			1.2; 0.2			1.1; 1.8; 0.4			4.9; 2.5; 1.5						0.4; 2.1; 0.2			1.7; 1.1; 0.4			2.8; 0.9; 0.5		
BNCOC	38 (28.25C; 3.75PE; 3TV; 3E)	2.6			2.9; 1.8			3.7			4.2; 9.2						0.4; 0.2			1.7; 2.5			3.2; 3.7		
ANCOC	104 (56C; 34PE; 6PEX; 8E)	1.4			3.0; 2.5; 3.4			1.5; 0.7			9.8; 4.2; 0.3						0.1; 1.4			2.4; 1.5; 0.7			4.7; 2.2; 1.2		
All Courses	279 (137.4C; 105.75PE; 4.85TV; 12PEX; 4D; 15E)	2.1			2.4; 1.5; 1.1			0.4; 2.4; 0.4			6.3; 5.3; 0.6						0.3; 1.2; 0.1			1.9; 1.7; 0.4			3.6; 2.3; 0.6		

^a Totals are from lesson review sheet, not POIs.

^b Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^c "Critical Three" skills are Math, Writing, and Reading-To-Do.

skills required for these exercises are not comparable to job tasks. These classroom-generated academic skill demands are less likely to provide transfer to job tasks. On the other hand, content-generated academic skill demands are more similar to job tasks, such as using simple arithmetic to compute distances on a map. These types of academic skill demands are more likely to transfer to job tasks. This distinction between classroom-generated and content-generated demands will be alluded to in the following discussion of academically demanding lesson elements for each academic skill.

Requirements for Specific Academic Skills in CLT Lessons

Mathematical Computation. Math demands are extremely low, almost entirely at the lowest "basic arithmetic" level. Most of the examples of Math demands (16 of 22) are embedded in map-reading or navigation instruction, such as determining elevation or measuring distances. While some of the map-reading instruction calls on skills higher than basic arithmetic, such as using decimals in the measurements, it was determined that these are routine tasks that soldiers have already mastered in previous training and usually perform in a rote fashion. The other Math demands involve basic and advanced arithmetic skills in self-paced, in-class exercises. Thus, it appears that NCOs can successfully complete lessons requiring simple Mathematics skills, which are frequently embedded in map reading or other classes.

Writing. While only a small portion of course time makes demands on Writing skills, the demands are varied and some of them are challenging. Many of the Writing demands are seen in the Army Writing Program, which is discussed further in Chapter 5. This program focuses on improving Writing skills while giving practice in the most common writing tasks NCOs face on the job. These lessons are usually taught by English instructors and vary somewhat in quality and content at different schools.

Roughly half of the basic-level Writing demands are simply answering written questions about course content. Other examples of basic Writing instruction include filling out maintenance and property forms, taking notes for preparing oral operations orders, and annotating simple maps.

Many of the intermediate Writing elements are assignments in the Army Writing Program based on actual on-the-job Writing tasks. The Army writing tasks include writing brief summaries on casualty and maintenance forms, writing counseling statements, writing training plans, writing orders, and drawing and annotating defensive sector sketches.

All of the advanced Writing demands occur in the Army Writing Program lessons in ANCOG. Examples include writing recommendations for awards, letters of commendation, a barracks SOP, information papers, and military briefing papers.

Speaking. Most of the Speaking demands are classroom-generated rather than content-generated. While classroom-generated Speaking requirements are

actually much higher than content-generated requirements, the only demands reported in our analyses are those specified in the lesson plans, and therefore the classroom-generated Speaking demands may be underestimated. Examples of classroom-generated Speaking requirements include making oral recommendations based on Practical Exercise scenarios (basic level) and participating in counseling and problem solving role-play exercises (intermediate level). Examples of content-generated Speaking requirements include giving commands during physical training (basic level); conducting and evaluating field training exercises and drills, conducting inspections, and supervising maintenance (intermediate level); and presenting briefings (advanced level).

Reading-to-Do. Reading-to-Do was the most prevalent demand for each course and across all courses. Approximately 14% of the ANCOC instructional hours require reading; roughly 13% and 9% of BNCOC and PLDC instruction, respectively, include reading exercises/assignments. Across the three courses, more than 12% of the total instructional hours include Reading-to-Do (32 of 279 hours). The time spent on reading is more than double the next highest rated academic skill, Writing, which occurs 5% of the time. Some of the Reading can be classified as classroom-generated, mostly at the basic level, while other requirements are content-generated. Examples of classroom-generated Reading include completing multiple-choice and map-reading exams, completing in-class written exercises, and reading scenarios in both written and role-playing exercises. Examples of basic-level content-generated Reading-to-Do demands include reading maintenance schedules in manuals; reading simple job aids; reading to fill out maintenance, casualty reporting, and property forms; and reading company orders and defense plans.

Intermediate level Reading-to-Do lesson elements include many map-reading tasks. While these lesson elements have some unique features and demand task-specific knowledge and abilities other than Reading, a soldier's general Reading skills may impact his map-reading ability. Other intermediate level elements include reading manuals to prepare and conduct field training.

The only advanced Reading requirement involves using the automated CEOI, a device used for encrypting radio information. As with map reading, this task embeds reading in unique task-specific requirements. However, this task requires locating specific information within the CEOI and therefore does demand a high level of general Reading ability. All soldiers are required to learn how to use the CEOI, but lose the ability to use it efficiently may be lost by those who are not required to use it outside of school. Thus, many soldiers find it quite difficult to reach the proficiency level required to pass the test based on this instruction since there is little or no previous on-the-job-training associated with the automated CEOI.

Reading-to-Learn. From examining the course documentation, it appears that NCOFS makes enormous demands on Reading-to-Learn abilities. Each lesson is accompanied with an Advance Sheet that outlines a carefully specified set of reading assignments intended as homework. Soldiers are

instructed to "scan," "read," "study," or "review" hundreds of pages of prepared supplementary readings and summary sheets, field manuals, and Army regulations--more than 600 pages for PLDC, more than 700 for BNCOC, and nearly 1000 for ANCOC. For one 3-hour ANCOC class, the advance sheet instructs soldiers to read or study 5 supplementary readings and study 10 FM or AR chapters for a total of 174 pages. This is in addition to an 8-hour class day with physical training and barracks detail as well. Thorough reading, therefore, is often impossible.

Because of the finding that reading is not done thoroughly, we list the homework assignments as Reading-to-Learn elements for each lesson, but do not quantify them and do not include them in our demand totals. The few Reading-to-Learn demands we quantified had to do with in-class reading.

Listening-to-Do. Listening-to-Do requirements are quite low, reflecting an emphasis in CLT lessons on more abstract knowledge rather than procedural abilities. Nonetheless, it seems that requirements for Listening-to-Do are probably higher, but we quantified only those lesson elements that were clearly defined in the documentation. Some of the Listening-to-Do demands that we documented were generated by the consideration of Listening as a job skill. For example, "Leadership Counseling" (BNCOC) requires students to practice Listening skills during role-playing exercises, and "Effective Listening" (ANCOC) requires students to test, critique, and practice their active Listening skills.

Other Listening-to-Do lesson elements require students to listen to instructions while learning to perform tasks. Basic level Listening-to-Do elements include learning how to plan and conduct an inspection, and simple map-reading tasks. Intermediate elements include using the CEOI, and following instructions for the more difficult map-reading tasks. Most of the Listening-to-Do tasks require passive listening or active listening to familiar material, so almost all are rated at the two lower levels.

Comparison of the Skills Required in CLT Lessons

Overall, the academic skill demands for the three CLT courses show similar emphases across the six skills considered. (Recall that Listening-to-Learn is considered to be a requirement of every lesson and therefore not rated.) Reading-to-Do is clearly the most demanded skill in all three CLT courses, being required in 8.8% of the hours for PLDC, 13.4% for BNCOC, and 14.3% for ANCOC, and averaging 12.2% across all three courses. Writing was the next highest rated skill, ranging from 1.4% of the hours for PLDC to 8.9% for ANCOC and averaging 5.0% across all three courses. Math, Speaking, and Listening-to-Do demands were mostly in the 1% to 3% range, and there were no Reading-to-Learn demands.

Comparison of the Skill Requirements for Each Course

An important question following the analysis of demands across skills is: Do the courses show increasing demands from PLDC to BNCOC to ANCOC?

The average academic skill demand across all skills was the highest for ANCOC, with an average of 4.7% of the 104 course hours requiring academic skills. PLDC had the lowest average demand across all skills, with an average of 3.1% of the 137 course hours including academic elements.

This disparity is even sharper for the "critical three" skills. In ANCOC lesson elements the average time spent on the "critical three" skills is 8.2% while these three skills are required an average of only 4.2% of the time in PLDC. It is important to note the difference in length of the total lesson hours; 137 for PLDC versus 104 for ANCOC. This means that while the percentage demand is lowest in PLDC, the total hours of demanding lesson elements are not. For example, the average numbers of hours of the "critical three" lesson elements for PLDC, BNCOC, and ANCOC are approximately 6, 3, and 9, respectively.

Difficulty Level of Demands

In our analysis, we found the majority of the academic skill demands of the CLT courses concentrated at the lowest level, with the demand for the advanced level of skills being almost negligible. Across the three CLT courses, the average demand for basic skills (1.9%) is slightly greater than the average for intermediate skills (1.7%) and much greater than the average for advanced skills (0.4%). The average demand for the "critical three" skills is even more skewed toward the basic level.

Overall Demand in Common Leader Training Lessons

The percentage of CLT instructional content that demands academic skills is very low. The average demand for all six skills across the three courses is only 4.0% of total course hours, with most of the demand concentrated at the lowest level. For the "critical three" skills, the average demand is 6.4%, again with most of the demand concentrated at the lowest level.

Academic Skill Demands of NCOES Technical Courses

The following section describes the academic skill demands of the six MOS-specific technical training courses we examined. Specifically, we looked at BNCOC and ANCOC for 11B, 31C, and 63B. The 13B MOS was not included in this analysis due to difficulty in obtaining adequate course documentation from Fort Sill.

Demands in Each Course

MOS 11B--Infantryman:

Overall. Table 4.3 shows the academic skill demands of MOS 11B BNCOC and ANCOC for each skill, broken down by difficulty levels. The demands are relatively low, especially for the "critical three" skills. Math and Writing demands are low, and most of the Reading-to-Do was concentrated at the lowest level.

The courses consist of a relatively small number of lengthy lessons/exercises (6 in BNCOC and 31 in ANCOC devoted to practicing and honing procedural skills). For example, BNCOC includes a 16-hour practical exercise "Maintenance" lesson with two "procedural-oriented" training objectives--perform pre- and post-operational serviceability checks of Infantry squad equipment. Another example of a BNCOC lesson is the 32-hour (12-hour conference and 20-hour practical exercise) "Tactics" lesson with 19 training objectives, such as "Establish an observation post." The average demand of all six skills was quite high, probably due to the inflated Listening and Speaking demands of the practical exercises.

Mathematics. All of the 11B math requirements are in ANCOC lessons, and all of these demands are generated from map-reading exercises. Basic level demands involve navigation and orienteering, while intermediate demands result from calling for artillery fire.

Writing. In BNCOC, the only Writing elements are filling out maintenance forms (basic level) and drafting oral squad operations orders (intermediate level). ANCOC has a much wider variety of Writing tasks. In addition to completing several maintenance forms, basic level demands in ANCOC include preparing and annotating platoon defensive sector sketches and range cards, and filling out JINTACCS report templates. ANCOC intermediate tasks include writing "execution paragraphs," mission statements, operations orders, and training specifications.

Speaking. While Speaking demands are rated very high at the basic level in BNCOC, part of this is an artifact of the analysis method. Course documentation includes several lengthy field exercises involving practice of giving commands and working in teams. Therefore, Speaking demands for the field exercises are rated for the entire duration of the lesson since the documentation doesn't specify the exact content and nature of the exercise. At the intermediate level, both BNCOC and ANCOC include formal practice in issuing orders. The only advanced speaking is preparing and presenting a period of instruction on tactical weapons employment.

Reading-to-Do. Some of the Reading-to-Do demand is classroom-generated, such as completing written multiple-choice examinations (basic level, although inadequate documentation precluded tabulating the exams in ANCOC) and reading scenarios in ANCOC (basic level). Other Reading-to-Do demands, mostly at basic level, are content-generated. These include reading operational checklists in TMs (BNCOC), and referring to manuals

Table 4.3
Academic Skill Demands of MOS 11B Technical Courses

Technical Courses		Percentage of Course Hours Containing Academically Demanding Elements at Each Difficulty Level																							
Course	Hours ^{a, b}	Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do			Average, All 6			Average ^c "Critical 3"		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
11B BNOC	138 (21C; 24PE1; 84PE2; 4E1; 5E3)																								
11B ANOC ^d	384 (41.5C; 215PE1; 105PE2; 22.5PE3)	3.4	1.5		0.7	0.7		52.2	2.2	15.2							34.8	14.5		17.1	2.9		5.3	0.2	
					7.6	2.7		11.7		1.8	12.0	10.2					25.7			10.1	2.4	0.3	7.7	4.8	
		Percentage of Course Hours Containing Academically Demanding Elements																							
11B BNOC					1.4			54.3		15.2							49.3				20.0		5.6		
11B ANOC		4.9			10.4			13.5		22.2							25.7				12.8		12.5		
Totals are from lesson review sheet, not POIs.																									
Course content sheet																									

^a Totals are from lesson review sheet, not POIs.

^b Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^c "Critical Three" skills are Math, Writing, and Reading-To-Do.

^d Examination elements are not included.

while drafting sector sketches and using offensive tactical sketches (ANCOC). There are no intermediate demands in BNCOC; ANCOC demands include referring to operations orders and troubleshooting, maintenance, and training manuals, and extracting specific data from a fairly broad variety of forms and manuals.

Reading-to-Learn. None of the 11B lesson plans specifies any homework reading or study assignments. It is possible that some soldiers may be required to study unfamiliar manuals during study sessions. However, students and instructors interviewed report that it is very rare for students to engage in this sort of reading during the courses.

Listening-to-Do. Since a great deal of instruction in these courses consists of field exercises, the Listening-to-Do demands are very high, although, as with Speaking demands, having large blocks of time devoted to practical training exercises probably inflates the results. At the basic level both BNCOC and ANCOC students follow commands during Infantry drills, patrol drills, and field exercises. At the intermediate level, BNCOC students follow instructions and demonstrations on various infantry tactics. Finally, at the advanced level, ANCOC students follow instruction/demonstration on operator maintenance, alignment, and arm/disarm procedures for a wide variety of complex weapons.

MOS 31C--Single Channel Radio Operator:

Overall. As expected from a largely technical MOS, 31C has relatively high academic skill demands--the highest of the four MOS. The 31C courses contain a large number of individual lessons (24 in BNCOC and 74 in ANCOC) covering fairly technical topics with a wide variety of academically demanding elements. Table 4.4 lists the academic skill needs for 31C BNCOC and ANCOC. Both BNCOC and ANCOC made considerable demands on the "critical three" skills at the basic level. Reading-to-Do demands were particularly high, with intermediate demands being substantially higher than basic. Moreover, 14.4% of ANCOC lesson hours include advanced Reading-to-Do demands.

One important factor in the increasing difficulty level of academic skill demands is lack of familiarity. A portion of 31C NCOs are "merged in" from other MOS that "close out" at E-4 or E-5. These students are presented with a myriad of new technical systems and accompanying reference material. Furthermore, the 31 NCO will have subordinates from various CMF 31 MOS. So courses in this CMF contain an overview of a large number of systems and issues to prepare students for the many possible duty environments they may encounter.

Mathematics. Calculating occurs at several points in the 31C courses. For example, in written and actual antenna construction PEs in BNCOC, students must calculate the antenna length, using long division with decimal numbers. ANCOC students complete fairly extensive computations in written PEs on radio wave propagation. While these math demands are among the highest seen, they generally are not a problem because the students are

Table 4.4
Academic Skill Demands of MOS 31C Technical Courses

Technical Courses		Percentage of Course Hours Containing Academically Demanding Elements at Each Difficulty Level																	
		Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Course	Hours ^{a, b}																		Average "Critical 3"
31C BNCOC	166 (41.75C; 1TV; 77PE1; 29.25PE3; 9E1; 8E3)	3.6	1.2		10.8	1.8	7.2	12.0			18.2	30.7	3.0	0.6	2.4		6.6	10.8	7.9
31C ANCOC	512.25 (166.75C; 148PE1; 2PE2; 141.25PE3; 214.25E1; 31.5 E3)	3.8	3.4		34.2	2.7	15.4				18.3	38.7	14.4	1.4	2.5	8.1	4.3	12.4	8.8
		Percentage of Course Hours Containing Academically Demanding Elements																	
31C BNCOC		4.8			12.7		19.3				52.0			3.0			17.5		18.2
31C ANCOC		7.2			36.9		15.4				71.4			1.4			14.9		24.5
																			23.1
																			38.5

^a Totals are from lesson review sheet, not POIs.

^b Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^c "Critical Three" skills are Math, Writing, and Reading-To-Do.

familiar with the problem elements and most have performed similar tasks previously. Additionally, the math equations are very consistent, so the students can (and do) memorize the setup and solution steps.

Another source of unique and potentially challenging math demand is presented in ANCOC instruction on spreadsheet and database management instruction. The mathematical elements of these tasks are reported to be demanding, but not nearly as difficult as the task in its entirety. Finally, both BNCOC and ANCOC include math related to standard map reading and land navigation.

Writing. These courses include many of Writing demands, most of them generated from job tasks included in the instruction. Many of the 31C SL 2, 3, and 4 duty tasks have a Writing component, and this is reflected in the instructional content. The Writing demands in both courses are numerous and varied.

Filling out relevant forms in BNCOC creates some basic Writing demands. These include inventory and maintenance forms, operational checkouts and logs, TAMMS (The Army Maintenance Management System) forms, and document destruction forms. ANCOC basic-level demands are also content-generated, requiring students to calculate and estimate the specifications for communication system components and completing various forms, such as circuit designation forms, circuit routing lists, and patch panel worksheets. Also at the basic level in ANCOC are the writing demands of transcribing and generating text while learning word processing and transcribing text into the Joint Interoperability of Tactical Command and Control System (JinTACCS) format. Intermediate Writing demands include practice writing of Communications-Electronics annexes to operations orders. The only advanced demands are BNCOC PEs that require reading technical bulletins and FM chapters, then writing descriptive paragraphs.

Some 31C Writing demands are classroom-generated. These include numerous short-answer written PEs and a few examination items requiring forms to be filled out and providing detailed written solutions to problem-solving scenarios.

Speaking. 31C lesson elements have a limited number of documented Speaking requirements. Some demands are simply practice of sending radio messages. The remaining demands are in practicing issuing directions in peer teams while installing, operating, and maintaining equipment, and supervising teams made of AIT students.

Reading-to-Do. Numerous Reading-to-Do demands exist in the 31C courses. Students interviewed complained about the enormous amount of reference information they are required to look up and the number of reference manuals needed to complete tasks.

Referring to the various TMs presents the most hours of reading. Even though the information is often simple, the demand is considered intermediate level because students often have to find the correct manual, then locate the information within it. The courses strongly emphasize

learning to use TMs in job settings. Instead of receiving handouts with excerpted reference information, are issued students a stack of manuals at the beginning of the courses. Some TM-related demands in BNCOC involve inspecting installed radio, power, and generator systems in accordance with the relevant technical manuals and performing operator-level troubleshooting. Students use TMs to install, operate, and troubleshoot various systems including teletypewriters, encryption devices, radiotelephones, and multichannel systems, during both PEs and performance examinations. Students also have to follow written instructions from both manuals and PE instructions on tasks such as performing radio network operating procedures, performing PMCS (Preventive Maintenance Checks and Services), calculating frequency and radiowave propagation characteristics, filling out TAMMS forms, establishing secure radio systems, and using the PC word processor, spreadsheet, and databasing software.

Another substantial Reading-to-Do demand is in written ANCOC PEs requiring students to read scenarios and design an entire Communications/Electronics (C/E) system. This includes establishing signal nodes, planning messenger service, preparing C/E annexes for the operations order, and preparing circuit routing lists and diagrams. Completing various forms presented basic-level reading demands (mostly in BNCOC). Similarly, the PEs on creating circuit routing lists, patch panel worksheets, and circuit diagrams also generate reading demands.

These courses also have a high level of classroom-generated Reading-to-Do demands. In addition to the usual multiple-choice exams (basic-level), students also complete many short-answer "quiz" PEs and various written performance examinations.

Listening-to-Do. The many detailed technical procedures in the 31C course instruction present substantial Listening-to-Do demands. Most of the procedures listed under Reading-to-Do also have a Listening component. Typically the instructor demonstrates the procedure or illustrates the steps with vu-graphs, and then guides the students step by step through the procedure. Thus, basic-level Listening-to-Do tasks involve passive listening such as following procedural instructions to fill out forms, send and receive JINTACCS messages (BNCOC), and fill out circuit designation lists and diagrams, and install equipment (ANCOC). Intermediate examples of active listening tasks involving familiar material include installing, operating, and troubleshooting various individual radio and power systems; programming and operating radio teletypewriters; using the automated CEOI; remoting FM radios; writing and downloading terminal control command programs; and completing the more complex and novel communications system worksheets and diagrams. Advanced examples of active listening tasks involving new and unfamiliar material include some very complex ANCOC procedures such as using reference manuals for the PC DOS, spreadsheet, and database software, Tactical Army Combat Service Support Computer System (TACCS) and associated software, JINTACCS transcription procedure, ACP 126 formatting, and programming autoswitch equipment using a keypad.

BNCOC lessons include some unique Listening demands in learning to recognize various "signature" sounds of radio jamming techniques and in managing radio traffic during radio net operation.

MOS 63B--Light-Wheel Vehicle Mechanic:

Overall. Table 4.5 lists the academic skill demands for MOS 63B BNCOC and ANCOC. The overall demand in BNCOC is fairly high, with the average demand for all six skills at 18.6% of course time. ANCOC drops substantially, with average demands for all six skills at only 10.0%. This reflects a decrease in technical content at ANCOC. ANCOC graduates generally perform mostly supervisory and administrative functions, so they do very little actual technical maintenance and repair. ANCOC is also very short, at only 81 hours.

While the BNCOC demands are high, and the course is very long (298 hours), much of the academic skill demand is accounted for by routine applications of the same skill to similar tasks. For example, almost all Math demands in BNCOC are from multimeter use in various troubleshooting tasks. Similarly, much of the Reading-to-Do is generated by system-troubleshooting tasks that require using reference manuals.

Another factor which reduces the actual academic skill demands is the systematic organization of BNCOC. Most of the BNCOC lessons are based on a structured approach, divided by major automotive systems (i.e., brakes, suspension, electrical, etc.) and four different types of vehicles (light, heavy, track, and new). A "Principles and Operations" lesson on each system is followed by a troubleshooting lesson repeated for each of the four different vehicle types. Thus, while using TMs for troubleshooting is a very substantial Reading-to-Do task, the basic procedure generating the demand is routine; the structured Reading requirements are repeated many times during the course.

Mathematics. Most basic-level Math demands in BNCOC and ANCOC are generated by rigging computations during written PEs and field exercises on vehicle recovery. These require students to determine the amount of line tension needed to recover (turn upright or unmire) a vehicle and determine the mechanical advantage various block-and-tackle combinations provide. They deal with whole numbers and simple ratios and in the field they are usually allowed a generous margin of error. Students are provided with division formulas that they can (and do) memorize. Other basic demands involve calculating simple generator loads in BNCOC written PEs.

Most of the intermediate Math demands are generated by multimeter use in troubleshooting exercises. In BNCOC, intermediate Math demands are also generated by electrical load calculations for a written PE and by pressure and displacement calculations for a hydraulics PE. In ANCOC, a particularly difficult rigging PE presents some intermediate Math demands.

The only advanced Math demand is generated by written BNCOC PEs requiring students to calculate electrical loads from scenarios. Because

Table 4.5
Academic Skill Demands of MOS 63B Technical Courses

Technical Courses		Percentage of Course Hours Containing Academically Demanding Elements at Each Difficulty Level																							
Course	Hours ^{a, b}	Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do			Average, All 6			Average ^c "Critical 3"		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
63B BNCOC	297.9 (71.3C; 29.4D; 143.1PE1; 7PE2; 8.9PE3; 28E1; 2E2; 8.2 E3)	4.9	9.2	1.0	17.2	1.1		1.0	9.1		14.6	40.1	3.2				0.3	9.3	0.3	6.3	11.5	0.8	12.3	16.8	1.4
63B ANCOC	81 (29C; 3.5D; 0.5TV; 37PE1; 2PE2; 2PE3; 2E1; 5E3)	7.4	1.2		3.7			5.6			13.8	14.8	9.9				2.5	1.2		5.0	3.1	1.9	8.2	5.3	3.3
		Percentage of Course Hours Containing Academically Demanding Elements																							
63B BNCOC		15.1			18.4			10.1			58.0						10.0			18.6			30.5		
63B ANCOC		8.6			3.7			5.6			38.3						3.7			10.0			16.9		

^a Totals are from lesson review sheet, not POIs.

^b Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^c "Critical Three" skills are Math, Writing, and Reading-To-Do.

they involve scenarios, the students have to determine values and set up equations.

Writing. Writing demands are mostly limited to routine basic-level demands. In BNCOC, the students are provided with written content outlines to take notes on. Students in other courses also take notes, but this is the only course that formalized the process and checked students' work. BNCOC students take sentence-completion spot quizzes. The rest of the writing demands are content-generated.

BNCOC students have written PEs on selecting route and calculating electrical loads. ANCOC students have written PEs on tracing hydraulic circuits and filling out maintenance forms. These exercises require writing skills at the lowest level. The only intermediate Writing demands are the formalized homework assignments requiring students to write sentence-length answers to the self-check and self-test questions in their textbooks. Since these Writing requirements are conducted as homework (outside of class and no supervision) and none of the students interviewed reported doing the homework, these demands are noted here in the text but are not quantified in the results.

Speaking. Oral communication demands of 63B are the lowest of all the courses. The only content-generated Speaking requirements are giving instructions during BNCOC team PEs on electrical system installation and vehicle recovery. Some ANCOC Speaking demands are content-generated. A number of PEs require students to verbally identify and describe vehicle components and answer instructor's questions.

Reading-to-Do. Some Reading-to-Do demands are content-generated. Many BNCOC lessons include multiple-choice and sentence-completion quizzes and both BNCOC and ANCOC include multiple-choice examinations. ANCOC also includes PEs that required identifying and verbally describing vehicle components, using references as necessary. Also in ANCOC are written PEs on rigging and mechanical advantage.

Most of the content-generated demands come from using technical manuals during troubleshooting, repair, and maintenance (intermediate level). The bulk of this is in troubleshooting induced malfunctions in various systems in BNCOC. Usually the student has to locate the fault on a troubleshooting chart, then systematically eliminate each of the possible listed causes. This also includes locating and using maintenance checklists during PMCS and troubleshooting performance examinations as well. Other demands include written scenario-based power installation PEs, route selection PEs, and Battlefield Damage Assessment and Recovery (BDAR) PEs.

The only advanced Reading-to-Do requirements are generated by the complex setup and operation procedures for the computerized testing equipment (STE/ICE) and a PE on removing and installing a vehicle engine. Both of these tasks make extensive demands on Reading-to-Do skills.

Reading-to-Learn. As with all courses, the 63B homework assignments were noted but not counted in the quantified results. However, none of the students reported reading the homework.

Listening-to-Do. All of the Listening-to-Do demands were generated by hands-on instruction/demonstrations on the many procedural tasks taught in the 63B courses. Typically, the instructor first demonstrated the procedure, then the students performed the procedure following step-by-step instructions. Then, after all students had completed the procedure once, they performed the task again on their own.

Overall Skill Demands in MOS-Specific Training

Table 4.6 shows the total percentage of course hours containing academically demanding elements of each skill type; Table 4.7 shows the same information broken down into levels of difficulty. Both tables also present averages across all three BNCOC and ANCOC courses and average demand for the six skills combined and the "critical three" skills.

The overall demand for academic skills is fairly high in the MOS-specific technical portions of BNCOC and ANCOC. The average demand for all six skills is 18.9% of the course time for BNCOC and 15.8% for ANCOC. The average demand for the "critical three" skills is 19.8% for BNCOC and 22.6% for ANCOC. This is a great deal higher than in Common Leader Training (4.0% for all six and 6.4% for the "critical three"), but a portion of this difference must be attributed to the difference in course documentation and the resulting accuracy of the analysis. CLT was documented by the lesson minute, allowing reviewers to identify more precise, smaller blocks of instruction containing academically demanding elements. Nonetheless, the MOS-specific demand is quite a bit higher.

Table 4.6
Academic Skill Demands of NCOES Technical Courses

NCOES Technical Courses		Percentage of Course Hours Containing Academically Demanding Elements ^b							
Course	Hours ^a	Math	Writing	Speaking	Reading- To-Do	Reading- To-Learn	Listening- To-Do	Average, All 6	Average "Critical 3" ^c
11B BNCOC	138 (21C; 24PE1; 84PE2; 4E1; 5E3)		1.4 (2)	54.3 (75)	15.2 (21)		49.3 (68)	20.0	5.6
11B ANCOC ^d	384 (41.5C; 215PE1; 105PE2; 22.5PE3)	4.9 (19)	10.4 (40)	13.5 (52)	22.2 (85)		25.7 (99)	12.8	12.5
31C BNCOC	166 (41.75C; 1TV; 77PE1; 29.25PE3; 9E1; 8E3)	4.8 (8)	12.7 (21)	19.3 (32)	52.0 (86)	3.0 (5)	17.5 (29)	18.2	23.1
31C ANCOC	512.25 (166.75C; 146PE1; 2PE2; 141.25PE3; 24.25E1; 31.5 E3)	7.2 (37)	36.9 (189)	15.4 (79)	71.4 (366)	1.4 (7)	14.9 (77)	24.5	38.5
63B BNCOC	297.9 (71.3C; 29.4D; 143.1PE1; 7PE2; 8.9PE3; 28E1; 2E2; 8.2 E3)	15.1 (45)	18.4 (55)	10.1 (30)	58.0 (173)		10.0 (30)	18.6	30.5
63B ANCOC	81 (29C; 3.5D; 0.5TV; 37PE1; 2PE2; 2PE3; 2E1; 5E3)	8.6 (7)	3.7 (3)	5.6 (5)	38.3 (31)		3.7 (3)	10.0	16.9
All BNCOC	601.9(134.05C; 29.4D; 244.1PE1; 91PE2; 38.15PE3; 1TV; 41E1; 2E2; 21.2E3)	6.6 (53)	10.8 (78)	27.9 (137)	41.7 (280)	1.0 (5)	25.6 (127)	18.9	19.7
All ANCOC	977.25(237.25C; 3.5D; 398PE1; 109PE2; 165.75PE3; 0.5TV; 26.75E1; 36.5E3)	6.9 (63)	17.0 (232)	11.5 (136)	44.0 (482)	0.5 (7)	14.8 (179)	15.8	22.6

^a Totals are from lesson review sheet, not POIs.
Course content abbreviations are as follows: C, Conference; PE, Practical Exercise; TV, Television; PEX, Practical Examination; D, Demonstration; E, Examination.

^b Number of total hours given in parentheses.

^c "Critical Three" skills are Math, Writing, and Reading-To-Do.

^d Examination elements are not included.

Table 4.7

Academic Skill Demands of NCOES Technical Courses, by Difficulty Level

Technical Courses		Percentage of Course Hours Containing Academically Demanding Elements at Each Difficulty Level																								
Course	Hours ^a	Math			Writing			Speaking			Reading-To-Do			Reading-To-Learn			Listening-To-Do			Average, All 6			Average ^b "Critical 3"			
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
11B BNCOC	138				0.7	0.7		52.2	2.2	15.2							34.8	14.5		17.1	2.9		5.3	0.2		
11B ANCOC ^c	384	3.4	1.5		7.6	2.7		11.7		18.12	0.2						25.7			10.1	2.4	0.3	7.7	4.8		
31C BNCOC	166																									
31C ANCOC	512.25	3.6	1.2		10.8		1.8	7.2	12.0	18.2	30.7	3.0	0.6	2.4			6.6	10.8		7.9	9.5	0.8	10.9	10.6	1.6	
		3.8	3.4		34.2	2.7		15.4		18.3	38.7	14.4					2.5	8.1	4.3	12.4	8.8	3.4	18.8	14.9	4.8	
63B BNCOC	297.9	4.9	9.2	1.0	17.2	1.1		1.0	9.1	14.6	40.1	3.2					0.3	9.3	0.3	6.3	1.5	0.8	12.3	16.8	1.4	
63B ANCOC	81	7.4	1.2		3.7			5.6		13.6	14.8	9.9					2.5	1.2		5.0	3.1	1.9	8.2	5.3	3.3	
All BNCOC	601.9	2.8	3.5	0.3	9.6	0.6	0.6	20.1	7.8	16.3	23.6	2.1	0.2	0.8			13.9	11.6	0.1	10.5	8.0	0.5	9.5	9.2	1.0	
All ANCOC	977.25	4.9	2.1		15.2	1.8		10.9		0.6	14.6	21.2	8.1				0.5	9.4	3.5	1.8	9.2	4.8	1.8	11.6	8.4	2.7

^a Totals are from lesson review sheet, not POIs.^b "Critical Three" skills are Math, Writing, and Reading-To-Do.^c Examination elements are not included.

