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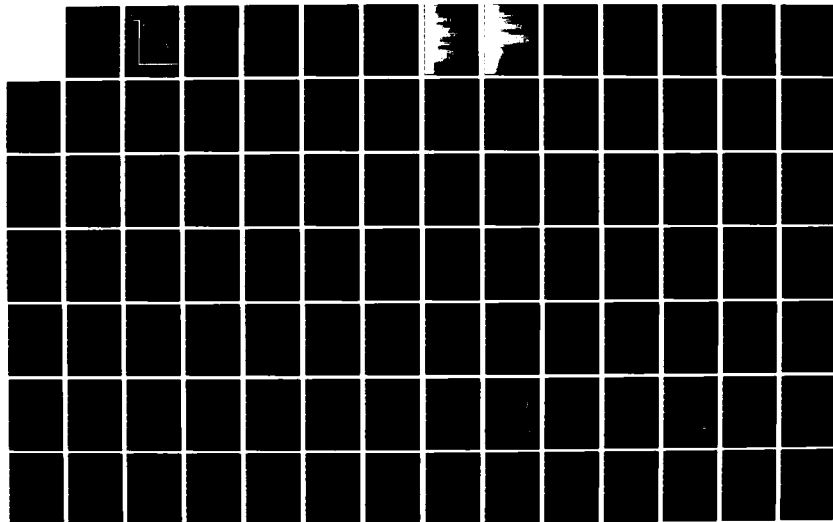
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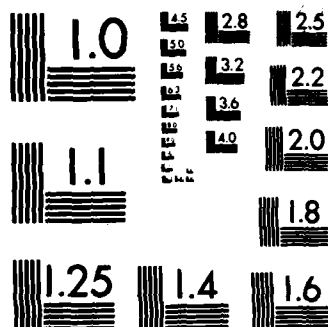
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**TASK-RELATED JOB READING INVENTORY:
DEVELOPMENT AND FIELD TRIAL OF A PROTOTYPE**

