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Military Leadership Job and Skill Requirements: An Annotated Bibliography

Melvin J. Kimmel and Richard H. Balzer

Personnel Utilization Technical Area
Manpower and Personnel Research Laboratory



U. S. Army

Research Institute for the Behavioral and Social Sciences

June 1984

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A literature search was performed to compile and organize military leadership job and skill requirements references. Eighty-seven references were annotated and organized alphabetically within two sections: (1) "Job/Skill Requirements References" containing research-based literature, and (2) "General References," which annotates references that provided an overview of the field. The "Job/Skills Requirements" section was classified further according to subject matter (job and/or skill requirements) and the grade level of the target population. The "General References" were (Continued)		

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categorized according to the nature of the report (methodological contributions, conceptual pieces, and/or review reports) in addition to classification by subject matter. *Key*

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Military Leadership Job and Skill Requirements: An Annotated Bibliography

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FOREWORD

A major goal of the Army Research Institute for the Behavioral and Social Sciences (ARI) is to provide the military with research-based information on factors that are known to impact significantly on force readiness and competency. Quality leadership is one such factor. ARI and other military agencies have performed a great deal of research over the years to identify leadership job and skill requirements. This annotated bibliography compiles and organizes this literature. It is intended as a resource for all researchers, course designers, instructors, and military leaders concerned with leadership training and development requirements.



EDGAR M. JOHNSON
Technical Director

MILITARY JOB AND SKILL REQUIREMENTS: AN ANNOTATED BIBLIOGRAPHY

EXECUTIVE SUMMARY

Requirement:

To compile and organize the existing literature on military leader job and skill requirements.

Procedure:

Literature on the role of the military leader was compiled through computer literature searches and consultations with military agencies concerned with leadership job requirements. Published and unpublished manuscripts were reviewed for their relevance to the required functions and competence of military leaders, and relevant contributions were abstracted. An initial set of references was reviewed by two agency directors at the U.S. Army Soldier Support Center, and the bibliography was revised in accordance with their suggestions. The resulting set of 87 references was arranged alphabetically within two sections: "Job/Skill Requirements References," which lists the research-based literature on leadership job and skill requirements; and "General References," containing literature that provides a general framework for the field. Within the two sections, each reference was classified according to its content area. Literature in the "Job/Skill Requirements" section was categorized according to subject matter (i.e., focus on leadership skills and/or job requirements) and the grade level of the target population (noncommissioned officers, company grade officers, and/or field grade officers). "General References" were organized according to the nature of the report (i.e., methodological, conceptual, and/or review references) as well as by subject matter (leadership skills and/or job requirements).

Findings:

(1) Of the 87 contributions abstracted, 63 items were research-based, and 24 provided a general overview of the field.

(2) The research literature contained 38 reports describing job analysis results, 21 items concentrating on leadership skill requirements, and 4 items are concerned with both job and skill requirements.

(3) Commissioned officers were studied in 58 of the research efforts, while noncommissioned officers (NCOs) were included in the target population of 16 referenced items. Ten of the commissioned officer research contributions focused on staff rather than command level positions. Of these, three described the job requirements of staff officers at all grade levels, five focused on battalion staff officers, one discussed the job requirements of the General Staff, and one focused on skill requirements of junior officer staff positions.

(4) With respect to the "General References," 14 focused on methodological issues, 4 provided conceptual frameworks, and 5 summarized past research. Thirteen of the "General References" focused on leader job requirements, 8 concentrated on skill requirements, and 3 dealt with both elements.

Utilization of Findings:

The bibliography will be of immediate value to researchers, course designers, instructors, and military leaders concerned with leadership training and development requirements.

Military Leadership Job and Skill Requirements: An Annotated Bibliography

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MILITARY JOB AND SKILL REQUIREMENTS: AN ANNOTATED BIBLIOGRAPHY

INTRODUCTION

The Armed Forces recognize the need for competent leaders at all command levels to accomplish their missions effectively and efficiently. To develop and train competent leaders requires a thorough analysis of the job requirements of individuals in leadership positions and a clear understanding of the personal characteristics, knowledges, abilities, and behaviors necessary to carry out these requirements. The military has engaged in a great deal of research over the years in an attempt to identify these requirements, but the literature remains largely disorganized. This annotated bibliography is an attempt to compile and organize this literature in the hope that it will help researchers, course designers, instructors, and military leaders to better understand the leadership process and develop competent leaders.

To identify relevant contributions, computer literature searches were performed using a number of data bank sources, including the Defense Research On-Line System (DROLES), the National Technical Information System (NTIS), the Educational Research Information Center (ERIC), and PSYCINFO (formally, Psychological Abstracts). Descriptors used in the search process included "Job Analysis," "Task Analysis," "Job Requirements," "Job Performance," "Military Leadership," "Leadership Training," "Leadership Skills," "Soft Skills," "Non-commissioned Officers," "Commissioned Officers," and "Officer Personnel." In addition to computer searches, relevant contributions were solicited from various military agencies concerned with job/skill requirements. Table 1 provides a listing of these agencies.

Table 1

Military Agencies From Which References Were Requested

United States Air Force

- U.S. Air Force Academy, Department of Behavioral Sciences and Leadership
- U.S. Air Force Human Resources Laboratory
- U.S. Air Force Leadership and Management Development Center
- U.S. Air Force Military Personnel Center
- U.S. Air Force Occupational Measurement Center

United States Army

- U.S. Army Command and General Staff College, Center for the Study of Leadership and Ethics
- U.S. Army Research Institute for the Behavioral and Social Sciences
- U.S. Army Soldier Support Center, Occupational Survey Division
- U.S. Army Training and Doctrine Command, Training Development Institute

United States Navy

- U.S. Navy Personnel Research and Development Center, Manpower and Personnel Laboratory
- U.S. Navy Occupational Data Division

The search process yielded literally hundreds of references. Each was evaluated and those specifically concerned with military leader job and/or skill requirements were annotated. A preliminary set of annotated references was reviewed for completeness and accuracy by U.S. Army Soldier Support Center, and additional annotations were developed in line with their suggestions.

The majority of listings in Section I describe research efforts aimed at identifying job and/or skill requirements of leaders at the various grade levels. The Section II references provide a more general methodological and conceptual framework. Included in this section are literature review articles, bibliographies, items discussing procedures for studying job/skill requirements, and articles of a theoretical nature.

The listings are arranged alphabetically within each section. Each section is preceded by a brief introduction, which includes a table that categorizes the various references according to their subject matter and focus. To further help the reader organize this material, related contributions are cross-referenced, where applicable.

The bibliography does not claim to include all the relevant literature on the subject. For example, much of the job/skill requirements literature for leaders at the more senior levels (O6 and above) has been omitted since this literature has already been compiled (Kimmel, 1981) and reviewed (Haythorn, Kimmel, and Steinberg, 1983). The present bibliography presents annotations of these two references in Section II.

The vast body of leadership literature from nonmilitary sources also has been omitted. In the past, the military has repeatedly used theories and research findings from the private sector to develop its leadership training programs. However, some have questioned the similarity between the two sectors and argue that the military should increase its own research output. In sympathy to this viewpoint, we have decided to annotate only references directly bearing on military leadership requirements.

Although the bibliography is not exhaustive, we have attempted to include as many of the truly significant items as could be found, read, and evaluated. However, it would not be surprising to learn that relevant contributions have been omitted. Should the reader note such omissions, a phone call or letter would be sincerely appreciated.

I. JOB/SKILL REQUIREMENTS REFERENCES

The 63 items in this section describe research efforts to identify job and/or skill requirements of military leaders. Table 2 categorizes each contribution according to its subject matter and the military grade level of the target population. Thirty-eight of the research reports describe job analyses results, 21 concentrate on leadership skill requirements, and four are concerned with both job and skill requirements.

Commissioned officers were studied in 58 of the 63 research efforts. Seventeen deal solely with company grade officers, 16 discuss the leadership requirements of only field grade officers, while 25 include both company and field grade officers in their target population. Thirteen of the items deal with the noncommissioned officer (NCO). Of these, five studied only the NCO, while the remaining eight used both NCO and commissioned officers in their samples. Of the five that focus on NCO job/skill requirements, one concentrates on the junior NCO (Showel, 1958), one discusses the role of the E9 (Connor, 1975), and three look at E5-E8 job/skill requirements (Department of the Army, 1977b; Hebein et al., 1983; U.S. Army Sergeants Major Academy, 1979).

While the majority of items focus on command positions, 10 were included that discuss staff officer requirements. Three describe the job requirements of staff officers at all grade levels (Baker, 1970; Department of the Army, 1976; Department of the Army, 1977a); five focus on battalion staff officers (Human Resources Research Organization, Division No. 4, 1970a, 1970b, 1970c, 1970d; Powers & DeLuca, 1972); one discusses the job requirements of officers attached to the general staff (Rossow, 1976); and one identifies the interpersonal, problem-solving and decision-making requirements of junior officers in administrative, nontactical support, and staff jobs (Olmstead & Elder, 1978).