The total percentage of MOS-specific lesson hours with academic skill demands is very high. For example, nearly half of the total course time --41.7% in BNCOC and 44.0% in ANCOC--has Reading-to-Do demands. This estimate provides a conservative view of the total academic demands since many of the academically demanding lesson elements have other skill demands as well as Reading-to-Do components. Only a handful of lesson elements with academic demands are not accounted for by the Reading-to-Do percentages. While the percentage of course hours with academic skill demands is the primary concern, the widely varying number of course hours means that the total numbers of hours requiring the different skills for each course differ significantly. Table 4.6 shows the total number of course hours demanding each skill.

It is important to note the level of the academic skill demands to understand the areas of NCOES that may pose problems to NCOs who lack academic skills. Across MOS and all six skills, the greatest demand is at the basic-level (10.5 and 9.2 percent of the lesson elements, respectively, for BNCOC and ANCOC). The next greatest demand is at the intermediate level (8.0 and 4.8 percent of the lesson elements, respectively, for BNCOC and ANCOC). Finally, the least demand is at the advanced level (.5 and 1.8 of the lesson elements, respectively). The pattern for the "critical three" skills is similar to that for the six skills, except that the percent of lesson elements with intermediate level demands in ANCOC increases substantially (from 4.8% for the six skills to 8.4% for the critical three). Thus, the results of the MOS-specific technical course analyses agree with the CLT course analyses--the primary emphasis of academic skill demands of NCOES is on the lower levels.

Demands Across Skills

Reading-to-Do is the most demanded skill, averaging 41.7% of course time in BNCOC and 44.0% in ANCOC. Speaking and Listening-to-Do are also quite high, although these averages are inflated by the high basic-level demands in MOS 11B BNCOC. The Writing and Math demands are lower, but still important. In any event, the academic skill demands for the MOS-specific technical training are substantially higher than the demands in the CLT lessons designed by the Sergeants Major Academy.

Demands Across Courses

The average demand for all six skills in BNCOC is 18.9%, greater than the ANCOC demands averaging 15.8%. However, the average demand for the "critical three" skills in BNCOC (19.7%) is slightly less than the "critical three" skill demands (22.6%) of ANCOC.

Demands Across MOS

Table 4.8 shows the total academic skill demands by MOS and Table 4.9 shows the academic skill demands by difficulty-level for each MOS. The

Table 4.8

Academic Skill Demands of NCOES Technical Courses, by MOS

MOS	Percentage of Course Hours Containing Academically Demanding Elements ^a							Average, All 6	Average, "Critical 3" ^b
	Math	Writing	Speaking	Reading-To-Do	Reading-To-Learn	Listening-To-Do			
11B (522)	3.6 (19)	8.0 (42)	24.3 (127)	20.3 (106)		31.9 (167)		14.7	10.6
31C (678.25)	6.6 (45)	31.0 (210)	16.4 (111)	66.6 (452)	1.8 (12)	15.6 (106)		23.0	34.7
63B (378.9)	13.7 (52)	15.2 (58)	9.1 (35)	53.8 (204)		8.6 (33)		16.7	27.6
All (1579.15)	6.7 (106)	19.6 (310)	17.3 (273)	48.2 (762)	0.8 (12)	19.3 (305)		18.7	24.8

^a Number of hours, rounded to nearest whole number, given in parentheses.

^b "Critical Three" skills are Math, Writing, and Reading-To-Do.

Table 4.9

a "Critical Three" skills are Math, Writing, and Reading-To-Do.

average demand for all six skills does not vary much across MOS (from 14.7% to 23.0%). But for the "critical three" skills, the demands of 11B (10.6%) are far lower than in 31C (34.7%) and 63B (27.6%).

The average demand for all six skills is higher for basic level than for intermediate level, and advanced level demands are almost negligible. For the "critical three" skills, the basic demands are not much greater than intermediate demands. More specifically, for all six skills the average demand for basic-level elements (10.3%) is greater than the average demand for intermediate elements (7.1%), and almost seven times greater than the average demand for advanced elements (1.5%). For the "critical three" skills, the demand for basic-level skills (12.3%) is not much greater than that for intermediate skills (10.6%), but five times greater than the average demand for advanced skills (2.2%).

Examining the individual skills more closely, by difficulty level, also shows the critical demands of 11B to be more concentrated at the basic level. In Reading-to-Do, the intermediate demands in 31C and 63B are double their basic demands and both have some advanced demands. In 11B, intermediate Reading-to-Do demands are less than one-half of basic demands and there are no advanced demands.

Summary

In this chapter, we reported the results of our analysis of the academic skill requirements for the Common Leader Training (CLT) lessons in the Primary Leadership Development Course (PLDC), the Basic Noncommissioned Officer Course (BNCOC), and the Advanced Noncommissioned Officer Course (ANCOC). We also reported the skill requirements for the MOS-specific, technical positions of BNCOC and ANCOC for 11B, 31C, and 63B. Our method included review of lesson materials and interviews with course instructors.

For CLT, we found an average demand across skills of 4% of the course hours. The most frequently required skill was Reading-to-Do (12.2% of the hours) and the next most frequently required skill was Writing (5% of the hours). For technical lessons we found an average demand across skills of 18.9% of BNCOC hours and 15.8% of ANCOC hours. Again, Reading-to-Do demands were highest (41.7% and 44% in BNCOC and ANCOC, respectively). Writing and Listening-to-Do were the next most demanded skills (10.8% and 17% for BNCOC and ANCOC Writing; 25.6% and 14.8% for BNCOC and ANCOC Listening-to-Do).

The difficulty level of skill requirements was roughly equal between basic and intermediate. Requirements for advanced level skills were very low--less than 3% of course time except for Advanced Reading-to-Do, which was required in 8.1% of the ANCOC technical lesson hours.

One surprising result, which will be elaborated on in Chapter 5, was that students don't require Reading-to-Learn skills in order to pass the NCOES courses we studied. While they are assigned reading material, few do the reading on a consistent basis.

In general, these findings mirror the findings for job performance requirements, in that there is a low to moderate extent of requirement for basic- and intermediate-level skills and in that Reading-to-Do is the skill having the most extensive requirement. Thus, NCOES and job performance requirements seem to be fairly well matched. The exception to this idea may be that the (yet to be verified) advanced-level skill requirements of leadership tasks are not matched by complementary advanced level skill requirements in NCOES.

CHAPTER 5

CURRENT INSTRUCTION IN ACADEMIC SKILLS

In the previous chapters, we described the extent and type of academic skill requirements for NCO career development, job performance, and classroom success. In general, we found moderate requirements for basic- and intermediate-level skills and little requirement for advanced skills, with the possible exception of leadership tasks. In this chapter, we move to a related but different question of what is the nature of current NCOES instruction in academic skills and how effective is this instruction likely to be?

Our discussion of current instruction is divided into two main sections. First, the internal discrepancies in the current system are documented. Second, the current system is evaluated in light of research on the nature of expertise in academic skill.

Current Instruction in PLDC, BNCOC, and ANCOC

As was described in Chapter 4, PLDC is the initial NCO course taken early in the NCO's career and required for promotion to E-6. It consists entirely of Common Leader Training lessons--that is, lessons to which all NCOs are exposed, independent of their MOS. BNCOC and ANCOC consist of both Common Leader Training lessons and MOS-specific lessons.

Common Leader Training Lessons

With the exception of Training Management lessons (written at Fort Leavenworth), all Common Leader Training lessons were written at the Sergeants Major Academy at Fort Bliss at the time we were carrying out our research. All three courses have similar lesson topics: Leadership, Communications, Resource Management, Training Management, Professional Skills, and Military Studies. (An exception is that BNCOC has no Communications lessons.) The total hours of Common Leader Training for PLDC, BNCOC, and ANCOC, respectively, are 213, 45, and 107. These hours show the relative amount of emphasis on Common Leader versus MOS-specific topics in the three courses. PLDC is devoted entirely to Common Leader Training (4 weeks). BNCOC is devoted almost entirely to MOS-specific training, with just a brief refresher on Common Leader topics. ANCOC has significant portions of both Common Leader and MOS-specific material. The Common Leader portions of ANCOC introduce new leadership topics reflecting the increased scope of supervisory duties for the advanced NCO.

Lesson Materials

Description. The lesson materials produced at the Sergeants Major Academy are intended to provide instructors throughout the world with a

complete package of instructional materials. The typical lesson packet contains a number of elements. First, there is an Advance Sheet, provided to both instructor and students, which states the objectives of the lesson and gives reading assignments and other instructions to the student (see Figure 5.1 for an example Advance Sheet).

Next, there is a Lesson Guide, which is a script of what the instructor should say or do, with marginal markings about the time point in the lesson when a given event should occur (Figure 5.2 shows an example of a page of a Lesson Guide). Students do not receive copies of the Lesson Guide, but rather hear some version of it during class.

The next material in the lesson packet is instructions for any Practical Exercises associated with the lesson. Generally, these are exercises in which the students respond to questions or work on pencil-and-paper problem scenarios individually or in groups (Figure 5.3 shows an example of a Practical Exercise).

Supplementary Readings are provided to both student and instructor. These readings are written by course developers at the Sergeants Major Academy, specifically to support the Lesson Guide. The Advance Sheet often requires students to read the Supplementary Reading prior to class. Moreover, test items may come from Supplementary Reading material, so these readings are central to lesson content.

Another element in the lesson packet, provided to both instructor and student, is the Summary Sheet. This sheet summarizes the lesson content in one or two pages. Almost all the information provided in the Summary Sheet appears in the multiple-choice test items. (Figure 5.4 shows a sample Summary Sheet.)

The final element provided in the lesson packet is a set of vu-graphs to be used during class. The vu-graphs are referred to in the Lesson Guide, so the instructor knows exactly when a particular vu-graph should be displayed.

The Sergeants Major Academy also prepares multiple-choice test items; however, these are provided to the course manager rather than to instructors. Several items are written to measure each Enabling Learning Objective identified on the Advance Sheet. Items are randomly selected by the course manager such that one item per objective occurs on each version of a test. Hence, instructors do not have advance knowledge of the particular test items selected by the course manager.

Evaluation. Examination of the lesson materials shows that lesson writers expect students to read Supplementary Readings prior to class and that Lesson Guides are written based on this assumption. For example, many of the questions the instructor is directed to ask in the Lesson Guide are based on information in the Supplementary Readings. In BNCOC Common Leader Training, which has mainly refresher material, students may be able to

ADVANCE SHEET

PURPOSE

As a squad/section leader, you will be responsible for various equipment or property, therefore, you must know how to ensure that it is correctly accounted for at all times and what actions you can take to obtain relief from responsibility for the property should it become lost or damaged through neglect.

LEARNING OBJECTIVES

a. Terminal Learning Objective (TLO). Follow fundamental hand receipt procedures and employ proper methods of obtaining relief from responsibility for lost or damaged property.

b. Enabling Learning Objectives (ELO).

(1) Differentiate between property accountability and types of responsibility.

(2) Explain the procedures used to hand/subhand receipt property.

(3) State the different methods of obtaining relief from responsibility for lost or damaged property.

ASSIGNMENT

Prior to class, read the current unit supply update: DA PAM 710-2-1, Ch 5, para 5-1, 5-3, 5-4, Fig 5-3 and 5-4, AR 735-5, Section II, AR 735-11, Ch 2, para 2-1 thru 2-4.

LESSON OVERVIEW

During the class, you will have a one-hour instructor-led discussion on property accountability and responsibility, and hand receipt procedures, a 25-minute PE on completing DA3161, temporary hand receipt, and a 10-minute discussion of the methods of obtaining relief of responsibility for lost or damaged property.

ADDITIONAL SUBJECT AREA RESOURCES

Current unit supply update, DA PAM 710-2-1, Ch 5, para 5-1, 5-3, 5-4, Fig 5-3 and 5-4, AR 735-5 Section II, AR 735-11, Ch 2, para 2-1 thru 2-4.

Figure 5i1

**Example of a CLT Advanced Sheet
(From BNCOC - Resource Management 02 Lesson)**

TIME	LESSON OUTLINE/NARRATIVE	INSTRUCTIONAL TACTICS

QUESTION: WHAT ARE HAND RECEIPTS?

ANSWER: HAND RECEIPTS ARE A LISTING OF ALL PROPERTY THAT IS ISSUED FROM THE UNIT COMMANDER, OR HIS DESIGNATED REPRESENTATIVE, TO A SUPERVISOR, (HAND RECEIPT HOLDER).

Partially answers FLO #2.
Call on several students until fully answered.

Hand receipts are prepared on DA Form 2062 in two copies. The original copy goes to the person issuing the property and the second copy goes to the person signing for the property. The person signing for the property will sign both copies.

Show VGT #6.

Refer to VGT facsimile. The illustration is too large to include in the Lesson Guide.

VGT #6

QUESTION: WHAT ARE SUBHAND RECEIPTS?

Remove VGT #6.

Figure 5.2

Example of a Page from a CLT Lesson Script
(From BNCOC - Resource Management 02 Lesson)

NOV 85

SUMMARY SHEET

1. This lesson has been designed to give you the basic fundamentals of property accountability, responsibility and liability. The knowledge you have gained will enable you to properly account for property that you are signed for and ensure that appropriate action is taken when it is lost or damaged through neglect.
2. Differentiate between property accountability and types of responsibility.
 - a. Accountability. The obligation of a person to keep an accurate record of property.
 - b. Responsibility. The obligation for the care and safekeeping of property.
 - c. Types of responsibility.
 - (1) Command Responsibility: The obligation of the commander to ensure that all measures necessary are taken to safeguard, secure and care for all equipment in his unit.
 - (2) Supervisory Responsibility: The obligation of a person for the care and safeguarding of all equipment issued to or used by his subordinates.
 - (3) Personal Responsibility: The obligation of an individual for the care and safeguarding of equipment in his possession.
 - d. Records used to Assign Responsibility.
 - (1) Hand and subhand receipts:
 - (2) Temporary hand receipts.
3. Explain the procedures used to hand/subhand receipt property.
 - a. Hand/subhand receipts.
 - (1) Prepare a DA 2062 listing all of the property that is to be signed for.
 - (a) One copy is for the person issuing the property that is to be signed for.
 - (b) One copy is for the person signing for the property.

Figure 5-4

Example of a CLT Summary Sheet
(From BNCOC - Resource Management 02 Lesson)
(Page 1 of 2 pages)

(2) Conduct an inventory.

- (a) The individual issuing property and the individual receipting for equipment should be present throughout the inventory.
- (b) All property on the hand receipt should be present.
- (c) Compare the actual item with the item description on the hand/subhand receipt.
- (d) Physically count all items to ensure those on hand and the hand receipt quantities match.
- (e) Use technical manual or supply catalogue to check for completeness.
- (f) Verify the item serial numbers against serial numbers on the hand/subhand receipt.
- (g) List any differences and report them to the person making the issue.
- (h) Resolve any discrepancies.
- (i) Sign hand/subhand receipt; keeping a copy for your records.

b. Temporary hand receipts.

(1) DD1150 and DA3161 are used to transfer property for 30 days or less.

(2) Preparation of DA3161 in two copies.

- (a) One copy goes to person receiving equipment/property.
- (b) One copy goes to person issuing equipment/property.

4. State the different methods of obtaining relief from responsibility for lost or damaged property.

a. Methods of relief when liability is admitted:

- (1) Cash payment: Used to purchase hand tools available at SSSC.
- (2) Statement of charges: May be used when the cost is less than one month's pay.

b. Method of relief when liability is not admitted:

(1) Report of Survey:

- (a) E-8 or above appointed as survey officer.
- (b) Survey officer investigates and makes recommendation of whom to hold liable.
- (c) A percentage of liability may be assessed against one or more individuals or no individual.

Example of a CLT Summary Sheet
(From BNCOC - Resource Management 02 Lesson)
(Page 2 of 2 pages)

answer such questions without having done the reading, but for PLDC and much of the ANCOC material this is not the case. However, a substantial number of students do not complete reading assignments.

Educational Philosophy of the Sergeants Major Academy

Description. In interviewing several individuals involved with course development at the Sergeants Major Academy, we found a consensus belief in the benefits of small group instruction for teaching the Common Leader Training portions of NCOES courses. This philosophy is communicated in the Course Manager's Guide for PLDC where it is stated that:

PLDC is designed to be taught in a small group (two instructors per 16 students). The small group environment is best when discussion is desired (for example: when students share their experiences and ideas about motivation, leadership styles, etc.) or when practicing new behavior is called for (for example: when students practice communication and counseling skills). The small group environment is also valuable in keeping all students productively involved in the learning process. In this regard, the small group allows all students, fast or slow, to be engaged almost continuously, receiving or giving feedback about course material, sharing personal experiences, or discussing fellow student performance. This characteristic allows slower students to keep up with the group. Small group instruction is a key feature of the Primary Leadership Development Course. (p. 2-12)

In other words, the belief is that small group methods are useful for discussion and for learning new behaviors. It is also believed that they are useful as a motivational technique because everyone, fast or slow, remains actively involved.

In addition to supporting the small group method of instruction, the Sergeants Major Academy also believes in the "small-group participatory process." Formally, this process consists of having students divide into small living groups upon arrival at a residential course. Leadership positions (e.g., squad leader and assistant squad leader) are rotated among the group members such that all members receive practice and are evaluated on their performance in various leadership roles. Thus, students are not only learning about the academic side of leadership in their lessons, they are also practicing these ideas in all of their activities while taking the course.

The ideal held out by the Sergeants Major Academy is for two instructors to be assigned to a small group of students throughout the Common Leader Training portion of courses. These two instructors are called "leader-trainers" rather than instructors to emphasize the idea that the

student is responsible for his or her own learning. The leader-trainers serve as guiders of group discussion, pulling the group back on task when it wanders. They also call the group's attention to leadership process phenomena that may be occurring in the group--for example, if a particular individual tends to dominate a group discussion, the leader-trainer may focus group attention on this to evaluate why this happens, whether or not it is good, etc. Leader-trainers are also available to the group outside of lesson hours, serving as monitors and consultants for the student who is assigned to a leadership role on any given day. As stated in the PLDC Course Manager's Guide, the leader-trainer "continuously critiques and counsels all junior leaders on leadership techniques, ideas, or principles that apply to the various situations presented."

While the ideal of small group instruction is required in the PLDC Course Manager's Guide, it is only suggested in material provided by the SMA to course managers for BNCOC and ANCOC. For example, the Program of Instruction for the Common Leader Training portion of BNCOC (June, 1986) states: "The class size will depend on the requirements of the proponent school. This course is designed to be taught using the small group process. Determination of method is the prerogative of the proponent school."

The small group philosophy is also evident in the Lesson Guides provided by the Sergeants Major Academy. The lesson scripts are sprinkled with discussion questions and notes to instructors about how to handle discussions. This is especially the case for PLDC, where the Lesson Guides are almost a continuous series of questions and possible answers, and where the notes to the instructor often state that several answers are acceptable. In BNCOC and ANCOC, the typical Lesson Guide has fewer questions per page and questions are more likely to have only one acceptable answer.

In summary, the philosophy of the Sergeants Major Academy is that small group instruction in the classroom and small group participatory processes both in and out of the classroom are effective educational techniques for a variety of reasons. First, they allow students to practice immediately what they are learning in class to out-of-class situations requiring the exercise of leadership. Second, small group discussion keeps everyone actively involved. Third, the cooperative ethic leads to peer tutoring, helping the slower students keep up with the class.

Evaluation of the Educational Philosophy. We are in close agreement with the educational philosophy espoused by the Sergeants Major Academy. Many of the claims made for small group methods are supported by research, although of course small groups are not appropriate for all instructional goals and their success depends on how well the small group participants carry out their intended roles. As we will argue later, we think that the small group method is useful not only for learning leadership knowledge and skills, but also for learning academic knowledge and skills.

Unfortunately, not every site we visited used small group instruction. One reason why the small group instruction method may not be used at some posts is resource limitations. At one site, the ANCOC Common Leader Training instructors stated that they wanted to use small group instruction,

but this desire was frustrated by lack of an adequate number of classrooms. At another site, the ANCOC class sizes are sometimes as large as 200.

Another obstacle to small group instruction, identified by some instructors, is the natural tendency to specialize. Some instructors specialize in Leadership, some in Military Sciences, and some in Resource Management. In the ideal stated by the Sergeants Major Academy, the leader-trainer stays with one group of students for all Common Leader Training lessons.

There are a few ways to overcome these obstacles. One can break large groups into smaller groups for discussions, as is already done for practical exercises. Too, one can have different leader-trainers for different parts of a course without destroying most of the benefits of small group instruction. In fact, such variety is beneficial because each leader-trainer is likely to model different attitudes, skills, and strategies.

The best example of small group instruction that we saw was in the Air Defense ANCOC at Fort Bliss. This CMF was not part of our study but we visited some of their classes on our familiarization trip to the Sergeants Major Academy at Fort Bliss. Two of the three instructors we observed and talked with were implementing the small group method as we think it was intended by the SME course developers. These instructors articulated the attitude that the students were responsible for their own learning. Discussions were lively and heated--showing the intense involvement of the students. When students asked questions, the instructor often asked another student to answer or asked the student to figure out where he or she could find the answer in a technical manual or other document. Such instructor behavior communicates that the instructor expects the student to learn how to learn independently.

Types of Course Objectives

Description. In reviewing the Advance Sheets for the Common Leader Training lessons for PLDC, BNCOC, and ANCOC, we identified three major types of objectives that we call Performance, Understanding, and Memory objectives. Table 5.1 shows a prototypical example of each type of objective. Performance objectives were those in which the trainee was expected to recall, recognize, or execute task steps. Understanding objectives were those in which the trainee was expected to integrate new information with known information. Memory objectives were those in which the trainee was expected to recall or recognize a fact or name in isolation.

Two project researchers independently classified all Enabling Learning Objectives (ELOs) into the three categories just defined. Their agreement was 66%. Disagreements were resolved through discussion. Table 5.2 shows the percentage of ELOs of each type by course. Of particular interest to us were the objectives that appeared to require the student to understand, as opposed to just memorize information) all of the Understanding objectives are listed in Appendix E). As can be seen the percentage of such objectives was 53%, 26%, and 51%, respectively, for PLDC, BNCOC, and ANCOC.

Table 5.1
Examples of Understanding, Memory, and
Performance Enabling Learning Objectives

Understanding

"Know how to effectively apply the 11 principles of leadership." (From lesson LHR-02).

Memory

"List the steps required for effective supervision." (From lesson LHR-07).

Performance

"Identify and employ physical conditioning activities." (From lesson PS-01).

Table 5.2
Percentage of Different Types of Objectives in
Common Leader Training Lessons for
PLDC, BNCOC, and ANCOC^a

	<u>Performance</u>	<u>Understanding</u>	<u>Memory</u>
PLDC	11%(7)	53%(33)	35%(22)
BNCOC	29%(11)	26%(10)	45%(17)
ANCOC	8%(9)	51%(59)	41%(47)
Across Courses	13%(27)	47%(102)	40%(86)

^aNumber of objectives stated in parentheses.

The variation in types of objectives across courses is consistent with our previous characterization of the three courses. PLDC covers Common Leader Training topics exclusively, BNCOC almost not at all, and ANCOC achieves a balance between Common Leader Training and technical, MOS-specific training. The BNCOC performance-oriented philosophy seems to expand from the MOS-specific lessons into the Common Leader Training lessons, such that the emphasis on understanding in BNCOC is greatly reduced. On the other hand, in PLDC and ANCOC, the majority of ELOs emphasize understanding.

Evaluation. Despite the goal of understanding held by the course developers, and supported by the small group instruction approach, we found a rather large discrepancy between goals and test items, especially for PLDC. To determine whether there was such a discrepancy, one project researcher categorized test items as to whether understanding or memory was required to answer them. Another researcher reviewed the decisions and the few disagreements were resolved through discussion.

Any test item with an answer clearly stated in a lesson Summary Sheet was considered a memory test item, because we found that students tended to "memorize" the Summary Sheets in preparation for tests. All other test items were considered items requiring understanding, even if answers to these items could be found in the Supplementary Reading. The reason for this broad definition of understanding is that, as previously noted, we found that many students in the MOS studied do not read assigned readings. Thus, most individuals who get such test items correct must do so through their general understanding of the content rather than through memorizing the reading material. Even for those who do read, it would be impossible for them to memorize all the reading material in the time available.

Even given this broad definition of understanding test items, we found that only 13% of PLDC and 32% of BNCOC test items tested Understanding. On the other hand, 70% of ANCOC test items were in the Understanding category. When we looked at the percentage of Understanding ELOs that had a matching Understanding test item, we found 36%, 71%, and 91%, respectively, for PLDC, BNCOC, and ANCOC. Thus, while BNCOC has a moderately good match of objectives and test items and ANCOC has a quite good match the match of PLDC objectives and test items is quite poor.

In a previous section on Common Leader Training course materials, we noted discrepancies between course developers' ideas at the SMA and the implementation of courses at four Army posts. Here we note a discrepancy between two parts of the course materials. Specifically, at least for PLDC, lesson objectives appear to have different goals than test items.

We turn now to a description of the evaluation system for the Common Leader Training portions of PLDC, BNCOC, and ANCOC because it seems to be a major reason for the difference between expectations and reality.

Common Leader Training Evaluation System

Description. Common Leader Training lessons are evaluated through both written and performance exams. Written exams contain mostly multiple-choice items, with a sprinkling of true-false, and matching questions. There are written exam items for 66%, 63%, and 87% of the Common Leader Training lessons, respectively, for PLDC, BNCOC, and ANCOC. Most other Common Leader Training lessons have either a performance exam or a practical exercise or both. Performance examinations involve having soldiers perform tasks and evaluating whether their performance meets specified criteria.

Written examinations typically cover several lessons, with each lesson covering several ELOs. To pass written examinations, a soldier must get 70% of the items correct. Soldiers who don't obtain 70% on the first test are given feedback about which ELOs were involved in missed items. They then take a second exam consisting of items keyed to the ELOs identified. Once again the passing criterion is 70%, although this time on a smaller content set than the original test. Soldiers who fail to get 70% correct on the second test are once again given feedback about which ELOs were involved in the missed items. They take a third test covering these missed ELOs and must pass this test at 70% correct. If a soldier fails at this point, then he or she must withdraw from the course. Thus adequate performance on written examinations is necessary for passing NCOES courses.

Soldiers are encouraged to study together for tests. Almost 100% of the instructors we interviewed said that they encourage pairs or groups to study together. The point of this technique is to have better students help poorer students, and in some cases instructors or leader-trainers assign a poorer student to a better student on purpose to achieve this goal. Typically, study sessions involve having students quiz each other on anticipated test questions.

A few students fail on their first tests. When this happens, a set of events occurs to assist these students to pass the second time around. First, the soldier is told which ELOs he or she needs to study. Second, the soldier's instructor is usually responsible for being available during a special study hall or for providing one-on-one remedial instruction. Given this support, very few soldiers need to take the third test, and if they do, few fail to reach the 70% criterion. Almost all of the instructors and course managers interviewed said that failure on written examinations was rarely a cause for someone withdrawing from a course. The more frequent causes were (1) failure to pass physical fitness standards, (2) medical or personal problems, and (3) disciplinary problems.

Evaluation. What we have just described is an instruction and evaluation system that encourages success for people with low academic skills. Few soldiers fail to reach the 70% criterion within three tries, after receiving the encouragement of study groups, and provision of remediation.

Summary

Evaluation of the current CLT instruction in PLDC, BNCOC, and ANCOC reveals some discrepancies between what is expected (or the ideal) and reality. The Sergeants Major Academy develops the CLT lesson materials for the three courses, but they only provide guidelines for conducting these courses. The actual logistics of operating the CLT courses at the various worldwide sites may be determined by resource availability and decisions of each course manager.

For example, there is a discrepancy between the SMA small group instruction philosophy and the reality of the classroom. At the sites we visited there did not appear to be enough instructors or classrooms available to conduct the courses effectively using small group instruction. Therefore, this discrepancy seems to be a result of the lack of resources and instructors trained in this method of instruction.

Extent of Current NCOES Instruction Directed at Academic Skills

An implication of cognitive psychological research on expertise in reading and writing is that one should teach to poor readers and writers the skills and strategies used by good readers and writers. Specifically, one should ensure that poor readers (1) automate the basic skills, (2) learn ways to enrich the meaning they are comprehending or communicating, (3) learn ways to organize meaning, and (4) learn to monitor the effectiveness of the strategies they select. We now turn to a discussion of the extent to which current NCO training focuses on these goals.

We will deal with four separate areas where NCOs receive academic skill instruction. The first is remedial instruction associated with some NCOES courses. The second is incidental academic skill instruction. The third is the Army Writing Program, a 16-hour set of lessons from the Common Leader Training portion of ANCOC. And fourth is a handful of other lessons distributed throughout NCOES that have an academic skill component (e.g., Conduct of Individual Training).

Remedial Education

Tables 5.3 and 5.4 show diagnostic testing and remedial education programs associated with PLDC, BNCOC, and ANCOC at Fort Benning, Aberdeen Proving Ground, and Fort Gordon. As can be seen, for three courses there is currently no testing of academic skills--PLDC and BNCOC at Fort Benning and BNCOC at Aberdeen. The BNCOC Course Manager at Aberdeen, however, reported plans to start testing reading comprehension for BNCOC students starting in FY89. The other four courses on which we have information all administer a

Table 5.3

Diagnostic Testing Associated with NCOES Courses at Three Posts

	ANCOC	BNCOC	PLDC
Fort Benning	Nelson-Denny Reading Test Diagnostic Writing Sample	No testing related to academic skills	No testing related to academic skills
Aberdeen Proving Ground	Tests of Adult Basic Education (TABE) Form D, reading and language only	Not at present. Expect to start testing reading comprehension in FY 89.	Not observed
Ft. Gordon	Tests of Adult Basic Education (TABE) Form D, language, reading, and math	Test of Adult Basic Education (TABE) Form D, language, reading, and math	Not offered

Table 5.4

Remedial Instruction Associated with NCOES Courses at Three Posts

	ANCOC	BNCOC	PLDC
Fort Benning	Students with problems are given packets of worksheets, self-paced, voluntary	NA	NA
Aberdeen Proving Ground	Up to 16 hrs of mandatory remedial work in reading and language. Self-paced instruction from BSEP II.	NA	NA
Fort Gordon	Mandatory remedial work in areas not passed on test. Self-paced instruction from BSEP and CSEP.	Mandatory remedial work in areas not passed on test. Self-paced instruction from BSEP and CSEP.	NA

a diagnostic pretest--the TABE Form D in three cases (BNCOC and ANCOC at Fort Gordon, and ANCOC at Aberdeen) and the Nelson-Denny and a diagnostic writing sample for ANCOC at Fort Benning.

For each course for which a diagnostic pretest is administered, there is a cut-off point for use in counseling. For example, at Aberdeen, the cut-off point is the 10.2 grade level for each Reading subtest. Students below the cut-off point are advised to take remedial instruction and in several cases participation in remedial instruction is mandatory. Since the programs vary by site, each is discussed separately below.

Fort Gordon. In ANCOC students who receive below 9.4 in English Usage, Reading Comprehension, or Arithmetic must attend approximately 20 hours of BSEP instruction. This instruction is self-paced, but monitored by an instructor who is available to provide assistance. Students scoring between the 9.5 and 10.2 grade levels must take instruction via computer (PLATO), again for up to 20 hours. Finally, students who score above 10.2 must engage in the Career Soldier's Education Program (CSEP), which can be a variety of activities including doing MOS-related studies or taking a college course.

The BNCOC students who don't make the cut-off score are required to take BSEP for 2 hours per evening for up to two and a half weeks, depending on how many subtests were "failed." Some students from BNCOC at Fort Gordon appear a few months later to take ANCOC and again receive the TABE pretest for ANCOC. Our interviewee reported that even though these individuals had taken BSEP during BNCOC and showed test score improvements immediately following BNCOC, their scores had dropped to the pre-BNCOC level by the time they returned for ANCOC. We were unable to follow up on this remark in order to evaluate the validity of the claims made, but it could be that extensive data are available at Fort Gordon that would shed light on the question of the enduring effects of BSEP.

Aberdeen Proving Ground. At APG's ANCOC, students who do not receive a 10.2 grade level cut-off on one or more of the Reading or Language subtests must do some remedial work for each of the relevant subtests. The remedial work consists of self-paced independent study using the McFann-Gray Associates BSEP II (1983) curriculum materials. Students check their own work and, as was true at Fort Gordon, there is no requirement that they improve on any skills.

Fort Benning. Fort Benning's remedial program for ANCOC students is entirely voluntary. The Communications Department staff puts together packets of worksheets to give to students to work on either while at Fort Benning or after returning to their units. The Fort Benning instructors are trying to select pretests that are quite specific in diagnosing skill deficits. They believe that the Nelson-Denny is more diagnostic than the TABE. Furthermore, they obtain a writing sample to diagnose problems in English usage.

The Curriculum Focus of Remedial Materials. From what has just been described, we conclude that the BSEP materials are the modal remedial

materials provided to NCOs. The question then becomes: To what extent do BSEP materials focus on either automating basic skills, or teaching the advanced literacy skills of enriching meaning, organizing meaning, and using self-monitoring?