By

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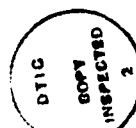
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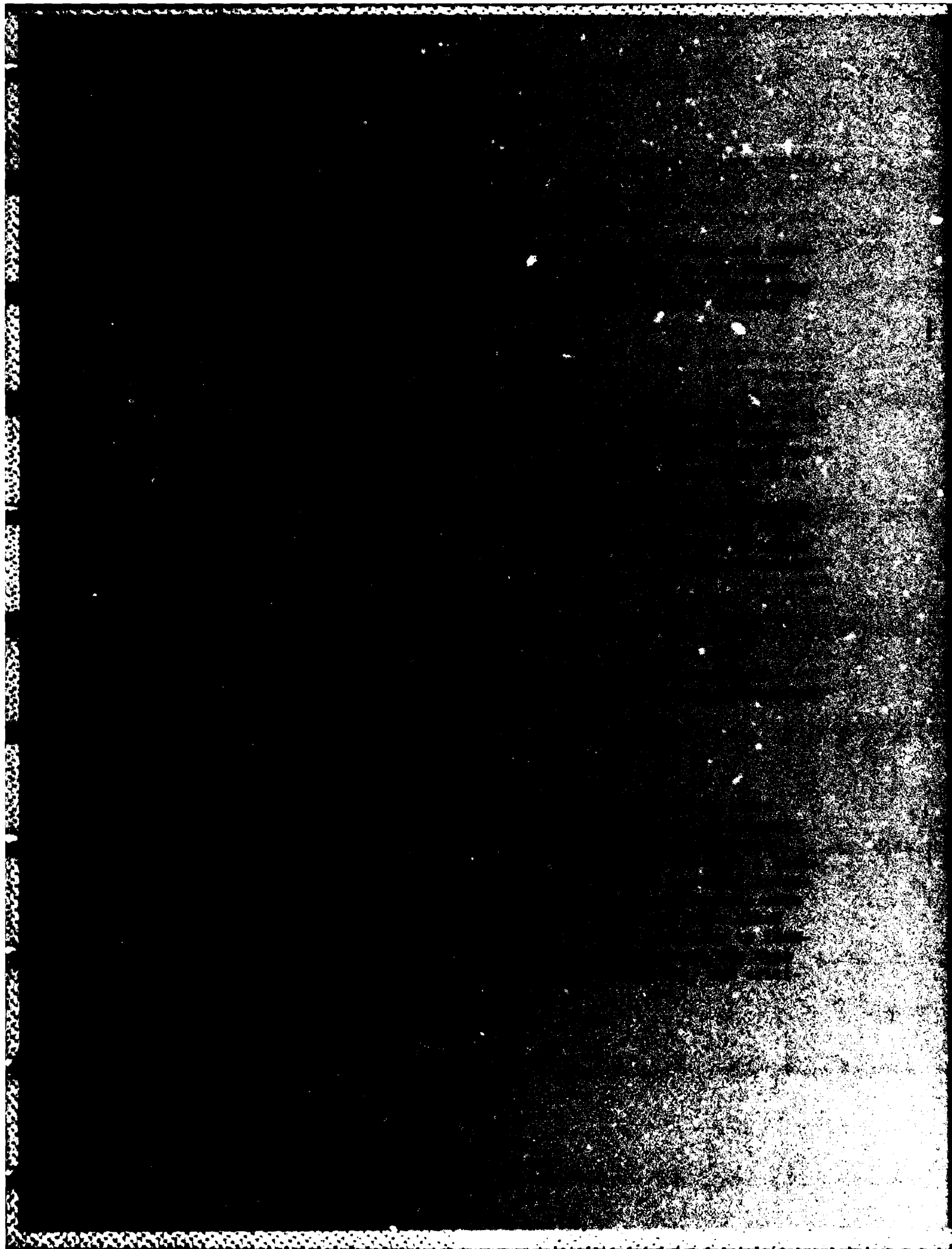
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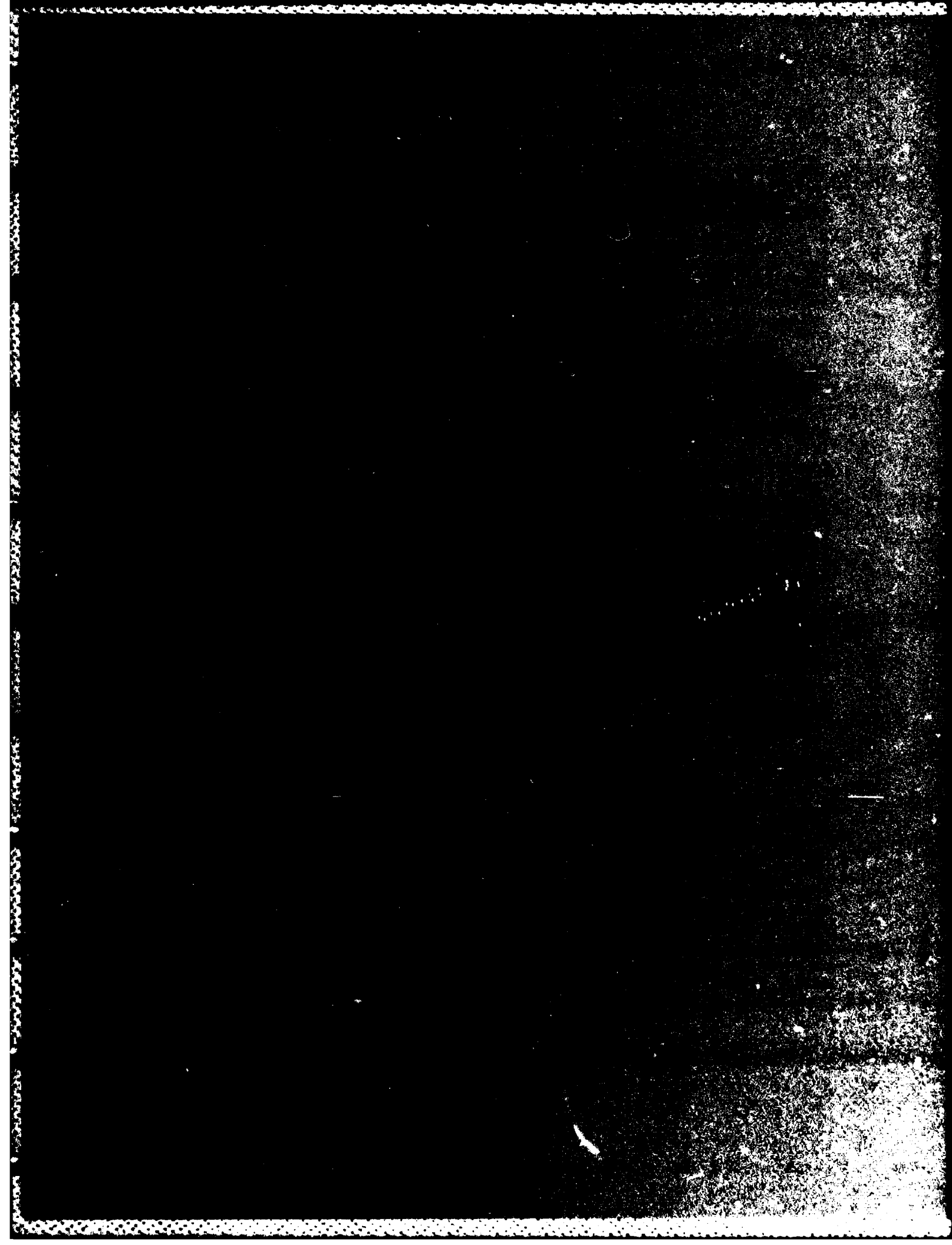
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**This publication is primarily a working paper.
It is published solely to document work performed.**