Table 2

Descriptive Contents of Job/Skill Requirements References (Section I)

Author(s)	Subject matter		NCO	Target Population	
				Officers	
	Leadership skills	Job requirements		Company grade	Field grade
American Institutes for Research (1975a)		X		X	X
American Institutes for Research (1975b)		X		X	X
Ammerman, H.L. (1965)		X		X	
Anderson, C.H. et al. (1970)		X		X	
Baker, R.A. (1970)		X		X	X
Berkowitz, L. (1953)	X				X (staff)
Buchanan, W.J. et al. (1978)		X		X	
Caviness, J.A. & Salter, J.A. (1970)		X		X	
Clement, S.D. & Ayres, D.B. (1976)	X			X	X
Clement, S.D. & Ayres, D.B. (1977)		X		X	X
Combined Arms Center (1982)		X		X	
Connor, J.E. (1975)		X	X		
Cory, B.H. et al. (1979)		X	X	X	X
Crumpton, A.T. (1975)		X			X
Davis, W.P. et al. (1975)		X		X	X
Deluca, A.L. & Powers, T.R. (1971)	X				X
Department of the Army (1976)		X		X (staff)	X (staff)
Department of the Army (1977a)		X		X (staff)	X (staff)

Table 2 (continued)

	Subject matter		NCO	Target population	
	Leadership skills	Job requirements		Officers	
				Company grade	Field grade
Authors (continued)					
Olmstead, J.A. et al. (1978)	X				X
Olmstead, J.A. et al. (1973)	X		X	X	
Olmstead, J.A. et al. (1975)	X				X
Olmstead, J.A. & Elder, B.L. (1978)		X		X (staff)	
Olmstead, J.A. et al. (1971)	X			X	X
Penner, D.D. et al. (1974)	X				X
Powers, T.R. & DeLuca, A.L. (1972)	X	X			X (staff)
Reaser, J.M. et al. (1974)	X		X	X	X
Rossow, A.F. (1976)		X			X (staff)
Salter, T.A. & Jacobs, T.O. (1973)	X			X	
Sebree, E.B. (1961)	X				X
Showel, M. & Peterson, G.W. (1958)	X				
Sitterson, J.D., Jr. et al: (1974)		X	X	X	
Sitterson, J.D., Jr. & Wintersteen, J.O. (1974)		X		X	X
Stephenson, R.W. et al. (1973)		X		X	X
Sterling, B.S. & Carnes, D. (1980)	X		X	X	
Stewart, S.R. et al. (1976)		X		X	
Training Development Institute (1979)		X	X	X	X
US Army Sergeants Major Academy (1979)	X	X	X		

US Army Soldier Support Center (1981)

US Army War College (1979)

Warnick, W.E. & Baker, R.A. (1964)

Wellins, R.S. et al. (1980)

X	X	X	X
X			X
X	X		
X		X	

American Institutes for Research. (1975a). Duty module methodology for officer management system development. (Research Note 79-33). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A081 267)

One of a nine volume series describing the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. This document provides an index of the duty module tasks catalogued in Davis et al. (1975).

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975b); Davis et al. (1975); Gilbert (1975); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974); Stephensen et al. (1973). ("Job/Skill Requirements References" section)

American Institutes for Research (1975b). Duty module methodology for officer career management system development: Task data bank, task list. (Research Note 79-34). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. AD A081 268)

One of a nine volume series describing the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. This report lists all the tasks comprising the 161 duty modules catalogued in Davis et al. (1975).

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975a); Davis et al. (1975); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Ammerman, H.L. (1965). A model of junior officer jobs for use in developing task inventories (Tech. Rep. No. 65-10). Washington, DC: George Washington University, Human Resources Research Office.

A job description procedure, based on a model of officer job behavior, was developed to identify junior officer tasks. The model was developed from existing job descriptions, job information typically provided by interviews with officers, and an information-processing view of purposive behavior. Application of the description technique yielded 816 tasks covering troop leadership and unit management as well as tactical and technical functions. General statements of work were subdivided into task-level statements of job activities.

Anderson, C.H., Mahnen, H.A., Papajohn, C. & Waldkoetter, R.O. (1970). Officer Rank Determination By Evaluative Ratings (ORDER) (Technical Research Study No. 144). Indianapolis, IN: US Army Enlisted Evaluation Center. (NTIS No. AD708885)

The objective of this research was to develop a mathematical model which, when used in conjunction with existing methods of job evaluation, would assist grade assignments for commissioned officer duty positions (lieutenant through colonel). From a criterion sample of 200 officer duty positions, with descriptions provided by the incumbents, a representative sample of 250 lieutenant colonels and colonels rated these 200 duty positions. Each officer rated 15 duty positions on four overall factors: (1) Varying Levels of Organizational Setting, (2) Positional Responsibility and/or Authority, (3) Criticality to Organization Mission, and (4) Skills and Knowledge Job Requirements.

Baker, R.A. (1970). Combat job requirements for principal staff personnel: Division, brigade, and battalion (Tech. Rep. No. 70-23). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD722248)

Lists of job requirements for commanders and staff officers at division, brigade, and battalion levels were prepared on the basis of interviews with experienced job incumbents. The preliminary lists were reviewed by job incumbents and by command and instructor personnel at the U.S. Command and General Staff College, the U.S. Army Armor and Infantry Schools, and the U.S. Continental Army Command (CONARC). The lists were revised to take the review comments into account to reflect the consensus obtained through school staff conferences on the materials.

Berkowitz, L. (1953). An exploratory study of the roles of aircraft commanders. US Air Force Human Resources Center Bulletin, 53-65, 1-27.

This study explored the behavior and role requirements of aircraft commanders. Commander roles were determined from responses of 50 11-person B-29 crews in training at Randolph AFB to a 13 item questionnaire. A factor analysis of the questionnaire responses yielded four factors: Maintaining Performance Standards; Behaving in a Nurturant Manner; Acting Upon and Awareness of Situational Needs; and Maintaining Crew Coordination and Teamwork.

Buchanan, W.J.; Layton, R.H. & Schaefer, R.L. (1978). Company level management study. Fort Hood, TX: Department of the Army, Headquarters 2nd Armored Division.

This study sought to identify and describe managerial problems at company level in terms of the capabilities of the typical unit commander to respond and comply with the totality of his/her administrative training, logistics, and personnel responsibilities. Two time-management surveys were administered within the 2nd Armored Division eliciting information on the time commanders actually spend and believe they should spend on different activities and functions, and a questionnaire was administered to 92 company commanders to assess factors bearing on company level problems. Interviews were then conducted with 41 company-level commanders on the basis of the survey and questionnaire results. It was concluded that the inability to execute prior planning due to top priority unprogrammed interruptions with an unrealistic suspense date was the root cause of every negative response to the questionnaire and the greatest problem of the company commander. Other findings and related recommendations are presented.

Caviness, J.A. & Salter, J.A. (1970). Inventory and selection of leadership tasks for training infantry officer candidates. Alexandria, VA: Human Resources Research Organization. (NTIS No. AD AO26229)

This research was conducted to determine leadership functions ranked high in priority for formal training by Officer Candidate School (OCS) graduates. The task inventory, a combination of the Leadership Activity Questionnaire and additional items, was developed to reflect specific observable behaviors required of job incumbents in a variety of distinctly different jobs. The final inventory was based upon the responses of 200 junior officers in Troop Command, Troop Staff, Aviation, Instructor, and Special Forces slots and subsequent sorting procedures by five experienced leaders according to the importance of the tasks for training. The final instrument containing 63 items is presented.

Clement, S.D. & Ayres, D.B. (1976). A matrix of organizational leadership dimensions. FT Benjamin Harrison, IN: US Army Administration Center. (Leadership for the 1970s, Monograph No. 8).

This monograph describes a taxonomy of nine management and leadership dimensions and the specific behaviors associated with each according to rank level (lieutenant through general officer). The taxonomy was developed from an analysis of the leadership and management literature, with special emphasis on the behavioral studies in the Ohio State University and Michigan traditions. The nine dimensions were: Communication, Human Relations, Counseling, Supervision, Technical, Management Science, Decision Making, Planning, and Ethics. In describing these dimensions by rank level, the

authors suggest that there is less of a need for technical and leadership skills (i.e. Human Relations, Counseling, and Supervision) and an increasing need for ethics (Creating Codes of Behavior) and conceptual skills (Decision Making, Planning) as one ascends the organizational hierarchy. Communication skills remain extremely important at all levels, while the Management Science (i.e., administrative) skills are considered less important for colonel/general officer than for mid-level positions.

Related references: Clement & Ayres (1977); How to Lead (1979). ("Job/Skill Requirements References" section).

Clement, S.D. & Ayres, D.B. (1977). Organizational leadership tasks for Army leadership training. FT Benjamin Harrison, IN: US Army Administration Center. (Leadership for the 1970s, Monograph No. 9).

This monograph is an outgrowth of Monograph No. 8 of the "Leadership for the 1970s" series which identified nine skill components/dimensions and related tasks of the leadership role. The objective of the present monograph was to elaborate in a more detailed manner on the leadership activities presented in Monograph No. 8 so curriculum developers could derive learning objectives. A modified Instructional System Design procedure was implemented. For each of four educational levels (Officer Basic, Officer Advanced, Command and General Staff College, and War College), the nine skill components were examined within the context of four categories (Individual, Collective, Support, and Organizational Effectiveness Skills). The components were explicated behaviorally through a deductive process of clarifying components in terms of competencies, skills, subskills, critical tasks, and enabling tasks. Task listings are presented.

Related references: Clement & Ayres (1976). ("Job/Skill Requirement References" section).

Combined Arms Center (1982). (Lieutenants Leadership Task List). Unpublished task list. FT Leavenworth, KS: Command and General Staff College.

The Lieutenants Leadership Task List (LLTL) is composed of 61 statements which provides, in functional terms, what a lieutenant must be able to do as a leader. An original list of 89 "competencies" was developed by Combined Arms Center personnel based on a search of the competency literature, and the list was then distributed to MACOM and company level service school personnel to determine the relative importance of each competency. The list was refined to 61 tasks for use in developing Officer Basic Course learning objectives.

Connor, J.E. (1975). Occupational analysis: MOS 00Z, Command Sergeants Major. Alexandria, VA: US Army Military Personnel Center.