The Army's primary goal for the BSEP I and BSEP II programs was to create a standardized curriculum that would serve two purposes:

1. It would be job-related or job-specific, and
2. It would teach basic academic skills needed to perform Army jobs, improve job performance, and prepare participants for reenlistment and/or promotion.

Two major curricula are in use at present in the various BSEP programs. Although they have goals similar to those stated by the Army, they differ in the percentage of actual military and job-specific information they include. However, each curriculum includes the basic level of academic skills required for subsequent learning in MOS job tasks.

Soldiers enter the BSEP programs at different levels depending upon their performance on screening tests given prior to ANCOC and BNCOC participation. So, as it is used, BSEP provides remedial work designed to assist soldiers in the "accumulation" of basic skills necessary to pass screening tests. BSEP does not provide a comprehensive presentation of integrated basic skills required to promote understanding or the development of more advanced skills.

Incidental Instruction in Academic Skills

Academic skills can be either an intentional or an incidental goal of instruction. By intentional we mean the target skills are a recognized part of the curriculum; intentional instruction will be discussed in the next two subsections on the Army Writing Program and other NCOES lessons. By incidental, we mean the skills are not a recognized part of the curriculum, but they are either modeled or encouraged by the instructor. For example, if a PLDC instructor demonstrates how to look up a task in a Technical Manual, he or she is modeling a Reading-to-Do skill. Since this skill was not explicitly mentioned in the curriculum materials, we say that it is being taught incidentally.

In order to explore the extent and nature of incidental academic skill instruction, we observed 10 classes not related to academic skills. For six of these classes we took detailed notes and performed a detailed analysis. The other four observations were used to confirm our findings for the first six. The six classes in the detailed analysis were a PLDC class on Ethics in Leadership, two 63B MOS-specific ANCOC classes on Wreckers and Battlefield Damage Assessment and Recovery (BDAR), two Common Leader Training ANCOC classes at Fort Benning on the Enlisted Personnel Management System (EPMS) and Platoon Operations Orders, and a Common Leader Training ANCOC class at Aberdeen Proving Ground on Training Management. For each of these

classes, researchers tape-recorded the class and took field notes. Immediately after observation, they reviewed their notes, looking for instructor modeling or mentioning of academic skills and student practice of such skills.

Table 5.5 shows the number of classes in which a given skill was taught in some way--either through modeling or some other technique. As can be seen, in terms of basic and intermediate skills Reading-to-Do was the main skill focused on. For this skill two classes covered how to locate a document, two covered using a specific table of contents, and one each covered using a table, a map, and a procedural list. Typically, instruction consisted of the instructor demonstrating or describing how to do these activities. Typically, this instruction was only a minute or two out of a 50-minute lesson.

In contrast to basic skills, the advanced skills required for Reading/Listening-to-Learn, Speaking, and Writing were more frequently noted as being taught incidentally. This frequency is a result of the fact that instruction involves presenting of information (spoken or written) with the goal of getting students to understand. Thus many actions of instructors implicitly model Reading/Listening-to-Learn and Speaking and Writing skills. For example, we saw many instructors ask students questions in order to assess how well the students were understanding. In doing this, they were modeling a way to monitor one's effectiveness in speaking. Or, for example, many of the vu-graphs provided by the Sergeants Major Academy are outlines or lists of main points that provide an organizational structure. Thus, they are models of Prepared Speaking. As a final example, instructors frequently gave personal examples of the general ideas being discussed, hence, modeling the use of elaboration to assist in understanding new material (Reading/Listening-to-Learn).

Unfortunately, implicit modeling of skills is not effective as an instructional technique. The reason it is ineffective is that students are not paying attention to the model of the skill, but rather are focusing on the lesson content. To bring the skill to consciousness, an instructor must tell students what is being modeled. For example, the instructor could say "I just gave an example to help you understand the main idea. If you try to think of your own examples as you read, it should help you understand better."

What the frequent modeling of advanced academic skills suggests, then, is not that these skills are being learned by osmosis now but rather that there is tremendous potential to teach them in the current NCOES context. Since these skills are being used implicitly as part of the stream of classroom events, a little time spent in conscious analysis of these skills might make a big difference in their acquisition by many soldiers. This idea is currently being implemented in the Chicago Public Schools.

In summary, we discovered two separate facts with respect to implicit instruction in academic skills. Fact one is that, even though not recognized as a goal in lesson materials, Reading-to-Do skills are demonstrated by instructors as needed. Fact two is that the advanced

TABLE 5.5

**Number of Classes (Out of 6) in which a Specific Academic Skill
Was Exhorted, Practiced, Demonstrated, or Modeled**

Basic and Intermediate Skills (Mainly Demonstration)		
Reading-to-Do		
Locate a Document		2
Use Table of Contents		2
Use Tables		1
Use a Map		1
Use a Procedural List		1
Writing Mechanics		
Spelling		1
Advanced Skills (Mainly Modeling)		
Reading/Listening-to-Learn		
Elaboration		5
Organization/Summarization		5
Comprehension Monitoring		3
Speaking/Writing		
Organizing		5
Monitoring/Revising		4

skills of elaboration, organization, and monitoring are modeled in almost every class, but this modeling isn't capitalized on to enhance the acquisition of advanced academic skills.

In the next two subsections, we describe the extent of intentional instruction in academic skills in NCOES courses.

The Army Writing Program

The Army Writing Program (AWP) is a 9-hour block of instruction in ANCOC, the objective of which is to teach NCOs to "communicate effectively in writing." More specifically, the purposes of AWP are explained on the Advance Sheet for the first AWP Lesson as being:

Senior NCOs must write effectively. They write efficiency reports, prepare records of counseling, and they write recommendations for awards. All of these written communications have a great impact on the careers of subordinate soldiers. Senior NCOs may also prepare plans and orders, information papers, memorandums for record, and disposition forms. This lesson provides instruction in the skills you need so that you can write in the Army style.

Table 5.6 shows all of the Enabling Learning Objectives (ELOs) that, when taken together, are supposed to yield the Terminal Learning Objective of communicating effectively in writing. Each ELO includes the Task, Standards, and Conditions of performance. Inspection of these ELOs should give the reader a good sense of the kinds of performances required of the NCO students.

Specifically, the student performs a number of Practical Exercises having to do with correcting confusing sentences (ELO 1), organizing sentences into paragraphs (ELO 2), computing a clarity index (ELO 3), using the basic elements of grammar (ELO 4), writing concisely (ELO 5), "mind-mapping" (ELO 6), editing (ELO 7), and practicing writing Army-related material (ELO 8). Except for practicing grammar and punctuation, which is practice of basic and intermediate writing skills, all of the other activities appear to focus on the advanced skills used by good writers.

Research has shown that good writers are better at generating or elaborating their ideas, organizing them, and reviewing what they have written to make sure the intended meaning is being communicated. Soldiers who complete the exercises in correcting confusing sentences and computing a clarity index are practicing reviewing material to make it communicate better. Soldiers who complete the mind-mapping exercise are practicing one technique for generating ideas. And soldiers who practice organizing paragraphs are learning organizational skills.

One activity that might focus exclusively on advanced writing skills tends to emphasize lower-level skills. This is the activity related to the

Table 5.6

Enabling Learning Objectives for the Army Writing Program

(1) TASK: Rewrite confusing, complex sentences so that they are clear, simple, and direct.

CONDITIONS: Given a dictionary, a usage book, the practical exercise "Words--What Do They Mean?", and the practical exercise "Sentence Rewrites."

STANDARDS: Remove confusing words from sentences. Replace the confusing words with words that express the intended meaning clearly, simply, and directly. Eliminate unnecessary words.

(2) TASK: Organize sentences into effective paragraphs.

CONDITIONS: Given a dictionary, a usage book, and the practical exercise "Grammatical Constructions."

STANDARDS: Students must organize the words to form effective sentences; recast sentences into the periodic form; and organize sentences into effective paragraphs so that each paragraph has a topic or thesis sentence followed by one or more supporting sentences arranged in a logical order to express a complete idea or a connected series of events.

(3) TASK: Use brief, concise words and sentences to contribute to the clarity of your writing.

CONDITIONS: Given a dictionary and a usage book, the handout "Tips for Reducing the Length of Your Writing," and the three part practical exercise, "Writing For Clarity."

STANDARDS: Compute the Clarity Index of the writing sample provided in Part I of PE-5 within (+) or (-) 1 point. Rewrite the passage provided in Part II of PE-5 so that the clarity index will be 30 or less. For Part III of PE-5, students must apply the Clarity Index and the "Tips" to the writing sample prepared at the end of Hour one, and improve their writing sample.

(4) TASK: Use the basic elements of grammar to contribute to the clarity of your writing.

CONDITIONS: Given a usage book, the handout "Simplified Punctuation," and the practical exercise "Correctness."

STANDARDS: Correctly punctuate at least 7 of the 10 sentences in Part I of PE-6; select the correct response for at least 7 of the 10 sentences in Part II of PE-6; and correctly identify at least 6 of the 8 examples in Part III of PE-6 as a comma splice, a fragment, a run-on sentence, or a correct sentence.

Table 5.6 (Cont'd)

Enabling Learning Objectives for the Army Writing Program

(5) TASK: Write in a concise style.

CONDITIONS: Given a dictionary and usage book, the handout "Simpler Words and Phrases," and the practical exercise "Style."

STANDARDS: In accordance with a dictionary and a usage book, rewrite at least 4 of 5 sentences in Part I of PE-7 correctly in the active voice; rewrite at least 4 of 6 sentences in Part II of the PE correctly by substituting action verbs for being verbs; correctly substitute middle-style words for at least 9 of 11 words given in Part III of the PE.

(6) TASK: Use the Mindmapping Process to prepare a first draft for a writing assignment.

CONDITIONS: Given the steps of the Mindmapping Process, and a requirement to write about a given subject.

STANDARDS: The student must perform all steps of the Mindmapping Process (as listed in the Reference Book provided to each student) in sequence.

(7) TASK: Edit your own writing and the written work of others.

CONDITIONS: Given a dictionary and a usage book, all previous handouts, a handout describing the Quick Screen Edit" technique, and the practical exercise "Editing Skills."

STANDARDS: Identify, by highlighting, at least 70% of the errors involving misspellings, passive voice, jargon, and obvious grammatical errors for each writing sample edited. Compute the "Clarity Index," within (+) or (-) 1 point, of each piece of correspondence by applying the "Clarity Index" formula, and note clarity indexes which are over 30.

(8) TASK: Apply Army writing skills to writing on forms or in pre-designed formats.

CONDITIONS: Given a dictionary and a usage book, all previous handout materials, forms and formats and situational practical exercises requiring the student to prepare correspondence using specific forms or formats.

STANDARDS: Prepare correspondence in a designated format so that it expresses the intended message; can be understood in a single, rapid reading; is generally free of errors in organization, style, and usage (i.e., meets or exceeds the minimum standards for the Army Writing Program as set forth in the USASMA Grading Template for Effective Writing.)

editing ELO (#7). Here soldiers learn to use the "Quick Screen Edit," a job aid that focuses on misspellings, passive voice, jargon, and grammatical errors, rather than overall meaning communication. Thus, soldiers learn to edit for mechanics rather than meaning. While editing for mechanics is a useful activity, editing (or revising) for meaning is an activity that marks expertise in writing.

Instructors have the chance to help soldiers revise for meaning in the extensive set of activities directed at meeting ELO 8 (Practice writing Army-related material). For this objective soldiers have several writing assignments, including:

- Information Paper

- Record of Counseling

- Letter of Commendation

- Memorandum for Record

- Enlisted Evaluation Report

- Revision of a Barracks SOP

- Award Recommendation

- Award Narrative.

The instructor evaluates each assignment and hands it back to the soldier with written comments.

We reviewed all of the comments made by one instructor for 25 compositions. We were looking specifically for whether the comments emphasized basic and intermediate versus advanced (meaning communication) writing skills. We found that 83/140 or 59% of the comments focused on lower-level skills while the remainder focused on advanced skills. When we asked this instructor what the most common problems of ANCOC students were, she said "subject-verb agreement, sentence structure--dangling modifiers, awkward wording, spelling, and verb tenses." Thus, while this instructor gave feedback relating to both lower-level and advanced skills, her emphasis was on lower-level skills.

In contrast, at another site, we found a greater emphasis on advanced skills during evaluation of writing assignments. Figure 5.5 shows the evaluation sheet used for each assignment. As can be seen, three of the four major categories (Substance, Organization, and Style) emphasize advanced writing skills.

- A Excellent _____
- B Good _____
- C Average _____
- D Marginal _____
- F NO-GO _____

See below for specific
instructor comments,
if applicable.

Errors in:

Instructor Comments:

SUBSTANCE

- _____ Missing bottom line
- _____ Unsupported bottom line
- _____ Weak or incomplete bottom line
- _____ Purpose is unclear
- _____ Needs more information
- _____ Other

ORGANIZATION

- _____ Bottom line is not up front
- _____ Poorly ordered presentation
- _____ Information out of sequence
- _____ Needs transitions
- _____ Other

STYLE

- _____ Inappropriate passive voice
- _____ Clarity index exceeds 40
- _____ Needs packaging
- _____ Jargon, acronyms, clichés
- _____ Wordy
- _____ Other

CORRECTNESS

- _____ Spelling
- _____ Punctuation
- _____ Capitalization
- _____ Sentence construction
- _____ Subject-verb agreement
- _____ Pronoun reference/vague pronouns
- _____ Person shift
- _____ Verb tense
- _____ Word usage
- _____ Other

Figure 5.5

Evaluation Sheet Used for Writing Assignments

In summary, while most of the Army Writing Program objectives suggest that instruction in advanced writing skills might occur, further analysis shows that much of the time is spent focusing on lower-level skills with the exact mix of lower-level versus advanced skill emphasis varying with the instructor and post. Nonetheless, there is more emphasis on advanced skills in these lessons than in any other curriculum we reviewed for this project.

Other NCOES Lessons

Several other Common Leader Training lessons appeared to have an academic skill emphasis. These include lessons on Training Management, Counseling, Listening, and presenting a military briefing. Table 5.7 lists these lessons.

Training Management. The BNCOC and ANCOC lessons on training management emphasize management. Specifically, in BNCOC, NCOs learn to "use a systems approach to plan, conduct, and evaluate Performance Oriented Training" (BNCOC POI, June 1986, USASMA). In ANCOC, soldiers are trained to "provide advice and assistance to unit training managers" (Advance Sheet, ANCOC CLT Lesson PS-02, April 1986). Soldiers learn to develop master training plans for the unit based on long- and short-range planning. Thus, for BNCOC and ANCOC there is no focus on learning how to conduct training, which involves the advanced level of Speaking in our Skill Category by Difficulty Level matrix.

In contrast, PLDC students learn how to conduct individual training. Students are taught to use the "Five-P" model for conducting training: Planning, Preparing, Presenting, Practicing, and Performing. They are also taught to use a specific outline in planning training. The outline has eight elements--a statement of the objective of training, a caution statement for safety precautions, a pretest, a reason for learning the task, demonstration of the task, an explanation of each task step, practice by the trainees, and evaluation of trainee performance. After learning about the elements of the outline, soldiers plan and carry out training on each other in an in-class graded Practical Exercise. The criteria for grading mainly are whether or not the soldier included each of the eight elements in the outline.

Thus, students learn one specific technique for preparing to speak (advanced level of speaking) for one specific type of speaking (training individual tasks). There is a contrast between what soldiers learn about advanced communication and what experts do. The NCOs learn an algorithm for a specific situation, while experts have a set of strategies or heuristics that they use flexibly. Thus, while the Conduct of Individual Training lesson teaches an advanced speaking skill, it doesn't teach the skills used by experts.

Table 5.7

NCOES Lessons that Appear to Have an Academic Skill Component

PLDC	
CM-02	Effective Communications
CM-03	Keeping Seniors and Subordinates Informed
TM-01	Fundamentals of Training
TM-02	Individual Training
TM-03	After Action Review
LDR-10	Counseling Techniques
BNCOC	
Annex E	Training Management ^a
LDRS-02	Personal and Performance Counseling
ANCOC	
CM-01	Army Writing Program
CM-02	Military Briefing
CM-03	Effective Listening
LDR-04	Leadership Counseling
PS-02	Training Management ^a

^aAnalysis revealed that no academic skills were taught.

Counseling. The general goals of the counseling lessons in PLDC, BNCOC, and ANCOC are for the NCO to understand his or her role as a counselor, to know the various resources to which individuals can be referred, to know how to conduct a counseling session, and follow it up with a written description of the session and additional followup with the counselee. In PLDC and BNCOC, students role play being counselors and counsees in Practical Exercises. Because we did not observe any of these lessons, we don't know what the focus of instructor feedback is after role-playing sessions. However, these PE's are potentially a good place in which to teach advanced speaking skills.

Communications. PLDC and ANCOC have lessons on effective listening. The PLDC lesson covers how to provide feedback to the speaker and how to identify barriers to communication. The ANCOC lesson reviews these same topics. Both lessons emphasize active listening and so are focusing on intermediate and advanced levels of listening rather than the most basic level.

Presenting a Military Briefing. This is an ANCOC lesson in which NCOs learn about and practice presenting a 5-minute briefing. As the SMA writers envisioned it, the information paper written for an Army Writing Program lesson would become the basis for the briefing. We found this to be the case at one post. At another post, the briefing and information paper were done independently, under the supervision of different instructors. At a third post, NCOs didn't practice presenting a briefing, but instead watched an excellent speaker present a briefing.

At posts where soldiers present briefings, they are evaluated on: Appearance and Bearing, Voice, Speech, Delivery Manner, Delivery Personality, Knowledge of the Subject, Planning and Preparation, Selection and Use of Audio-Visual Aids, Management, Introduction, Body, Closing, and Time Limits. We asked several instructors what soldiers had the most trouble with and received the consistent answers of (1) not finishing in 5 minutes, and (2) nervousness.

As with the lesson on Conduct of Individual Training, so too with this lesson: Our impression is that while an advanced speaking skill is being taught, it is not a skill used by expert speakers. The NCOs are given an algorithm for producing a 5-minute briefing rather than being taught to use heuristics and their own good judgment.

Summary of NCOES Academic Skill Instruction

In summary, the remedial instruction received by NCOs focuses exclusively on basic and intermediate-level skills, typically using BSEP curriculum materials. Incidental academic skill instruction in PLDC, BNCOC, and ANCOC focuses mainly on Reading-to-Do and advanced Listening-to-Learn and Speaking. Reading-to-Do is explicitly demonstrated by the instructor, so it is probably learned by the students. However, advanced Listening-to-Learn and Speaking are only implicitly modeled, so they are unlikely to be learned.

Approximately 35 of the 279 Common Leader Training hours in PLDC, BNCOC, and ANCOC are directed at academic skill instruction. The skills emphasized are Writing (13 hours), Speaking (8 hours), and Listening (30 hours). The Speaking skills, especially the advanced ones, are taught as algorithms and therefore they are unlikely to generalize beyond the specific situations for which they were tailored.

This tendency to render advanced skills into algorithms is characteristic of NCOES in general--whether the skills are academic or MOS-specific. It is also a characteristic way of instructing low-aptitude students. While it has the benefit of helping these students reach their short-term learning goals, it "short-circuits" their long-term goal of becoming academically more proficient. The short-circuit exists because (1) they don't need to use advanced comprehension skills to understand the material presented, and (2) advanced skills that they do learn are not the skills used by experts.

Thus, while there is some instruction in academic skills in NCO training, very little of it can be said to teach the advanced skills that NCOs may need for learning new information on the job and for performing leadership tasks.

Chapter Summary

Our overall impression of PLDC, BNCOC, and ANCOC was that they are well-organized programs in which students learn or refresh their knowledge of MOS-specific and common leader content. We suspect that a major benefit of the courses is that the students learn a lot from one another about variation in Army operations from one post to another. Our purpose here, however, was to focus on the academic skill implications of current NCOES instruction.

In this chapter we described aspects of current NCOES instruction that relate to practice and/or acquisition of academic skills. It appears that the developers of Common Leader Training instruction expect students to use intermediate and advanced Reading, Listening, and Speaking skills as they prepare for and participate in small group instruction. However, the reality is that few students do much of the assigned reading and that small group discussions are not always feasible. Instead, many students end up memorizing information that they think will be tested. Thus, generally speaking, intermediate and advanced academic skills are not used.

A little over 10% of Common Leader Training lesson hours involve direct instruction in one or more academic skills. The tendency in these lessons is to provide students with a set sequence of steps to perform under all conditions. For example, PLDC students are taught a sequence of steps to follow in planning and delivering individual training (Advanced Speaking). Teaching a set sequence for academic skills might work if the sequence was viewed as a transitional model for the student to adopt until he or she discovered a better model with growing on-the-job experience. However, current instruction indicates to the student that the sequence they are

learning is the one they should always use. While it may be quite appropriate to teach job-specific skills in this manner, it is not appropriate for advanced academic skills because part of the advanced skill involves selecting a unique sequence of steps for each unique problem.

CHAPTER 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this project was to perform an initial needs assessment of the academic skill requirements of noncommissioned officers. We used a variety of methods to determine these requirements including review of task documentation, review of lesson materials, interviews with subject matter experts, interviews with students and instructors, and monitoring NCOES classes. We focused on identifying the requirements for several different skills at three different difficulty levels (see Table 1.1).

In this chapter we will summarize our findings and make recommendations for further research.

Summary of Findings

Overall Skill Requirements

Job Performance. Table 6.1 shows a summary of some of the major quantitative findings of the project. For on-the-job performance (the first set of columns in Table 6.1), we assessed separately the skill requirements for Common and MOS-specific tasks. We looked at all common tasks, but sampled MOS-specific tasks. The sampling procedure was biased in favor of critical, frequently-performed tasks that appeared to have an academic skill component. Thus, the large percentage differences between skill requirements for MOS-specific and common tasks should not be interpreted to mean that more MOS-specific than common tasks have academic skill requirements. While this conclusion may be true, our different task sampling procedures for the two groups of tasks precludes drawing this conclusion.

On the other hand, conclusions about the relative requirements of different skills within task categories can be drawn validly from these data. Specifically, for both MOS-specific and common tasks, the skill with the greatest requirement is Reading-to-Do. Reading-to-Do tasks range in difficulty from reading a simple job aid to reading complex troubleshooting charts. Mathematics Computation, Speaking, and Writing, while not required by as many tasks as Reading-to-Do, are more often required than is Listening-to-Do. On the other hand, Listening-to-Do may have been underestimated by our method. Specifically, few task steps list listening as an activity, yet it is easy to imagine that, in field settings, a less expert individual will listen to instructions provided by a more expert individual.

We did not find a requirement for Reading- or Listening-to-Learn in the tasks we reviewed. This doesn't seem surprising since on-the-job Reading and Listening are generally done in the service of completing a task, therefore entailing Reading- and Listening-to-Do, rather than Reading- and Listening-to-Learn. There are two specific job situations in which Reading- and Listening-to-Learn may arise--changing MOS or becoming a supervisor of

Table 6.1

Overall Skill Requirements for On-the-Job and Classroom Performance

On-the-Job Performance				Classroom Performance		
	Percentage of Tasks	Average Rank ^a		Percentage of Lesson Hours	Average Rank	
Skill	Common	MOS-Sp		CLT	MOS-Sp ENOC	MOS-Sp ANOC
Math Computation	12	42	2.5	2.1	6.6	6.9
Writing	7	34	3.5	5.0	10.8	17.0
Speaking	13	33	3.0	3.1	27.9	11.5
Reading-to-Do	16	65	1.0	12.2	41.7	44.0
Listening-to-Do	6	15	5.0	1.6	25.6	14.8

^aThe rank order of skill requirements for each task and lesson category was determined and then these ranks were averaged across categories. One was the most-frequently required skill and five the least-frequently required skill within a category.

an MOS in which one is not trained. In such situations, individuals have to read technical manuals or listen to on-the-job instruction to learn the background conceptual information required for job performance. However, we did not attempt to document such situations in this study.

Classroom Performance. We assessed classroom requirements for academic skills separately for common leader training and MOS-specific technical lessons. Within MOS-specific lessons, we looked separately at BNCOC and ANCOC. We did not sample lessons, but rather examined all lessons, so there is no biasing factor in these data as there is for the MOS-specific task data. The percentages for common leader training hours are more accurate than those for MOS-specific hours because CLT lessons give minute-by-minute scripts of classroom events, while the MOS-specific lesson outlines are not as well-specified.

As can be seen by inspecting Table 6.1, Reading-to-Do is once again the most frequently required skill. The skills of Speaking, Writing, Mathematics Computation, and Listening-to-Do are also required by substantial percentages of lesson hours, although the rank order of the requirement varies with the lesson category (CLT vs. MOS-specific BNCOC vs. MOS-specific ANCOC). Listening-to-Learn is a ubiquitous requirement of all NCOES classes and therefore is not reported in the table because there are no variations in this requirement. On the other hand, Reading-to-Learn is really not a requirement for any lesson because, as discussed in Chapter 5, students can succeed in NCOES classes without using this skill.

Table 6.1 also shows the average rankings of skill requirements across task or lesson categories, with 1 being the most- and 5 being the least-required skill. One could argue that the ideal would be for a consistent mapping between task skill rankings and classroom skill rankings because the classroom emphasis should mirror on-the-job requirements. Table 6.1 shows that the correspondence between task and classroom rankings exists for Reading-to-Do (1st in frequency) and Speaking (3rd in frequency). However, there is a discrepancy of one rank for Listening-to-Do (5th place for tasks and 4th place for classroom), of two ranks for Writing (4th place for tasks and 2nd place for classroom), and three ranks for Math Computation (2nd place for tasks, 5th place for classroom).

Our opinion is that each of these discrepancies is reasonable. Specifically, the lower ranking of Listening-to-Do for tasks than for classrooms probably is due to an under-estimate of the requirement for this skill on-the-job, as was already discussed. As will be discussed more in the next section, the higher ranking of Writing in classroom than in tasks is due completely to basic-level writing that is generated by classroom activities--e.g., practical exercises. Such writing need not correspond to on-the-job requirements as it simply serves classroom instructional purposes.

The discrepancy in ranking for math computation also seems to be reasonable. All math requirements are at the basic and intermediate levels. Thus, NCOs may not need much instruction to meet these requirements. Moreover, the high ranking of the math requirement for tasks is an over-

estimate in the sense that the same specific math skill (e.g, using a formula to cut an antenna) occurs in several of the tasks and is counted separately for each task.

Difficulty Levels of Skill Requirements

Table 6.2 summarizes the quantitative data for the difficulty levels involved in tasks having academic skill requirements. As can be seen, for both common and MOS-specific tasks, there is a rough equivalence across skills in the requirement for basic and intermediate skills. For Math, the majority of requirements are basic, while for Reading-to-Do and Listening-to-Do the majority of the requirements are intermediate. Advanced skills are required much less than either basic or intermediate skills.

The difficulty levels of skill requirements for classroom performance are shown in Table 6.3. The pattern is quite similar to the pattern for tasks. That is, across skills, there is a rough equivalence of basic and intermediate demands, and demands for advanced skills are much less. Thus, at a gross level, there is good correspondence between classroom and job performance.

Leadership Tasks

We used Steinberg and Leaman's (1988) survey data to determine, for leadership tasks, which tasks are performed by 50% or more of NCOs, which tasks increase in perceived criticality across ranks, and which tasks increase substantially in percent performing across NCO ranks. Inspection of these data suggested (1) that a wide variety of leadership tasks are performed by the majority of NCOs, (2) that most tasks with a perceived criticality that increases across NCO ranks appear to have intermediate or advanced academic skill components, and (3) that, likewise, many tasks with substantial increases in percent performing across NCO ranks appear to require intermediate or advanced academic skills. Moreover, NCOs rated most academic skills as being quite important for their job performance.

The problem with these data is they don't allow specification of the extent or level of skills required. Our judgment that many leadership tasks appear to require intermediate to advanced level skills is based upon the task title in Steinberg's Leadership Requirements Survey and our prior knowledge of Army operations. It is not based on a detailed empirical analysis of how leadership tasks are carried out. Thus, our conclusions about leadership tasks are offered with a high degree of uncertainty. We hope that the tentative conclusion will provoke the additional study needed to adequately assess the academic skill requirements of leadership tasks.

Changes in Skill Requirements Across Skill Levels and NCO Grades

In general, the percentage of tasks requiring academic skills increases from Skill Levels 1 & 2 to Skill Level 4. In Chapter 3, we reported that,

Table 6.2
Percentage of Tasks at Different Difficulty Levels
of Academic Skills

	Common Tasks			MOS-Specific Tasks		
	Basic	Intermediate	Advanced	Basic	Intermediate	Advanced
Math Computation	12	1	0	35	7	0
Writing	4	2	1	13	16	4
Speaking	5	5	3	4	25	4
Reading-to-Do	3	12	2	12	45	9
Listening-to-Do	2	4	0	5	9	0
Average Rank ^a	1.5	1.5	3.0	1.9	1.2	2.9

^aDetermined by ranking the frequency of each of the three levels of difficulty within a skill and then averaging ranks across skills. One is most frequently required, three is least frequently required.

Table 6.3
Percentage of Lesson Hours at Difficulty Levels of
Academic Skill Requirements for Classroom Performance

	CLT ^a			MOS-Specific ENOC			MOS-Specific ANOC		
	Basic	Int	Adv	Basic	Int	Adv	Basic	Int	Adv
Math Computation	2	4	0	3	4	1	5	2	0
Writing	2	2	1	10	1	1	15	2	0
Speaking	0	2	0	20	8	0	11	0	1
Reading-to-Do	6	5	1	16	24	2	15	21	8
Listening-to-Do	0	1	0	14	12	0	9	4	2
Average Rank ^a	1.9	1.3	2.8	1.6	1.5	2.7	1.2	2.0	2.8

^aDetermined by ranking the frequency of each of the three levels of difficulty within a skill and then averaging ranks across skills. One is most frequently required, three is least frequently required.

for MOS-specific tasks, tasks requiring Math Computation increases by forty percent from Skill Levels 1 & 2 to Skill Level 4. Speaking, Writing, and Listening-to-Do requirements increase by 23-26%. Reading-to-Do, the skill with the highest overall requirement, increases the least--seventeen percent--across skill levels. For common tasks, the most dramatic increases were in Speaking (22%) and Writing (23%) requirements. These data support the conclusion that there are increasing demands for academic skills across NCO grades.

It also appears that the difficulty level of skill requirements increases with increasing grade. Specifically, for leadership tasks, almost all of the tasks with increasing criticality ratings across NCO grades seem to have intermediate- or advanced-level academic skill components. Also, for leadership tasks with substantial increases in percent performing, there are many that appear to require advanced speaking and writing skills.

There is some recognition of the increasing difficulty levels of academic skill requirements for more advanced NCOs in ANCOC Common Leader Training. For example, there is a higher percentage of course objectives that require understanding and a higher percentage of these objectives are tested in a manner requiring understanding than is the case for PLDC and BNCOC. Moreover, the Military Briefing and Army Writing Program lessons are designed to teach advanced Speaking and Writing skills (although in Chapter 5 we questioned whether these lessons were sufficient and/or as effective as they might be).

Quality of Current NCOES Instruction in Academic Skills

Current NCOES instruction, while it has the potential to teach a wide variety of academic skills, fails to reach this potential for two reasons. First, it "short-circuits" the need to learn and use many academic skills. For example, although there are assigned readings and classroom discussions based on these readings, students can learn enough course content to pass tests by participating in study groups and memorizing content related to Enabling Learning Objectives. Thus, they don't have to use many academic skills to succeed in NCOES. Also, when advanced academic skills are taught explicitly--as in the Conduct of Individual Training or Giving a Military Briefing--they are taught as algorithms. This approach "short-circuits" the flexible, conditional, reflective character of truly advanced skills.

A second reason that NCOES fail to reach its potential in the area of academic skill instruction is that it doesn't capitalize on instructor modelling of academic skills. As was discussed in Chapter 5, instructors frequently model their own Listening-to-Learn, Reading-to-Learn, and Speaking skills but they don't call attention to the processes being modelled. Thus, most students remain unaware of these processes.

In order to improve the capability of NCOES to teach and/or exercise academic skills, we recommend the following:

1. Assign a realistic amount of reading to be completed prior to class.
2. Remove resource impediments to using the small group instruction approach (such as too few classrooms). The small group instruction approach, done correctly, provides strong incentives for students to read and comprehend information.
3. Re-evaluate the set of events (described in Chapter 5) that lead students to memorize, as opposed to understand, course content. Memorization exercises basic-level academic skills while understanding exercises intermediate and advanced academic skills.
4. Consider teaching self-monitoring and adaptation when teaching advanced academic skills explicitly. If this is added to the instruction that provides algorithms, then the student will be more likely to adapt the algorithm or create new ones to suit his or her needs upon returning to the field.

Recommendations for Additional Research

To get a more complete picture of the academic skills required for NCO career progression and job performance, we recommend more study in two areas. First, the area of leadership tasks needs to be studied in more detail. It would be useful to know how leadership tasks are typically performed and the levels of academic skills required for such performance. The second area needing further study is that of the extent of advanced academic skill competencies possessed by NCO. Available data used instruments that don't assess the advanced level of competence for reading and writing defined in this report. If the Army knew what the range of competence was for NCOs, it could use this in making policy decisions.