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PREFACE

The project was conducted for the Training System Division, Air Force Human Resources Laboratory (AFSC), Lowry Air Force Base, Colorado 80230. The development of the inventory was conducted under the technical monitorship of Dr. Lydia R. Hooke. Subsequently the inventory methodology as a means of assessing reading behavior and requirements was tested under the technical monitorship of Dr. Ron Burkett and Capt. Leon J. Tauscher.

The project described in this report was conducted by the Training Analysis and Measurement Office, Training Research Division, Human Resources Research Organization, Carmel, California, under Contract F33615-78-C-0056. Dr. Robert Vineberg was the Principal Investigator and overall Project Director.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
Problem	1
Background	2
The Present Approach to the Problem	7
PROCEDURE	10
General	10
Selection of Career Ladders	10
Trial No. 1	11
Results of Trial No. 1	12
Trial No. 2	19
Results of Trial No. 2	20
DEVELOPMENT OF THE FIELD TRIAL INVENTORY	23
FIELD TEST RESULTS AND DISCUSSION	25
Frequency and Purpose for Reading	26
Frequency of Reading: Type of Material	34
Reading Difficulty	39
Criticality	52
CONCLUSIONS AND RECOMMENDATIONS	56
Frequency of Job Reading	56
Difficulty of Job Reading	56
Criticality of Job Reading	57
Feasibility of the Inventory Approach	57
WORKS CITED	59
APPENDICES	

LIST OF FIGURES AND TABLES

	<u>Page</u>
<u>Figures</u>	
1. Frequency distribution of reading difficulty scale value usage in two Air Force jobs . . .	48
<u>Tables</u>	
1. Trial No. 1 Sample	12
2. Purpose for Reading: Task-Related Format Trial No. 1	13
3. Purpose for Reading: General Format Trial No. 1	14
4. Ratings of Reading Difficulty - Trial No. 1 . . .	16
5. Time Spent Reading - Trial No. 1	17
6. Trial No. 2 Sample	20
7. Purpose for Reading - Task-Related Format Trial No. 2	21
8. Materials Read: Task-Related Format Trial No. 2	21
9. Purpose for Reading: General Format Trial No. 2	22
10. Materials Read: General Format Trial No. 2	22
11. Reading Inventory Field Test Sample	25
12. Percent of Task Performers Who Read for One or More Purposes - AFSC 431X2	27
13. Percent of Task Performers Who Read for One or More Purposes - AFSC 702X0	28
14. Comparison of Incidence and Purpose of Reading in Two Air Force Jobs	31
15. Purpose for Reading by Grade - AFSC 431X2 . . .	32
16. Purpose for Reading by Grade - AFSC 702X0 . . .	33

LIST OF FIGURES AND TABLES (Continued)