Five hundred ninety-nine Command Sergeants Major rated 462 tasks on a relative time spent scale. Respondents were also requested to assess and comment on the job and training requirements. Comparisons were made between the five duty positions of the Military Occupational Specialty and between unit types. In general, there were few differences between duty position groups or unit type. A description of the Command Sergeant Major job is presented from the tabulated data supplied by the MOS 00Z incumbents. It was recommended that the Command Sergeant Major job be clearly defined and that the job description be included in all officer training courses.

Cory, B.H.; Johnson, C.D.; Korotkin, A.L. & Stephenson, R.W. (1979). Duty modules: An approach to the identification and classification of personnel resources and requirements (Tech. Rep. No. 367). Washington, DC: American Institutes for Research. (AD A073 745)

Experimental sets of duty modules for officers and enlisted personnel were developed, field tested, and revised. Task inventories based on tentative duty modules were administered to 334 enlisted infantry company personnel and 518 Infantry and Quartermaster Branch officers. The task inventories queried respondents on the applicability, percent of total time spent on, and criticality of the duty modules as well as the level of their involvement in the tasks. Modules were evaluated by preparing unit capability tables in which the relationships between duty modules and the mission statements for organizational units were indicated. The relationship between duty module performance and unit test scores was examined within 45 platoons, and 34 enlisted and 93 officer job content modules were developed. It was concluded that while the duty module approach offers promise for personnel selection, assignment, training, and performance evaluation, methods for weighting the importance and criticality of module subelements should be developed for broad implementation.

Crumpton, A.T. (1975). The U.S. Army project manager: A job analysis model (Student Project Report No. 75-2). Ft Belvoir, VA: Defense Systems Management School. (NTIS No. ADA026981)

This study was performed to develop a model of the U.S. Army Project Manager position and to use the model to conduct an analysis of the tasks and subtasks performed by the Project Manager. A review of pertinent literature was used to guide the development of the model, which was based on the U.S. Army Life Cycle Management Model. The job analysis model included interacting subsystems of the person, job, and environment. A job analysis task inventory containing 408 action/object statements organized according to life cycle phases is presented.

Davis, W.P.; Hadley, H.L.; Conmy, J.B. Jr.; Marsh, C.N. Jr. & Wallis, M.R. (1975). Duty module methodology for officer management system development: Catalogue of Army officer duty modules (Research Note 79-32). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A084 266)

One of a nine volume series describing the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. This document catalogues 464 duty modules according to 28 functional dimensions (e.g. Personnel, Intelligence, Operations, and Plans) and lists tasks associated with each module.

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975a, 1975b); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

DeLuca, A.L. & Powers, T.R. (1974). Identification of knowledge and skills and investigation of thought processing. Alexandria, VA: Human Resources Research Organization. (NTIS No. AD 734305)

This document reports research conducted to identify the knowledge, skills and thought processes of battalion commanders by six types of maneuver battalions (Infantry, Lt. Infantry, Mechanical, Airborne, Airmobile, and Armored). An inventory was developed and mailed to 80 percent of all worldwide maneuver battalions to develop a data base on the personal backgrounds of battalion commanders and their principal staff officers; functional areas of command (Personnel, Intelligence, Operations, Logistics, Training, Management, Decision-Making and Leadership); and command-related topics. Inventory respondents assessed each item in light of current time spent. Results are presented within each of the eight functional areas.

Related references: Powers & DeLuca (1972). ("Job/Skill Requirements References" section).

Department of the Army. (1976). Organizational, technical, and logistic data (Unclassified data) (Field Manual 104-10-1). Washington, DC: US Government Printing Office.

This manual, for use as a planning guide, provides general planning data for staff officers of all echelons. Data pertaining to Tables of Organization and Equipment are limited to division, brigade, and armored cavalry regiments as of November 1975.

Related references: Department of the Army (1977a). ("Job/Skill Requirements References" section).

Department of the Army (1977a). Organizational, technical, and logistic data: Extracts of nondivisional Tables of Organization and Equipment. (Field Manual 101-10-2). Washington, DC: US Government Printing Office.

This manual is a planning guide to provide general troop planning data for staff officers of all echelons in nondivisional units. Each Table of Organization and Equipment (TOE) extract lists the mission, assignment, capabilities, basis of allocation, category, and mobility. Component elements are listed, where applicable.

Related references: Department of the Army (1976). ("Job/Skill Requirements References" section).

Department of the Army. (1977b). Soldier's manual of common tasks (Field Manual 22-2). Washington, DC: US Government Printing Office.

This manual describes tasks required to be performed by all enlisted personnel regardless of Military Occupational Specialty. The tasks are distinguished according to Skill Level and divided into functional areas (e.g., First Aid, Communications, Leadership, Training, etc.).

Department of the Army, Office of the Deputy Chief of Staff for Personnel (1967). Study of Signal, Transportation, Ordnance, Chemical and Quartermaster Corps: Interim report phase I. Washington, DC: US Government Printing Office (NTIS No. AD 848700)

This report examines the Signal, Transportation, Ordnance, Chemical, and Quartermaster (STOCQ) Corps to determine the functions to be performed by the officers in those corps in the light of the Army's requirements for functional specialists, logistics generalists, weapons systems managers, material managers, and commodity specialists appropriate from 1967 through 1975. Inventories and findings of studies pertaining to the Officer Personnel Management System are presented, statements of roles and missions for the branches are developed, and recommendations of the Board of Inquiry on the Army Logistics System are addressed. The findings of this study were intended to be used to develop officer personnel management programs. The major conclusions were: (1) The Army requires officers who are functional specialists, commodity specialists, and logistics generalists; (2) most officer positions in the Army are identified by the function to be performed; and (3) STOCQ branches should be realigned on a functional basis.

Elliot, M.P.; Harden, J.T.; Geisler, R.W.; Scott, A.C. & Euske N. (1980). The process and procedures used for job preparation: Field Artillery and Infantry Officers and NCOs (Research Rep. No. 4314). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A109 995)

An extensive list of garrison/administrative tasks was compiled and administered to 15 officers and 91 noncommissioned officers to obtain information on the relative time required to perform each task, the job-holder's estimate of the relative importance of each responsibility, and the kind of job preparation needed for effective performance. Training sources for garrison/administrative job preparation were identified and compared with the job responsibilities. This information served as a basis for recommended modifications of the job preparation process for non-commissioned officers and company and battery officers.

Geisler, R.W.; Harden, J.T.; Best, P.R. & Elliot, M.P. (1979). Missions, responsibilities, duties, and tasks of infantry companies and field artillery batteries. (Research Rep. No. 1288). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A099 989)

This report provides a description of the official missions and activities of Infantry and Artillery units along with individual job responsibilities and tasks according to official documents. The long range goal was to design and implement a job preparatory and operational management system to optimize combat efficiency through collective and individual skills training. The 55 positions selected to identify specific tasks were believed to be the most common jobs across different Artillery and Infantry units and considered to be key positions for supervisory, training, and management responsibilities. The job analyses resulted in the specification of 127 unit missions, 162 individual activities, and 592 specific job tasks. The information derived from this report was used to construct job task inventories for officer and noncommissioned officer duty positions and to prepare structured interview and observation guidelines.

Gilbert, A.C.F. (1975). Dimensions of certain Army officer positions derived by factor analysis (Tech. Rep. No. 269). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A019 002)

This research effort attempted to determine the underlying dimensions of Infantry and Quartermaster officer duty positions described in terms of duty modules. Task analysis data were collected from 403 Infantry officers and 74 Quartermaster officers in representative duty positions described by 93 duty modules. The field survey data reflected duties under actual and simulated combat and garrison conditions. Subjects were grouped by grade, position title, type of organization and Military Occupational Specialty.

The data were factor analyzed, and the following six factors were obtained: Unit Command; Operations and Training; Manpower and Personnel; Logistics; Intelligence; and Troop Welfare. These six factors accounted for 67.43% of the common variance under combat conditions and 57.19% under garrison conditions. It was concluded that the duty module concept is an effective strategy for defining Army officer duty positions and identifying relationships among duty positions, and that training and assignment decisions could be facilitated through its use.

Hebein, J.; Kaplan, A.; Olmstead, J. & Sharon, B. (1983). NCO leader tasks, competencies and skills. Manuscript submitted for publication. Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences.

The study identified the performance frequency, importance, and difficulty level of nontechnical tasks for squad leader, E6/E7 section chief, platoon sergeant, and first sergeant positions. Skills associated with these tasks were also identified using a modified critical incidents approach. All four task lists were modified versions of a 1979 first sergeant task list developed by the US Army Sergeants Major Academy. The lists were administered to approximately 500 Combat Arms, Combat Service, and Combat Service Support job incumbents in USAREUR. The report includes descriptive statistics (e.g., means, standard deviations, etc.) for each task according to rank and branch type.

Related references: US Army Sergeants Major Academy (1979). ("Job/Skill Requirements References" section).

Helme, W.H.; Willemin, L.P. & Grafton, F.C. (1971). Dimensions of leadership in a simulated combat situation (Tech. Rep. No. 1172). Arlington, VA:: US Army Behavior and Systems Research Laboratory. (NTIS No. AD 734325)

A sample of 900 lieutenants who had taken the Differential Officer Battery (DOB) and had one to two years of active duty performed five combat, five technical, and five administrative simulated exercises. Two thousand single behavioral observations were coded for each subject and factor analyzed. The resulting factors were: (1) Combat Leadership, (2) Technical Managerial Leadership, (3) Team Leadership vs. Personal Resourcefulness, (4) Command of Men vs. Individual Technical Effectiveness, (5) Mission Persistence, (6) Executive Direction, (7) Tactical Staff Skills, and (8) Technical Staff Skills. The first two factors were the most general and encompassed both cognitive and noncognitive aspects of leadership activity: It was concluded that combat aptitudes can be assessed reliably in specific simulated situations and that DOB adaptations can be effective management tools.