Conclusion

This report identifies some, but not all of the information needed to formulate policy about NCO academic skill instruction--at least for the four MOS studied (11B, 13B, 31C, and 63B). We now know that some critical, frequently-performed technical tasks have substantial requirements for Reading-to-Do, Math Computation, Speaking, and Writing. We know that classroom performance has similar requirements. We also know that the percentage of tasks having academic skill requirements increases with NCO grade. Finally, we know that the large majority of requirements are about equally divided between basic and intermediate levels, with very few requirements at the advanced skill level.

However, we still don't know the levels of academic skill required for performance of leadership tasks, and these could well involve many advanced level requirements. And we still don't know the degree of advanced level competence possessed by NCOs, although it could well be a low degree.

REFERENCES

- Campbell, C.H., Campbell, R.C., Rumsey, M.G., & Edwards, D.C. (1986, July). Development and field test of task-based MOS-specific criterion measures. (ARI Technical Report 717.)
- Department of the Army, Headquarters (1981). Individual military education and training (AR 351-1). Washington, DC: U.S. Government Printing Office.
- Eitelberg, M.J., Laurence, J.H., & Waters, B.K. with Perelman, L.S. (1984). Screening for service: Aptitude and education criteria for military entry. Washington, DC: Office of the Assistant Secretary of Defense (Manpower, Installations, and Logistics).
- Eitelberg, M.J. (1988). Manpower for military occupation. Washington, DC: Office of the Assistant Secretary of Defense (Force Management and Personnel).
- Finn, P.J. (1977). Computer-aided description of mature word choices in writing. In Coope, C.R. & Odell, L. (Eds.) Evaluating Writing. NCTE No. 16221.
- Guthrie, J.T. & Mosenthal, P. (1987). Literacy as multidimensional: Locating information and reading comprehension. Educational Psychologist, 22, 279-297.
- Hahn, C.P., Krug, R.E., Rosenbaum, H., & Stoddart, S.C. (1986). Evaluation of the U.S. Army basic skills education program (Technical Report 724). American Institutes for Research.
- Harman, J., Bell, S.A., Sneed, D.C., & Sabot, M.A. (1988). Academic skills of U.S. Army non-commissioned officers. U.S. Army Research Institute for the Behavioral and Social Sciences.
- Hammill, D.D. & Larsen, S.C. (1983). The test of written language. Austin, TX: Pro-ed "Services for Professional Educators."
- Headquarters, Department of the Army. (1981a). Individual military education and training (AR 351-1). Washington, DC: U.S. Government Printing Office.
- Headquarters, Department of the Army. (1981b). Soldier's manual of common tasks--skill levels 2, 3, and 4 (FM 21-3). Washington, DC: U.S. Government Printing Office.
- Headquarters, Department of the Army. (1985a). Soldier's manual and trainer's guide - Cannon crewman MOS 13B skill levels 1/2/3/4. Washington, DC: U.S. Government Printing Office.

- Headquarters, Department of the Army. (1966). The Army noncommissioned officer guide (FM 22-600-20). Washington, DC: U.S. Government Printing Office.
- Hunt, K.C. (1970). Syntactic maturity in schoolchildren and adults. Monographs of the Society for Research in Child Development. 35.
- Hunt, K.W. (1967). Sentence structures used by superior students in grades four and twelve and superior adults. Cooperative Research Project, No. 5-0313 Washington, DC: US Office of Education.
- McFann-Gray Associates. (1983). BSEP II curriculum.
- Potter, R.R. (1967). Sentence structure and prose quality: An exploratory study. Research in the teaching of English. 1, 17-28
- Steinberg, A.G. (1987). The leader requirements survey package (ARI Research Product 87-21). Alexandria, VA: US Army Research Institute.
- Steinberg, A.G., & Leaman, J.A. (1988). The Army leader requirements task analysis: Noncommissioned officer results (Leadership and Management Technical Area Working Paper 88-07). Alexandria, VA: US Army Research Institute.
- Sticht, T.G., Fox, L.C., Hauke, R.N., & Zapf, D.W. (1977). The role of reading in the Navy (Technical Report 77-40). San Diego: Navy Personnel Research and Development Center.
- The Army Noncommissioned Officer Guide (1986). FM22-600-20. (??)
- U.S. Army Field Artillery School. (1986). Program of instruction - 13B BNCOC. Fort Sill, OK: USAFAS.
- U.S. Army Field Artillery School. (1987). Program of instruction - 13B ANCOC. Fort Sill, OK: USAFAS.
- U.S. Army Infantry School. (1987a). Program of instruction - 11B ANCOC. Fort Benning, GA: USAIS.
- U.S. Army Infantry School. (1987b). Program of instruction - 11B BNCOC. Fort Benning, GA: USAIS.
- U.S. Army Ordnance Center and School. (1987a). Program of instruction - 63B ANCOC. Aberdeen, MD: USAOCS.
- U.S. Army Ordnance Center and School. (1987b). Program of instruction - 63B BNCOC. Aberdeen, MD: USAOCS.
- U.S. Army Sergeants Major Academy. (1986a). PLDC course manager's guide. Fort Bliss, TX: USASMA.

- U.S. Army Sergeants Major Academy. (1986b). Program of instruction - BNCOC common leader training. Fort Bliss, TX: USASMA.
- U.S. Army Signal Center. (1986). Program of instruction - 31C BNCOC. Fort Gordon, GA: USASC.
- Veal, L.R. (1974). Syntactic measures and related quality in the writing of young children. Studies in Language Education. Report No. 8, Dept. of Education, University of Georgia. (ERIC: ED 090 555).
- Walker, C.H. Relative importance of domain knowledge and overall aptitude on acquisition of domain-related information. Cognition and Instruction, 4, 25-42.
- Yekovich, F.R., Walker, C.H., Ogle, L.T., & Thompson, M.A. (in press). The influence of domain knowledge on inferencing in low aptitude individuals. In A.C. Graesser & G.H. Bower (Eds.), The Psychology of Learning and Motivation: Advances in Research and Theory, 24. New York, NY: Academic Press.

APPENDIX A

Task Elements and Ratings for Common Tasks

Skill Level 1

Task Elements A- 1

Ratings A- 4

Skill Level 2

Task Elements A-14

Ratings A-17

Skill Level 3

Task Elements A-21

Ratings A-24

Skill Level 4

Task Elements A-28

Ratings A-30

SKILL LEVEL ONE COMMON TASKS

MATHEMATICAL COMPUTATION

Basic Arithmetic

Complete directional and location information in both sketch and data sections of range card (071-312-3007).

Use simple addition or multiplication to calculate estimated range (071-326-0512).

Use coordinate scale job aid to determine coordinates (071-329-1002).

Read map and use coordinate scale to determine location on the ground (071-329-1005).

Add distances to measure total distance on map (071-329-1008).

Count breaths while performing mouth-to-mouth resuscitation (081-831-1042).

Advanced Arithmetic

Algebra

WRITING

Words

Write required information (date, time, rads per hour) on NBC marker (031-503-1021).

Sentences

Complete directional and location information in remarks section of range card (071-312-3007).

Prose

SKILL LEVEL ONE COMMON TASKS (Continued)

WRITING (Continued)

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
Take notes of enemy soldier sighting including SALUTE information - size, activity, location, unit, time, equipment (071-331-0803).		

SPEAKING

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
Orally issue challenge when person(s) approach (071-331-0801).	Asks casualty questions to check level of consciousness (081-831-1033).	
Report SALUTE information - size, activity, location, unit time, equipment - of enemy soldier sighting (071-331-0803).		
Read radio message on radio network (113-571-1016).		

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
If necessary, read M58A1 personal decontaminating kit training aid (031-503-1007).	If required, use TM 3-4240-280-10 to maintain M24, M25, or M25A1 protective mask with hood (031-503-1011).	
Use coordinate scale job aid to determine coordinates of a point on a map (071-329-1002).	Read/use map to identify terrain features (071-329-1001).	

SKILL LEVEL ONE COMMON TASKS (Continued)

READING TO DO (Continued)

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read message on radio network (113-571-1016).	Read map and coordinate scale to determine location on the ground by terrain association (071-329-1005). Read map to navigate from one point on the ground to another dismounted (071-329-1006). Read map to orient the map to the ground by terrain association (071-329-1012).	

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read messages over radio network and respond appropriately (113-571-1016).		

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 1 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-1001	Maintain your M17-series protective mask with hood																		
031-503-1002	Put on, wear, and remove your M17-series protective mask with hood																		
031-503-1003	Store your M17-series protective mask with hood in carrier																		
031-503-1007	Decontaminate your skin and personal equipment - If necessary, read M58A1 personal decontaminating kit training aid.												x						
031-503-1009	Drink, use the latrine, and check soldier sleeping in MOPP4																		
031-503-1010	Replace filters in your M17-series protective mask																		
031-503-1011	Maintain your M24, M25, or M25A1 protective mask with hood - If required, use TM 3-4240-280-10 to maintain M24, M25, or M25A1 protective mask with hood.																	x	

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 2 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-1012	Put on, wear, remove, and store your M24, M25, or M25A1 protective mask with hood																		
031-503-1004	Use M8 detector paper to identify chemical agent																		
031-503-1015	Put on and wear MOPP gear																		
031-503-1018	React to nuclear hazard																		
031-503-1019	Recognize and react to chemical or biological hazard																		
031-503-1020	Use M9 detector paper to detect chemical agent																		
031-503-1021	Mark NBC contaminated area - Write required information (date, time, rads per hour) on NBC marker.							x											
031-503-1022	Decontaminate equipment using M13 decontaminating apparatus, portable (DAP)																		
031-503-1023	Exchange MOPP gear																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 3 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-2002	Decontaminate equipment using ABC M11 decontaminating apparatus																		
051-191-1361	Camouflage yourself and your individual equipment																		
051-191-1362	Camouflage equipment																		
051-192-1022	Locate mines by probing																		
051-202-1363	Camouflage your defensive position																		
071-311-2001	Perform operator maintenance on an M16A1 rifle, magazine, and ammunition																		
071-311-2003	Load, reduce a stoppage, and clear an M16A1 rifle																		
071-311-2004	Battlesight zero an M16A1 rifle																		
071-311-2101	Perform operator maintenance on an M203 grenade launcher and ammunition																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 4 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-311-1202	Load, unload, and clear an M203 grenade launcher																		
071-312-3001	Load, reduce a stoppage, and clear an M60 machine gun																		
071-312-3002	Fire an M60 machine gun																		
071-312-3005	Perform operator maintenance on an M60 machine gun and ammunition																		
071-312-3007	Prepare a range card for an M60 machine gun - Complete directional and location information in remarks section of range card.	x														x			
071-318-2201	Prepare an M72A2 LAW for firing; restore an M72A2 LAW to carrying configuration																		
071-318-2202	Engage targets with an M72A2 LAW																		
071-318-2203	Apply immediate action to correct a malfunction on an M72A2 LAW																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 5 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-325-4401	Perform safety checks on hand grenades																		
071-325-4402	Engage enemy targets with hand grenades																		
071-325-4405	Identify and employ hand grenades																		
071-325-4412	Install and fire/recover an M18A1 claymore mine																		
071-326-0502	Move under direct fire																		
071-326-0503	Move over, through, or around obstacles (except mine fields)																		
071-326-0510	React to indirect fire																		
071-326-0511	React to flares																		
071-326-0512	Estimate range - Use simple addition or multiplication to estimate range. x																		
071-326-0513	Select temporary fighting positions																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

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Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
Task Number	Task Description & Academic Elements	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-326-5703	Construct individual fighting position																		
071-329-1001	Identify terrain features on a map - Read/use map to identify terrain features.												x						
071-329-1002	Determine the grid coordinates of a point on a military map using the military grid reference system - Use coordinate scale job aid to determine coordinates.												x						
071-329-1003	Determine a magnetic azimuth using a compass																		
071-329-1005	Determine a location on the ground by terrain association - Read map and use coordinate scale.																		
071-329-1006	Navigate from one point on the ground to another point, dismounted - Read map.																		
071-329-1008	Measure distance on a map - Add distances to measure total distance on map.																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks – Skill Level 1

Page 7 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-329-1012	Orient a map to the ground by map terrain association - Read map.																		
071-329-1018	Determine direction using field-expedient methods																		
071-331-0801	Use challenge and password - Orally issue challenge when person(s) approach.																		
071-331-0803	Collect/report information - SALUTE - Make oral or written report of enemy soldier sighting.																		
071-331-0804	Conduct day and night surveillance without the aid of electronic devices																		
071-331-0815	Practice noise, light, and litter discipline																		
071-331-0852	Clear fields of fire																		
081-831-1030	Evaluate a casualty																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 8 of 10

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
081-831-1003	Clear an object from the throat of a conscious victim																		
081-831-1005	Prevent shock																		
081-831-1007	Give first aid for burns																		
081-831-1008	Recognize and give first aid for heat injuries																		
081-831-1009	Give first aid for frostbite																		
081-831-1016	Put on a field or pressure dressing																		
081-831-1017	Put on a tourniquet																		
081-831-1025	Apply a dressing to an open abdominal wound																		
081-831-1026	Apply a dressing to an open chest wound																		
081-831-1030	Administer nerve agent antidote to self (self-aid)																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 1

Page 9 of 10

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
081-831-1031	Administer first aid to a nerve agent casualty (buddy aid)																		
081-831-1033	Apply a dressing to an open head wound - Asks casualty questions to check level of consciousness.								x										
081-831-1034	Splint a suspected fracture																		
081-831-1040	Transport a casualty using a one-man carry																		
081-831-1041	Transport a casualty using a two-man carry or an improvised litter																		
081-831-1042	Perform mouth-to-mouth resuscitation - Count breaths.			x															
181-906-1505	Conduct combat operations according to the law of war																		
113-571-1016	Send a radio message - Read message over radio network and respond appropriately.								x				x					x	

SKILL LEVEL TWO COMMON TASKS

MATHEMATICAL COMPUTATION

Basic Arithmetic

Accurately determine radiation exposure using dosimeter (031-503-2001).

Calculate how many hours automatic chemical agent alarm system pump assembly has been used to determine need for service and/or replacement (031-503-2004).

Calculate distance on map from starting point to destination (071-329-1006).

Add distances measured to determine total distance between two points on a map (071-329-1008).

Advanced Arithmetic

Calculate grid azimuth on map from starting point to destination (071-329-1006).

Algebra

WRITING

Words

Sentences

Prose

SPEAKING

Words

Sentences

Prepared

Using an automated CEOI, communicate on a radio net (113-573-8006).

Using correct radiotelephone procedures and authorized call signs, communicate with another station (113-587-2043).

Rehearse training session in preparation to conduct training (874-896-2010).

In conducting training, present objective and then explain and demonstrate how the task is done (874-896-2020).

SKILL LEVEL TWO COMMON TASKS (Continued)

READING TO DO

Basic

Intermediate

Advanced

Select applicable TM for the piece of equipment being maintained and read standards and steps to supervise maintenance (071-328-5302).

If the startup test on the automatic chemical agent alarm system fails, refer to tables 3-3 and 3-4 in TM 3-6665-225-12 for troubleshooting (031-503-2004) (031-503-2003).

Read declination diagram on map to orient a map using a compass (071-329-1011).

Locate terrain features on map corresponding to features on the ground (071-329-1012).

Using an automated Communications Electronics Operation Instructions (CEOI), find the item number of the CEOI extract, radio station call sign, radio net frequency, challenge and reply authentication, and item number identifier (113-573-8006).

If necessary, refer to soldier's manuals, Army Training and Evaluation Programs (ARTEPs), standard crew drills, how-to-fight/ support manuals, unit SOPs, and other publications to prepare to conduct training (874-896-2010).

SKILL LEVEL TWO COMMON TASKS (Continued)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Using correct radiotelephone procedures and authorized call signs, communicate with another station (113-587-2043).

Incorporate feedback/-critique from practice training session (874-896-2010).

LISTENING TO LEARN

Basic

Intermediate

Advanced

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 2

Page 1 of 4

Task		Type and Level of Academic Requirements											
Task Number	Task Description & Academic Elements	math	writing	speaking	reading to do	reading to learn	listening to do						
		1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3						
031-503-2001	Read and report radiation dosages - Accurately determine radiation exposure by reading scale on dosimeter.	x											
031-503-2002	Decontaminate equipment using the ABC M11 decontaminating apparatus												
031-503-2003	Put the automatic chemical agent alarm system into operation - If the startup test on the automatic chemical agent alarm system fails, refer to tables 3-3 and 3-4 in TM 3-6665-225-12 for troubleshooting.				x								
031-503-2004	Service the automatic chemical agent alarm system - Calculate how many hours automatic chemical agent alarm system pump assembly has been used to determine need for service and/or replacement. - If the startup test on the chemical alarm fails, refer to tables 3-3 and 3-4 TM 3-6665-225-12 for troubleshooting.	x					x						
031-503-2005	Shut down the automatic chemical agent alarm system												
031-503-3012	Supervise the fitting of protective masks												

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 2

Page 2 of 4

Task		Type and Level of Academic Requirements																	
Task Number	Task (Description & Academic Elements)	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-326-5704	Supervise/evaluate construction of a fighting position																		
071-328-5302	Supervise maintenance on individual and TOE equipment - Select applicable TM for the piece of equipment being maintained and read standards and steps for maintenance to supervise.												x						
071-329-1006	Navigate from one point on the ground to another point - Calculate grid azimuth on map from starting point to destination and convert grid azimuth to magnetic azimuth. - Calculate distance on map from starting point to destination.		x																
071-329-1006	Measure distance on a map - Add distances measured to determine total distance between two point on a map.		x																
071-329-1011	Orient a map using a compass - Read declination diagram on map to orient a map using a compass.																	x	

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 2

Page 3 of 4

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-329-1012	Orient a map to the ground by map-terrain association - Locate terrain features on map corresponding to features on the ground.												x						
071-331-0802	Process known or suspected enemy personnel/ documents/equipment																		
071-331-0809	Emplace and recover field expedient warning devices																		
113-573-8006	Use an automated CEOI - Using an automated CEOI, find the item number of the CEOI extract, radio station call sign, radio net frequency, challenge and reply authentication, and item number identifier. - Using an automated CEOI, communicate on a radio network.												x						x
113-587-2043	Prepare/operate FM radio sets - Using correct radiotelephone procedures and authorized call signs, communicate with another station.																		x
113-588-1089	Install a hot loop with a telephone TA-312/PT																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 2

Page 4 of 4

Task		Type and Level of Academic Requirements											
Task Number	Task Description & Academic Elements	math	writing	speaking	reading to do	reading to learn	listening to do						
		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3						
113-588-4023	Repair field wire												
113-600-1015	Install and operate a field telephone												
874-896-2010	Prepare to conduct training - If necessary, refer to soldier's manuals, Army Training and Evaluation Programs (ARTEP), standard crew drills, how-to-fight/support manuals, unit SOPs, and other publications to prepare to conduct training. - Rehearse training session in preparation to conduct training. - Incorporate feedback/critique from practice training session.				x								
874-896-2020	Conduct training - Present objective and explain/demonstrate how task is done.			x									

SKILL LEVEL THREE COMMON TASKS

MATHEMATICAL COMPUTATION

Basic Arithmetic

Check expiration date to determine if it is time to order a new M256 Chemical Detector Kit (031-503-3001).

Compare all readings with the IM-174 series radiac-meter and select the highest reading (031-503-3003).

Compare background AN/PDR-27 Radiac reading to the radiation readings of equipment, supplies, and soldiers, to determine contamination levels (031-503-3009).

Review scores from SQTs, ARTEPs and FTXs to evaluate status of training (874-896-3040).

Advanced Arithmetic

Algebra

WRITING

Words

Write pertinent information for submitting an NBC-1 report (031-503-3005).

Sentences

Complete a written report of a counseling session (121-030-3526).

Prose

In writing, recommend needed training to unit leaders based on evaluation of the status of training (874-896-3040).

SKILL LEVEL THREE COMMON TASKS (Continued)

SPEAKING

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
If appropriate, use oral signals to communicate with squad and issue orders for defense (071-326-5725).	Order soldiers to unmask a according to the proper steps for the specific situation (031-503-3002). Assess the current defensive situation and issue orders to squad (071-326-5510). Ask questions of subordinate being counseled (121-030-3526). Provide feedback to trainer on training technique (874-896-3030).	Orally, recommend needed training to unit leaders based on evaluation of the status of training (874-896-3040).

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Review scores and performance evaluations on SQTs, ARTEPs, & FTXs to evaluate status of training (874-896-3040).	Refer to TM kept in AN/PDR-27 Radiac Set case, when necessary (031-503-3009). Analyze terrain features on map (071-331-0820). Read or review FM 22-100 and FM 22-101 before conducting performance counseling with a subordinate (121-030-3526).	

SKILL LEVEL THREE COMMON TASKS (Continued)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Listen to subordinate
being counseled (121-030-
3526).

Observe training session
to evaluate trainer (874-
896-3030).

Observe training session
to evaluate status (874-
896-3040).

LISTENING TO LEARN

Basic

Intermediate

Advanced

Academic Skill Requirements of NCO Duty Tasks

Common Tasks – Skill Level 3

Page 1 of 4

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-3001	Use the M256 chemical detector kit - Check expiration date to determine if it is time to order a new M256 chemical detector kit.	x																	
031-503-3002	Initiate unmasking procedures - Order soldiers to unmask according to the proper steps for the specific situation.							x											
031-503-3003	Use an IM-174 series radiacmeter - Compare all readings with the IM-174 series radiacmeter and select the highest reading.	x																	
031-503-3004	Direct the crossing of a contaminated area																		
031-503-3005	Prepare and submit NBC-1 reports - Write pertinent information and submit NBC-1 report.				x														
031-503-3006	Conduct partial decontamination																		
031-503-3007	Prepare for NBC attack																		

Academic Skill Requirements of NCO Duty Tasks **Common Tasks – Skill Level 3**

Page 2 of 4

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-3008	Implement mission-oriented protective posture (MOPP)																		
031-503-3009	Use an AN/PDR-27 radiac set - If necessary, refer to TM kept in AN/PDR-27 radiac set case. - Compare background AN/PDR-27 radiac reading to the radiation readings of equipment, supplies, and soldiers, to determine contamination levels.			x									x						
071-326-5510	Consolidate and reorganize squad-size element following enemy contact (defense) - Assess the current defensive situation and issue orders to squad.																		
071-326-5701	Supervise the preparation of squad-size element's defensive position																		
071-326-5705	Establish an observation post																		
071-326-5710	Designate fighting positions for squad members (less crew-served weapons)																		

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 3

Page 3 of 4

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
071-326-5725	Direct squad-size element's fires in the defense - If appropriate, use oral signals to communicate with squad and issue orders for defense.									x									
071-331-0820	Analyze terrain using the five military aspects of terrain - Analyze terrain features on map.																		
121-030-3526	Conduct performance counseling with a subordinate - Read or review FM 22-100 and FM 22-101 before conducting performance counseling with a subordinate. - Ask questions of subordinate being counseled. - Listen to subordinate being counseled. - Complete a written report of a counseling session.																		
874-896-3030	Evaluate the conduct of training - Observe training session to evaluate trainer. - Provide feedback to trainer on training technique.																		

Common Tasks – Skill Level 3

[illegible]

SKILL LEVEL FOUR COMMON TASKS

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Calculate average radiation dose each day (031-503-4003).

WRITING

Words

Sentences

Prose

Complete an NBC-4 report (031-503-4006 & 031-503-4004).

Draw and annotate a sector sketch on map overlay paper to include positions, sectors of fire, final protective lines, observation posts, and other relevant information (071-326-5770).

SPEAKING

Words

Sentences

Prepared

Assess defensive situation and issue orders to platoon (071-326-5511).

Brief platoon on plan for night defense (071-326-5515).

Issue orders to fire and keep the company commander informed of defensive position (071-326-5780).

SKILL LEVEL FOUR COMMON TASKS (Continued)

READING TO DO

Basic

Intermediate

Advanced

Read a map to determine the best route to accomplish the goals of an operation order (071-326-0515).

Read a map and the symbols on an overlay (071-329-1019).

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Receive orders in the form of an operation order or fragmentary order (071-326-0515).

LISTENING TO LEARN

Basic

Intermediate

Advanced

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 4

Page 1 of 2

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
031-503-4002	Plan for and supervise the positioning of an automatic chemical agent alarm system setup																		
031-503-4003	Collect and report total radiation dose - Calculate average radiation dose each day.	x																	
031-503-4004	Prepare and submit NBC-4 reports - Complete an NBC-4 report.				x														
031-503-4006	Supervise radiation monitoring - Complete an NBC-4 report in conjunction with supervising radiation monitoring.				x														
071-326-0515	Select a movement route using a map - Read a map to determine the best route to accomplish the goals of an operations order. - Receive orders in the form of an operations order or fragmentary order.												x					x	
071-326-5511	Consolidate and reorganize platoon-size element following enemy contact (defense) - Assess defensive situation and issue orders to platoon.																	x	

Academic Skill Requirements of NCO Duty Tasks

Common Tasks - Skill Level 4

Page 2 of 2

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-326-5515	Organize platoon for night defense - Brief platoon on plan for night defense.																		
071-326-5770	Prepare a platoon/element sector sketch - Draw and annotate a sector sketch on map overlay paper to include positions, sectors of fire, final protective lines, observation posts, and other relevant information.						x												
071-326-5775	Coordinate with adjacent platoon-size elements																		
071-326-5780	Direct platoon-size element's fires in the defense - Issue orders to fire and keep the company commander informed of defensive position.									x									
071-329-1019	Use a map overlay - Read a map and the symbols on an overlay.															x			

APPENDIX B

Task Elements and Ratings for MOS-Specific Tasks

11B

Skill Level 1/2	B- 1
Skill Level 3	B- 7
Skill Level 4	B-12

13B

Skill Level 1/2	B-16
Skill Level 3	B-20
Skill Level 4	B-25

31C

Skill Level 1/2	B-32
Skill Level 3	B-41
Skill Level 4	B-44

63B

Skill Level 1/2	B-60
Skill Level 3	B-66
Skill Level 4	B-72

11B SKILL LEVELS 1 & 2

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Determine coordinates to
adjust indirect fire.
(061-283-6003, S)

Calculate heights using
contour lines on map to
determine elevation of
point on ground. (071-329-
1004, S)

Determine coordinates by
intersection to locate an
unknown point on the
ground. (071-329-1014, S)

Determine coordinates by
resection to locate an
unknown point on the
ground. (071-329-1015, S)

WRITING

Words

Sentences

Prose

SPEAKING

Words

Sentences

Prepared

Read radio message on
radio network and, if
necessary, respond to
reply. (113-571-1016, C)

Give commands to call for
and adjust indirect fire.
(061-283-6003, S)

11B SKILL LEVELS 1 & 2 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
If necessary, read directions to install an M21 metallic antitank mine. (051-192-1008, S)	Read a map to determine elevation of point on ground. (071-329-1004, S)	
If necessary, read directions to disarm an M21 metallic antitank mine. (051-192-1018, S)	Read a map to locate an unknown point on the ground or map by intersection. (071-329-1014, S)	
If necessary, refer to manual while practicing preventive medicine. (071-328-5303, S)	Read a map to locate an unknown point on the ground or map by resection. (071-329-1015, S)	
Read message on radio network. (113-571-1016, C)	Read a map to navigate from a point on the ground to another dismounted. (071-329-1006, C)	

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read radio message on radio network and, if necessary, respond to reply. (113-571-1016, C)	Receive commands to adjust indirect fire. (061-283-6003, S)	

11B SKILL LEVELS 1 & 2 (Continued)

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

Academic Skill Requirements of NCO Duty Tasks

11B Skill Levels 1 & 2

Page 1 of 3

Task		Type and Level of Academic Requirements											
Task Number	Task Description & Academic Elements ¹	math	writing	speaking	reading to do	reading to learn	listening to do						
051-192-1008	Install an M21 metallic antitank mine (S) - If necessary, read directions to install an M21 metallic antitank mine.	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3						
051-192-1018	Disarm an M21 metallic antitank mine (S) - If necessary, read directions to disarm an M21 metallic antitank mine.												
061-283-6003	Call for, adjust indirect fire (S) - Determine coordinates to adjust indirect fire. - Give commands to call for and adjust indirect fire. - Receive commands to adjust indirect fire.	x											
071-315-2307	Zero an AN/PV8 to an M16 (S)												
071-326-0541	Movement in urban terrain (S)												
071-328-5303	Practice preventative medicine (S) - If necessary, refer to manual while practicing preventative medicine.												

(S) - MOS specific tasks

(C) - Common tasks identified as crucial to 11B skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks

11B Skill Levels 1 & 2

Page 2 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements ¹	math			writing			speaking			reading to do			reading to learn			listening to do		
071-329-1004	Determine elevation of point on ground (S) - Calculate heights using contour lines on map to determine elevation of point on ground. - Read a map to determine elevation of point on ground.	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3

¹ (S) - MOS specific tasks

(C) - Common tasks identified as crucial to 11B skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks

11B Skill Levels 1 & 2

Page 3 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements ¹	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-329-1006	Navigate from one point on the ground to another, dismounted (C) - Read map to navigate from a point on the ground to another.																		
113-571-1016	Send a radio message, not using CEOI (C) - Read radio message on radio network and, if necessary, respond to reply.																		
878-920-1001	Recognize friendly and threat vehicles (C)																		

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 11B skill levels 1 & 2

11B SKILL LEVEL 3

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Calculate ranges and zones when preparing a squad size element's defensive sector sketch. (071-326-5720, S)

Check expiration date to determine if it is time to order a new M256 chemical detector kit. (031-503-3001, C)

WRITING

Words

Sentences

Prose

Jot down information to prepare and issue an oral squad operations order. (071-326-5505, S)

Make notes on squad size defensive sector sketch. (071-326-5720, S)

Write NBC-1 report. (031-503-3005, C)

SPEAKING

Words

Sentences

Prepared

Issue an oral squad operations order to subordinates. (071-326-5505, S)

11B SKILL LEVEL 3 (Continued)

SPEAKING (Continued)

Words

Sentences

Prepared

Give orders to unmask
according to proper
procedures. (031-503-
3002, C)

READING TO DO

Basic

Intermediate

Advanced

Read map to prepare a
squad size element's
defensive sector sketch.
(071-326-5720, S)

Read map to analyze
terrain. (071-331-0820,
C)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Listen to oral platoon
operations order to
prepare and issue oral
squad operations order.
(071-326-5505, S)

11B Skill Level 3

[illegible]

—

(S) - MOS specific tasks

(C) - Common tasks identified as crucial to 11B skill level 3

Academic Skill Requirements of NCO Duty Tasks

11B Skill Level 3

Page 2 of 2

Task		Type and Level of Academic Requirements											
Task Number	Task Description & Academic Elements ¹	math	writing	speaking	reading to do	reading to learn	listening to do						
031-503-3005	Prepare and submit NBC-1 reports (C) - Write NBC-1 report.	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3						
071-331-0820	Analyze terrain using five military aspects of terrain (C) - Read map to analyze terrain.		x										
071-326-5701	Supervise preparation of squad defensive sector (C)												

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 11B skill level 3

11B SKILL LEVEL 3 (Continued)

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

11B SKILL LEVEL 4

MATHEMATICAL COMPUTATION

Basic Arithmetic

Determine distance and coordinates when preparing a route reconnaissance report. (051-196-3029, S)

Add up totals to maintain accountability of personnel. (121-030-1502, S)

Advanced Arithmetic

Algebra

WRITING

Words

Take notes to orally report a route reconnaissance report. (051-196-3029, S)

Take notes to prepare fragmentary order. (071-332-5002, S)

Sentences

Prepare to issue an oral operations order for an offensive mission. (071-326-5625, S)

Complete personnel accountability form, including remarks. (121-030-1502, S)

Prose

SPEAKING

Words

Sentences

Prepared

Issue oral operations order for an offensive mission. (071-326-5625, S)

Issue a fragmentary order. (071-332-5002, S)

11B SKILL LEVEL 4 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read and follow form for accountability of personnel. (121-030-1502, S)	Read map to prepare a route reconnaissance report. (051-196-3029, S)	

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
	Receive platoon order and prepare and issue an oral operations order for an offensive mission. (071-326-5625, S)	
	Receive an order to prepare a fragmentary order. (071-332-5002, S)	

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Page 1 of 2

(S) - MOS specific tasks

11B Skill Level 4

Page 2 of 2

[illegible]

1 (S) - MOS specific tasks

13B SKILL LEVELS 1 & 2

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Calculate expenditure of ammunition to record on DA Form 4513, Record of Missions Fired. (061-266-1102, S)

Calculate timing for charges when preparing ammunition. (061-266-1504, S)

WRITING

Words

Sentences

Prose

Fill out fire mission data on DA Form 4513, Record of Missions Fired. (061-266-1102, S)

Take notes to fill out SALUTE report. (071-331-0803, C)

SPEAKING

Words

Sentences

Prepared

Report SALUTE information. (071-331-0803, C)

Communicate on radio network. (113-573-8006, C)

13B SKILL LEVELS 1 & 2 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read fire mission data DA Form 4513, Record of Missions Fired. (061-266-1102, S)	Read CEOI, follow directions. (113-573-8006, C)	
Identify fuses when preparing ammunition for firing. (061-266-1504, S)		

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Using an automated CEOI, communicate on radio network. (113-573-8006, C)		

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

Academic Skill Requirements of NCO Duty Tasks

13B Skill Levels 1 & 2

Page 1 of 2

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
061-***-1212 ²	Boresight DF telescope using DAP (S)																		
061-266-1102	Record fire mission data on DA Form 4513, Record of Missions Fired (S) - Read fire mission data on DA Form 4513. - Fill out fire mission data on DA Form 4513. - Calculate expenditure of ammunition to record on DA Form 4513.												x						
061-266-1504	Prepare ammunition for firing (S) - Identify fuses when preparing ammunition for firing. - Calculate timing for charges when preparing ammunition.																		
071-313-3455	Set headspace and timing on .50 caliber (S)																		
551-721-1312	Operate vehicle in convoy (S)																		
071-325-4412	Install/fire/recover claymore mine (C)																		

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 13B skill levels 1 & 2

² The asterisks '***' indicate that this skill applies to a series of tasks with different numbers for the different weapon systems.