	<u>Page</u>
<u>Tables</u>	
17. Estimated Reliability of Purposes for Reading in 40 Tasks - AFSC 431X2	35
18. Estimated Reliability of Purposes for Reading in 39 Tasks - AFSC 702X0	36
19. AFQT Scores	37
20. Comparison of Types of Material Read in Two Air Force Jobs	38
21. Types of Material Read by Grade - AFSC 431X2	40
22. Types of Material Read by Grade - AFSC 702X0	41
23. Reliability Coefficients by AFSC for Ratings of Reading Difficulty	42
24. Rated Reading Difficulty by Persons Who Read in Task Performance - AFSC 431X2 . .	43
25. Rated Reading Difficulty by Persons Who Read in Task Performance - AFSC 702X0 . .	44
26. Mean Ratings of Reading Difficulty in Two Air Force Jobs	45
27. Reading Difficulty Ratings by Grade	45
28. Reading Difficulty Ratings for Occurrences with Single Reading Purpose . . .	46
29. Need for Assistance in Reading by Grade . . .	49
30. Need for Assistance in Reading at Three Levels of Task Frequency	50
31. Need for Assistance in Reading at Three Levels of Reading Frequency	50

LIST OF FIGURES AND TABLES (Continued)

<u>Tables</u>	<u>Page</u>
32. Need for Assistance in Reading for Particular Purposes	51
33. Availability of Directions for Task Performance Without Reading by Grade	52
34. Need for Assistance in Reading vs Availability of Task Directions Without Reading - AFSC 431X2	54
35. Need for Assistance in Reading vs Availability of Task Directions Without Reading - AFSC 702X0	55

TASK-RELATED JOB READING INVENTORY: DEVELOPMENT AND FIELD TRIAL OF A PROTOTYPE

INTRODUCTION

In recognition of the potential mismatch between the literacy skills of personnel entering the Armed Services and the literacy demands of their jobs and training, the Services have undertaken a variety of programs of literacy research and development. One goal of these efforts has been to define the level of reading skill required to perform satisfactorily in different occupational specialties. Differences in required levels of reading skill across specialties are of obvious significance when selecting, classifying, and training personnel. Whether in the Army (Sticht, Caylor, Kern, & Fox, 1971), Navy (Biersner, 1975) or the Air Force (Mockovak, 1974c), military specialties have been found to differ considerably in the reading ability required of incumbents.

Problem

Viewed in its full complexity, determining the level of reading skill required to perform satisfactorily in a military occupational specialty requires defining acceptable job performance and identifying factors that affect reading difficulty, while addressing the question of how reading competence should be measured. None of these facets of the problem is likely of near-term solution. Measurement aside, the very definition of language comprehension, of which reading comprehension ability is one aspect, is unresolved (Carroll, 1972). Consequently, literacy research has usually addressed only one part of the problem at a time. The question of what constitutes satisfactory job performance, for example, although it has not been ignored, has understandably been given less attention than has the question of what factors affect reading difficulty.

Military literacy research has focused primarily on the task of relating some index of reading demand in a job or in training to some measure of reading ability. The reading requirements of military service have historically been stated in terms of "general" reading levels, which are usually based on performance on school-grade-referenced standardized reading tests. In other words, a general reading requirement level (e.g., "reading grade level 6.1") can be considered an index of how much difficulty an incumbent would encounter when reading job publications in order to answer questions on a multiple-choice test. Moreover, particular purposes for reading are usually implied in such tests: locating facts in, and drawing inferences from, narrative/expository prose. Yet, reading to answer factual questions and reading to draw inferences are only two of many possible purposes for reading, and

expository/narrative prose is but one of many types of printed material. Although these may be the most important purposes in school, reading in a job may involve other purposes.

The fact that general reading ability may be imperfectly related to military job reading requirements has prompted efforts to define military "job reading tasks." These efforts have resulted in identifying a number of literacy tasks and establishing literacy skill levels for several military specialties. Most approaches used, however, are research methodologies, too costly to be applied on an on-going, operational basis to all Air Force specialties. In addition, they generally produce estimates of reading difficulty with respect to a specialty as a whole, not to particular reading tasks performed in the specialty. Finally, they express literacy requirements in terms of general reading grade levels, even if these estimates have been based on job performance or job reading performance. This last factor limits the utility of the literacy data in designing appropriate reading training programs.

The principal objective of this research, therefore, was to develop an inventory approach to estimating Air Force job reading demands. Specifically, an approach was sought that

1. Was compatible with Air Force occupational survey methods.
2. Could be implemented operationally with existing equipment and resources.
3. Would provide information about Air Force job reading in terms of the frequency, difficulty, and criticality of specific reading tasks, rather than solely by reference to general reading ability/difficulty.