Related references: Helme et al. (1974). ("Job/Skill Requirements References" section).

Helme, W.H.; Willemin, L.P. & Grafton, F.C. (1974). Prediction of officer behavior in a simulated combat situation (Research Rep. No. 1182). Arlington, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD 779 445)

This report examined the extent to which Differential Officer Battery (DOB) scores were associated with differential performance in the Officer Evaluation Center (OEC) simulated exercise and success in combat and technical administrative assignments. Of the 4,000 junior officers who took the DOB at entry on active duty, 900 participated in the OEC exercise one to two years later performing five combat, five technical and five administrative tasks. Factor scores on the DOB representing major dimensions of officer characteristics were correlated with officer performance in the OEC exercise. Officer characteristics, as measured by the DOB, were differentially predictive of officer behavior in situations representative of the two major leadership dimensions (Combat and Technical/Managerial Leadership). The DOB Combat Leadership factor predicted OEC combat leadership performance. The DOB Scientific Potential and General Knowledge factors predicted OEC technical/managerial leadership performance.

Related references: Helme et al. (1974). ("Job/Skill Requirements References" section)

Henriksen, K.F.; Jones, D.R.; Hannam, D.L.; Wylie, P.B.; Shriver, E.L.; Hamill, B.W. & Sulzen, R.H. (1980). Identification of combat unit leader skills and leader-group interaction processes (Tech. Rep. No. 440). Alexandria, VA: Kinton, Inc. (AD A084 977)

The present research sought to identify those leader skills and leader-group interactive processes having potential influence on unit performance in tactical situations. On the basis of an historical review of the leadership research literature, historical Engagement Simulation (ES) data (i.e. battle narratives, audio tapes, and net control sheets collected at tactical engagement simulation exercises), and research staff ES/combat experience, a listing of leader skill categories was developed. The five skill categories identified were: (1) Management, (2) Communication, (3) Problem Solving, (4) Tactical and (5) Technical. It was suggested that the taxonomy developed for leader skills and leader-group interaction processes be utilized to observe and measure behavior during unit tactical performance.

How To Lead: TRADOC Leadership Conference. (1979) FT Benning, GA: US Army Infantry School.

The TRADOC Leadership Conference was conducted to develop an overall plan for leadership training and development within the U.S. Army. Eighty

noncommissioned and commissioned officers (E6 through O6) participated in the development of separate task lists for each grade level, and a small group of subject matter experts and training development tasks writers edited the resulting lists. This document presents the ten task lists, each organized according to the eight leadership dimensions developed by Clements and Ayres (1976).

Related references: Clement & Ayres (1976). ("Job/Skill Requirements References" section).

Human Resources Research Organization, Division No. 4. (1970a). Knowledge and skills inventory, the adjutant S-1 combat arms maneuver battalion (Tech. Rep. No. D4-70-2). Alexandria, VA: Author. (NTIS No. AD738188)

One of four volumes that describes the knowledge and skill requirements of the four principal battalion staff officers (S-1, Personnel Officer; S-2, Intelligence Officer; S-3, Operations/Training Officer; S-4, Logistics Officer) of six types of maneuver battalions (Infantry, Lt Infantry, Mechanized, Airborne, Airmobile, and Armored). This report describes S-1 functions. A task inventory covering 48 object areas and 317 related actions was administered to the staff officers from over 80% of all combat maneuver battalions worldwide. The staff officers indicated the relative frequencies, time requirements, difficulty level, and importance of a variety of tasks within each object area. Results are presented by object area.

Related references: Human Resources Research Organization, Division No. 4 (1970b, 1970c, 1970d); Powers & DeLuca (1972). ("Job/Skill Requirements References" section).

Human Resources Research Organization, Division No. 4. (1970b). Knowledge and skill inventory: The intelligence officer S-2 combat maneuver battalion (Tech. Rep. No. D4-70-3). Alexandria, VA: Author. (NTIS No. AD738159)

The second of four reports describing the functions and required skills of the four principal staff officers. This report describes the requirements of the Intelligence Officer (S-2) by presenting results of a task inventory requesting relative frequency, time requirements, importance, and difficulty level of information for tasks from 48 object areas (e.g., Feeder Reports; Company Daily Strength Messages; Daily Status Report) that was administered to over 80% of all combat maneuver battalions worldwide.

Related references: Human Resources Research Organization, Division No. 4 (1970a, 1970b, 1970d); Powers & DeLuca (1972). ("Job/Skill Requirements References" section).

Human Resources Research Organization, Division No. 4. (1970c). Knowledge and skills inventory: The operations/training officer S-3 combat arms maneuver battalion (Tech. Rep. No. D4-70-4). Alexandria, VA: Author. (NTIS No. AD738160)

The third of four reports describing the functions and required skills of the four principal staff officers. This report describes the requirements of the Operations/Training Officer (S-3) by presenting results of a task inventory requesting relative frequency, time requirements, importance, and difficulty level of information for tasks from 48 object areas (e.g., Feeder Reports; Company Daily Strength Messages; Daily Status Report) that was administered to over 80% of all combat maneuver battalions worldwide.

Related references: Human Resources Research Organization (1970a, 1970b, 1970d); Powers & DeLuca (1972). ("Job/Skill Requirements References" section).

Human Resources Research Organization, Division No. 4 (1970d). Knowledge and skills inventory: The logistics officer S-4 combat arms maneuver battalion (Tech. Rep. No. D4-70-5). Alexandria, VA: Author. (NTIS No. AD738161)

The fourth of four reports describing the functions and required skills of the four principal staff officers. This report describes the requirements of Logistics Officer (S-4) by presenting results of a task inventory requesting relative frequency, time requirements, importance, and difficulty level of information for tasks from 48 object areas (e.g., Feeder Reports; Company Daily Strength Messages; Daily Status Report) that was administered to over 80% of all combat maneuver battalions worldwide.

Related references: Human Resources Research Organization (1970a, 1970b, 1970c); Powers & DeLuca (1972). ("Job/Skill Requirements References" section).

Johnson, C.A.; Tokunaga, H.T. & Hiller, J. (1980). Validation of a job analysis questionnaire against extensive observation. Proceedings of the 22nd Annual Conference of the Military Testing Association. Toronto, Canada: Canadian Forces Personnel Applied Research Unit.

The authors of this research effort emphasize the importance of using observational data to validate subjective self-report measures of job activity and the advantages of absolute over relative time spent scales. Ninety-eight noncommissioned and commissioned Infantry officers responded to a job task inventory designed to elicit accurate absolute time estimates for each job task, while 56 noncommissioned and commissioned officers from the same division were observed at work. Significant positive correlations were obtained between inventory responses and observational data.

Klemp, G.O., Jr.; Munger, M.T. & Spencer, L.M., Jr. (1977). Analysis of leadership and management competencies of commissioned and non-commissioned naval officers in the Pacific and Atlantic Fleets. Boston, MA: McBer and Company.

This study attempted to identify skills/competencies of naval officers in the Pacific and Atlantic Fleets using a modified critical incident technique. Interviews were conducted with 48 commissioned and 52 noncommissioned officers, yielding approximately 800 critical incidents. Commanding officers' ratings were obtained to distinguish superior from average performers. Twenty-seven competencies were identified and factor analyzed into five basic clusters: Task Achievement, Skillful Use of Influence, Advising and Counseling, Management Control, and Coercion.

Korotkin, A.L. & Davis, W.P. (1975a). Duty module relationship to training and experience requirements in career development and alternate specialty selections (Research Note 79-37). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A081 229)

This report is one of a series concerned with the duty module concept. Representative duty module coverage was developed in each of 46 different Officer Personnel Management System (OPMS) specialties. A matrix was developed reflecting 174 modules over 46 specialties in order to demonstrate task clusters common or unique to OPMS specialties. A survey involving 440 respondents, representing 46 OPMS specialties in grade O1-O6 was administered to gather data regarding specialty training. Data were gathered on duty module and task applicability, percentage of time spent, and criticality. A quantitative measure of duty module commonality across positions and specialties was developed reflecting the ratio of common modules to total modules within a pair of specialties or positions. An example of the utility of an index of commonality for OPMS career development efforts is presented.

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975a, 1975b) Davis et al. (1975); Korotkin & Davis (1975b); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Korotkin, A.L. & Davis, W.P. (1975b). Design and validation of additional duty modules for Engineer and Ordnance officer positions (Research Note 79-38). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A033 794)

This report is one of a series of nine companion volumes on duty modules. The present research developed 41 duty modules for use in describing

positions held by Engineer and Ordnance officers in both Modified Table of Organization and Equipment (MTOE) and Table of Distribution Allocations (TDA) types of organizations. A job analysis was performed using observation/interview techniques for 50 positions held by Ordnance officers and 50 positions held by Engineer officers. Position descriptions were then prepared as a basis for new duty modules. A survey which assessed officer perceptions of the relative applicability, time spent on, and criticality of various duty modules was then administered to 142 officers in both MTOE and TDA types of organizations to validate duty module descriptions of their positions. Three different survey methodologies were used to determine the most suitable procedure for future surveys.

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975a, 1975b); Davis et al. (1975); Korotkin & Davis (1975a); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Korotkin, A.L.; Hadley, H.I.; Davis, W.P. & Marsh, C.N. (1976). Duty module methodology for officer career management system. (Research Note 79-39). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A081 157)

One of a nine volume series describing the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. This report provides a summary of earlier research on duty module development for Ordnance, Quartermaster and Engineer branches. In addition, a duty module system for the Armor specialty was developed to expand the generalizability of the officer management development system.