Academic Skill Requirements of NCO Duty Tasks

13B Skill Levels 1 & 2

Page 2 of 2

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-331-0803	Collect/report information - SALUTE (C) - Report SALUTE information. - Take notes to fill out SALUTE report.								x										
071-331-0815	Practice noise, light, and litter discipline (C)																		
081-831-1030	Administer nerve agent antidote to self (C)																		
113-573-8006	Use an automated CEOI (C) - Read CEOI, follow directions. - Communicate on radio network.																		

¹ (S) - MOS specific tasks

(C) - Common tasks identified as crucial to 13B skill levels 1 & 2

13B SKILL LEVEL 3

MATHEMATICAL COMPUTATION

Basic Arithmetic

Compute totals for DA Form 2408-4, Weapons Record Data. (061-266-3323, S)

Calculate coordinates by resection to locate an unknown point on map or ground. (071-329-1015, S)

Check expiration date to determine if it is time to order a new M256 chemical detector kit. (031-503-3001, C)

Advanced Arithmetic

Calculate ranges and deflection when preparing a range card for the howitzer. (061-266-3313, S)

Algebra

WRITING

Words

Record entries on DA Form 2408-4, Weapons Record Data. (061-266-3323, S)

Sentences

Draw range card and, if necessary, complete description and remarks column. (061-266-3313, S)

Prose

SPEAKING

Words

Sentences

Give orders regarding corrections during PMCS on the Howitzer. (061-***-3420, S)

Prepared

13B SKILL LEVEL 3 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read DA Form 2408-4, Weapons Record Data. (061-266-3323, S)	Review PMCS form when verifying PMCS on the Howitzer. (061-***-3420, S) Look up reading in manual to perform prefire checks. (061-***-3434, S) Look up information from firing tables to prepare a range card for the Howitzer. (061-266-3313, S) Read map to locate unknown point on map or ground by resection. (071-329-1015, S)	

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Observe and interact with subordinates while verifying PMCS on the Howitzer. (061-***-3420, S)		

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

13B SKILL LEVEL 3 (Continued)

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

Academic Skill Requirements of NCO Duty Tasks

13B Skill Level 3

Page 1 of 2

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
061-***3420 ²	Verify PMCS on Howitzer (S) - Review PMCS form when verifying PMCS. - Observe and interact with subordinates while verifying PMCS. - Give orders regarding corrections during PMCS.											x							x
061-***3434 ²	Perform prefire checks (S) - Look up information in manual to perform prefire checks.											x							
061-266-3313	Prepare a range card for Howitzer (S) - Draw range card and, if necessary, complete description and remarks column. - Look up information from firing tables to prepare a range card for the Howitzer. - Calculate ranges and deflection when preparing a range card for the Howitzer.												x						

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 13B skill levels 1 & 2

² The asterisks "***" indicate that this skill applies to a series of tasks with different numbers for the different weapon systems

13B Skill Level 3

Task		Type and Level of Academic Requirements																				
		math			writing			speaking			reading to do			reading to learn			listening to do					
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
Task Number	Task Description & Academic Elements																					
061-266-3323	Maintain DA Form 2408-4, Weapons Record Data (S) - Read DA Form 2408-4. - Record entries on DA Form 2408-4. - Compute totals for DA Form 2408-4.	x						x						x								
071-329-1015	Locate unknown point on map or ground by resection (S) - Read map to locate unknown point on map or ground by resection. - Calculate coordinates by resection to locate an unknown point on map or ground.	x									x											
031-503-3001	Use M256 chemical detector kit (C) - Check expiration date to determine if it is time to order a new M256 chemical detector kit.	x																				

1
(S) - MOS specific tasks

(C) - Common tasks identified as crucial to 13B skill level 3

13B SKILL LEVEL 4

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Calculate fire control alignment. (061-***-4554, S)

Subtract to establish an orienting line (OL) azimuth with simultaneous observation. (061-266-4001, S)

Determine latitude by subtraction to establish an OL azimuth with the Polaris-Kochab method. (061-266-4002, S)

Add and subtract to lay firing battery with M2 aiming circle by the grid azimuth method. (061-266-4146, S)

Measure orienting angles. (061-266-4151, S)

Subtract to measure azimuth. (061-266-4152, S)

Calculate range using piece to crest range. (061-266-4153, S)

Determine angles to compute executive of-ficer's (XO) minimum quadrant elevation (MIN QE) using rapid fire tables. (061-266-4154, S)

13B SKILL LEVEL 4 (Continued)

MATHEMATICAL COMPUTATION (Continued)

<u>Basic Arithmetic</u>	<u>Advanced Arithmetic</u>	<u>Algebra</u>
Measure angle twice and determine mean angle to calculate distance using subtense method. (061-266-4155, S)		
Calculate distance to operate M90 chronograph. (061-266-4237, S)		
Subtract to declinate an M2 aiming circle. (061-302-1004, S)		

WRITING

<u>Words</u>	<u>Sentences</u>	<u>Prose</u>
Record data while computing XO MIN QE using rapid fire tables. (061-266-4154, S)		

SPEAKING

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
Report confirmation of azimuth. (061-266-4152, S)	Give commands to lay firing battery with M2 aiming circle by the grid azimuth method. (061-266-4146, S)	

13B SKILL LEVEL 4 (Continued)

READING TO DO

Basic

Intermediate

Advanced

Read and follow the -10 manual to perform fire control alignment test. (061-***-4554, S)

Read map to establish OL azimuth with Polaris-Kochab method. (061-266-4002, S)

Read map to measure piece to crest range. (061-266-4153, S)

Use rapid fire tables to compute XO MIN QE. (061-266-4154, S)

Read XO handbook tables to measure distance using the subtense method. (061-266-4155, S)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Receive commands to establish OL azimuth with simultaneous observation. (061-266-4001, S)

13B SKILL LEVEL 4 (Continued)

LISTENING TO DO (Continued)

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Receive commands to lay firing battery with M2 aiming circle by the grid azimuth method. (061-266-4146, S)		
Receive commands to measure azimuth. (061-266-4152, S)		

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Page 1 of 3

1 (S) - MOS specific tasks

² The asterisks **** indicate that this skill applies to a series of tasks with different numbers for the different weapon systems.

Academic Skill Requirements of NCO Duty Tasks

13B Skill Level 4

Page 2 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
061-266-4151	Measure orienting angles (S) - Measure orienting angles.																		
		x																	
061-266-4152	Measure azimuth (S) - Subtract to measure azimuth. - Receive commands to measure azimuth. - Report confirmation of azimuth.																		
		x																x	
061-266-4153	Measure piece to crest range (S) - Read map to measure piece to crest range. - Calculate range using piece to crest range.																		
														x					
061-266-4154	Compute executive officer's (XO) minimum quadrant elevation (MIN QE) using rapid fire tables (S) - Determine angles to compute XO MIN QE. - Read rapid fire tables to compute XO MIN QE. - Record data while computing XO MIN QE.																		

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

13B Skill Level 4

Page 3 of 3

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
Task Number	Task Description & Academic Elements	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
061-266-4155	Measure distance using subtense method (S) - Read XO handbook tables to measure distance. - Measure angle twice and determine mean angle to calculate distance.																		
		x																	
061-266-4237	Operate M90 chronograph (S) - Calculate distance to operate M90 chronograph.																		
		x																	
061-302-1004	Declinate M2 aiming circle (S) - Subtract to declinate an M2 aiming circle.																		
		x																	

¹ (S) - MOS specific tasks

31C SKILL LEVELS 1 & 2

MATHEMATICAL COMPUTATION

Basic Arithmetic

Read map and use compass to determine directions. (071-329-1005, C)

Advanced Arithmetic

Use formula to cut doublet antenna. (113-596-7056, S)

Install radioteletype-writer set and use formula to erect doublet antenna. (113-599-1003, S)

Algebra

WRITING

Words

Sentences

Prose

Submit maintenance, equipment, and personnel management reports, if required, when performing station/net duties. (113-571-7001, S)

Submit required reports upon inspection of station/net duties. (113-571-7002, S)

Complete DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting radio teletypewriter set. (113-599-2003, S)

List faults of 5KW generator on DA Form 2404 after troubleshooting. (113-601-2002, S)

31C SKILL LEVELS 1 & 2 (Continued)

WRITING (Continued)

Words

Sentences

Prose

List faults of radio set AN/GRC-106 on DA Form 2404 after trouble-shooting. (113-620-2002, S)

Report equipment/operation deficiencies on DA Form 2404. (113-622-7001 & 113-623-7002, S)

SPEAKING

Words

Sentences

Prepared

Correct soldier, if necessary, while performing station/net duties. (113-571-7001, S)

Explain training objective and demonstrate/explain task. (874-896-2020, C)

Report problems with station/net operations following inspection. (113-571-7002, S)

Issue instructions for installation of a doublet antenna. (113-596-7056, S)

Correct errors during inspection of installed operational generator sets. (113-601-7001, S)

Speak to appropriate personnel about deficiencies found during inspection. (113-622-7001 & 113-623-7002, S)

31C SKILL LEVELS 1 & 2 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
If necessary, read job aid to decontaminate self and individual equipment. (031-503-1007, C)	Use CEOI to extract appropriate call signs, suffixes, and frequencies to establish, enter, or leave a radio network. (113-571-1003, S)	Read troubleshooting chart for radio teletype-writer set. (113-599-2003, S)
	Read TMs and station log to perform station/net duties. (113-571-7001, S)	Read troubleshooting chart for 5KW generator. (113-601-2002, S)
	Read log sheet to inspect station/net operations. (113-571-7002, S)	Read troubleshooting chart for radio set AN/GRC-106. (113-620-2002, S)
	Use TM to check radio-teletypewriter equipment for completeness, install radioteletypewriter set, and erect antenna. (113-599-1003, S)	
	Read long lists of procedures for presetting, tuning, stopping radio teletypeset AN/GRC-142 or 122. (113-599-2020, S)	
	If necessary, refer to equipment manual to check all meter readings for correct indications when inspecting installed operational generator sets. (113-601-7001, S)	
	Read in soldier's manual to select team radio site. (113-611-1001, S)	

31C SKILL LEVELS 1 & 2 (Continued)

READING TO DO (Continued)

Basic

Intermediate

Advanced

Refer to TM to connect cables and audio accessories, and install antenna for radio set AN/GRC-106. (113-620-1001, S)

Read appropriate TMs prior to conducting inspections. (113-622-7001 & 113-623-7002, S)

Read map and use compass to determine directions by terrain association. (071-329-1005, C)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

Academic Skill Requirements of NCO Duty Tasks

31C Skill Levels 1 & 2

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Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-571-1003	Establish, enter, or leave a radio network (S) - Use CEOI to extract appropriate call signs, suffixes, and frequencies to establish, enter, or leave a radio network.																		
113-571-7001	Perform station/net duties (S) - Read TMs and station log to perform station/net duties. - Correct soldier, if necessary, while performing station/net duties. - If required, submit maintenance, equipment, and personnel management reports.																		
113-571-7002	Inspect station/net operations (S) - Read log sheet to inspect station/net operations. - Report problems with station/net operations. - Submit required reports upon inspection of station/net duties.																		
113-596-7056	Direct installation of a doublet antenna (S) - Use formula to cut doublet antenna. - Issue instructions for installation of a doublet antenna.																		

¹ (S) - MOS specific tasks

(C) - Common tasks identified as crucial to 31C skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks

31C Skill Levels 1 & 2

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Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-599-1003	Install radio teletypewriter set (S) - Use TM to check radio teletypewriter equipment for completeness. - Install radio teletypewriter set and use formula to erect doublet antenna.											x							
113-599-2002	Operate radio teletypewriter AN/GRC-142 or -122 (S) - Read long lists of procedures for presetting, tuning stopping radio teletypewriter AN/GRC-142 or -122.											x							
113-599-2003	Troubleshoot radio teletypewriter set (S) - Read troubleshooting chart for radio teletypewriter set. - Complete DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting radio teletypewriter set.												x						
113-601-2002	Perform operator troubleshooting on 5KW generator (S) - Read troubleshooting chart for 5KW generator. - List faults of 5KW generator on DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting.																	x	

1 (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 31C skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks

31C Skill Levels 1 & 2

Page 3 of 5

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-601-7001	Inspect installed operational generator sets (S) - If necessary, refer to equipment manual to check all meter readings for correct operation of generator sets. - Correct errors during inspection of installed operational generator sets..																		
113-611-1001	Select team radio site (S) - Read in soldier's manual to select team radio site.																		
113-620-1001	Install radio set AN/GRC-106 (S) - Refer to TM to connect cables and audio accessories, and to install antenna for radio set AN/GRC-106.																		
113-620-2002	Perform operator troubleshooting procedures on radio set AN/GRC-106 (S) - Read troubleshooting chart for radio set AN/GRC-106. - List faults of radio set AN/GRC-106 on DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting.																		

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 31C skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks **31C Skill Levels 1 & 2**

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Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
113-622-7001	Inspect installed operational radio set control groups (S) - Read appropriate TMs prior to conducting inspection. - Speak to appropriate personnel about deficiencies found during inspection. - Make written report of equipment/operation deficiencies on DA Form 2404, Equipment Inspection and Maintenance Worksheet.																		
113-623-7002	Inspect performance of preventive maintenance at team level (S) - Read appropriate TMs prior to conducting inspection. - Speak to appropriate personnel about deficiencies found during inspection. - Make written report of equipment/operation deficiencies on DA Form 2404, Equipment Inspection and Maintenance Worksheet.																		
031-503-10*1 ²	Maintain protective mask (C)																		
031-503-10*2 ²	Put on a protective mask (C)																		

¹ (S) - MOS specific tasks

(C) - Common tasks identified as crucial to 31C skill levels 1 & 2

² The asterisk (*) indicates that there is a series of tasks with different numbers for the different types of protective masks.

Academic Skill Requirements of NCO Duty Tasks

31C Skill Levels 1 & 2

Page 5 of 5

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
031-503-1007	Decontaminate self and individual equipment (C) - If necessary, read job aid to decontaminate self and equipment.																		
051-191-1362	Camouflage/conceal equipment (C)																		
071-311-2001	Maintain an M16 A1 rifle, magazines, and ammunition (C)																		
071-311-2003	Load, reduce stoppage, clear M16 rifle (C)																		
071-329-1005	Determine location on ground by terrain association (C) - Read map and use compass to determine directions.	x																	
071-331-0815	Practice noise, light, and litter discipline (C)																		
071-311-2004	Zero an M16 A1 rifle (C)																		
874-896-2020	Conduct a performance oriented training session (C) - Explain training objective and demonstrate/ explain task.																		

1

(S) - MOS specific tasks

(C) - Common tasks identified as crucial to 31C skill levels 1 & 2

31C SKILL LEVEL 3

MATHEMATICAL COMPUTATION

Basic Arithmetic

Advanced Arithmetic

Algebra

Count pieces of equipment when conducting inventory of radio equipment. (113-617-1008, S)

WRITING

Words

Sentences

Prose

Complete forms to report results of communications security inspections. (113-573-1004, S)

Complete DA Form 2062 and submit to supervisor when conducting an inventory of radio equipment. (113-617-1008, S)

SPEAKING

Words

Sentences

Prepared

Issue instructions to soldiers to install radioteletype equipment. (113-599-1006, S)

Communicate with others to search for missing radio equipment after conducting inventory. (113-617-1008, S)

31C SKILL LEVEL 3 (Continued)

READING TO DO

Basic

Intermediate

Advanced

If necessary, refer to FM 32-6 & (C) TB 380-41 for procedures to conduct inspection. (113-573-1004, S)

Refer to TM when issuing instructions for installation of radioteletype equipment. (113-599-1006, S)

Read appropriate TM to determine what radio equipment should be on hand. (113-617-1008, S)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

31C Skill Level 3

Page 1 of 1

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-573-1004	Conduct communications security inspections (S) - Complete forms to report results of communications security inspections. - If necessary, refer to FM 32-6 & (C) TB 380-41 for procedures to conduct inspection.				x									x					
113-599-1006	Issue instructions for installation of radio teletype equipment (S) - Issue instructions to soldiers to install radio teletype equipment. - Refer to TM when issuing instructions for installation of radio teletype equipment.								x										
113-599-1008	Inventory radio equipment (S) - Count pieces of equipment when conducting inventory. - Read appropriate TM to determine what radio equipment should be on hand. - Communicate with others to search for missing radio equipment when conducting inventory. - Complete DA Form 2062 and submit to supervisor when conducting an inventory of radio equipment.																		

¹ (S) - MOS specific tasks

31Y SKILL LEVEL 4

MATHEMATICAL COMPUTATION

<u>Basic Arithmetic</u>	<u>Advanced Arithmetic</u>	<u>Algebra</u>
Determine how many terminals are needed while directing installation of a communications nodal control element (CNCE). (113-602-7021, S)	Determine height of antenna using formula when directing remoting of FM radios. (113-587-7078, S)	
Calculate distances, etc. when reading map to perform site reconnaissance. (113-611-1013, S)	Use formula to cut antenna when directing establishment of a secure single channel retransmission facility. (113-587-7079, S)	
Determine distances, etc. and use map reading skills to plan field cable/wire system. (113-611-4006, S)	Use formula to cut antenna when directing establishment of a multichannel microwave radio terminal/repeater. (113-591-7013, S)	
Determine distances, etc. to plan a multichannel communications system. (113-611-4007, S)	Use formula to cut antenna when directing establishment of a secure low capacity VHF/UHF multichannel system. (113-593-7026, S)	
Determine distances, etc. to prepare area telephone traffic diagram. (113-611-4008, S)		
Determine locations, etc. to prepare teletypewriter traffic diagram. (113-611-4009, S)	Use formula to cut antenna when directing establishment of a medium security multichannel cable terminal system. (113-593-7027, S)	
Determine distances, etc. to plan HF radio network. (113-611-4010, S)	Cut antenna using frequency formula when directing the establishment of a secure radio teletypewriter terminal (RATT). (113-599-7024, S)	
Use math/check math of others when preparing communications-electronics annex. (113-611-5014, S)		

31Y SKILL LEVEL 4 (Continued)

WRITING

Words

Sentences

Prose

Write after action report following establishment of a multichannel microwave radio terminal /repeater. (113-591-7013, S)

Identify COMSEC insecurities. If found, complete extensive reporting procedures. (113-573-0007, S)

Write after action report following installation of a communications nodal control element (CNCE). (113-602-7021, S)

Draw and annotate a diagram for operations order annex when planning field cable/wire system. (113-611-4006, S)

Prepare communications-electronics annex. (113-611-5014, S)

Write after action report following check of operations of the communications nodal control element (CNCE). (113-616-7020, S)

SPEAKING

Words

Sentences

Prepared

Report to supervisor on best site for radio network. (113-571-7005, S)

Direct remoting of FM radios. (113-587-7078, S)

31Y SKILL LEVEL 4 (Continued)

SPEAKING (Continued)

Words

Sentences

Prepared

Direct establishment of a secure single channel retransmission facility. (113-587-7079, S)

Direct establishment of a multichannel microwave radio terminal/repeater. (113-591-7013, S)

Direct establishment of a secure low capacity VHF/UHF multichannel system. (113-593-7026, S)

Direct establishment of a medium security multichannel cable terminal system. (113-593-7027, S)

Ask questions to check telephone switching facility operations. (113-594-7033, S)

Ask questions to check tactical telecommunications center operations. (113-598-7018, S)

Direct installation of a communications nodal control element (CNCE). (113-602-7021, S)

Ask questions to monitor preparation for a tactical motor movement. (113-611-1014, S)

Ask questions for information related to planning field cable/wire system. (113-611-4006, S)

31Y SKILL LEVEL 4 (Continued)

SPEAKING (Continued)

Words

Sentences

Prepared

Ask questions to plan a multichannel communications system. (113-611-4007, S)

Ask questions to prepare area telephone traffic diagram. (113-611-4008, S)

Ask questions to prepare teletypewriter traffic diagram. (113-611-4009, S)

Ask questions to plan HF radio network. (113-611-4010, S)

Ask questions to check operations of the communications nodal control element (CNCE). (113-616-7020, S)

READING TO DO

Basic

Intermediate

Advanced

Read references and maps to supervise operation of a team within a radio network. (113-571-7005, S)

Read schematics to check installation of power generating equipment. (113-601-7037, S)

Refer to manual to direct remoting of FM radios. (113-587-7078, S)

31Y SKILL LEVEL 4 (Continued)

READING TO DO (Continued)

Basic

Intermediate

Advanced

Read TM and CEOI to direct establishment of a secure single channel retransmission facility. (113-587-7079, S)

Read TM to direct establishment of a multichannel microwave radio terminal/repeater. (113-591-7013, S)

Read TM to direct establishment of a secure low capacity VHF/UHF multichannel system. (113-593-7026, S)

Read TM to direct establishment of a medium security multichannel cable terminal system. (113-593-7027, S)

Read TM to check operations at a telephone switching facility. (113-594-7033, S)

Read forms and review security forms to check operations of a tactical telecommunications center. (113-598-7018, S)

Read operations order and CEOI to direct establishment of a secure radio teletypewriter terminal (RATT). (113-599-7024, S)

31Y SKILL LEVEL 4 (Continued)

READING TO DO (Continued)

Basic

Intermediate

Advanced

Read TM to determine where problems are when checking operations radio teletypewriter terminal. (113-599-7025, S)

Read plans to direct installation of a communications nodal control element. (113-602-7021, S)

Use map reading skills to perform site reconnaissance. (113-611-1013, S)

Read load plans to prepare for a tactical motor movement. (113-611-1014, S)

Read maps, operations order, and TMs to plan field cable/wire system. (113-611-4006, S)

Read CEOI to plan HF radio network. (113-611-4010, S)

Read maps and site plan to establish site defense. (113-611-5016, S)

Read log sheets and forms to check operations of the communications nodal control element (CNCE). (113-616-7020, S)

31Y SKILL LEVEL 4 (Continued)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

Listen to answers to questions to check telephone switching facility operations. (113-594-7033, S)

Listen to answers to questions to check tactical telecommunications center operations. (113-598-7018, S)

Listen to answers to questions to monitor preparation for a tactical motor movement. (113-611-1014, S)

Listen to answers to questions for information related to planning field cable/wire system. (113-611-4006, S)

Listen to answers to questions to plan a multichannel communications system. (113-611-4007, S)

Listen to answers to questions to prepare area telephone traffic diagram. (113-611-4008, S)

31Y SKILL LEVEL 4 (Continued)

LISTENING TO DO (Continued)

Basic

Intermediate

Advanced

Listen to answers to questions to prepare teletypewriter traffic diagram. (113-611-4009, S)

Listen to answers to questions to plan HF radio network. (113-611-4010, S)

Listen to answers to questions to check operations of the communications nodal control element (CNCE). (113-616-7020, S)

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

31Y Skill Level 4

Page 1 of 8

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-571-7005	Supervise operation of a team within a radio network (S) - Read references and maps to supervise operations. - Report to supervisor on best site for radio network.												x						
113-573-0007	Identify COMSEC insecurities (S) - Identify COMSEC insecurities. If found, complete extensive reporting procedures.						x												
113-587-7078	Direct remoting of FM radios (S) - Refer to manual to direct remoting of FM radios. - Determine height of antenna using formula to direct remoting of FM radio. - Direct remoting of FM radios.			x									x						
113-587-7079	Direct establishment of a secure single channel retransmission facility 9S) - Read TM and CEOI to direct establishment of a secure single channel retransmission facility. - Use formula to cut antenna. - Direct establishment of a secure single channel retransmission facility.			x									x						

¹ (S) - MOS specific tasks

31Y Skill Level 4

1 (S) - MOS specific tasks

1 (S) - MOS specific tasks

31Y Skill Level 4

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-599-7024	Direct establishment of a secure radio teletypewriter terminal (RATT) (S) - Read operations order and CEOI to direct establishment of a secure radio teletypewriter terminal. - Use formula to cut antenna.			x									x						
113-599-7025	Check operations of a radio teletypewriter terminal (S) - Read TM to determine where problems are when checking operations of a radio teletypewriter terminal.												x						
113-601-7037	Check installation of power generating equipment (S) - Read schematics to check installation of power generating equipment.															x			
113-602-7021	Direct installation of a communications nodal control element (CNCE) (S) - Read plans to direct installation of a CNCE. - Direct installation of a CNCE. - Determine how many terminals are needed while directing installation of a CNCE. - Write after action report following installation of a CNCE.			x												x			

1 (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

31Y Skill Level 4

Page 5 of 8

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
113-611-1013	Perform site reconnaissance (S) - Use map reading skills to perform site reconnaissance. - Calculate distances, etc. when reading map.																		

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks **31Y Skill Level 4**

Page 6 of 8

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
113-611-4007	Plan a multichannel communications system (S) - Determine distances, etc. to plan a multichannel communications system. - Ask questions to plan a multichannel communications system. - Listen to answers to questions.	x								x									
113-611-4008	Prepare area telephone traffic diagram (S) - Determine distances, etc. to prepare area telephone traffic diagram. - Ask questions to prepare area telephone traffic diagram. - Listen to answers to questions.	x								x									
113-611-4009	Prepare teletypewriter traffic diagram (S) - Determine locations, etc. to prepare teletypewriter traffic diagram. - Ask questions to prepare teletypewriter traffic diagram. - Listen to answers to questions.	x								x									

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks 31Y Skill Level 4

Page 7 of 8

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-611-4010	Plan HF radio network (S) - Determine distances, etc. to plan HF radio network. - Read CEOI to plan HF radio network. - Ask questions to plan HF radio network. - Listen to answers to questions.	x											x						
113-611-5014	Prepare communications-electronics annex (S) - Use math/check math of others when preparing communications-electronics annex. - Prepare communications-electronics annex.	x																	
113-611-5016	Establish site defense (S) - Read maps and site plan to establish site defense.													x					

Academic Skill Requirements of NCO Duty Tasks

31Y Skill Level 4

Page 8 of 8

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
Task Number	Task Description & Academic Elements	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113-616-7020	Check operations of communications nodal control element (CNCE) (S) - Read log sheets and forms to check operations of CNCE. - Ask questions to check operations of the CNCE. - Listen to answers to the questions. - Write after action report following check of operations of CNCE.											x							
																		x	

¹ (S) - MOS specific tasks

63B SKILL LEVELS 1 & 2

MATHEMATICAL COMPUTATION

Basic Arithmetic

Use meters to troubleshoot fuel system malfunctions. (091-474-2023, S)

Use meters to troubleshoot generator set malfunctions. (091-474-2142, S)

Use meters to troubleshoot engine malfunctions. (091-474-2177, S)

Use meters to troubleshoot service brake malfunctions. (091-474-2182, S)

Use meters to repair engine wiring harness. (091-474-2248, S)

Advanced Arithmetic

Algebra

WRITING

Words

Sentences

Prose

Take notes to fill our SALUTE report. (071-331-0803, C)

SPEAKING

Words

Sentences

Prepared

Report SALUTE information. (071-331-0803, C)

Present objective, then explain/demonstrate how the task is done. (874-896-2020, C)

63B SKILL LEVELS 1 & 2 (Continued)

SPEAKING (Continued)

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
Communicate on radio net. (113-573-8006, C)		

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
	Refer to TM for items to be inspected when performing semi-annual checks and services. (091-474-1013, S)	Troubleshoot fuel system malfunctions according to TM. (091-474-2023, S)
	Select applicable TM for equipment and read standards and steps for maintenance. (071-328-5302, C)	Troubleshoot generator set malfunctions according to TM. (091-474-2142, S)
	Read map to navigate from one point on the ground to another, dismounted. (071-329-3005, C)	Troubleshoot engine malfunctions according to TM. (091-474-2177, S)
	Find the following information using a CEOI: item number of CEOI extract, radio station call sign, radio net frequency, challenge and reply authentication, item number identifier. (113-573-8006, C)	Troubleshoot service brake malfunctions according to TM. (091-474-2182, S)
		Use appropriate TM to repair engine wiring harness. (091-474-2248, S)

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

63B SKILL LEVELS 1 & 2 (Continued)

LISTENING TO DO

Basic

Intermediate

Advanced

Using an automated CE0I,
communicate on radio
network. (113-573-8006, C)

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letters S and C following the task numbers in parentheses denote:
S - MOS specific tasks
C - Common tasks identified as crucial to the MOS at this skill level.

Academic Skill Requirements of NCO Duty Tasks

63B Skill Levels 1 & 2

Page 1 of 3

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
Task Number	Task Description & Academic Elements	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-474-1031	Perform semi-annual checks and services (S) - Refer to TM for items to be inspected when performing semi-annual checks and services.																		
091-474-2023	Troubleshoot fuel system malfunctions (S) - Troubleshoot fuel system malfunctions according to TM. - Use meters to troubleshoot fuel system malfunctions.																		
091-474-2142	Troubleshoot generator set malfunctions (S) - Troubleshoot generator set malfunctions according to TM. - Use meters to troubleshoot generator set malfunctions.																		
091-474-2177	Troubleshoot engine malfunctions (S) - Troubleshoot engine malfunctions according to TM. - Use meters to troubleshoot engine malfunctions.																		

¹ (S) - MOS specific tasks
(C) - Common tasks identified as crucial to 63B skill levels 1 & 2

83B Skill Levels 1 & 2

Page 2 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-474-2182	Troubleshoot service brake malfunctions (S) - Troubleshoot service brake malfunctions according to TM. - Use meters to troubleshoot service brake malfunctions.	x											x						
091-474-2248	Repair engine wiring harness (S) - Use appropriate TM to repair engine wiring harness. - Use meters to repair engine wiring harness.	x											x						
091-499-1902	Recover disabled vehicle with 5 ton wrecker (S)																		
031-503-1018	React to nuclear hazard (C)																		
071-312-3005	Perform operator maintenance on M60 (C)																		
071-328-5302	Supervise maintenance on individual and TOE equipment (C) - Select applicable TM for equipment and read standards and steps for maintenance.												x						

1 (S) - MOS specific tasks

(C) - Common tasks identified as crucial to 63B skill levels 1 & 2

Academic Skill Requirements of NCO Duty Tasks **63B Skill Levels 1 & 2**

Page 3 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
071-329-1006	Navigate from point on the ground to another, dismounted (C) - Read map to navigate from one point on the ground to another, dismounted.																		
071-331-0803	Collect/report information - SALUTE (C) - Make oral or written report of enemy soldier sighting.																		
081-831-1030	Administer nerve agent antidote to self (C)																		
113-573-8006	Use automated CEOI (C) - Find the following information using a CEOI: extract, radio station call sign, radio net frequency, challenge and reply authentication, item number identifier. - Using an automated CEOI, communicate on a radio network.																		
874-896-2020	Conduct a performance oriented training session (C) - Present objective, then explain/demonstrate how the task is done.																		