Evidence of the usefulness and dependability of such an inventory would be sought in its capacity to detect differences in reading requirements across Air Force career ladders, in the extent to which the kinds of reading reported conform to expectations based on the nature of the tasks performed in an occupation, and in the extent of agreement among incumbents concerning the difficulty of a given reading task and which reading tasks are associated with particular occupations.

Background

Several approaches to identifying and expressing job reading demands have been pursued. The variety of methods used during and since World War II is described and summarized by Sticht, Fox, Hauke, and Zapf (1976). Several of these approaches will be reviewed here, with particular attention to the evolution of the concept of a job reading task and the role of the reader's purpose for reading in defining such tasks.

Readability Approach

The most widely used method of estimating job or training reading demands has been to apply readability formulas to samples of publications found in jobs or training. Such formulas typically translate textual features such as sentence length or number of syllables per word into an index of difficulty such as reading grade level. The factors that are taken as affecting reading difficulty depend, superficially, on which readability formula is employed. Formulas have been based on vocabulary familiarity and diversity; number of simple, compound, and complex sentences, polysyllabic words, prepositions, and personal pronouns; and even the percentage of words beginning with w, h, and b (Klare, 1963). Rothkopf (1976) has suggested that such superficial characteristics of text may be indicative of deeper constructs, such as familiarity, that in turn may affect learning, retention, etc.

The well-known Flesch formula was published in 1948, but Klare dates the first formula to the early 1920's and traces the antecedents of formulas still further. The Air Force in particular has utilized such formulas; in a review of literacy research in the Air Force, Burkett (1976) cites many examples of their use: England (1950, 1951); Hegg and Weaver (1952); Peerson (1953); Klare, Mabry, and Gustafson (1954); Rubenstein and Aborn (1958); Kincaid, Yasutake, and Geiselhart (1967); Huff and Smith (1970); and Mockovak (1974b & 1974c). Siegel (1976) and Burkett also review related Air Force efforts to devise improved methods of measuring the comprehensibility of text, taking into account structural factors (such as use of headings) and content factors (such as level of abstraction), as well as the cognitive and language-processing load that the text places on the reader. Other aspects of the literacy question that Air Force research programs have addressed include measuring the literacy skills of trainees and job incumbents, developing training to improve literacy skills, and reducing the reading difficulty level of publications.

Readability formulas have also been used to measure literacy requirements in the other services. Duffy (1976) describes a study that assessed the readability of recruit training materials and the training manuals for three Navy rates (occupational specialties); Sticht (1975b) reviews the Army's use of readability formulas to estimate job reading demands.

The readability approach does not investigate the relation between reading performance and job performance; it takes as given that incumbents should be able to comprehend the publications found in jobs. The reading requirement of a specialty is defined as the difficulty of comprehending these texts, and the primary factor held responsible for differences in reading difficulty is the structural nature of the material read.

Job Proficiency Approach

An approach that does address the question of a job performance criterion is that of Sticht et al. (1971). This approach related standardized general reading test scores to performance on three criteria of job performance: job knowledge, hands-on job proficiency, and supervisors' ratings. The functional literacy level of a specialty was then defined as the general reading grade level at which no more than one quarter of incumbents were found to be among the lowest quartile of performers on the criterion measure. Although a criterion of satisfactory job performance is an added feature of this methodology, no attempt is made to identify directly the factors that affect reading difficulty.

Job Reading Task Approach

An alternative to both the readability approach and the job proficiency approach is also described by Sticht et al. (1971). In their job reading task approach, the structural nature of the material read is not, as such, isolated as a primary factor affecting reading difficulty. Instead, Sticht et al. focused on classifying job reading behavior in terms of job reading tasks identified by interviewing incumbents and collecting samples of the publications they reported using in their work. "Job reading task tests" were then constructed to assess incumbents' skill at performing these tasks.

Both the readability and the job reading task approaches, then, define literacy demand ultimately in terms of the comprehension of job reading materials. The latter approach is more refined in that (a) the comprehension tests consist of tasks that are more nearly like job behavior than those on standard comprehension tests, and (b) the measurement of comprehension is more direct, since the intermediary of a readability formula is not used.