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975a, 1975b); Davis et al. (1975); Korotkin & Davis (1975a, 1975b); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Lange, C.J.; Campbell, V.; Katter, R.V. & Shanley, F.J. (1958). A study of leadership in Army Infantry platoons (Research Rep. No. 1). George Washington University, Human Resources Research Office.

The purpose of this study was to obtain information about the on-the-job leadership behaviors that distinguish effective from ineffective infantry platoon leaders. Source of data included: (a) Interviews with 281 platoon members to provide detailed descriptions of leader behaviors in specific situations, (b) a questionnaire in which platoon members rated platoons and platoon leaders, (c) ratings of platoon leaders by company commanders, and

(d) tests of intelligence and military information given to platoon leaders. Considerable agreement existed between subordinate and superior ratings. The effective leader was found to: Emphasize performance as the basis of reward and punishment; use punishment instructively and for motivational failures; and provide precise information about needed improvement when reacting to below-standard performance.

Mohr, S.E. & Helme, W.H. (1975). An analysis of 30 scales of leadership in a simulated combat situation (Research Memorandum 75-6). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A076 784)

This report deals with data obtained from 726 lieutenants performing combat, technical, and administrative tasks during a three-day exercise in a simulated combat situation. A factor analysis of the original data yielded eight interpretable factors. The purpose of the present research was to assess the consistency of these eight derived leadership dimensions. A five-factor solution was found to be most appropriate. These factors were: Completed Staff Work; Quantitative Staff Organization; Combat Mission Requirements; Effective Team Leadership; and Combat vs. Technical Persistence.

Norris, J.R. & Robbins, J.R. (1977) A feasibility study: The application of duty modules to a front-end analysis of the Command and General Staff College Regular Course. (Unpublished masters thesis). FT Leavenworth, KS: US Army Command and General Staff College.

This study examined the feasibility and usefulness of applying duty module methodology in a front-end analysis of the Regular Course, US Army Command and General Staff College (CGSC). A front-end analysis model using duty modules and the ISD process was developed and applied to structuring the CGSC curriculum. Comparisons of this hypothetical curriculum and the current one are discussed. The authors suggest the following: A front-end analysis of the curriculum following the ISD model; revision of the duty module catalogue; and construction of a "group" duty module for command/staff actions.

Olmstead, J.A.; Baranick, M.J. & Elder, B.L. (1978). Research on training for brigade command groups: Factors contributing to unit combat readiness (Tech. Rep. No. 78-A18). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD A056054)

This research was performed to identify factors of organizational behavior within brigade command groups which contribute to effective unit performance. Measures of brigade unit effectiveness were obtained from 11

CONUS and Hawaii brigades based on unit performance in Computer Assisted Map Maneuver System (CAMMS) exercises. After the exercises, all players rated the brigade on various dimensions of organizational processes, supervision, and control. Brigades whose command groups performed the Army Training and Evaluation Program (ARTEP) tasks effectively were characterized as exhibiting control and supervision activities which relate to the performance of a number of critical organizational processes that had been found previously to contribute to unit combat effectiveness.

Related references: Olmstead et al. (1975). ("Job/Skills Requirements References" section).

Olmstead, J.A.; Cleary, F.K.; Lackey, L.I. & Salter, J.A. (1973). Development of leadership assessment simulations (Tech. Rep. No. 73-21). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD 772990)

This report describes the development of three leadership assessment simulations for use in the Noncommissioned Officer Educational System, Infantry Officer Advanced Course, Infantry Officer Basic Course, and Officer Candidate Course for personnel assessment purposes. The simulations were developed to assess three levels of military personnel on 11 leadership dimensions. Pilot tests were conducted of the full assessment processes for each simulation with six naive subjects from appropriate populations. It was concluded that organizational simulations contribute an aspect to assessment centers not obtainable through other techniques and can effectively create an environment that is characteristic of complex hierarchial organizations.

Olmstead, J.A.; Cleary, F.K. & Salter, J.A. (1975). Functions of battalion command groups (Tech. Rep. No. 75-11). Alexandria, VA: Human Resources Research Organization.

This research attempted to identify the functions and associated actions served by battalion command groups related to execution of effective combat performance to facilitate more efficient training and evaluation. A model of command group functioning in combat operations was developed after reviewing previous HumRRO projects and making field observations. Candidate functions for the attack operation selected from the literature were reviewed and revised by experts. A similar procedure was performed for defense, delay, and road movements operations. After the four combat operations were compared to determine commonalities and differences, 23 combat-experienced soldiers rated each function on an importance scale for each operation separately. Sixteen functions, 75 tasks, and 192 activities critical to combat performance were identified.

Related reference: Olmstead et al. (1978). ("Job/Skill Requirements References" section).

Olmstead, J.A. & Elder, B.L. (1978). The use of management games for developing Army officers in administrative and staff jobs (Tech. Rep. No. 78-A2). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A054 994)

A task analysis was undertaken to identify the interpersonal, problem-solving and decision-making requirements of junior officers working in administrative, nontactical support, and staff jobs. This information along with previous literature on management games was used to develop: (1) a descriptive model of the processes and parameters involved in management games and (2) a methodology to evaluate the utility of management games for training and assessment of junior officers in the focal jobs. A framework and guidance for constructing games and simulations was also developed.

Olmstead, J.A.; Lackey, L.L. & Christensen, E.E. (1971). Leadership actions as evaluated by experienced company-grade officers (Tech. Rep. No. 71-11). Alexandria, VA: Human Resources Research Organization.

This study attempted to determine (a) the desirability of certain leader actions for battalion commanders, company commanders, and platoon leaders, and (b) possible effects of source of commission (ROTC and OCS) and branch specialty (Infantry, Armor, and Army Aviation) upon the judged desirability of leader actions. A random sample of 154 experienced officers attending the Officer Advanced Courses of the U.S. Army Infantry and Armor Schools rated 36 leader actions categorized into four functional areas (Task Centralized, Task Decentralized, Social-Emotional Positive Actions, and Social-Emotional Negative Actions) on desirability for the three command levels. No differences were found between groups differentiated by source of commission and branch specialty. Differences were found in the desirability ratings of leader behavior for the three command levels with decentralization viewed as more important at higher command levels. The results confirmed the value of emphasizing leader actions rather than personal attributes in understanding components of effective leadership.

Penner, D.D.; Malone, D.M.; Coughlin, T.M. & Herz, J.A. (1974). Field grade officer leadership. FT Benjamin Harrison, IN: US Army Administration Center. (Leadership for the 1970s, Monograph No. 6).

This monograph summarizes the most important leadership behaviors of field grade officers (major through colonel) as perceived by the field grade officers, their superiors, and subordinates. While a number of differences existed among the three sets of ratings, there was substantial agreement on

the most important field grade officer behaviors: Awareness of unit morale, technical competence, effective communication with subordinates, knowledge of men and their capabilities, and the establishment of high performance standards. Field grade officers emphasized making their desires and expectations known to their subordinates, superiors were concerned with the field grade officers' attitude toward their job and with the ethical issue of distorting reports, and subordinates emphasized field grade officer personal characteristics. All three groups perceived the field grade officer as establishing and maintaining too high a level of discipline.

Powers, T.R. & DeLuca, A.J. (1972). Knowledge, skills and thought processing of the battalion commander and principal staff officers. (Tech. Rep. No. 72-20). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD748832)

This report summarizes previous research on knowledge and skill requirements of the four principal staff officers (S1, S2, S3, S4) from 171 combat maneuver battalions and commanders of 161 battalions worldwide. In addition, a theoretical model of thought processing was generated and tested using a simulated command post exercise (CPX) with battalion commanders and their staffs. The authors conclude from the results of this program that (1) job analysis techniques are effective in identifying knowledge and skill requirements of leaders at battalion level, (2) the resulting information can be used to develop and validate course curriculae, and (3) a simulated battalion CPX is useful for studying the thought processing of battalion commanders and their staffs.

Related references: DeLuca & Powers (1971); Human Resources Research Organization (1970a, 1970b, 1970c, 1970d). ("Job/Skill Requirements References" section).

Reaser, J.M.; Vaughan, M.R. & Kriner, R.E. (1974). Military leadership in the seventies: A closer look at dimensions of military leader behavior (Tech. Rep. No. 4-133). Alexandria, VA: Human Resources Research Organization.

The objective of this research was to develop a survey instrument to assess Army leader behavior. Six criterion scales were included measuring performance and satisfaction. The 1800 returned questionnaires covered the ranks of E2-E9, Warrant Officer, and O1-O7. Final item selection was based on factor analysis results which yielded four interpretable dimensions of leader behavior: (1) Task Professionalism, (2) Task-oriented Consideration, (3) People-oriented Consideration, and (4) Personal Interpersonal Professionalism. The four dimensions of leader behavior were used as independent variables in a stepwise multiple regression procedure with the satisfaction and six outcome measures. It was concluded that leader behavior is highly related to performance and satisfaction ratings. A

two-dimensional paradigm is presented to interpret the dimensions. This conceptual model differentiates between task and socio-emotional types of leadership behavior on one dimension and between types of demands placed on the leader on the second dimension.

Rossow, A.F. (1976) The relationship between the G-2 and the G-3: Should we have both a G-2 and G-3? (Unpublished master's thesis). FT Leavenworth, KS: US Army Command and General Staff College. (NTIS No. AD A029678)

Interviews were conducted with representatives of German, British and French armies concerning the staff relationships in their respective countries to examine relationships in foreign and US Army staffs and the functional responsibilities of the G-2 and G-3. Additionally, an examination was made of divisions today and the allocation of resources between the intelligence and operations fields/staffs. The author suggests that resources for the intelligence field should be drastically increased to achieve combat readiness.