¹ (S) - MOS specific tasks
 (C) - Common tasks identified as crucial to 63B skill levels 1 & 2

63B SKILL LEVEL 3

MATHEMATICAL COMPUTATION

Basic Arithmetic

Use meters to troubleshoot power plant. (091-474-3140, S)

Use meters to troubleshoot electrical system. (091-474-3143, S)

Record and add totals. (091-499-3007, S)

Total up numbers to establish tool control procedures. (091-499-3326, S)

Calculate loads for PLL operations (091-499-3351, S)

Keep daily count to prepare Materiel Condition Status Report, DA Form 2406, (091-499-3352, S)

Advanced Arithmetic

Algebra

WRITING

Words

Fill out PMCS schedule to direct scheduling of PMCS. (091-499-3011, S)

Make changes to entries on DA Form 2404, Equipment Inspection and Maintenance Worksheet. (091-499-3013, S)

Sentences

Annotate DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting power plant. (091-474-3140, S)

Prose

Write out control cards and SOP to establish tool control procedures. (091-499-3326, S)

63B SKILL LEVEL 3 (Continued)

WRITING (Continued)

<u>Words</u>	<u>Sentences</u>	<u>Prose</u>
Fill out publication request form when maintaining maintenance publication library. (091-499-3336, S)	Annotate DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting electrical system. (091-474-3143, S)	
Complete DA Form 2406, Materiel Condition Status Report. (091-499-3352, S)	Submit report when supervising operator maintenance of 5-ton wrecker. (091-499-3143, S)	
	Submit report when supervising suspension system maintenance. (091-499-3350, S)	

SPEAKING

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
	Direct scheduling of PMCS. (091-499-3011, S)	
	Supervise operator maintenance of 5-ton wrecker. (091-499-3160, S)	
	Supervise suspension system maintenance. (091-499-3350, S)	
	Supervise PLL operations. (091-499-3351, S)	

63B SKILL LEVEL 3 (Continued)

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Read tool list to inventory tools and equipment. (091-499-3007, S)	Refer to -10 manual to direct scheduled PMCS. (091-499-3007, S)	Use TMs and troubleshooting guides to troubleshoot power plant. (091-474-3140, S)
Read publications request form to update maintenance publication library. (091-499-3336, S)	Review DA Form 2404, Equipment Inspection and Maintenance Worksheet. (091-4499-3350, S)	Use TMs and troubleshooting guides to troubleshoot electrical system. (091-474-3143, S)
Examine Prescribed Load List (PLL), DA Form 2063-R. (091-499-3351, S)	Refer to TMs to supervise operator maintenance of 5-ton wrecker. (091-499-3160, S) Refer to TMs to supervise suspension system maintenance. (091-499-3350, S)	

READING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

LISTENING TO LEARN

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 3

Page 1 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-474-3140	Troubleshoot powerplant (S) - Use TMs and troubleshooting guides to troubleshoot power plant. - Use meters to troubleshoot power plant. - Annotate DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting power plant.	x																	
091-474-3143	Troubleshoot electrical system (S) - Use TMs and troubleshooting guides to troubleshoot electrical system. - Use meters to troubleshoot electrical system. - Annotate DA Form 2404, Equipment Inspection and Maintenance Worksheet, after troubleshooting electrical system.	x																	
091-499-3007	Inventory tools and equipment (S) - Read tool list to inventory tools and equipment. - Record and add totals.	x																	

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 3

Page 2 of 3

Task		Type and Level of Academic Requirements																	
		math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Task Number	Task Description & Academic Elements																		
091-499-3011	Direct scheduled PMCS (S) - Refer to –10 manual to direct scheduled PMCS. - Direct scheduling of PMCS. - Fill out PMCS schedule to direct scheduling of PMCS.																		
091-499-3013	Review DA Form 2404, Equipment Inspection and Maintenance Worksheet (S) - Review DA Form 2404. - Make changes to entries on DA Form 2404.																		
091-499-3160	Supervise operator maintenance of 5 ton wrecker (S) - Refer to TMs to supervise operator maintenance of 5 ton wrecker. - Supervise operator maintenance of 5 ton wrecker. - Fill out report when supervising operator maintenance of 5 ton wrecker.																		
091-499-3326	Establish tool control procedures (S) - Write out control cards and SOP to establish tool control procedures. - Total up numbers to establish tool control procedures.																		

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 3

Page 3 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-499-3336	Maintain maintenance publication library (S) - Read and fill out publication request form when updating maintenance publication library.				x							x							
091-499-3350	Supervise suspension system maintenance (S) - Refer to TMs to supervise suspension system maintenance. - Supervise suspension system maintenance. - Fill out report when supervising suspension system maintenance.						x			x			x						
091-499-3351	Supervise Prescribed Load List (PLL) operations (S) - Examine PLL document. - Calculate loads for PLL operations. - Supervise PLL operations.			x								x							
091-499-3352	Prepare Materiel Condition Status Report, DA Form 2406 (S) - Keep daily count to prepare DA Form 2406. - Complete DA Form 2406.			x															

¹ (S) - MOS specific tasks

63B SKILL LEVEL 4

MATHEMATICAL COMPUTATION

Basic Arithmetic

Calculate hours and miles to monitor unit oil analysis program. (091-499-4016, S)

Calculate inventories to review Prescribed Load List (PLL), DA Form 2063-R. (091-499-4018, S)

Inspect Document Register, DA Form 2064, and check dollar figures. (091-499-4019, S)

Advanced Arithmetic

Algebra

WRITING

Words

Make corrections on Maintenance Request, DA Form 2407. (091-499-4003, S)

Prepare loading diagram/plan for vehicles. (091-499-4007, S)

If necessary, make changes to PLL. DA Form 2063-R. (091-499-4018, S)

If necessary, make changes to Document Register, DA Form 2064. (091-499-4019, S)

Sentences

Complete appropriate form to request new publications for reference library. (091-499-4026, S)

Prose

Write performance measures for an OJT program. (091-499-4015, S)

Write recommendations to recommend individuals for favorable personnel actions. (091-499-4021, S)

Write new Standard Operating Procedures. (091-499-4024, S)

Write a plan with objectives to train subordinate NCOs in administrative tasks. (091-499-4028, S)

63B SKILL LEVEL 4 (Continued)

SPEAKING

Words

Sentences

Prepared

Give orders to organize an OJT program. (091-499-4015, S)

Train subordinate NCOs in administrative tasks. (091-499-4028, S)

READING TO DO

Basic

Intermediate

Advanced

Read Maintenance Request, DA Form 2407. (091-499-4003, S)

Look up loading detail for truck to prepare loading plan for vehicles. (091-499-4007, S)

Review existing Standard Operating Procedure (SOP) to develop new SOP. (091-499-4024, S)

Review log forms and read printout to monitor unit oil analysis program. (091-499-4016, S)

Locate and review references to organize an OJT program. (091-499-4015, S)

Review Prescribed Load List (PLL), DA Form 2063-R. (091-499-4018, S)

Read files and examine sample recommendations to recommend individuals for favorable personnel action. (091-499-4021, S)

Inspect Document Register, DA Form 2064. (091-499-4019, S)

Review change lists on fiche to request new publications for reference library. (091-499-4026, S)

Review tasks to train subordinate NCOs in administrative tasks. (091-499-4028, S)

63B SKILL LEVEL 4 (Continued)

READING TO LEARN

Basic

Intermediate

Advanced

LISTENING TO DO

Basic

Intermediate

Advanced

LISTENING TO LEARN

Basic

Intermediate

Advanced

Note: The letter S following the task numbers in parentheses denotes:
S - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 4

Page 1 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-499-4003	Review Maintenance Request Form, DA Form 2407 (S) - Read DA Form 2407. - Make corrections on DA Form 2407.				x						x								
091-499-4007	Prepare loading plan for vehicles, including trailer (S) - Look up loading detail for truck to prepare loading plan for vehicles. - Prepare loading diagram/plan for vehicles.				x						x								
091-499-4015	Organize an OJT program (S) - Locate and review references to organize an OJT program. - Direct organization of an OJT program. - Write performance measures for an OJT program.										x								
091-499-4016	Monitor unit oil analysis program (S) - Review log forms and read printout to monitor unit oil analysis program. - Calculate hours and miles to monitor unit oil analysis program.										x								

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 4

Page 2 of 3

Task		Type and Level of Academic Requirements																	
Task Number	Task Description & Academic Elements	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
091-499-4018	Review/Prescribed Load List (PLL), DA Form 2063-R (S) - Review PLL, DA Form 2063-R. - Calculate inventories to review PLL, DA Form 2063-R. - If necessary, make changes to PLL, DA Form 2063-R.	x									x								
091-499-4019	Inspect Document Register, DA Form 2064 (S) - Inspect DA Form 2064. - Inspect DA Form 2064 and check dollar figures. - If necessary, make changes to DA Form 2064.	x									x								
091-499-4021	Recommend individuals for favorable personnel actions (S) - Read files and examine sample recommendations to recommend individuals for favorable personnel actions. - Write recommendations to recommend individuals for favorable personnel actions.											x							
091-499-4024	Develop standard operating procedure (SOP) (S) - Review existing SOP to develop new SOP. - Write new SOP.												x						

¹ (S) - MOS specific tasks

Academic Skill Requirements of NCO Duty Tasks

63B Skill Level 4

Page 3 of 3

Task		Type and Level of Academic Requirements											
Task Number	Task Description & Academic Elements	math	writing	speaking	reading to do	reading to learn	listening to do						
091-499-4026	Review reference library (S) - Review change lists on fiche to request new publications for reference library. - Complete appropriate form to request new publications for reference library.	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3						
091-499-4028	Train subordinate NCOs in administrative tasks (S) - Review tasks to train subordinate NCOs in administrative tasks. - Write a plan with objectives to train subordinate NCOs in administrative tasks. - Train subordinate NCOs in administrative tasks.												

¹ (S) - MOS specific tasks

APPENDIX C

Common Leader Training Lessons

PLDC

Lesson Elements C- 1

Ratings C- 6

BNCOC

Lesson Elements C-13

Ratings C-17

ANCOC

Lesson Elements C-21

Ratings C-26

Primary Leadership Development Course (PLDC)

MATHEMATICAL COMPUTATION

Basic Arithmetic

Complete and score self-assessment homework exercises. (LHR-02)

Determine elevation on map. (LN-01)

Measure distance on map. (LN-01)

Add or subtract degrees to determine azimuths. (LN-01)

Use addition and subtraction when interpreting declination diagram. (LN-01)

Use the intersection method to determine location on map. (LN-01)

Count paces and follow directions on terrain familiarization walk to practice land navigation skills. (LN-02)

Complete land navigation course, using map reading /land navigation skills (including basic math skills). (LN-03)

Use land navigation and map reading skills (including basic math skills), negotiate land navigation course for performance exam. (LN-04)

Advanced Arithmetic

Algebra

WRITING

Words

Write answers to in-class exercises on the principles of leadership. (LHR-02)

Write answers to in-class exercises on leadership characteristics. (LHR-04)

Analyze 2 case studies and complete written and oral recommendations of ethical actions. (LHR-05)

Write answers to in-class exercise on reflective listening. (CM-02)

Write answers to practical exercise quiz on emotion, state of being, reflective listening, and communication barriers. (CM-02)

List and apply the 6 categories of essential elements of information to novel situations. (CM-03)

Answer brief written questions about specific maintenance forms and records. (RM-02)

Perform preventive maintenance check and service (PMCS) on a designated piece of equipment according to the appropriate manual; complete any forms, if necessary. (RM-03)

Take notes during an oral platoon order to prepare an oral squad order. (PCO-04)

Sentences

Write a summary for DA Form 4856-R. (LDR-10)

Phrases

Take notes during an oral platoon OPORD to prepare an oral squad OPORD. (PCO-04)

Write notes to prepare to conduct training in the field. (CDO-01 thru CDO-28)

SPEAKING

Words

Analyze 2 case studies and complete written and oral recommendations of ethical actions. (LHR-05)

Introduce self to squad. (CM-01)

Give commands to conduct squad physical training. (PS-01)

Identify uniform violations orally during classroom exercise. (PS-03)

Ask/answer questions during recon-patrol led by instructor, in preparation for field training exercise. (CDO-29)

Sentences

Discuss problem solving and decision making approaches to 3 scenarios, in practical exercise. (LDR-06)

Participate in role play problem solving exercise. (LHR-07)

Participate in role play counseling sessions. (LDR-10)

Participate in one-way communication exercise. (CM-02)

Conduct and evaluate training in field. (CDO-01 thru CDO-28)

Prepared

Prepare oral squad warning orders from on oral platoon warning order. (PCO-04)

Issue squad warning orders. (PCO-05)

Present an OPORD. (PCO-04)

READING TO DO

Basic

Read in-class exercises on the principles of leadership. (LHR-02)

Read, answer, and score self-assessment exercises. (LHR-03)

Read in-class exercises on leadership characteristics. (LHR-04)

Intermediate

Read 3 scenarios and discuss problem solving and decision making approaches. (LDR-06)

Read 12 scenarios to determine if they involve sexual harassment. (LHR-12)

Advanced

Read and use the Automated CEOI. (TC-02)

Read descriptions and answer questions to assess leadership style. (LHR-07)

Read descriptions and differentiate between authoritarian and participative leader styles. (LHR-07)

Read in-class exercise on reflective listening. (CM-02)

Read practical exercise quiz on emotion, state of being, reflective listening, and communication barriers. (CM-02)

Read novel situations and apply the 6 categories of essential elements of information. (CM-03)

Read instructions and answer brief questions about specific maintenance forms and records. (RM-02)

Read appropriate manual to perform preventive maintenance check and service (PMCS) on a designated piece of equipment. (RM-03)

Complete multiple-choice exams I, II, & III.

Complete map-reading exam.

Read and identify marginal information and symbols on map to learn map reading skills. (LN-01)

Read map to determine elevation on map. (LN-01)

Read map to measure distance on map. (LN-01)

Read map to determine azimuths. (LN-01)

Read map to interpret declination diagram. (LN-01)

Read map to use the intersection method to determine location. (LN-01)

Read map to complete land navigation course. (LN-03)

Read map using land navigation and map reading skills to negotiate land navigation course. (LN-04)

Read appropriate manuals to prepare to conduct training in the field. (CDO-01 thru CDO-28)

READING TO LEARN

Basic

Intermediate

Advanced

Scan, read, or study the various homework assignments. Most are USAMA-prepared supplementary readings or student handouts, and DA Pams. (most lessons)

LISTENING TO DO

Basic

Observe inspections to learn how to plan and conduct inspections. (PS-04)

Listen to instructor to answer questions during recon-patrol. (CDO-29)

Intermediate

Discuss problem solving and decision making approaches to three scenarios. (LDR-06)

Participate in role play problem solving exercise. (LHR-07)

Participate in role play counseling sessions. (LDR-10)

Participate in one-way communication exercise. (CM-02)

Listen to instructor explanation on how to use an automated CEOI. (TC-02)

Advanced

Prepare an oral squad order from an oral platoon order. (PCO-04)

Prepare a squad OPORD based on information from an oral platoon OPORD. (PCO-04)

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
LHR-01	Introduction to Leadership - Homework reading 10 SR pages.	2C																		
LHR-02	Principles of Leadership - Homework reading 7 SR pages. - Written exercise on the principles of leadership.	2C																		
LHR-03	Human Behavior - Homework reading 12 SR pages and skimming 11 SR pages. - Complete and score written self-assessment exercise.	1.5C; .5PE 5																		
LHR-04	The Character of a Leader - Homework reading 6 SR pages and reviewing 1 SR page. - Written exercise on leadership characteristics.	2C																		
LHR-05	Ethics in Leadership - Homework reading 7 SR pages and reviewing 3 SR pages . - Analyze case studies and make oral and written recommendations.	1C, 1PE																		
LHR-06	Problem Solving and Decision Making - Homework reading 7-page SR. - Discuss problem solving and decision approaches to the scenarios.																			

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
LHR-07	Leadership Styles - Read description and answer verbal questions to assess leader-styles. - Read descriptions and differentiate between authoritarian and participative leader styles. - Participate in role-play problem solving exercises. - Homework, read 11-page SR.	2C; 1PE																		
													10							
													10							
													5							30
																		x		
LHR-08	Reception and Integration of New Personnel - Homework, read 6-page SR.	.85C; .15TV																		
																			x	
LHR-09	Principles of Motivation - Homework, read 11-page SR, review 3-page SR.	2C																		
																			x	
LHR-10	Counseling Techniques - Participate in role-play counseling sessions. - Write a summary for DA Form 4856-R, Record of Counseling. - Homework, read 35-page SR, review 3-page SR, and read a DA Pam.	2.7C; 3PE; .3TV																		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
LHR-12	Contemporary Leadership Challenges - Read 12 scenarios and determine if they represent sexual harassment. - Homework, read 13-page SR and 9-page SR.	2C; 1.85PE; .15PE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
RM-01	Introduction to Maintenance - Homework, read 17 RB pages and scan 10 RB pages.	1C														x				
RM-02	Introduction to Maintenance Forms and Records. - Answer brief questions about maintenance forms and records. - Homework, read 10 RB pages and scan 67 RB pages.	1.25C; .75PE				10						20								
RM-03	Maintenance and Supply - Perform PMCS on equipment IAW manuals and annotate forms. - Read 19 RB pages and scan 3 RB appendices.	1.5C; 1.5PE				5						5				x				
TM-01	Fundamentals of Training *	3																		
TM-02	Individual Training*	12																		
TM-03	After Action Review*	1																		
PS-01	Physical Fitness Training - Conduct squad physical training. - Read 26-page SR.	2C; 10PE; 2PEX									15					x				
PS-02	Drill and Ceremonies*	12																		
PS-03	Wearing of the Uniform - Orally identify uniform violations during classroom exercise. - Homework, Read 17 AR pages, Scan 2 AR chapters.	2C; 2PE								15										

* Curriculum materials unavailable (hours were not counted in totals)

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
PS-04	How to Plan and Conduct an Inspection - Observe an inspection to learn how to plan and conduct inspections. - Homework, read 17 AR pages and scan 2 AR chapters.	1C; 1PE																	30	
PS-05	Maintaining Discipline*	1																		
PS-06	Maintaining Discipline - Homework, read 8-page SH and scan 4-page SH.	1C																		
LN-01	Intro to Map Reading - Identify marginal information and symbols. - Practice determining elevation. - Practice measuring distance and map. - Determine azimuth by adding and subtracting degrees. - Interpreted declination diagram using addition and subtraction. - Use the intersection method to determine location on a map.	6C; 6PE																		
			20									20								
			20									20								
			20									20								
			20									20								
			20									20								
LN-02	Introduction to Land Navigation - Follow demonstration/explanation when practicing centerhold technique with lensatic compass. - Count paces and follow directions on terrain familiarization walk.	2C; 2PE																	5	
			20																60	

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
LN-03	Land Navigation Practical Exercise - Practice land navigation and map reading skills. - Homework, review 7-page SS and 3-page SS.	4PE 30												20			x			
LN-04	Land Navigation Performance Exam - Use land navigation and map reading skills.	4PEX 30												30						
TC-01	Prepare/Operate FM Radio Set AN/PRC-77. - Homework, read 8-page SR.	.5C; .5PE															x			
TC-02	Use and Automated CEOI - Follow instructor explanation on how to use CEOI. - Homework, read 20-page SR.	.75C; 1.25PE												120			x			20
PCO-02	AirLand Battle - Homework, read 6-page SR and 16-page SR.	1.6C; 4TV															x			
PCO-03	Field Sanitation - Homework, read 9-page SR.	1.75C; 25PE															x			
PCO-04	Combat Orders - Prepare an oral squad order from an oral platoon order. - Prepare a squad OPORD based on platoon OPORD. - Present OPORD. - Homework, read 7-page SR.	1C; 1PE														5		5	5	10

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
PCO-05	Troop Leading Procedures - Issue Squad warning orders - Homework, read 5-page SR	1C; 3PE									20						x			
CD0-01 thru CD0-28	Common Tasks - Prepare to conduct training in the field. - Conduct and evaluate training in the field. - Homework, scan 5-page SR.	18PE				15					30			15			x			
CD0-29	Fundamentals of Small Unit Tactics - Participate in recon patrol lead by instructor. - Homework, scan 119-page RB.	4D; 6PE									30						x			
	Examinations I, II, & III	3E												180						
	Map Reading Exam	1E												60						

Basic Non Commissioned Officers Course (BNCOOC)

MATHEMATICAL COMPUTATION

Basic Arithmetic

Use basic math skills during map reading diagnostic exam. (MS-02)

Use basic math skills to complete programmed test for map reading review. (MS-02)

Use basic math skills during multiple choice written map reading exam. (MS-02)

Confirm pace count. (MS-02.2)

Apply addition and subtraction to move to first point on land navigation course with a strip map. (MS-02.2)

Use compass and map (basic math skills necessary) to navigate to other designated points on land navigation course. (MS-02.2)

Advanced Arithmetic

Algebra

WRITING

Words

Write NBC-1 report, using job aid if necessary. (MS-01)

Write answers to map reading diagnostic exam. (MS-02)

Write answers to programmed text for map reading review. (MS-02)

Sentences

Write a counseling statement. (LDRS-02)

Write narrative summaries for DA Forms 1155 and 1156 for wartime casualty reporting. (MS-05)

Phrases

Take written exam to test map reading skills. (MS-02)

Draw a strip map. (MS-02.1)

Draw a strip map for use in the land navigation performance examination. (MS-02.2)

Fill out DA 3161 on property accountability. (RM-02)

SPEAKING

Words

Sentences

Prepared

Participate in role playing of personal and performance counseling sessions. (LDRS-02)

Read and discuss case study of a soldier as a leader/teacher for in-class exercise. (LDRS-05)

Speak with individuals when conducting an inspection. (PS-01)

Practice and conduct drills. (PS-02)

Supervise preventive maintenance checks and services (PMCS) on a piece of equipment, referring to the appropriate manual, if necessary. (RM-01)

READING TO DO

Basic

Read scenarios for personal and performance counseling role play sessions. (LDRS-02)

Read job aid to write NBC-1 report, if necessary. (MS-01)

Read strip map to move to first point on land navigation course. (MS-02.2)

Read instructions to fill out DA Forms 1155 and 1156 on wartime casualty reporting. (MS-05)

Supervise preventive maintenance checks and services (PMCS) on a piece of equipment, referring to the appropriate manual if necessary. (RM-01)

Read instructions to fill out DA Form 3161 on property accountability. (RM-02)

Intermediate

Read and discuss case study of a soldier as a leader/teacher for in-class exercise. (LDRS-05)

Read questions on map reading diagnostic exam. (MS-02)

Read programmed text for map reading review. (MS-02)

Take written exam to test map reading skills. (MS-02)

Read compass and map to navigate to designated points on the land navigation course. (MS-02.2)

Advanced

READING TO LEARN

Basic

Intermediate

Advanced

Skim, read, study, or review various homework assignments, including USAMA-produced supplementary readings and student handouts, and FMs, TMs, ARs and DA Pams. (most lessons).

LISTENING TO DO

Basic

Prepare NBC-1 report (in class) using a job-aide if necessary (MS-01)

Follow directions on using the lensatic compass to measure direction. (MS-02.1)

Intermediate

Participate in role playing of personal and performance counseling sessions. (IDRS-02)

Read and discuss case study of a soldier as a leader/teacher for in-class exercise. (IDRS-05)

Advanced

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
LDRS-01	Leadership Doctrine - Homework, read 118 FM pages and 3-page SR.	1C																		
LDRS-02	Personal and Performance Counseling - Participate in role-playing sessions. - Write a Counseling Statement. - Homework, read 60 FM pages.	2C; 1PE					20			10			5						10	
LDRS-03	Duties and Responsibilities of the NCO - Homework, read 58 FM pages and 11 AR pages.	2C; 1TV																		
LDRS-04	Battlefield Leadership - Homework, skim 38 FM pages, read 26 FM pages.	1C																		
LDRS-05	The Leader as Teacher - Read and discuss case study of a leader as teacher. - Homework, skim 52 FM pages, read 52 FM pages and 8SR pages.	1C								5			10						5	
LDRS-06	Taking Charge - Homework, scan 66 FM pages.	1C																		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																			
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do				
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
MS-01	NBC - Prepare NBC-1 report using job-aide if necessary. - Homework, scan 16 page SH.	3C; 1PE; 1TV				5														5		
MS-02	Map Reading Review - Complete map-reading diagnostic exam - Complete programmed text for map reading review. - Take written map-reading exam. - Homework, study 68 FM and PT pages	2E	10			10						60										
			15			15						90										
			10			10						60										
MS-02.1	Land Navigation - Follow directions using the compass to measure direction - Draw a strip map.	3C; 1PE; 1TV																				
						5																
MS-02.2	Land Navigation Performance Exam - Construct a strip map. - Confirm pace count. - Use strip map to move to first point. - Using compass and map to navigate to designated points. - Homework, review 3-page SS.	.5C; .5PE				5																
			5																			
			5																			
			15																			

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
MS-03	AirLand Battle - Homework, read 20 FM pages.	1C																		
MS-04	Graves Registration - Homework, scan 5-page SH.	1C																		
MS-05	Wartime Casualty Reporting - Complete DA Forms 1155 & 1156. - Homework, scan entire FM.	1C						20						10						
PS-01	Conduction a Military Inspection - Speak with individuals when conducting and inspection. - Homework, read 58 FM pages, scan AR.	1C									20									
PS-02	Drill and Ceremonies - Practice and conduct drills. - Homework, read 8 FM chapters and sections.	1C									30									

Academic Ratings of NCOES Common Leader Training Lessons

BNCOOC, Page 4 of 4.

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
RM-01	Maintenance - Supervise PMCS on equipment IAW references. - Homework, read 18 DA Pam pages and SH.	3C								20			10				x			
RM-02	Property Accountability - Complete DA Form 3161. - Homework, read 3 DA Pam pages and 2 ARs.	1.75C; 25PE				15							5				x			
RM-03	Enlisted Promotions - Homework, scan 1 AR chapter.	1C															x			
RM-04	Enlisted Evaluation Reporting System - Homework, read 16 AR pages.	2C															x			
RM-05	Military Awards Program - Homework, read 17 AR pages, scan 6 AR chapters, and scan 3-page SH.	1C															x			
	Common Leader Training Exam - Multiple choice exam.	1E											60							

Advanced Non Commissioned Officers Course (ANCOOC)

MATHEMATICAL COMPUTATION

Basic Arithmetic

Compute the clarity index of a given paragraph. (CM-01, hour 3)

Rewrite the given paragraph and recompute the clarity index. (CM-01, hour 3)

Compute the clarity index of the essay written for hour 1. (CM-01, hour 3)

Compute the clarity index of the information paper written for hour 6. (CM-01, hour 7)

Compute the clarity index, edit, and rewrite the barracks SOP in the reference book for the Army Writing Program. (CM-01, hours 8 & 9)

Read maps and calculate distances, azimuths, etc. to complete orienteering course. (PS-01)

Take multiple choice diagnostic map reading exam (requires basic math skills to determine distance, elevation, azimuth, etc.).

Advanced Arithmetic

Algebra

WRITING

Words

Take notes to arrive at a solution during practical exercise on leadership concepts. (LDR-02)

Sentences

Revise sentences to make them shorter and more understandable. (CM-01, hour 1)

Phrases

Write an essay approximately 250 words, on any topic. (CM-01, hour 1)

Discuss written situation, take notes and present plan of action to motivate a platoon. (LDR-03)

Write answers to punctuation, agreement/reference, and sentence construction exercises. (CM-01, hour 4)

Write answers to passive voice/active voice, action vs. being verb, and style exercises. (CM-01, hour 5)

Take notes during practical exercise on safety. (PS-05)

Discuss what actions to take during terrorist attack or possible terrorist attack, take notes, and present ideas to class during practical exercise. (MS-03)

Answer written home safety questionnaire. (MS-03)

Answer written practical exercise questions on the use of the automated CEOI. (MS-04)

Write answers to programmed text on military symbols and overlay techniques. (MS-05)

Plot a hasty protective minefield on DA Form 1355-1-R. (MS-06)

Complete written grammar exercises. (CM-01, hour 2)

Rewrite given paragraph and recompute the clarity index. (CM-01, hour 3)

Write a memorandum for record. (CM-01, hours 8 & 9)

Write a training and evaluation plan, reading appropriate manuals if necessary. (PS-02)

Write OPORD or FRAGO for training management lesson. (PS-02)

Write platoon OPORD based on written company OPORD. (MS-07)

Write platoon warning order based on written scenario. (MS-07)

Write platoon defense plan based on given situation. (MS-08)

Draw a platoon defensive sketch. (MS-08)

Rewrite the essay from hour 1. (CM-01, hour 3)

Write an information paper on any Army related topic. (CM-01, hour 6)

Revise information papers from hour 6. (CM-01, hour 7)

Draft a letter of commendation. (CM-01, hours 8 & 9)

Compute the clarity index, edit, and rewrite the barracks SOP in the reference book for the Army Writing Program. (CM-01, hours 8 & 9)

Write a recommendation for award. (CM-01, hours 8 & 9)

Write a military briefing based on information paper written during Army Writing Program. (CM-02)

SPEAKING

Words

Sentences

Prepared

Discuss leadership concepts during practical exercise. (LDR-02)

Present briefing for leadership concepts practical exercise. (LDR-02)

Discuss platoon situation, take notes, and present plan of action to motivate a platoon. (LDR-03)

Discuss problems and solutions to safety scenarios. (PS-05)

Present solutions to safety scenarios. (PS-05)

Discuss what actions to take during terrorist attack or possible terrorist attack and present ideas to class during practical exercise on terrorism counteraction. (MS-03)

Practice and present briefing of information paper. (CM-02)

READING TO DO

Basic

Provide a plan of action to motivate a platoon based on a written situation; discuss the situation, take notes, and present plan. (LDR-03)

Complete written multiple choice exercise to choose the most correct meaning of words without using a dictionary. (CM-01, hour 1)

Revise sentences to make them shorter and more understandable. (CM-01, hour 1)

Complete written grammar construction exercises. (CM-01, hour 2)

Read given paragraph to compute the clarity index. (CM-01, hour 3)

Intermediate

Read class notes and materials to discuss leadership concepts during practical exercise. (LDR-02)

Read essay written for hour 1 to compute the clarity index. (CM-01, hour 3)

Read information paper written for hour 6 to compute clarity index. (CM-01, hour 7)

Read barracks SOP in the reference book for the Army Writing Program to compute the clarity, then index, edit, and rewrite. (CM-01, hours 8 & 9)

Advanced

Complete written punctuation, agreement/reference, and sentence construction exercises. (CM-01, hour 4)

Complete written passive voice/active voice, action vs. being verb, and style exercises. (CM-01, hour 5)

Read safety hazard or accident scenarios. (PS-05)

Read terrorism counter-action practical exercise and discuss what actions to take during terrorist attack or possible terrorist attack and present ideas to class. (MS-03)

Read home safety questionnaire. (MS-03)

Read DA Form 1355-1-R to plot a hasty protective minefield. (MS-06)

Read company OPORD to write platoon OPORD. (MS-07)

Read scenario to write platoon warning order. (MS-07)

Complete platoon defense plan based on written practical exercise. (MS-08)

Check squad sector sketches for accuracy. (MS-08)

Read platoon defense plan to prepare a platoon defensive sketch. (MS-08)

Prepare a military briefing based on the information paper written during the Army Writing Program. (CM-02)

Read maps and calculate distances, azimuths, etc. to complete orienteering course. (PS-01)

Write training and evaluation plan, reading appropriate manuals, if necessary. (PS-02)

Read programmed text on military symbols and overlay techniques. (MS-05)

Read multiple choice diagnostic map reading exam.

Read multiple choice exams: diagnostic reading and writing exam, end of week exams, and end of common training comprehensive exam.