There is no single, generally accepted taxonomy for classifying job reading behavior. In the job reading task approach, the factors identified as affecting reading difficulty depend on the way a job reading task is defined. Sticht et al. defined a job reading task primarily in terms of six categories of content:

1. Tables of contents and indexes
2. Standards and specifications
3. Identification and physical description
4. Procedural directions
5. Procedural check points
6. Functional descriptions

One dimension reflected in these categories is text structure, the same factor reflected by readability formulas. Indexes, for instance, consist of fewer words per "sentence" (i.e., entry) than do functional descriptions. The same could be said of specifications versus procedural directions. In short, the categories represent roughly a range of styles from concise to diffuse.

A second general factor that can be viewed as inherent in these content categories can be termed "message variables." These include, at the least, the amount of information contained in a message and the abstractness of the message. These can logically be presumed to affect reading difficulty, even though they are not readily defined or quantified. It is not possible to rank the content categories used by Sticht et al. neatly in terms of these characteristics, but some relation between content categories and such message variables seems clear. Procedural directions, for example, would seem likely to contain less information than do functional descriptions, and to be less abstract, as well.

A third factor that can be expected to affect reading difficulty and which is reflected in the content categories is the reader's intent, or purpose. Sticht et al. sought to determine in their job reading interviews the nature of information a person had been seeking, i.e., the kinds of questions that incumbents addressed to their job reading materials. Likewise, the job reading task tests developed by Sticht et al. were designed to require the examinee "to seek the kind of information from the materials which job incumbents reported seeking."

The "kind of information being sought"--the reader's purpose--can logically be expected to affect reading difficulty in at least two ways. The first is the level of comprehension required. Near one extreme, a message might be read solely to be transcribed, as during typing. Typists would not necessarily need to comprehend the meaning of messages at all, and their attention could be limited to the superficial form of the text. The same message, on the other hand, might be read by another person for a different purpose--to learn how to perform a procedure. In that case, the reader would need to attend to the sense of the text, not just its form; reading for this latter purpose could be expected to be more difficult.

Second, within the set of purposes that require comprehending the meaning of the message, the degree of information-processing, or type of search, required by the reader's purpose can be expected to affect reading difficulty. Reading text to ascertain a particular fact, for example, may be less difficult than attempting to comprehend or assimilate an entire message. When specific facts are being sought, limited scanning and understanding of the bulk of the message may be sufficient for a reader to reject portions that do not contain the desired information. When an entire message is to be comprehended, none of it can be partially understood and rejected. An example is preparing for an examination when the questions to be asked are not known.

Sticht et al. also defined two general purposes for job reading: to do a task and to learn to do a task. Although these purposes were not treated as separate variables in the definition of job reading tasks or development of job reading training, one or the other of these purposes for reading is implicit in some of the content categories. Reading standards or specifications, for example, implies the intent to find out a particular fact in the course of doing a task. Others of the content categories are less indicative of a single purpose. Functional descriptions might be read in the search for a particular fact during job task performance, but also to learn about a topic in general, as when preparing to conduct training.

The job reading task approach to defining functional literacy is of course subject to limitations, some of which are addressed by the research reported here. One problem is the metric for equating functional literacy levels across occupational specialties. In order to generate an index for this purpose, performance on the job reading task test for each Army specialty studied was related to scores on standardized grade-school-referenced reading tests (Sticht et al., 1971; Caylor, Sticht, Fox, & Ford, 1973). The literacy demand of a specialty was then defined as the reading grade level associated with any given criterion level of performance on the job reading task test. For example, Sticht et al. found that, if 80% of incumbents were expected to score at least 70% on the job reading task test, then the functional literacy level of the Cook specialty would fall in the range of reading grade levels 7.0 to 7.9. Thus, the eventual expression of functional literacy requirements was less direct than the original specification of job reading tasks; the methodology did not entirely escape dependence on the general reading standard.

A second limitation of this approach is that it does not yield information about the relative difficulty of different job reading tasks themselves, nor about the relative representation of different tasks among different occupations. If one occupational specialty is found to have a lower literacy skill requirement than another, as indexed in terms of general reading grade level, it is not known whether this is due to a lower proportion of more difficult reading tasks or to some other factor affecting reading difficulty. Thus, although the approach starts by identifying job reading tasks in several specialties, differences between specialties are not made explicit, but are captured and represented only implicitly in the various job reading task tests.