Salter, J.A. & Jacobs, T.O. (1973). Leadership instruction for Infantry officer candidates: Terminal training objectives. (Tech. Rep. No. 73-66). Alexandria, VA: Human Resources Research Organization.

The research was designed to assist in the systems engineering of the Army Infantry officer candidate leadership program. A previously developed leadership task list was refined by subject matter experts as the original broad and complex tasks were subdivided into more easily trainable subtasks. Fifteen terminal training objectives also were developed.

Sebree, E.B. (1961). Leadership at higher levels of command as viewed by senior and experienced combat commanders (Research Memorandum). Monterey, CA: US Army Leadership Human Research Unit.

The objective of this research project was to obtain information on: (1) characteristics of higher-level leadership in contrast to leadership below division level, (2) the knowledge of psychology or sociology required by high commanders, (3) leader traits important to high-level leadership, and (4) the impact of the group and situation upon the exercise of high-level leadership. More than 100 senior officers with command and/or staff experience were questioned. This paper is a compilation of information obtained from this survey, supplemented by other material such as official records and biographies.

Showel, M. & Peterson, G.W. (1958). A critical incident study of Infantry, Airborne, and Armored junior noncommissioned officers (Staff Memorandum Task

NCO I). Washington, DC: The George Washington University, Human Resources Research Office.

This research was conducted to provide source material for the development of a junior noncommissioned officer training program. Critical incidents interviews were held with 135 subordinates and 135 superiors of junior noncommissioned officers in infantry, airborne, and armored units, stationed in Europe during the summer of 1957. Subjects described three successful and three unsuccessful instances of squad leader performance. Analysis of 1600 critical incidents yielded 3,946 specific significant behaviors which were classified into 26 sub-areas and then grouped into nine general areas. The nine general areas identified were: Planning and Foresight; Information Teaching and Briefing; Supervising and Checking; Correcting and Rewarding or Punishing; Manner of Dealing with Subordinates; Concern with Welfare of Men; Attitude Toward Job; Deportment; and Technical Job Knowledge and Ability. The nine general areas are described, and frequencies of successful and unsuccessful behaviors associated with those categories are presented.

Sitterson, D.D. Jr.; Davis, W.P. & Korotkin, A.L. (1974). Development of criteria dimension for evaluation of performance and career development of entry-level officers (Research Rep. No. 79-36). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A081 521)

One of a nine volume series describing the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. Job schedules of lieutenant positions were examined; nine job performance dimensions were developed that summarized the duties of entry-level officers, (e.g., Attends to Administrative Details; Prepares Correspondence, Memoranda and Reports); previously determined duty modules were categorized under each dimension; and a matrix was developed of job dimensions by entry level positions, arrayed by OPMS specialty.

Related references: Hadley (1975). ("General References" section). American Institutes for Research (1975b); Davis et al. (1975); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Sitterson, J.D. Jr. & Wintersteen, J.O. (1974). Results of field survey to evaluate an experimental set of officer duty modules (Research Note 79-35). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A013 586)

This is one of a set of volumes on the duty module concept. Field surveys were administered to 518 officers (lieutenants - colonels) from three division headquarters, six Infantry battalions, and six Quartermaster

companies. Distinctions were made for duty module applications in actual or simulated combat operations and support and those in garrison. The relative applicability, criticality, and time spent on the modules were tabulated. Most modules were validated as 96% of the officers surveyed stated that their test modules fit and reasonably described their duties. At least 90% stated that the duty modules accounted for a minimum of 80% of their total working time. Modular profiles that depict "core" duty modules for 43 positions are presented.

Related references:

Hadley (1975). ("General References" section). American Institutes for Research (1975a, 1975b); Davis et al. (1975); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson et al. (1974). ("Job/Skill Requirements References" section).

Stephenson, R.W.; Hadley, I. & Davis, P. (1973). A comparison of officer job content modules with activity groupings implicit in course design. Silver Spring, MD: American Institute for Research. (NTIS No. AD A013652)

The present study designed job content modules for Quartermaster and Infantry officer jobs and assessed the modules' accountability for these officers' work activities and activity groupings implicit in the design of officer instructional courses. Eighty-nine job content modules were designed. The job content modules accounted for a large proportion of Infantry and Quartermaster officer positions sampled. The compatibility of job content modules and course modules was found to depend upon the extent to which course instruction was occupationally related.

Sterling, B.S. & Carnes, D. (1980). Perceptions of leadership in a USAREUR brigade (Research Note 83-11). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A125 603)

The objective of this research was to develop an instrument to analyze leadership behaviors at company level and below and to develop and validate a model of company level leadership. Troops' and leaders' perceptions of squad to company level leaders in a USAREUR brigade were examined. A leadership model at and below company level was developed through unstructured interviews with USAREUR battalion personnel at various levels. The model postulated that leaders must be proficient in three general areas: training, troop handling, and garrison activities. The leadership model was used as a basis to construct survey instruments on leader behavior that were administered to 543 troops and 237 leaders from 15 companies. Leader responses were analyzed by leaders' rank, position, time in position and type of unit. Troop responses were analyzed by troops' time in location and type of unit. In general, perceptions of leadership were positive. Specific results are presented and discussed.

Stewart, S.R.; Christie, C.I.; Jacobs, T.O. & Whittenberg, J.H. (1976). Leadership tasks performed by US Army company commanders in Europe (Research Problem Review No. 76-16). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD A076649)

The objective of the research was to identify the more significant tasks involved in the company commander's job and to prioritize such tasks for training. A sample of 267 company commanders from combat arms, combat support, and combat service support units in Europe was administered the Job Task Inventory Questionnaire (JTIQ). The JTIQ contained 402 command duty tasks rated on the extent to which each task is a significant part of the job and the amount of preparation needed for adequate task performance. Nine major duty areas were tapped by the items (e.g. leadership, training, maintenance, etc.). It was concluded that the jobs of company commanders from different branches of the Army are very similar and it would be appropriate to develop a common core training curriculum.

Training Development Institute, Occupational Research and Analysis Division. (1979). TRADOC Service Schools Reports 'Soft Skills Areas'. FT Monroe, VA: Author. (NTIS No. AD A100401)

TRADOC Service Schools were asked to identify job performance dimensions and associated tasks as a first step toward operationally defining the soft skills area. This document provides the responses of 22 TRADOC service schools to this request.

US Army Sergeants Major Academy, Training Directorate (1979). Front-end analysis of first sergeants project. (Unpublished manuscript). FT Bliss, TX.

Common tasks that comprise the first sergeant's duty position were developed. A review of existing sources of information on first sergeant tasks, interviews, and expert judgments yielded 298 task statements. A pre-test survey was administered to 208 commanders and first sergeants and the final instrument was administered world-wide to 1843 first sergeants and 1788 commanders by Academy personnel to obtain information on the frequency, importance, skill and knowledge requirements, and training adequacy of each task. Tasks requiring training and tasks not consistently performed at mastery level also were identified.

US Army Soldier Support Center, Occupational Survey Division (1981). (Company and Field Grade Task Lists). Unpublished task lists.

A 177-item company grade and a 125-item field grade common task list were developed by the Soldier Support Center. Staff personnel (field grade

officers) from five Army agencies were asked to list tasks that were common to at least half of the officer specialties. The accumulated lists were then refined by SSC personnel of field grade rank. A small pilot study on two officer specialties was performed to obtain information of percent performing and criticality of each task.

US Army War College (1979). Senior service college position validation study. (Unpublished manuscript). Carlisle Barracks, PA.

The research report was part of a multi-year effort to (1) determine skill and knowledge requirements of general officer and colonel positions; (2) correlate these skills and knowledges with the curriculum of the US Army War College (USAWC); and (3) assess which Army colonel positions justify being occupied by Senior Service College graduates. The manuscript reports preliminary results of a senior officer job analysis. Using a self-report questionnaire format, colonels and general officers rated 73 skills (grouped into the seven skills/knowledge areas taught at USAWC) on importance and level of expertise required to accomplish their duties. The most important perceived needs of both general officers and colonels were in the leadership (Communication Skills and Personal Qualities Associated with Effectiveness) and managerial skills areas (Decision-Making Techniques and Knowledge of Organizational Systems and Procedures). Military Skills and Knowledge of Domestic and International Issues were seen as more necessary for general officers than colonels, but neither group considered them as important as the leadership and management skills. While the rank ordering of these skill categories on perceived importance and required expertise level were the same at both senior officer levels, general officers reported requiring a greater level of expertise in all subareas, especially in the Military skills and Knowledge of Domestic and International Issues areas. Among colonels, slight differences existed in the skill rankings as a function of job type, particularly in the Military skills and Domestic and International Knowledge domains. The ratings on perceived importance and required skill level were fairly consistent among colonels, regardless of educational background, source of commission, or type of position.

Warnick, W.L. & Baker, R.A. (1964). Determination of combat job requirements for armored cavalry platoon personnel (Tech. Rep. No. 92). Washington, DC: George Washington University, Human Resources Research Office. (NTIS No. AD455302)

The objectives of this study were to develop a description of job requirements for armored cavalry platoon personnel and to determine the importance of each job requirement in combat. Lists of job requirements for armored cavalry platoon personnel were prepared after reviewing pertinent literature and interviewing experienced officers and noncommissioned officers. The 14 lists developed encompassed the 14 types of jobs

representing 5 armored cavalry platoon personnel MOS. Lists of essential traits and abilities were also compiled. The lists were submitted to senior platoon, squad and section leaders in 13 armored cavalry squadrons for evaluation. A five-point scale was used for each respondent to indicate the applicability of the job duties to his/her job and their importance to combat performance. The final criterion lists contained the duties and skills considered most important for effective combat performance.