READING TO LEARN

Basic

Intermediate

Advanced

Skim, scan, read, study, or review various homework assignments, including USSMA-produced student handouts and supplementary readings and FMs, TMs, ARs, and DA Pams. (most lessons)

LISTENING TO DO

Basic

Intermediate

Advanced

Participate in five question listening test. (CM-03)

Discuss leadership concepts during practical exercise. (LDR-02)

Provide a plan of action to motivate a platoon based on a written situation; discuss the situation, take notes, and present plan. (LDR-03)

Discuss problems and solutions to safety scenarios. (PS-05)

Discuss what actions to take during terrorist attack or possible terrorist attack and present ideas to class during terrorism counter-action practical exercise. (MS-03)

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
LDR-01	Perspectives on NCO Leadership - Homework, study 29 SR pages and 113 FM pages and read 17 SR pages and 15 AR pages.	3C																		
LDR-02	Application of Leadership Concepts - Discuss leadership concepts during PE. - Take notes to arrive at a solution during PE. - Present a briefing on solution during PE. - Homework, read 102 FM pages.	1C; 3PE				15			30		15	10							30	
LDR-03	Leadership that Motivates - Provide a plan of action to motivate a platoon, based on a scenario; discuss, take notes, present plan. - Homework, review 60 FM pages and study 34 FM pages.	2C; 2PE										10		30	10					30
LDR-04	Leadership Counseling - Homework, review 42 FM pages and read 54 FM pages.	1C																		
LDR-05	Managing Soldier Performance in Continuous Operation.	1C																		
CM-01	The Army Writing Program (AWP) - Homework, read dictionary preface, scan grammar book, read selected sections of grammar book	7C, 8PE																		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
AWP Hour One	- Multiple-choice vocabulary exercise. - Sentence-revision exercise. - Write a 250-word essay.						10					10								
AWP Hour Two	- Grammatical construction exercise.						15													
AWP Hour Three	- Compute the clarity index of a given paragraph. - Rewrite a paragraph and recompute clarity index. - Compute the clarity index of the essay and rewrite.		10									5								
AWP Hour Four	- Complete punctuation, agreement, reference, and sentence construction exercises.		5			5						5								
AWP Hour Five	- Complete passive/active voice, action/being and style exercises.						20								5					
AWP Hour Six	- Write an information paper on any Army topic.																			
AWP Hour Seven	- Compute the clarity-index of hour-six paper. - Quick-screen edit paper. - Revise paper.		5															5		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
AWP Hours Eight & Nine																				
	- Draft a letter of Commendation.							12												
	- Prepare a memorandum for the record.					20														
	- Edit and rewrite the barracks SOP in the Reference Book.							10				10								
	- Write Recommendation for Award.							30												
CM-02 Effective Military Briefings																				
	- Prepare briefing based on AWP information paper.	1C, 6PEX						30				30								
	- Practice and present briefing.																			
	- Homework, read 11 SR pages.																			
CM-03 Effective Listening Test																				
	- Participate in listening test.	1C																		
	- Homework, read 6-page SR.																			5
RM-10 Supply Management																				
	- Homework, read 80 FM, pages, 25 AR paragraphs, 8DA Pam pages, and study 14 FM pages..	3C																		
RM-20 Army Maintenance Doctrine																				
	- Read 2 AR pages and scan 26 FM pages.	2C																		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
RM-21	Preparation for the PMCS - Homework, read 10 DA Pam pages, read appropriate - 10 TM and lube order and scan DA Pam glossary.	1C																		
RM-30	Personnel Management - Homework, scan 3 ARs.	2C																		
RM-31	The Enlisted Promotion System - Homework, read 25 AR pages and and 2 AR chapters.	1C																		
RM-32	Wartime Unit Personnel Support - Homework, read 2 FM chapters and 4 TC chapters, and study 2 TC chapters.	1C																		
PS-01	Land Navigation - Read maps and calculate distances and azimuths. - Read 2-page SR and GTA and review an FC.	2C; 6PE																		
PS-02	Training Management - Write training and evaluation plan, IAW appropriate manuals. - Write OPOD and FRAGO. - Read 56 FM pages and review 6 FM chapters.	5C; 5PE																		

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
PS-03	NCO Development Program - Homework, read 14-page SR.	1C																		
PS-04	Military Justice - Read 5 SR pages and 5 SH pages.	2C															x			
PS-05	Safety - Read safety hazard and accident scenarios. - Discuss problems and solutionsto scenarios. - Take notes during discussion. - Present solutionsto scenarios. - Homework, read 17-page SR.	IC; IPE										5								
									10			10								10
																	x			
MS-01	The Threat - Homework, completeProgrammed Text. - Homework, study 2 FM sections, 18 DA Pams, and 2 appendices, read 7 FM chapters, and scan 3 GTAs.	5C															x			
																	x			
MS-02	AirLand BattleOverview - Homework read 22 SR pages.	1C															x			

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
MS-03	Terrorism Counteraction - Discuss what action to take and present ideas to class. - Complete home safety questionnaire - Homework, study 1 TC chapter and 4 appendixes, read DA Pam, and skim FC and AR sections.	2C				10			15			10					15			
						10						10								
MS-04	Tactical Communications - Learn and practice using the CEOI. - Homework, study 31-page SR.	1C; 3PE				20								20						
MS-05	Military Symbols and Overlay Techniques - Complete programmed text on military symbols and overlay techniques.	1C; 1PE				60								60						
MS-06	Construction Minefields and Wire Obstacles - Plot a hasty protective minefield. - Homework, study 13 FM pages.	1C; 1PE				20						20								
MS-07	Platoon Operations - Write platoon OPORD based on Company OPORD. - Write platoon warning order based on written scenario. - Homework, read FM, and FC sections and 15 annexes.	2C, 2PE													20					
															15					

NCOES Common Leader Training Lessons			Lesson Minutes and Level of Academically Demanding Elements																	
Number	Name and Academic Elements	Hours	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
MS-08	Platoon Defense	3C; 2PE																		
	- Complete platoon defense plan based on a scenario.						10						10							
	- Check squad sector sketches for accuracy.												5							
	- Prepare a platoon defensive sketch from platoon defensive plan.						10						10							
	- Homework, read 6 FM sections.																x			
MS-09	Platoon Defense of Urban Terrain (MOUT)	2C																		
	- Homework, read 2 FM chapters.																x			
	Reading and Writing Diagnostic Test (TABLE D)	3E												180						
	Map Reading Diagnostic.	1E 10												60						
	End of Week Exams.	2E												120						
	Comprehensive Exam.	2E												120						

APPENDIX D

MOS-Specific Lessons

11B

BNOCC D- 1

ANCOC D- 5

31C

BNOCC D-14

ANCOC D-23

63B

BNOCC D-40

ANCOC D-54

11B ENOC

MATHEMATICAL COMPUTATION

(none)

WRITING

Words

Fill out Form 2404 and other maintenance-related forms (ENCO37).

Sentences

Prepare and issue an oral squad operation order, including drafting the order (ENCO36).

Prose

SPEAKING

Words

Plan, lead, and participate in patrols in classroom and field training (ENCO41).

Give and receive orders during squad's participation in ARTEP exercises (ENCO40).

Sentences

Issue a warning order (ENCO36).

Prepare and issue an oral squad operation order, including drafting the order (ENCO36).

Issue a fragmentary order (ENCO36).

Prepared

READING TO DO

Basic

Multiple-choice examinations (ENCO48, ENCO50, & ENCO30).

Perform pre- and post-operational checks on squad equipment IAW TMs (ENCO37).

Intermediate

Advanced

READING TO LEARN

Basic

Intermediate

Advanced

(none)

LISTENING TO DO

Basic

Give and receive instructions during squad's participation in ARTEP field exercise (ENCO40).

Intermediate

Follow hands-on demonstration/instruction on 20 infantry tactics (such as issuing orders, designating fighting positions, analyzing terrain, reacting to enemy fire, etc.) (ENCO36).

Advanced

Follow hands-on demo/instruction for operator maintenance, alignment, & arm/disarm procedures on Cal .50 machine gun, M60 machine gun, M249 SAW, M201A rocket launcher, 90mm RCLR, M47 Dragon, M18A1 Claymore mine, and M203 grenade launcher (ENCO38).

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level									
Lesson and Academic Elements	Time (and No. of Tasks)	math	writing	speaking	reading to do	reading to learn	listening to do				
BNCO38 Tactics	12C; 20PE2 (20 tasks)	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3	1 : 2 : 3				
- Hands-on demonstration/instruction on all tasks											
- Issue a warning order (1 task)				1							20
- Prepare and issue an oral squad operation order including drafting the order (1 task)			1	1							
- Issue a fragmentary order (1 task)				1							
BNCO41 Patrolling	8C; 24PE2 (9 tasks)										
- Classroom and field training planning, leading, and participating in patrols (all tasks).				32							
BNCO38 Weapons Training	8 PE1 (13 tasks)										8
- Hands-on demonstration/instruction in operator maintenance, alignment, and arm/disarm procedures for eight infantry weapons (all tasks).											
BNCO48 Tactics Examination	2E3								2		
- Multiple-choice exam.											
BNCO49 Weapons Examination	4E1										
BNCO39 Infantry Squad Drills	1C										

Lesson and Academic Elements	Time (and No. of Tasks)	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BNCO37 Maintenance	18PE1 - Perform pre-operational and post-operational checks and services on squad weapons IAW references - Complete Form 2404 for each weapon																		
BNCO40 Situational/Field Training Exercise	40PE2 - Give and receive orders during squads participation in ARTEP exercise.				1			40									40		
BNCO50 Diagnostic Examination	2E3 - Multiple-choice exam															2			
BNCO30 End of Course Comprehensive Test	1E3 - Multiple-choice exam.															1			

11B ANCOG

MATHEMATICAL COMPUTATION

Basic Arithmetic

Map coordinate reading during orienteering and land navigation exercises (BMEE99, WJEE05, & WJEE06).

Advanced Arithmetic

Map coordinate reading when calling for fire during field training exercises (BMEE24, BMEE99).

Algebra

WRITING

Words

Develop platoon sector sketches (BMEE50 & BMEE98).

Prepare range cards (BMEE99).

Fill out JINTACCS situation report template (CTEE05).

Prepare DA form 2404, given a scenario and appropriate TM's and operator references (WPPE62).

Extract data from DA Form 2407 and annotate data on DA Form 314, IAW DA Pam 738-750 (WPPE62).

Perform FMCS or troubleshooting on 23 different systems IAW TMs and filling out DA Form 2404 (WPPE62).

Sentences

Write an execution paragraph for platoon from a PE scenario (BMEE01).

Complete a mission statement for a platoon from a PE scenario (BMEE01).

In classroom, determine commander's intent and write a mission statement and execution statement of an operation order (CMEE01).

In a classroom scenario write a restated mission statement, platoon leader's intent, and execution paragraph (CMEE04).

Prepare realistic operations order during field exercise (BMEE24).

Prose

SPEAKING

Words

Issue oral orders during field training exercise (BMEE98 & BMEE24).

Sentences

Issue oral reports during training exercises (BMEE51).

Prepared

Present a period of instruction on tactical employment of company weapons (BMEE50).

READING TO DO

Basic

Write and execution paragraph for a platoon from a PE scenario (BMEE01).

Complete a mission statement for a platoon from a PE scenario (BMEE01).

Develop a platoon sector sketch IAW FMs (BMEE50).

Knock out bunkers using complex sketches (TXEE82).

Map reading in tactical objectives (BMEE94, BMEE24, BMEE98, BMEE99, WJEE05, WJEE06, & WJEE12).

Intermediate

Extract tabulated data, troubleshooting information & FMCS criteria and determine the basic and additional issue items from and operator's manual (WPFE62).

Prepare DA form 2404, given a situation, references and appropriate operator's manual. (WPFE62).

Extract data from DA Form 2407, given references and a situation (WPFE62).

Extract data and identify a reporting period from DD Form 314, given references and a situation (WPFE62).

Extract data from DA Form 2407 and annotate data on DD Form 314, IAW references (WPFE62).

Extract data from equipment identification card (WPFE62).

Extract data from DA Form 2401 (WPFE62).

Extract data from a -20P manual (WPFE62).

Advanced

READING TO DO (continued)

Intermediate

Extract data from a prescribed load list computer printout (WPPE62)

Using a microfiche reader and references, extract data from the Army Master Data File (WPPE62).

Given references, extract data from DA Form 2064 (WPPE62).

Given references, extract data from DA Form 2404-14 (WPPE62).

Use DD Form 314 and references to determine when service is due (WPPE62).

Extract data from a -20 manual (WPPE62).

Extract data from a lube order (WPPE62).

Establish a preventative maintenance training program IAW appropriate manuals (WPPE62).

Perform PMCS or troubleshooting on 23 different systems IAW TMs and fill out 2404 forms (WPWW62).

READING TO LEARN

Basic

Intermediate

Advanced

(none)

LISTENING TO DO

Basic

Intermediate

Advanced

Receive oral operations orders (TXEE82, EMEE98, EMEE99, & EMEE24).

Follow hands-on demo/ instructions on night scope operation procedures. (EMEE51).

Fill out JINTACCS situation report template (CTEE05).

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																	
Lesson and Academic Elements	Time (and No. Training Obj.)	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BMEE01 Fundamental Offense	4PE3 (4TOs) - Write an execution paragraph for a platoon from a written PE scenario.(1 TO) - Write a platoon mission statement from a written PE scenario (1 TO).					1						1							
BMEE50 Tactical Employment of Company Weapons	4PE1 (4TOs) - Present a period of instruction . - Develop a platoon sector sketch IAW references								1										
BMEE70 Battalion Task Force/Company Team	3C					1													
CMEE01 Platoon Offensive Operations	4C (12TOs) - Determine commander's intent and write a mission statement and execution statement of an operation order (1TO).								2										
CMEE04 Platoon Defensive Operations*	4C (10TOs) - Given a scenario including operation order and map, write a restated mission statement, platoon leaders intent, and execution paragraph (1TO)								2										
CMEE62 Low-intensity Conflict Overview	1C																		
TXEE82 Tactical Leadership Course	45PE1 (20 TOs) - Recieve and follow oral operations orders. - Knock out bunkers using complex sketches.														2			4.5	

Lesson and Academic Elements	Time (and No. Training Obs.)	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BMEE24 Light Infantry Offense and Defense FTX 76 PE2; (17 TOs) - Recieve and follow oral operations orders (all TOs) - Read maps (4TOs) - Read map coordinates when calling for fire (1 TO). - Prepare written operations orders (1TO). - Give oral operations orders and reports (2 TOs).			4.5			4.5					18						76		
BMEE27 Low Intensity Conflict 31 PB1										9									
BMEE68 Tactical Road March/ Bivouac 1C; 14PE3																			
BMEE98 Fundamentals of Mechanized Infantry (TEWT/STX) Part 1 48PE1; 14PE2 (44 TOs) - Recieve and follow oral operations orders (3TOs). - Issue oral operations orders (27 TOs). - Map reading (4 TOs) - Draw platoon sector sketch (1 TO). - Determine coordinates for calling and adjusting indirect fire (1 TO).		1.3		1.3				36			5.2						4		
BMEE99 Fundamentals of Mechanized Infantry (TEWT/STX) Part 1 12PE1; 4 PE2 (16 TOs) - Recieve and follow oral operations orders (4 TOs). - Prepare range cards (1TO). - Map reading (5 TOs). - Map coordinate reading (4 TOs).					1						6						5		

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BMEE51 Patrolling - Follow hands-on demo/instructions on night scope operations procedures (4 TOs). - Give oral orders or reports (4 TOs).	15PE1 (9TOs)																	7	
CIEE12 The Soviet Army	2C																		
DTEE99 Rifle Marksmanship Training Management	3C																		
CLEE11 Intro to Military Leadership	1C; 3PE3																		
CLEE16 Unit Assessment and Taking Charge	1.5 PE3; 5C																		
DPEE21 Family Advocacy Program	1C																		
WJEE05 Orienteering - Given a map, compass, and protractor, locate 5 out of 10 stakes correctly.	1C; 3PE2 4												4						
WJEE06 Land Navigation Exercise (Review) - Using map, compass, and protractor, locate points on a map.	8PE2 4												4						
WJEE12 Mounted Land Navigation - Map reading.	5C; 3.5PE1												4						
WJEE17 Aerial Photography	2C																		
BMEE00 DA Career, EPMS/EES Briefing	2.5C																		

Lesson and Academic Elements	Time (and No. Training Obs.)	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
DTEE88 Delta Force Information Briefing	1C																		
CTEE05 JINNTACCS Overview	1C				1												1		
WPTEE62 Infantry Weapon Systems Maintenance and Procedures	12C; 47.5PE1 (54 TOs)																		
- Extract tabulated data, troubleshooting information, & PMCS criteria and determine the basic and additional issue items form an operators manual (1 TO).													1						
- Prepare DA Form 2404, given a situation and appropriate references (1 TO).					1								1						
- Extract data from DA Form 2407, given references and a scenario (1 TO).													1						
- Extract data and identify a reporting period from DD Form 314, given references and a scenario (1 TO).													1						
- Extract data from DA Form 2407 and annotate data on DD form 314, IAW references (1 TO).					1								1						
- Extract data from equipment identification card, IAW references (1 TO).													1						
- Extract data from DA Form 2401 (1 TO).													1						
- Extract data from the -20 manual (3TOs).													3						
- Extract data from a prescribed load list computer printout (1 TO).													1						
- Use a microfiche reader and references to extract data from the Army Master Data File (1TO).													1						
- Given references, extract data from a DA Form 2084 (1 TO).													1						
- Given references, extract data from a DA Form 2408-14 (1 TO).													1						
- Use DD Form 314 and appropriate references to determine when services are due.													1						

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
WPEE62 (Continued)																			
- Extract data from a lube order (1 TO).																			
- Perform PMCS or troubleshooting on 23 different systems IAW TMs and filling out Form 2404 (23 TOs)					23						1								
BMEE40 Basic Rifle Marksmanship	2PE1																		
WVEE49 Rifle Marksmanship	1C; 9PE1																		

31C ENOC

MATHEMATICAL COMPUTATION

Basic Arithmetic

Map reading math associated with field PE "Select Team Radio Site" (C02-LP1)

Advanced Arithmetic

Calculate frequencies (using formulas) in written PE on frequencies and radiowave propagation (E01-LP1).

Calculate antennae length and frequencies in PE on directing installation of field expedient antennae (E01-LP2).

Algebra

WRITING

Words

PE filling out form 2062 (hand receipt) and other inventory documents (B01-LP1).

Complete radio maintenance forms from scenario in PE (B02-LP1).

Performance examination filling out maintenance documents (B03-CTI).

Type written and verbal JINTACCS messages onto teletype (D01-LP1).

Short answer PEs on selecting team radio sites, net operating procedures, frequency and radio wave propagation, field-expedient antennae installation (C02-LP1, D03-LP1, E01-LP1, & E01-LP2).

Sentences

Paragraphs

PEs reading technical bulletins and FM chapters and writing paragraphs describing COMSEC topics (C01-LP1 & C01-LP2).

PE reading FM chapters and writing paragraphs describing electronic warfare topics (C01-LP1).

WRITING (continued)

words

Complete "Troubleshooting Power Systems Worksheet" (E02-LP1).

Fill out forms related to team PE on radiotelephone and radioteletype system operation (F03-LP1 & F04-LP1).

SPEAKING

Words

Send and receive JINTACCS voice messages (D01-LP1).

Practice directing dipole and field-expedient antennae installation (E01-LP1 & E01-LP2).

Sentences

Supervise and participate in student team radio-net operations PE (D02-LP1).

Issue radioteletype installation, operation, and troubleshooting instructions (E03-LP2).

Direct student team in installing and operating the TSEC/KG84A encryption device, installing and operating radioteletype system, and performing tactical system FMCS (F03-LP1, F04-LP1, F05-LP1).

Prepared

READING TO DO

Basic

PE filling out form 2062 hand receipt and other inventory documents (B01-LP1).

Complete maintenance forms in PE from scenario (B02-LP1).

Read operations orders and maps in field PE "Select Team Radio Sites (C02-LP1).

Short-answer PEs on selecting team radio sites, net operating procedures, field-expedient antennae construction, and radio-teletype techniques (C02-LP1, D03-LP1, E01-LP2, E03-LP2).

Type written and verbal JINTACCS messages onto teletype (D01-LP1).

Fill out forms associated with field PE directing the installing and operating radiotelephone and radioteletype systems (F03-LP1 & F04-LP1).

Multiple-choice examinations (A02-LP1, C03-CTI, D04-CTI, E04-CTI, G01-CTI).

True/false directed energy warfare awareness quiz (A03-LP1).

Performance examination filling out maintenance documents (B03-CTI).

Intermediate

Inspect installed radio systems, power systems, and generators IAW TMs and perform operator's troubleshooting if necessary (C02-LP1, E02-LP1, & E02-LP2).

Supervise and perform net operating procedures according to TMs (D02-LP1).

Short-answer PE on frequency and radiowave propagation, requiring students to calculate from charts & tables (E01-LP2).

Install, operate, and troubleshoot teletype-writer, radio telephone systems, and TSEC/KG-84A encryption device IAW TMs (E03-LP2, F02-LP1, & F03-LP1).

Direct student team members to perform tactical system PMCS according to TMs (F05-LP1).

End-of-course performance examination identifying and correcting operational faults in various systems IAW TMs (G01-CTI).

Performance exam identifying and correcting operational faults in radioteletypes IAW TMs (E04-CTI).

Advanced

Use Automated CEOI in PE. (D02-LP1).

READING TO LEARN

Basic

"Troubleshooting Power Systems" worksheet (E02-LP1).

Intermediate

PEs reading technical bulletins and FM chapters and writing paragraphs describing COMSEC topics (C01-LP1 & C01-LP2).

In-class eight-page "Information Mission Area" reading assignment (A06-LP1).

Advanced

LISTENING TO DO

Basic

Follow procedures for filling out maintenance forms in class (B02-LP1).

Follow instructions in class for sending and handling JINTACCS messages (D01-LP1).

Follow hands-on demo/instruction of procedures in directing antennae installation (E01-LP1 & E01-LP2).

Intermediate

Learn to recognize electronic warfare sounds in class and in PE. (C01-LP3).

Supervise and be part of team in radio net operations field PE (D02-LP1).

Follow hands-on demo/instruction of procedures for installing, operating and troubleshooting power systems, radioteletypes, and encryption device (E02-LP1, E03-LP1, F02-LP1).

Advanced

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																	
Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
A01-LP1 Orientation	1C																		
A02-LP2 Diagnostic Exam - multiple-choice exam.	2E3																		
A03-LP1 Directed Energy Warfare Awareness - True/False quiz.	.75C; 25PE3																		
A04-LP1 Mobile Subscriber Equipment	1TV																		
A05-LP1 Leveler Training (Typing Test and Remediation)	4PE3																		
A06-LP1 Information Mission Area (IMA) - In-class IMA reading assignment.	1C																		
B01-LP1 Inventory Radio Equipment - PE filling out form 2082 (hand receipt) and other inventory documents.	2C; 3PE3																		
B02-LP1 Maintenance Procedures - Complete maintenance forms for scenario in PE - Follow procedures in class.	3C; 3PE3																		

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
BO3-CTI TAMMS Examination	1E3 - Exam filling out maintenance documents IAW references.																		
C01-LP1 Conduct Communications Security (COMSEC) Inspections	4C; 1PE3 - PE reading FM and Tech Bulletin chapters and writing paragraphs about COMSEC issues.																		
C01-LP3 Electronic Warfare	3C; 2PE3 - Recognize EW sounds in class & PE. - Read 8 FM chapters in class PE and write paragraph describing EW topics.																		
C02-LP1 Select Team Radio Sites	2C; 6PE1 - Map-reading math associated with field PE. - Read OP orders and maps in field PE. - Short-answer PE.																		
C02-LP2 Inspect Installed Radio System	2C; 5PE1; 1PE3 - Inspect according to TMs and troubleshoot if necessary.																		
C03-CTI Examination-Radio Operations	1E3 - Multiple choice exam.																		
D01-LP1 Supervise JINTACCS Message Preparation and Handling	2C; 2PE3 - Follow JINTACCS instruction in class. - Type JINTACCS messages onto teletype machine. - Send and receive JINTACCS voice message.																		

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D02-LP1	Supervise Radio Net Operations 2C; 5PE3 - Use CEOI in PE. - Supervise and be part of student team in radio net PE															5			
D03-LP1	Net Operating Procedures 3C; 6PE1 - Supervise and perform net operating procedures in PE according to TMs. - Short-answer PE.												6						
					1						1								
D04-CTI	Examination - Net Operations 1E3 - Multiple choice exam.													1					
E01-LP1	Radiowave Propagation and Antennae Construction 3C; 5PE1; 1PE3 - Practice procedures for directing antennae installation. - Short-answer PE on frequency and radiowave propagation using charts.								5										5
				1							1								
E01-LP2	Direct Installation of Common HF and Field Expedient Antennae 2C; 6PE1; 1PE3 - Practice procedures for directing field expedient antennae installation. - Short-answer PE on field expedient antennae installation. - Hands-on demo/instruction in class.																		
				1						6						1			2
E02-LP1	Operating and Troubleshooting Power Systems 2C; 2PE3 - Hands-on demo/instruction in class. - Use manual to perform operator troubleshooting. - Complete "Troubleshooting Power Systems" worksheet.																		2
																	1		

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
E02-LP2 Inspect Installed Generators - Inspect generators according to TM.	1C; 2PE3																		
E03-LP2 Radioteletype Techniques - Hands-on demo/instructions in class. - Issue installation instructions. - Short answer PE. - Install and troubleshoot teletypewriter IAW TM.	4C; 12PE1; 2PE3																		4
E04-CTI Radioteletype Techniques Exam - Multiple choice exam. - Performance exam correcting operational faults IAW TMs	3E1; 1E3																		
F01-LP1 Introduction to Tactical System Operation	2C																		
F02-LP1 Supervise Installation/Operation and Trouble-shooting of TSEC/K6-84A Encryption Device - Hands-on demo/instruction in class - Install, operate, and troubleshoot TSEC IAW TM	2D; 3PE1																		2
F03-LP1 Radio Telephone Systems Operation - Direct student team in installing and operating radio telephone system - Inspect installed system IAW TMs. - Fill out associated forms.	10PE1																		

Lesson and Academic Elements		Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
F04-LP1	Radioteletype System Operation	16PE1 - Direct student team members in installing and operating radioteletype system - Inspect installed system IAW TMs. - Fill out associated forms.								4										
G01-CT1	End of Course Exam	6E1; 2E3 - Hands-on performance exam identifying operational faults IAW TMs. - Multiple choice exam.																		
F05-LP1	Tactical System Operator Maintenance	8PE1 - Direct student team members performing PMCS according to TMs.								4										

31C ANCOG

MATHEMATICS

Basic Arithmetic

Mathematical operations in PC database management PE (B04-LP1).

Mathematical operations in PC spreadsheet PE (B05-LP1).

Operations with frequencies and numeric codes in automated CEOI PE (F01-LP3).

Use map coordinates in PE "Plan a Messenger Service" (H05-LP1).

Use map coordinates when planning field cable wiring system (J05-LP2).

Advanced Arithmetic

Calculate radio frequencies using formula during antennae and radio wave propagation PE (F04-LP3).

Determine radio frequencies in scenario using scales and graphs (J04-LP2).

Math associated with map reading in map reading review PE (J05-LP1).

Algebra

WRITING

Words

Transcribe printed text in PC word processing and WriteOne screen editor PEs (B03-LP1 & B08-LP1).

Transcribe text into JINTACCS format in PE (C02-LP1)

Short-answer PEs on directed energy warfare, automated CEOI, and radiowave propagation, (D02-LP1, F01-LP3, & F04-LP3).

Fill out Army Maintenance Management System (TAMMS) forms during TAMMS PE (F07-LP1)

Sentences

Provide written solutions to Radiotelephone procedure problem scenarios (F01-LP4)

Reformatting text into ACP 126 transmission format during ACP126 PE (F04-LP2)

Write Communication-Electronics annex to operation order from written Battle scenario (J01-LP2).

Prose

WRITING (continued)

Words

Fill out circuit designation forms, circuit routing lists, Patch Panel Worksheets, and tandem circuit worksheets from written PE scenarios (HO1-LP1, HO1-LP2, HO1, LP3, & HO1-LP4)

Fill out forms in PE "Check operation of tactical telecommunications center" (HO3-LP1)

Complete written PE "Plan a messenger service" (HO4-LP1)

Fill out document destruction forms from written scenario in PE (HO5-LP1)

Complete circuit switchboard diagram PE (IO1-LP6)

Plan a multichannel communication system from a written scenario (JO6-LP2).

Prepare autoswitching equipment computer program worksheets from PE scenarios (IO1-LP8)

Enter Autoswitching equipment computer programs into PC (IO1-LP11)

Prepare field cable wiring systems, circuit routing lists, area telephone traffic diagrams, TTY traffic diagrams, and HF radio net diagrams from written scenarios (JO2-LP1, JO2-LP2, JO3-LP1, JO4-LP1).

SPEAKING

Words

Sentences

Prepared

Complete PE directing AIT student teams to operate radio systems (K01-LP3)

READING TO DO

Basic

Intermediate

Advanced

Read Army Maintenance Management System (TAMMS) forms during TAMMS conference (F07-LP1)

Fill out circuit designation forms, circuit routing lists, Patch Panel Worksheets, and tandem circuit worksheets from written PE scenarios (H01-LP1, H01-LP2, H01, LP3, & H01-LP4)

Fill out forms during document destruction forms from written scenario in PE (H05-LP1)

Review handouts for autoswitching equipment, interfacing devices, circuit switchboard diagrams, and logistical support class (I01-LP1, I01-LP2, J01-LP6, & I01-LP5).

Install, operate, and program auto switchboard according to notes and references (I01-LP13)

Review ANTOC-39 and TYC reference documents in class

Review various telecom system planning reference books in class (I03-LP3)

Follow instructor-led walk through of PC MS-DOS, word processing, spreadsheet, and data base commercial software manuals (B02 to B05)

Follow instructor-led walkthrough of TACCS software manuals (B07 to B09)

Complete written PEs on automated CE01, circuit switchboard diagrams, autoswitching programming procedures, entering terminal control command programs on PC, and downloading terminal control programs (F01-LP3, I01-LP6, I01-LP9, I01-LP11, & I01-LP12)

Look up radiotelephone procedures in information booklet for completing scenario PE (F01-LP4)

Follow written instructions during PE on remoting FM radios, cableing, and net radio interfacing (F02-LP3, F02-LP4, F02-LP5).

Locate and use information in TM during antennae and radiowave propagation PE (F04-LP3).

Complete written tutorial PEs on PC MS DOS, word processing, spreadsheet and data base management software (B02 to B05)

Complete written tutorial PEs on TACCS software procedures (B07 to B09)

Complete tutorial PE on reformatting text in ACP 126 format (F04-LP4)

Establish a secure radio teletypewriter set according to class notes on TM (F04-LP5)

Follow complex written instructions in student info guide during PE "Establish high capacity multichannel system" (G03-LP2)

READING TO DO (continued)

Basic

Prepare an area telephone traffic diagram, TTY traffic diagram, and HF radio net from written scenarios (J02-LP1, J05-LP1, & J04-LP1)

Complete written PE determining radio frequencies (J04-LP2)

Multiple-choice examinations (B06-CTI, D03-CTI, F03-CTI, F08-CTI, G04-CTI, H02-LP1, I02-CTI, & K02-CTI)

Hands-on examination using WriteOne editor (B11-CTI).

Hands-on JINTACCS performance examination (C04-CTI).

Complete written performance exam on planning a multichannel communications system (J07-CTI).

Intermediate

Follow along in TM during class on programming and operating teletypewriters (F04-LP4)

Fill out sample TAMMS forms during TAMMS PES (F07-LP1)

Follow written instructions in student information guide during PE on establishing a secure medium capacity multichannel system (G02-LP1)

Read scenarios and complete PES on checking operation of tactical telecommunications center, establishing a signal node, planning a messenger service, and preparing the CE annex to the operations order, and preparing circuit routing lists (H01-LP5, H04-LP1, H01-LP5, J03-LP1, & J02-LP1).

Hands-on performance examination IAW references on WriteOne editor, JINTACCS, troubleshooting induced radioteletype malfunctions, multichannel communications systems, TOC operations, program worksheet (B11-CTI, C04-CTI, F05-CTI, G04-CTI, H06-CTI, I02-CTI).

READING TO LEARN

Basic

Intermediate

Advanced

(none)

LISTENING TO DO

Basic

Follow written and spoken instructions in classes on system circuit designation, circuit routing list, patch panel worksheet and tandem circuit procedures (H01-LP1 to H01-LP4)

Follow instructions to install operate and program the Automatic Switchboard (I01-LP13)

Follow instructions in map reading review (J05-LP2)

Follow instructions in planning field cable wiring system (J05-LP2)

Intermediate

Follow hands-on demo/instructions during conference and PE on automated CEOI, programming and operating radio teletypewriter, and establishing a secure radio teletypewriter set (F01-LP3, F04-LP4, & F04-LP5).

Follow hands-on demo/instructions during conference on establishing medium channel communications system, remoting FM radios, completing circuit switchboard diagrams, preparing autoswitching equipment program worksheets, downloading terminal control command programs, preparing TTY traffic diagrams, planning high-frequency nets, predicting radio frequencies, and map reading (G02-LP1, I01-LP8, I01-LP11, I01-LP12, J03-LP1, J04-LP1, J04-LP2, & J05-LP1).

Complete in-class JINTACCS message summary PE (C03-LP1).

Perform operational checks on teletypewriter according to TM and instructor (F04-LP1).

Advanced

Follow hands-on demo/instruction in class on PC DOS, word processing, spreadsheet and database management software procedures (B02-LP1, B03-LP1, B04-LP1, B05-LP1)

Follow hands-on demo/instruction in class on TACCS, WriteOne and SAM software procedures, and establishing a signal node (B07-LP2, B08-LP1, B09-LP1, H01-LP5).

Complete step-by-step JINTACCS PE with class, transcribing info into JINTACCS format (C02-LP1).

Follow hands-on demo/instructions during classes and PEs on reformatting text into ACP 126 format and programming autoswitch equipment with keypad (F04-LP2 & I01-LP9).

Lesson and Academic Elements		Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
B06-CTI	Exam	3.75E1 - Multiple choice exam.																		
B07-LP1	Intro to TACOs	1C																		
B07-LP2	TACOs System Description	1C																		
B07-LP3	Volume Structure & Commands - Survey and use manual in class. - Hands-on demo/instruction in class. - Written PE.	2C; 10PE1											2							2
B08-LP1	Write One WP/Editor - Survey and use manuals in class. - Hands-on demo/instruction in class. - Written PE.	2C; 6PE1												2						2
B09-LP1	SAM (Standard Army Maint. Tutorial) - Hands-on demo/instruction in class. - Written and CBT tutorial.	1C; 7PE1															7			1
B10-LP1	Review	1C																		
B11-CTI	Exam - Hands-on exam using editor.	2E1													2					

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
C01-LP1	Receive, Transmit, Read and Write JINTACCS Messages - JINTACCS in-class PE. - Written JINTACCS PEs.																		
					7						7								7
					9						9								
C03-LP1	JINTACCS Message Summary - Written JINTACSS PE.				1						1								1
C04-CTI	JINTACCS Performance Test - Hands-on JINTACCS tests.				2						2								
D01-LP1	Mobile Subscriber Equipment																		
D02-LP1	Directed Energy Warfare - "Fill-in-blank" DEW PE.				.25						.25								
D03-CTI	Exam - Multiple choice exam.															2			
F01-LP1	Communications																		
F01-LP2	Single Channel Communications Systems within the Maneuver Brigade Battalion																		

Lesson and Academic Elements		Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
F01-LP3	Automated CEOI - Hands-on demo/instruction in class and PE. - Written CEOI PE.	3C; 1PE3	1			1														
F01-LP4	Radio Telephone Procedures - PE, research and write radio telephone procedures from written scenarios.	3C; 1PE3					1						4						4	
F02-LP1	The AN/VRC-12 Series Radio Family	1C																		
F02-LP2	Introduction to the Radio Intercom AN/VIC-1	1C																		
F02-LP3	Direct the Remoting of FM Radios - Follow written and spoken directions during remoting PE.	1C; 1PE1											1						1	
F02-LP4	Establish a Secure Single Channel FM Retransmission Facility - Follow written and spoken directions during cabling PE.	1C; 1PE1												1					1	
F02-LP5	Establish a Single Channel Net Radio Interface (NRI) Facility. - Follow written and spoken directions during NRI PE.	1C; 3PE1															3			3
F03-CTI	FM Written Test - Multiple choice exam.	3E3														3				
F04-LP1	Check Installation/Operation of Power Generating Equipment	1C																		

Lesson and Academic Elements	Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
F04-LP2	Formatting a Message in ACP 26 Format - ACP 126 formatting PE.																		
F04-LP3	Antennae and Radio Wave Propagation - Written PE. - Use FM during antennae and radio wave propagation PE. - Calculate frequencies during antennae and radio wave PE.				1								1						1
F04-LP4	Programming and Operation of the AN/VGC-74 Teletypewriter - Follow TM during class. - Perform operational checks on teletypewriter according to TM and instructor.																		
F04-LP5	Establish a Secure Radio Teletypewriter Set - Follow written and spoken instructions in class and PE.															9			9
F05-CTI	Hands-on Troubleshooting Test - Trouble shoot induced malfunctions.																		
F05-CTI (2)	AM Written Test - Multiple choice and short-answer exam.																		
F06-LP1	Electronic Warfare ECCM/MIJ				4								4						
F07-LP1	The Army Maintenance Management System - Read forms during class. - Read and fill out TAMMs forms during PE.																		

Lesson and Academic Elements		Time and No. of Tasks	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
F08-CTI	E/W TAMMS Test Review - Multiple choice exam.	3.5E3																		
G01-LP1	Intro to Multichannel System	1C																		
G01-LP2	Intro to Low Capacity UHF/VHF System	2C																		
G02-LP1	Establish a Medium Capacity Multichannel System 2C; 8PE1 - Follow written and spoken instructions in class. - Written PE.																			2
G03-LP1	Direct and Establish a High Cap System - Written PE.	18PE1																		16
G04-CTI	Multichannel Communications Systems Exam - Multiple choice exam. - Hands-on performance exam.	5E1; 3E3																		
H01-LP1	System Circuit Designation - Follow written and spoken instructions in class. - Complete designation from written PE scenario.	2C; 2PE3																		2
H01-LP2	Circuit Routing List - Follow CRL instruction in class. - Fill out CRL lists from written scenario.	4C; 12PE3																		4

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																	
Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
H01-LP3	Patch Panel Worksheet - Follow instructions for worksheet in class. - Complete worksheet from PE scenario.																		
H01-LP4	Tandem Circuits - Follow instruction for forms in class. - Make circuit designations from written PE scenario.				4							4						1	
H01-LP5	Establish a Signal Node - Follow establishment instruction in class. -- Establish signal node from written PE scenario.													3					2
H01-LP6	Summary of Terminal Objectives																		
H02-LP1	End of Annex Exam - Multiple choice exam.												3						
H03-LP1	Check Operation of a Tactical Telecommunication Center - Check operation in written PE scenario															6			
H04-LP1	Plan a Messenger Service - Plan service from PE scenario. - Map reading associated with PE.																2		
H05-LP1	COMSEC Insecurities - Prepare COMSEC document, conduct inspection																		

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
H06-CT1 TCC Operations Performance Exam - Hands-on performance exam.	2E3																		
I01-LP1 Intro to Auto Switching - Survey handouts in class.	2C																		
I01-LP3 Terminal Cards	1C																		
I01-LP4 Configurations/Power Signal Patch Panel	1C																		
I01-LP5 Numbering Plan/Concept and Network	1C																		
I01-LP6 Circuit Switchboard Diagram - Survey handouts in class. - Circuit switchboard diagram PE.	1C; 1PE3																		
I01-LP7 Functional Assignments	2C																		
I01-LP8 Prepare Program Worksheet - Follow worksheet instructions in class. - Prepare program worksheets from written PE scenarios.	2C; 14PE3																		
I01-LP9 Programming Procedures - Hands-on demo/instruction in class. - Enter terminal control command programs on PC.	2C; 2PE1																		

Lesson and Academic Elements	Time	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
I01-LP10 Intro to Terminal Control Devices	2C																		
I01-LP11 Terminal Control Device (TCD) Modes of Operation - Hands-on demo/instruction in class. - Enter terminal control command programs on PC.	5C; 12PE1																	5	
I01-LP12 Downloading Programs to the TCD - Hands-on demo instruction in class. - Hands-on written downloading PE.	2C; 2PE1				12													2	
I01-LP13 Install, Operate, and Program SB-3614 - Hands-on demo/instruction in class. - Hands-on written switchboard PE	5C; 1.5PE1												1.5					5	
I01-LP14 System Nodal Control/Directory Service	1C																		
I02-CT1 Performance Test - Hands on/Written - Written program worksheet exam. - Multiple-choice exam.	6E1; 1E3						6						6						
I03-LP1 Intro to Auto Switch	2C; 2PE2																		
I03-LP2 Overview of ANTOC-39 and TYC - Review documents in class.	1C															1			
I03-LP3 Planning Factors - Review TMs in class.	6C																		

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
Time		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
I03-LP4	Network Design																		
I04-CT1	Auto Switch Course EAC Test and Review																		
J01-LP1	Intro to Plans and Operations																		
J01-LP2	Prepare the CE Annex to the Operation Order - Follow preparation instructions in class. - Prepare annex from written PE scenario.																		1
J02-LP1	Circuit Routing Lists (CRL) - Follow CRL instructions in class. - Prepare CRLs from written scenarios																		5
J02-LP2	Prepare an Area Telephone Traffic Diagram - Follow diagram instructions in class. - Prepare diagrams from written PE scenarios.																		1
J03-LP1	Prepare TTY Traffic Diagram - Follow diagramming instructions in class. - Prepare diagram from written PE scenarios.																		5
J04-LP1	Plan High Frequency Net - Follow planning instructions in class. - Plan nets from written PE scenarios.																		1

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
J04-LP2	Predict HF Radio Frequencies - Follow prediction instructions in class. - Written prediction PE - Math associated with frequency PE																	2	
J05-LP1	Map Reading Review - Follow map reading procedures in class. - Written map reading PE. - Math associated with map reading.			8.5								6.5							
J05-LP2	Plan Field Cable Wiring System - Written PE planning field cable wiring system from a scenario. - Map-reading math in PE.			8								7.5						.5	
J06-LP2	Plan a Multichannel System - Written team PE.			3.5			3.5					3.5							
J07-CT1	End of Annex Exam - Written performance exam.						51			51		51				4			
J08-LP1	After Action Review (Remediation)																		
K01-LP1	Intro to CNCE (T)																		
K01-LP2	Intro to Low-Capacity UHF/VHF Assemblies																		

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
K01-LP3 Introduction to Medium-Capacity Systems - Complete team-PE directing AIT students to operate system.	1C; 28PE1							28					28						
K02-CTI End of Course Exam - Multiple-choice exam	8E3										8								

MATHEMATICAL COMPUTATION

Basic Arithmetic

Simple load calculations in PE on paralleling generators (E-11).

Rigging calculations in recovery class and PE (H-1 & H-3).

Multimeter-related math in PEs on troubleshooting magneto systems and power generation electrical equipment (E-6 & E-8).

Advanced Arithmetic

Multimeter-associated math in Troubleshooting PEs on vehicle electrical systems, power generation fuel systems, control box wiring harnesses, power generation engine assemblies, & load banks (D-10 thru D-13, E-4, E-7, E-9, & E-10).

Load calculations in PE on transferring electrical loads (E-11).

Pressure and displacement calculations in hydraulic system maintenance PE (F-1).

Algebra

Advanced circuit calculations in PE on calculating electrical loads from scenarios (E-11).

SPEAKING

Words

Complete school-provided "lesson outline" during class (C-1, C-2, D-1, D-2, D-4, D-9, D-15, D-20, D-26, D-27, E-1, E-2, E-3, E-5, E-11, F-1, H-1, H-2, & H-4).

Sentence completion spot-quiz (C-2, D-9).

PE laying out route selections (H-5).

Written team-PE calculating electrical loads for scenarios (E-11)

Sentences

Homework assignments writing answers to "self-check" and "self-test" questions for textbook readings (C-1, D-4, D-15, D-20, D-26, & D-30).

Prose

SPEAKING

<u>Words</u>	<u>Sentences</u>	<u>Prepared</u>
Team PE on vehicle recovery techniques (H-1).	Team PEs calculating electrical loads from scenarios, parallelling generators, and PMCS/transferring load (E-11).	
	Team/Field PEs recovering vehicles manually and using recovery vehicles (H-1 and H-3).	

READING TO DO

<u>Basic</u>	<u>Intermediate</u>	<u>Advanced</u>
Multiple-choice PE quiz (C-1, C-3, D-4, D-15, D-20, D-26, D-31, E-1, E-2, E-3, E-5, F-1, & H-4).	STE/ICE troubleshooting performance examination (C-3).	PE setting up and operating STE/ICE equipment (C-2).
Sentence completion spot-quiz (C-2, D-9).	PEs troubleshooting induced malfunctions in fuel & air induction systems, electrical systems, cooling & lubrication systems, power trains, chassis suspension & steering systems, brakes, generator fuel systems, magneto ignition systems, control box wiring harnesses, generator electrical systems, generator engine assemblies, load banks, and hydraulic systems according to references & notes (C-3, D-5 thru D-8, D-10 thru D-13, D-16 thru D-19, D-21 thru D-24, D-27 thru D-30, D-32 thru D-35, E-4, E-6 thru E-10, & F-2 thru F-5).	PE troubleshooting simulated malfunctions with STE/ICE (C-2).
Follow along in FM, TM and rigging card during class (H-1).		PE removing and installing M113 power plant (D-3).
Perform PMCS on recovery vehicles according to TMs (H-3).		
Multiple choice examinations (C-4, D-14, D-25, D-37, E-13, F-7, & H-6)		
Review troubleshooting of induced malfunctions IAW references (J-1).		
	Team PEs calculating electrical loads from scenarios, parallelling generators, and PMCS/transferring load (E-11).	

READING TO DO (continued)

Intermediate

Written route-selection
PE (H-5).

Performance examination
troubleshooting induced
malfunctions using
references (C-4, D-14, D-
25, D-37, E-13, F-7, H-6,
& J-2).

READING TO LEARN

Basic

Intermediate

Advanced

Homework reading assign-
ments extensive passages
from commercial vocation-
al texts and Army techni-
cal manuals (TMs) and
student information
sheets (C-1, C-3, D-4, D-
9, D-15, D-20, D-26, D-
31)

LISTENING TO DO

Basic

Follow instructor's demonstration of trouble-shooting generator fuel systems and magneto ignition systems (E-4 & E-6).

Intermediate

Follow instructions during demonstration of use of TMDE, trouble-shooting fuel & air induction systems, electrical systems, cooling and lubrication systems, power trains, suspension & steering systems, brake systems, magneto ignition systems, and generator electrical systems, and trouble-shooting hydraulic systems, and operating various recovery vehicles (C-2, C-3, D-5 thru D-8, D-10 thru D-13, D-16 thru D-19, D-21 thru D-24, D-27 thru D-30, D-32 thru D-35, F-2 thru F-5, E-8, & H-2).

Advanced

Follow instructions during demonstration of load calculation (E-11).

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																	
Lesson and Academic Elements	Time	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
C-1 Principles of Spark Ignition and Compression Ignition Engines - Homework, read 9 textbook chapters and self-test/self-check. - Complete lesson outline in class. - Multiple-choice PE.	2C; .5D; .5PE3					x										x			
C-2 Introduction to and use of TMDE - Complete lesson outline in class. - Sentence-completion spot quiz. - Follow instructions in demonstration. - PE, set up and operate STE/ICE - Hands-on PE troubleshooting simulated malfunctions.	2.5C; .5D; 1PE1; 3PE2				2.5						.25								.5
C-3 Troubleshooting Procedures and Techniques - Homework, read 5-page SS. - Follow instructions in demonstration. - Hands-on troubleshooting performance examination. - 10-item multiple choice PE.	1C; .5D; .5PE3; 1PE1															x			.5
C-4 Within-course Test - Introduction to Troubleshooting - Multiple-choice examination. - Performance exam hooking up TMDE IAW references.	.1C; 1E1; .9E3																		

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D-1 Intro to Wheeled and Track Vehicles - Complete lesson outline in class.	1C				1														
D-2 Intro to Material Handling Equipment - Complete lesson outline in class.	1C				1														
D-3 Remove and Install M113 Power Plant - PE, remove and install power plant IAW references.	.5C; 5.5PE1												5.5						
D-4 Principles and Operation of Fuel and Air Induction Systems. - Homework, reading 29 TM paragraphs and 11 textbook chapters and self-test/self-check. - Complete lesson outline in class. - Multiple-choice PE.	3.4C; 2D; 6PE3				x											x			
D-5 thru D-8 Troubleshoot Light/Heavy/Track/New Vehicle Fuel and Air Induction Systems. - Follow instructions in demonstration. - PEs troubleshooting induced malfunctions according to references.	.6C; 1D; 3.4PE1 (x4)				.6														4
D-9 Principles and Operation of Electricity - Homework reading 10 textbook chapters, 6 TM chapters, a 20-page and a 30 page information sheet and self-check/self-test. - Complete lesson outline in class. - Sentence-completion spot quiz.	7.6C; 4D; 4PE2; 1PE1				x											x			
					7.6; 1														

Lesson and Academic Elements		Time	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D-10 thru D-13	Troubleshoot Light/Heavy/Track/New Vehicle Electrical Systems	.5C; 1D; 4.5PE1 (x4)																		
	- Follow instructions in troubleshooting demonstrations.																			
	- PE troubleshooting induced malfunctions.																			
	- Multimeter associated math in PE.																			
D-14	Within-Course Test - Automotive Vehicle Maintenance	.1C; 4E1; .9E3																		
	- Multiple-choice exam.																			
	- Performance examination.																			
D-15	Principles and Operation of Cooling and Lubrication Systems	2C; 1D; 1PE3																		
	- Homework, read 4 textbook chapters and 3 TM paragraphs and complete self-test/self/c heck.																			
	- Complete lesson outline in class.																			
	- Complete multiple-choice PE.																			
D-16 thru D-19	Troubleshoot Light/Heavy/Track/New Vehicle Cooling and Lubrication Systems	.5C; .5D; 2.5PE1 (x4)																		
	- Follow instructions in demonstrations.																			
	- PE troubleshooting induced malfunctions according to references.																			

Lesson and Academic Elements		Time	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D-20	Principles and Operation of Power Trains - Homework reading 13 textbook chapters, 19 TM paragraphs, and 2 TM chapters, and self-test/self-check. - Complete lesson outline during class. - Complete multiple-choice PE.	3C; 1D; 1PE3				x														
D-21 thru D-24	Troubleshoot Light/Heavy/Track/New Vehicle Power Trains - Follow instructions in demonstrations. - PE troubleshooting induced malfunctions IAW references.	6C; 4D; 2PE1 (x4)				3					1								1.6	
D-25	Within-course Test - Automotive Vehicle Maintenance - Multiple-choice exam. - Performance exam troubleshooting induced malfunctions in powertrains and cooling systems.	1C; 2E1; .9E3																		
D-26	Principles and Operation of Chassis and Hull Suspension and Steering Systems - Homework, reading 6 textbook chapters and 25 TM paragraphs and self-test/self-check. - Complete lesson outline during class. - Complete multiple-choice PE.	4.5C; 1D; .5PE3				x														
D-27 thru D-30	Troubleshoot Light/Heavy/Track/New Vehicle Chassis, Suspension, and Steering Systems. - Follow instructions in demonstrations - PE troubleshooting induced malfunctions according to references	.5C; 1D; 3PE1 (x4)				1					5								4	
																			12	

Lesson and Academic Elements		Time		math			writing			speaking			reading to do			reading to learn			listening to do		
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D-31	Principles and Operation of Brake Systems	3.5C; 1D; 5PE3																			
	- Homework reading 2 textbook chapters and one TM chapter and self-check/self-test.						x											x			
	- Complete lesson outline during class.						3.5														
	- Complete multiple choice PE												.5								
D-32 thru D-35	Troubleshooting Light/Heavy/Track/ New Vehicle Brakes.	.5C; 5D; 3PE1 (x4)																			
	- Follow instructions in demonstration.																				
	- PE troubleshooting induced faults IAW references.												12							2	
D-38	Reinforcement Training	1C																			
D-37	Within-course Test - Automotive Vehicle Maintenance.	.1C; 4E1; 9E3																			
	- Multiple-choice examination.												1								
	- Performance exam troubleshooting induced brake system malfunctions.												4								
E-1	Introduction to Power Generation Sets	1C; 5D; 5PE3																			
	- Complete lesson outline during class.						1														
	- Multiple-choice PE.												.5								
E-2	Principles and Operation of the Generator Engine	.4C; 3D; 3PE3																			
	- Complete lesson outline in class.																				
	- Multiple-choice PE.						4						.3								

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
Time		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
E-3	Principles and Operation of Power Generation Equipment Fuel Systems. - Complete lesson outline in class. - Multiple-choice PE.					5													
E-4	Troubleshooting Power Generation Fuel Systems - Follow instructions during demonstration. - PE troubleshooting induced malfunctions. - Multimeter-related math during PE.																		
E-5	Principles and Operation of Power Generation Electrical Systems. - Complete lesson outline in class. - Multiple-choice PE.					2													
E-6	Troubleshoot Magneto Ignition System - Follow troubleshooting instructions during demonstration. - PE troubleshooting induced malfunctions IAW references. - Multimeter-related math in PE.																		
E-7	Troubleshoot Control Box Wiring Harness - PE troubleshooting induced malfunctions IAW references - Multimeter-related math in PE																		
E-8	Troubleshoot Power Generation Elec. Systems - Follow instructions during demonstration. - PE troubleshooting induced malfunctions. - Multimeter-related math in PE.																		

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																		
Lesson and Academic Elements		Time	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
E-9	Troubleshoot Power Generation Engine Assembly - PE troubleshooting induced malfunctions. - Multimeter-related math in PE.	6C; 1.4PE1																		
E-10	Troubleshoot Load Bank - PE troubleshooting induced malfunctions. - Multimeter-related math in PE.	1C; 1PE1																		
E-11	Generator Set Selection, Installation, Paralleling, and Field Application of Generator Sets. - Complete lesson outline in class. - Team PE calculating electrical loads from scenarios. - Follow instructor demonstration of load calculation. - Team PE paralleling generators. - Team PE on generator PMCS and transfer of loads.	3C; 9PE1																		
E-12	Reinforcement Training	1PE1																		
E-13	Within-course Test - Power Generation Equipment Maintenance - Multiple-choice exam. - Performance exam troubleshooting induced malfunctions IAW references.	1C; 3E1; 9E3																		

Lesson and Academic Elements		Time		math			writing			speaking			reading to do			reading to learn			listening to do		
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
F-1	Principles and Operation of Hydraulic System Maintenance - Complete lesson outline in class. - Multiple-choice PE. - Pressure and displacement calculation in PE.	2C; 1PE3					2						1								
F-2	Troubleshoot Wrecker Hydraulic System - Follow instructions during demonstration. - PE troubleshooting induced malfunctions	.5C; .5D; 2PE1											2								.5
F-3	Troubleshoot Rough Terrain Forklifts - Follow instructions during demonstration. - PE troubleshooting induced malfunctions.	1C; .5D; 1.5PE1											1.5								.5
F-4	Troubleshoot Recovery Vehicle Hydraulic System - Follow instructions during demonstration. - PE troubleshooting induced malfunctions.	.5C; .5D; 2PE1											2								.5
F-5	Troubleshoot Bridge Launcher Hydraulic System - Follow instructions during demonstration. - Troubleshoot induced malfunctions.	.5C; .5D; 3PE1											2								.5
F-6	Reinforcement Training	1PE1																			
F-7	Within-Course Test - Hydraulic System Maintenance - Multiple-choice examination. - Performance exam troubleshooting induced malfunctions	.1C; 1E1; .9E3											1								

Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
H-1	Rigging Techniques - Complete lesson outline during class. - Follow FM, TM, and Rigging Card during Class - Team Field+PE recovering vehicles by hand. - Rigging calculations math in class and in PE.				3						3								
		6						3											
H-2	Recovery Equipment Familiarization - Complete lesson outline during class. - Follow instruction learning to operate various recovery systems.				1														7
H-3	Recovery Field Problem/PMCS - Team/field recovery PE. - Rigging calculations in recovery PE. - Perform PMCS IAW references.	3						18			18								
H-4	Frag and Warning Orders - Complete lesson outline in class. - Multiple-choice PE.				1.5														
H-5	Detailed Route Selection - Route Selection PE.				3.5						3.5								
H-6	Within Course Troubleshooting Exam. - Multiple-choice examination. - Performance examination.																		
											1								

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MATHEMATICAL COMPUTATION

Basic Arithmetic

Rigging and mechanical advantage-related math on multiple-choice Recovery examination (D-6).

Advanced Arithmetic

Written PE on estimating mechanical advantage and rigging (D-3).

Algebra

Multimeter-related math in generator trouble-shooting PE (C3-1).

WRITING

Words

PE tracing hydraulic circuit diagrams (C1-3).

PE performing FMCS and operating recovery vehicles, including annotating form 2404 (D-2).

Sentences

Prose

SPEAKING

Words

PE, verbally identify and describe components and operating procedures for the Bradley Fighting Vehicle, using appropriate references (C2-1).

Answer instructor questions about hydraulic system test and repair unit (C3-3).

PE, verbally identify and describe physical and functional characteristics of M1 tank, using appropriate references (C4-2).

Sentences

Prepared

READING TO DO

Basic

Written PE tracing hydraulic diagrams (C1-3).

Multiple-choice closed-book examinations (C1-4, C4-2, D-6, F-5).

PE verbally identifying and describing components and operating procedures for Bradley Fighting Vehicle, using appropriate references (C2-1).

Written PE tracing generator circuits (C3-1).

PE verbally identifying and describing physical and functional characteristics of M1 tank, using appropriate references (C4-1).

Written PE on rigging and estimating mechanical advantage (D-3).

Intermediate

PE on troubleshooting and PMCS of generators according to references (C3-1).

PE performing PMCS and operating recovery vehicles, including annotating form 2404 (D-2).

PE performing battlefield damage assessment and recovery (BDAR) according to references (D-5).

Advanced

READING TO LEARN

Basic

Intermediate

Advanced

Homework (or in class) reading of school-made supplements and information sheets (C1-3, C2-1, C3-1).

LISTENING TO DO

Basic

Intermediate

Advanced

Follow hands-on instruction/demonstration of components and operating procedures on the Bradley Fighting Vehicle (C2-1).

Follow hands-on instruction/demonstration on Simplified Test Equipment/Internal Combustion Engine (STE/ICE) (C1-2).

Follow hands-on instruction/demonstration of generator troubleshooting and PMCS (C3-1).

NCOES Technical Training Lessons		Lesson Hours Containing Academically Demanding Elements at Each Level																	
Lesson and Academic Elements		math			writing			speaking			reading to do			reading to learn			listening to do		
	Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
C1-1	Introduction to Tank/Automotive 1C																		
C1-2	Simplified Test Equipment/Internal Combustion Engine (STE/ICE) - Hands-on demo/Instruction. - Hands-on PE using STE/ICE.																		1
C1-3	Hydraulic Systems - Homework, read 4 SR. - PE tracing hydraulic circuit diagrams.												8						
C1-4	Within-course Examination 2E3				1								1						
C2-1	Introduction to the M2/3 Bradley Fighting Vehicle (BFV) - Homework, read information sheet... - Follow demo/Instruction of components and operating procedures for BFV. - PE verbally identifying and describing components and operating procedures for BFV.																		1
C2-2	Tank/Automotive Trends and Developments 3C																		

Lesson and Academic Elements	Time	math			writing			speaking			reading to do			reading to learn			listening to do		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
C3-1 Power Generation Equipment - Homework, reading 2 SRs. - PE tracing generator relay circuits. - Hands-on instruction/demonstration of generator troubleshooting and PMCS. - PE troubleshooting and PMCS on generators. - Multimeter-related math in PE.	6C; 1PE3; 1D; 4PE1																		
					1						1					x			
																			1
		4									4								
C3-2 Hydraulic System Test and Repair (HSTRU) - Answer instructor's questions about HSTRU.	.5C; .5D																		
								5											
C3-3 Introduction to Quartermaster Equipment	1C																		
C3-4 Introduction to Chemical Equipment	1C																		
C3-5 Support Equipment Trends and Developments	2C																		
C4-1 Introduction and Safety Precaution, M1 Abrahms Tank - Verbally identify and describe physical and functional characteristics of M1 using appropriate references.	2C; 3PE1							3			3								
C4-2 Written Exam Multiple-choice closed book exam.	1E3															1			
D-1 Recovery Equipment Fundamentals	2.5C; .5TV																		
D-2 Wreckers and Recovery Vehicles - PE performing PMCS and operating recovery vehicles, including annotating form 2404.	5PE1				1														5

Lesson and Academic Elements		Time	math			writing			speaking			reading to do			reading to learn			listening to do		
			1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
D-3	Rigging Fundamentals	2C; 1PE1																		
	- Written PE on estimating mechanical advantage and rigging.		1									1								
D-4	Vehicle Recovery Problems	15PE1																		
D-5	Battlefield Damage Assessment and Repair (BDAR)	2C; 2PE2																		
	- PE performing BDAR according to references.											2								
D-6	Examination-Recovery Operations	2E1																		
	- Written multiple-choice examination.											2								
	- Rigging and advantage-related math.		2																	
F-4	Tank Automotive Troubleshooting and Support Equipment Exam	1E3																		
	- Written multiple-choice exam.											1								
F-5	Recovery Operations Exam	1E3																		
	- Multiple-choice exam.											1								

APPENDIX E

Understanding Enabling Learning Objectives

PLDC.	E-1
BNCOC	E-3
ANCOC	E-4

Understanding Enabling Learning Objectives

PLDC

LHR-01 - Introduction to Leadership

- Explain the six personal attributes of a military leader
- Explain the main categories of BE, KNOW, DO leadership attributes.
- Describe the four major factors of military leadership.

LHR-02 - Principles of Leadership

- Know how to effectively apply the 11 principles of leadership.

LHR-03 - Human Behavior

- Identify and explain how human needs affect behavior.
- Know how to develop group norms.
- Identify abnormal behavior induced by stress.
- Discuss ways of handling fear and panic.

LHR-04 - The Character of a Leader

- Define and explain character.
- Know how to build character in yourself and your subordinates.

LHR-07 - Leadership Styles

- Discuss various styles of leadership.

LHR-09 - Principles of Motivation

- Define and explain motivation.
- Identify motivational problems.
- Discuss techniques for applying motivational principles.

LDR-10 - Counseling Techniques

- Discuss the characteristics of a good counselor.
- Discuss the preparation and conduct of a counseling session.

LHR-11 - Duties, Responsibilities, and Authority of NCOs

- Explain the difference between specified, directed, and implied duties.
- Explain the difference between individual and command responsibility.
- Understand specific noncommissioned officer responsibilities.
- Explain the difference between command authority and general military authority.

CM-02 - Effective Communications

- Use the communication model to explain the communication process.
- Explain the difference between verbal and non-verbal communication.
- Know how to provide feedback through reflective listening or paraphrasing.

CM-03 - Keeping Seniors and Subordinated Informed

- Discuss filters to communication in the chain of command.
- Describe three types of informal communication systems.
- Discuss ways of avoiding barriers to communication.

PS-01 - Physical Fitness Training

- Describe the five considerations for developing an effective physical fitness program.
- Describe the benefits derived from additional activities.

PS-03 - Wearing of the Uniform

- Identify uniform discrepancies, to include the proper wear of awards and decorations, and make appropriate corrections.

PS-04 - How to Plan and Conduct an Inspection

- Know the purpose of a military inspection.
- Know the purpose of the on-the-spot correction and its relationship to the military inspection.

PS-06 - Maintaining Discipline

- Know and distinguish between punitive and nonpunitive measures available for maintaining discipline.

LN-01 - Introduction to Map Reading

- Identify and interpret marginal information.

BNCOC

LDRS-01 - Leadership Doctrine

- Identify and explain the nine leader competencies.
- Explain the four leadership factors.

LDRS-02 - Personal and Performance Counseling

- Discuss the purpose of counseling and describe the leader's responsibilities as a counselor.

LDRS-03 - Duties, Responsibilities, and Authority of NCOs

- Distinguish between specified, directed, and implied duties, and how the duty relationship of each change as you progress in rank and position.
- Define and discuss the relationship between the chain of command and NCO support channel.

LDRS-04 - Battlefield Leadership

- Identify the elements that contribute to panic.

MS-01 - NBC

- Describe the concepts and effects of NBC weapons/agents.

MS-02 - Map Reading Review

- Identify and interpret marginal information.

RM-01 - Maintenance

- Supervise subordinates in the performance of selected maintenance operations.

RM-02 - Property Accountability

- Differentiate between property accountability and types of responsibility.

ANCOC

LDR-01 - Perspective on Leadership

- Explain the lineage of the noncommissioned officer.
- Explain why the phrase "backbone of the Army" is used to describe the Noncommissioned Officer Corps.
- Explain specified, directed, and implied duties.
- Explain the concept and basis of authority in the military.
- Explain the purpose of and the difference in the chain of command and the noncommissioned officer support channel.
- Describe the Be-Know-Do framework of current Army leadership doctrine as contained in FM 22-100, Military Leadership.
- Describe the four factors of leadership.
- Describe the nine competencies of leadership.
- Relate the current leadership doctrine in FM 22-100 to the Army's current operational doctrine in FM 100-5.

LDR-02 - The Application of Leadership

- Given a situation, identify a problem, and use the ethical reasoning process and the problem solving process to determine a solution.
- Apply the four implementing skills of leadership.

LDR-03 - Leadership that Motivates

- Explain the basic differences between primary and secondary motives.
- Identify and explain the basic dynamics of group interaction.

LDR-04 - Leadership Counseling

- Identify the need for counseling.
- Recognize the need for referral.
- Identify basic indicators of a soldier in crisis or suicidal mindset.

LDR-05 - Management of Soldier Performance in Continuous Operations

- Describe the combat stress of AirLand Battle (ALB).
- Explain how to recognize and care for soldiers with more serious (moderate) battle fatigue.

CM-03 - Effective Listening

- List and explain the three levels of listening.
- List and describe the three ways (Ingredients of Concentration) to become a better listener.

RM-10 - Supply Management

- Explain The Army Authorization Document System (TAADS) and identify important supply reference publications.
- Explain how to determine accountability and responsibility.
- Explain how to conduct inventories of supplies and equipment.
- Explain the concepts and special concerns for providing supplies and services on the AirLand Battlefield.

RM-20 - Army Maintenance Doctrine

- Explain Army maintenance policies.
- Explain the current three-level maintenance organization and what type of maintenance is conducted at each.
- Explain the considerations of a platoon/section sergeant when deciding what maintenance support he should request on the battlefield.
- Describe BDAR and explain how information is organized in a typical BDAR manual.

RM-21 - Preparation for PMCS

- Describe the proper use of the forms and records associated with Preventive Maintenance.

RM-30 - Personnel Management

- Describe career management decisions for which senior NCOs are expected to provide advise and counsel.
- Identify methods of recognizing superior performance as a means of enhancing career progression.
- Explain the senior NCO's role in the Army Retention Program.

RM-32 - Wartime Unit Personnel Support

- Explain the differences between strength accounting and personnel accounting.
- Identify unit responsibilities for accurate strength accounting and the use of strength accounting reports in tactical decision making.
- Explain how accurate strength accounting enables the unit to obtain needed personnel (and equipment) replacements.

PS-02 - Training Management

- Explain how Battle Focus is obtained when developing unit training programs.
- Describe the long-range planning process and its impact on unit training.
- Explain how short-range planning supports the long-range plan and drives near-term planning.
- Identify near-term planning actions which will support the short and long-range plans of higher headquarters.
- Provide assistance to the platoon leader in managing and conducting collective training.

PS-03 - Noncommissioned Officer Development Program (NCODP)

- Explain the role of the SNCO in NCODP.
- Explain how common subjects are selected for NCODP training.
- Explain the purpose of NCO communication links in facilitating NCODP training.
- Select appropriate subjects to be taught in platoon/company NCODP.

PS-04 - Military Justice

- Given a commander's recommendation for a particular disciplinary action against a soldier, state whether the action recommended is punitive or nonpunitive.
- Know and understand the term of protecting soldiers' rights, specifically; the laws of search and seizure and Article 31 proceedings.

PS-05 - Safety

- Explain the four elements of the Army Safety Program.
- Explain the use of the Accident Prevention Management Process (ACMP) to identify unsafe acts or conditions.

MS-01 - The Threat

- Explain the possible missions of U.S. forces in a low intensity conflict.
- Describe terrorism as a part of the threat during low intensity conflict.
- Describe the relationship between terrorism and insurgency in low intensity conflict.
- Describe our most likely opponent during a high intensity conflict.
- Explain how unconventional warfare could be used in a high intensity conflict.

MS-02 - AirLand Battle Overview

- Outline the characteristics of the expected battlefield.
- Describe the critical elements of combat power.
- Explain the importance of understanding the commander's intention.

MS-03 - Terrorism Counteraction

- Identify situations which expose military personnel and their dependents to increased risk of terrorist attack.

MS-04 - Tactical Communications

- Know and be able to explain the three components of electronic warfare.
- Know and be able to explain the four components of communication security.