Wellins, R.S.; Rumsey, M.G. & Gilbert A.C.F. (1980). Analysis of junior officer training needs (Research Rep. No. 1236). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A096 034)

This three-phase research project sought to assess the training needs of junior officers. In Phase I, approximately 600 soldiers (captain, lieutenant, NCO and enlisted below the rank of E-4) were interviewed to identify problems encountered by junior officers. Eight problem areas emerged (Officer/Superior Relationships; Officer/Subordinate Relationships; Officer/NCO Relationships; Counseling; Discipline and Military Justice; Command and Leadership; Overburden with Secondary Duties; and Skill Deficiencies). Phase II involved the development and administration of a questionnaire to 114 officers and 114 enlisted personnel to quantify and validate the interview information. In Phase III, 931 newly commissioned officers completed mailed surveys sampling their opinions on 40 precommissioned subject areas pertaining to the value of their education. The prevalent theme of the results was the importance of emphasizing leadership and managerial skills in precommissioning training and the need to provide training experiences dealing with realistic job-related problems.

II. GENERAL REFERENCES

The 24 items in Section II provide a general overview of the leadership job/skill requirements field. Table 3 summarizes their content. Fourteen of the listing focus on methodological issues, four provide conceptual frameworks of military leadership, and five summarize past research. Of the 14 methodologically-oriented contributions, 11 are concerned largely with job analysis procedures, while the remaining three (Jacobs, 1973; Kopstein, Kingsley & Siebold, 1978; Peterson & Rumsey, 1981) focus on skill requirements methodology and problems. With respect to the five conceptual pieces, one discusses leadership performance requirements (Olmstead, 1969); one focuses on the distinction between skill and job requirements (Ansbro & Hayes, 1981); one is a military leadership field manual (Department of the Army, 1984); and two combine their conceptual frameworks with suggested procedures for studying the leader's role (Uhlener, 1975; Whitmore & Fry, 1974).

Three of the summary reports are bibliographies and two present literature reviews. Of the three bibliographies, one lists leadership literature largely based on the personal viewpoints of military leaders (Miller, 1976); one is an annotated bibliography of the senior leader job and skill requirements literature (Kimmel, 1981); and one summarizes the job analyses literature (Donahue, 1979). The two literature reviews are evaluative in nature. One discusses the success of leadership training research and development programs (Crawford, 1964), and the second critically reviews the senior leadership job and skill requirements literature (Haythorn, Kimmel & Steinberg, 1983).

Table 3

Descriptive Contents of General References (Section II)

	Subject matter		Type of Report		
	Leadership skills	Job requirements	Methodological	Conceptual	Review
Ansbro, T.M. & Hayes, W.A. (1981)	X	X		X	
Christal, R.D. (1974)		X	X		
Crawford, M.P. (1964)	X				X
Department of the Army (1975)		X	X		
Department of the Army (1984)	X	X		X	
Donahue, K.E. et al. (1979)		X			X
Hadley, H.I. (1975)		X	X		
Haythorn, W.W. et al. (1983)	X	X			X
Jacobs, T.O. (1973)	X		X		
Kimmel, M.J. (1981)	X	X			X
Kopstein, F.F. et al. (1978)	X		X		
Merrill, M.D. et al. (1981)		X	X		
Miller, L.L., Jr. (1976)	X				X
Olmstead, J.A. (1969)	X			X	
Peterson, G.W. & Rumsey, M.G. (1981)	X		X		

Ansbro, T.M. & Hayes, W.A. (1981). The job task analysis/skills and knowledge marriage: Parts I and II. Proceedings of the 23rd Annual Conference of the Military Testing Association, Volume I (pp 103-108).

This paper discusses the distinction between job and skill requirements and presents a description of a matrix of skill and knowledge components to complement the front-end job/task analysis subsystem of the Naval Enlisted Professional Development Information System (NEPDIS). It is noted that presently the computer has aided in making some of the formerly judgmental areas of the front-end analysis more objective. However, subjectivity still prevails in the process of identifying job skills and knowledges as components of inventoried tasks. The authors suggest that although skill statements often resemble task statements, distinctions should be maintained between billet-specific task inventories and rating-specific skill inventories. Alternatives are discussed representing NEPDIS efforts to merge job task data with supporting skill and knowledge information.

Christal, R.D. (Ed.). (1974). Proceedings of the Division 19 Military Psychology Symposium: Collecting, analyzing and reporting information describing jobs and occupations (Tech. Rep. No. 74-19). Brooks Air Force Base, TX: Air Force Human Resources Laboratory. (NTIS No. AD774575)

This report contains four papers presented at the 77th Annual American Psychological Association Convention in 1969. Topics dealt with include present and future job analysis in the Canadian Forces; the Military Occupational Data Bank as a job analysis source; job analysis in the U.S. Training and Employment Service; and job analysis procedures in the U.S. Air Force. The volume also includes subject matter expert reactions to the individual presentations and a concluding discussion by the program chair.

Crawford, M.P. (1964). A review of recent research and development on military leadership, command, and team functions (Research Memorandum). Washington, DC: The George Washington University, Human Resources Research Office.

Invited presentation for the 1964 Annual Convention of the American Psychological Association that reviewed military training research and development in the areas of interpersonal aspects of leadership and command; organizational and technical aspects of command; and team training. The author concludes that research has led to development of more effective leadership training programs.

Department of the Army. (1975). Interservice procedures for instructional systems development. Phase I: Analyze. (TRADOC Pamphlet 350-30). Washington, DC: US Government Printing Office.

This US Army Training and Doctrine Command (TRADOC) pamphlet describes procedures for performing a front-end analysis as a first step for developing training curricula. This initial phase of the Instructional Systems Development (ISD) approach emphasizes the need for accurate descriptions of duty positions and collective tasks and describes a methodology to gather the necessary data for a valid job analyses.

Department of the Army. (1984). Military Leadership (Field Manual 22-100). Washington, DC: US Government Printing Office.

This field manual provides the basic doctrine for Army leadership at company grade and below. It describes the four major leadership factors (Follower, Leader, Communication and Situation) and details what a leader must "Be" (Professionalism, Character) "Know" (Knowledge of Self, Job, Unit, Leadership Principles and History) and "Do" (Provide Direction, Implement and Motivate) to influence others and accomplish a mission. While the manual is primarily concerned with company level leadership, the principles and concepts presented are viewed as relevant for all levels of command.

Donahue, K.E., Madellin, A. & Loup, K. (1979) Bibliography: Occupation and Manpower Research Division, Air Force Human Resources Laboratory (1957-1979) (Tech. Rep. No. 79-71). Brooks Air Force Base, TX: Air Force Human Resources Laboratory.

This document presents a bibliography of technical reports and other research publications conducted by the Occupation and Manpower Research Division (OMRD), AFHRL over the period July, 1957 to July, 1979. The bibliography includes research publications in the following areas: Methods for collecting, analyzing, and retrieving occupational information; structuring work into jobs, specialties, career ladders, and broader management categories; establishing grade, pay, training, education, experience and other job requirements; organizational and management analyses; measuring worker experience, performance, potential, and satisfaction; task-oriented criterion development; establishing career programs; and reassignment systems.

Hadley, H.I. (1975). Army officer duty module manual (Research Note 79-31). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A081 265)

This report describes the American Institutes for Research program to develop officer duty modules, a personnel management system concept to cluster tasks statistically and logically. The report defines the duty module concept and serves as the manual for developing, reviewing, and updating a duty module system.

Related references: American Institutes for Research (1975a, 1975b); Davis et al. (1975); Korotkin & Davis (1975a, 1975b); Korotkin et al. (1976); Sitterson et al. (1974); Sitterson & Wintersteen (1974). ("Job/Skill Requirements References" section).

Haythorn, W.W., Kimmel, M.J. & Steinberg, A.G. (1983). Senior leadership: A review of the literature (Working Paper No. 83-2). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences.

This paper reviews the military as well as the public-private sector literature on job and skill requirements of senior level positions. An evaluation of this literature and suggestions for future research also are discussed. The suggestions include a need for consensus as to the most crucial leadership variables and a greater emphasis on the study of decision making and problem solving processes as they relate to the senior leader's role.

Related reference: Kimmel (1981). ("General References" section).

Jacobs, T.O. (1973). The evaluation of leadership skills (Professional Paper No. 11-73). Alexandria, VA: Human Resources Research Organization.

Problems in the development of leadership evaluation methods are discussed, including the identification of "true experts", the general lack of clarity in defining criterion measures, and the disjunctive nature of leadership skills. The paper argues for the value of the behavioral scientist in soft skills systems engineering and cautions against theoretical biases that may lead to misdirected work and misconceptions due to lack of direct experience as a leader.

Kimmel, M.J. (1981). Senior leadership: An annotated bibliography of the military and nonmilitary literature (Tech. Rep. No. 532). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A45 890)

This document provides an annotated bibliography of literature on senior leader job and skill requirements in the military (colonels and general officers) and public-private sectors (general managers, vice presidents and presidents). One hundred forty references were annotated and categorized into three sections: Summary articles, research-based contributions and conceptual pieces. Each contribution was categorized further according to "organization type" (military, nonmilitary or military-nonmilitary comparisons), "target population" (i.e., literature focusing solely on the senior leader or literature comparing senior with lower level positions) and "subject matter" (job and/or skill requirements).

Related reference: Haythorn et al. (1983). ("General References" section).

Kopstein, F.F.; Kingsley, E.H. & Siebold, G.L. (1978). Quasi-algorithm methods and techniques for specifying objective job/task performance requirements (Research Note 80-20). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A100 435)

This report presents a method for describing job and task performance requirements. The technique, quasi-algorithmic task specifications (TS), consists of tables of sequential overt (observable) and covert (mental) behaviors that are necessary and sufficient to accomplish a particular task. An account is given of the development of and successful verification procedures for quasi-algorithmic TS using task data from Field Artillery Detection Centers; sets of quasi-algorithmic TS are discussed; and a mathematical model for structuring TS is presented.

Merrill, M.D.; Reigeluth, C.; Branson, R.K.; Tarr, R. & Begland, R.R. (1981). Extended Task Analysis Procedure (ETAP): Introduction to ETAP. Columbus, OH: Battelle. (NTIS No. AD A098389)

Extended Task Analysis Procedure (ETAP) is a 12-step process designed to analyze "soft skills" tasks and those that are primarily procedural in nature. The Procedure includes three major types of task analyses processes: Procedural Analysis, Factor-Transfer Analysis and Principle-Transfer Analysis. This report presents training materials to accompany a user's manual. ETAP was field tested with eight Military Occupational Specialties in three Army Schools by soldiers assigned to task analysis and by civilian analysts working with Army subject matter experts.

The authors claim that these field tests provided confirmation of the efficiency of ETAP, although no data are presented.

Related reference: Reigeluth et al. (1980). ("General References" section).

Miller, L.L. Jr. (1976). Military leadership: A selected bibliography of periodical articles. FT Sill, OK: US Army Field Artillery School Library. (NTIS No. AD A031356)

One hundred fifty-six leadership articles are referenced from periodicals held by the Morris Swett Library, US Army Field Artillery School. The majority of referenced articles provide personal viewpoints on military leadership requirements.

Olmstead, J.A. (1969). Requirements for organizational leadership (Professional Paper No. 26-69). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD 693010)

This concept paper contends that leadership involves more than the capacity to generate favorable attitudes among personnel and steering the organization by the routine solution of everyday problems. Rather, the performances required of military organizations are becoming more adaptive and the distinctive quality of future leadership will be in the ability to develop and guide responsive systems of decisions and actions. The author suggests that developing future leaders will require recognizing the organizational role of leadership and designing training programs specifically attuned to that role.

Peterson, G.W. & Rumsey, M.G. (1981, August). A methodology for measuring officer job competence. Paper presented at the meeting of the American Psychological Association. Los Angeles.

This paper presents a methodology for measuring officer job competence. It postulates a common set of generic competency skills that underlie the successful performance of most complex officer tasks. It was theorized that a generic skills test could be used to: identify top potential performers; identify individual skill areas in need of further development; evaluate training effectiveness; and facilitate classification. Identified skills included problem performance measures of these skills from a set of essential job tasks were described. These procedures were applied to the development of experimental measures to assess generic competency skills required of Army Military Police junior officers.

Reigeluth, C.; Merrill, M.D.; Branson, R.K.; Begland, R.R. & Tarr, R. (1980). Extended Task Analysis Procedure (ETAP): User's Manual. Columbus, OH: Battelle. (NTIS No. AD A098354)

This manual describes the Extended Task Analysis Procedure (ETAP) Process. ETAP is a 12-step design to analyze tasks that are primarily procedural in nature and tasks that are usually called "Soft Skill" tasks. Four specific task analysis procedures are used in ETAP: Process Analysis, Factor-Transfer Analysis, Principle-Transfer Analysis, and Knowledge Analyses. These four procedures are combined with eight other action and decision steps to form three general task analysis methods and are intended to meet the needs of both task description and instructional design. The report was designed to assist the analyst to do an ETAP.

Related reference: Merrill et al. (1981). ("General References" section).

Siebold, G.L. (1980). Discriminant function job analysis in three Army technical MOS (Tech. Rep. No. 454). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A097 682)

Job questionnaire data on tasks performed in three aviation maintenance Military Occupational Specialties (MOS) were gathered from installations in the continental US, Germany, Korea, Alaska, and Hawaii. Job incumbents rated MOS tasks they performed on a "relative time spent performing" scale and supervisors rated all tasks in their MOS on four scales: Task Learning Difficulty, Consequences of Inadequate Performance, Immediacy of Task Performance, and Type of Training. The seven response categories for the criterion, "type of training" scale were collapsed into two new categories (tasks to be trained at local unit vs formal school setting) for the discriminant analysis. The results indicated that the discriminant functions could classify tasks into the appropriate training category by incorporating the mean ratings for each task on the four predictor scales. These categorizations agreed with supervisor classifications on about 80 percent of the classification.

Related reference: Staley, M.R. & Weismuller, J.J. (1981, October). ("General References" section).

Staley, M.R. & Weismuller, J.J. (1981, October). Interrater reliability: The development of an automated analysis tool. Proceedings of the 23rd Annual Conference of the Military Testing Association. Volume II (pp. 1141-1148).

This paper provides a historical sketch of the development and evolution of interrater reliability procedures for the Comprehensive Occupational Data Analysis Program (CODAP). CODAP provides analysis tools and procedures to deal with occupational data. Its objective is to provide accurate task information on jobs to improve classification structures, insure appropriate training curriculum, and assess job skills. Current research streams,

potential applications, and the operational use of the programs are discussed.

Uhlaner, J.E. (1975). Management leadership in system measurement beds (Tech. Rep. No. S-3). Alexandria, VA: US Army Research Institute for the Behavioral and Social Sciences. (AD A021 888)

A conceptual framework of leadership is developed based on 30 years of research carried out by the US Army Research Institute (ARI). Effective leadership is seen as determined by a great many variables that may be analyzed as parts of several distinct but interwoven systems. The most basic system involves the distinction between cognitive (objective, absolute, factual) and noncognitive (subjective, value-laden) aspects of human performance. A second basic distinction is in the style of management (authoritarian vs. participative) and its interaction with other factors. Two primary domains of Army leadership are distinguished (combat and technical/managerial) and subdivided into eight general leadership dimensions. The author suggests the need for a system measurement test bed to study selected interactions and their effect on leadership dimensions.

Vineberg, R. & Joyner, J.N. (1980). Instructional System Development (ISD) in the Armed Services: Methodology and application (Tech. Rep. No. 80-1). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD A080347)

This study examined Instructional System Development (ISD) methodologies and practices in the Army, Navy, Marine Corps, and Air Force during August, 1977-March, 1979. Findings were based on (1) analysis of the primary guidance documents used in the Armed Services for conducting ISD; (2) questionnaire survey of 209 training units, agencies and schools familiar with the ISD approach; and (3) detailed interviews of training developers at 33 organizations. The authors conclude that the potential of ISD to insure that training meets job requirements has not been realized. Since the consequences of training occur in the operational units and training is developed and evaluated within the training subsystem, it is recommended that operational commands be given a larger role in developing and evaluating training.

Walton, B.L. (1979). Job and task analysis (TRADOC Regulation No. 351-4). FT Monro, VA: Training Development Institute. (NTIS No. AD A103309)

This regulation defines US Army Training and Doctrine Command (TRADOC) policy, objectives and requirements for conducting job and task analysis within the training development process. The minimum acceptable products to support the TRADOC training developments process in the area of job/task

analysis are specified. The general purpose of such guidelines was to establish a systematic approach to gather and use job/task data in the training development process to provide a base on which training is designed. Procedural guides for implementing this regulation are to be found in TRADOC Pamphlet 354-4(T).

Related reference: Walton & Begland (1979). ("General References" section).

Walton, B.L. & Begland, R.R. (1979). Job and task analysis handbook (TRADOC Pamphlet No. 354-4(T)). FT Monroe, VA: Training Development Institute.

This handbook presents a methodology to accompany TRADOC Regulation 354-4, which defines the management requirements and procedures for performing job and task analysis. The objective was to provide common guidelines for conducting job and task analysis to facilitate the training development process. The necessary steps for doing an analysis are specified, such as: developing the task inventory, locating data sources, and selecting tasks for training. Each chapter concludes with an outline summarizing the key points. Auxiliary appendices are included describing processes associated with job and task analysis such as site selection and job performance measures.

Related references: Walton (1979). ("General References" section).

Whitmore, P.G. (1973). Use of the job model concept to guide job description procedures for Army officers (Tech. Rep. No. 73-26). Alexandria, VA: Human Resources Research Organization. (NTIS No. AD772993)

This report examines the job description procedures specified in CONARC Regulation 350-400-1 (Systems Engineering of Training, February 1968), and develops alternative procedures. The author contends that major deficiencies in the job description process can be avoided by beginning with the development of a job model having three major sections: (1) broad job functions derived from appropriate system characteristics; (2) general behavioral science considerations appropriate to the analysis of each broad job function; and (3) information categories, sources, and collection procedures required to explicate each broad job function fully. A partial model of Army officer jobs is presented as an example.

Whitmore, P.C. & Fry, J.P. (1974). Soft Skills: Definition, behavioral model analysis, training procedures (Professional Paper No. 3-74). Alexandria, VA: Human Resources Research Organization.

Three papers concerned with soft skills analysis and training are presented. "What are Soft Skills?" (Fry & Whitmore) develops a definition of soft skills based on responses by representatives of CONARC Schools to a questionnaire designed to clarify the terms "hard" and "soft" skills; "The Behavioral Model as a Tool for Analyzing 'Soft Skills'" (Whitmore) discusses leadership and motivation job functions in terms of behavior modification principles; and "Procedures for Implementing Soft-Skill Training in CONARC Schools" (Fry) describes the instructional approach used to redesign the Chemical Schools C-22 Course.