This limitation is perhaps of little importance when literacy skill requirements are being used for selection and classification. When it comes to developing training, however, the importance of knowing what reading tasks are performed in a specialty is self-evident. In a literacy training program based on the job reading task approach (Sticht, 1975a), this matter was addressed to an extent by using as training content the technical publications unique to the various specialties being trained. Differences between specialties in job reading tasks were

presumably represented by the different sets of publications, but this required producing a unique set of classroom materials for every career group trained.

Finally, the job reading task approach is a research method. Conducting interviews and developing a job reading task test for each specialty under investigation is costly. For this reason, the methodology is not suitable for application across a wide range of specialties.

Reading Task Inventory Approach

In a later study, Sticht et al. (1976) divided the domain of "reading to do" into two job reading tasks: "fact-finding" and "following directions." They then developed an inventory on which incumbents indicated, for each of five types of reading material, how frequently they read for each of these purposes. A job reading task test was then developed to represent these same tasks. When the test was administered to recruits, results suggested that the "following directions" items were more difficult to answer correctly. The authors advise caution, however, in interpreting the results of this study, pointing out that the reading task inventory had been administered to only four subjects and that representing different reading tasks in test items is a difficult matter.

The Present Approach to the Problem

Three factors have now been reviewed that have been shown or can logically be expected to affect the difficulty of job reading: text structure as defined by readability formulas, message variables, and the reader's purpose. Since this research was directed at testing an inventory approach, the use of readability formulas was not considered. Regarding the direct assessment of message variables, the inventory approach is not feasible. It would not be possible to describe in an inventory the technical distinction between the amount of information in a message and the apparent length of a message. The same is true for message abstractness. Judgments about such factors would most likely be unreliable, if the factors could be represented at all.

Of the three factors viewed as affecting reading difficulty, then, purpose for reading was selected for representation on the reading inventory. In an effort to capture a wider range of purposes that might affect reading difficulty, the following categories were initially specified:

Reading to transcribe

Reading aloud

Reading to sort materials by title or subject (not by content)

Reading to look up a specific fact

Reading a notice or order that a task is to be done

Reading about how to perform a specific procedure

Reading to summarize or edit information

Reading to find out about a topic

Reading material to find out what it is about

Purposes higher on the list are viewed as likely to involve less comprehension of a given message and/or less information processing. The reading involved in sorting by title, for example, is viewed as requiring less information processing than that involved in discovering what a message is all about.

Direct Estimates of Reading Difficulty

A goal of the inventory approach described here is to avoid the need to administer reading tests or to examine job reading materials and to obtain difficulty estimates more directly. The basic approach taken was for the incumbent to indicate why the material was read and then to rate the difficulty of the reading. In the initial phases of the study, this basic approach was divided into a task-related approach and a general, non-task-related approach. On the task-related inventory, the incumbent was asked to respond on the basis of the most recent instance of reading for a particular occupational task. On the general inventory, the incumbent was asked to respond on the basis of the last time any material was read for a given purpose. Like a job inventory, the task-related inventory was organized around a list of task statements that describe time-ratable, job-related behavior for an Air Force specialty.

A single, general inventory that could be employed Air-Force-wide, if effective, would be more economical to implement. Against the advantage of economy, however, the task-related approach holds these potential advantages:

1. Analysis of reading performance at a task level of description permits information about such behavior to be related to already existing job analysis data. Information about time spent, frequency, or difficulty of task performance can be used to clarify reading inventory data or to develop new information.
2. Task-level description permits generalization of findings about reading behavior in one Air Force Specialty (AFS) to other AFSs when there is overlap in types of job tasks performed.

3. The specificity of context and lower degree of abstraction in task-level description may aid an incumbent in recalling information about previous behavior in the job situation--for example, the reconstruction of past reading behavior. With a general inventory, an incumbent answering questions about job reading must first, on the basis of induction, recall situations where reading could have occurred and then decide whether or not it did. In a task-related inventory, potential situations for reading have already been identified, and the incumbent can relate them to functions performed on the job.
4. Similarly, a task-related inventory focuses on particular behavioral events and thereby should reduce much of the unreliability attributable to a subject's "mental averaging" to arrive at a decision regarding how that individual generally perceives reading situations or behaves in them.

A limitation of the task-related approach is that separate ratings of reading difficulty are not easily obtained for each reading purpose. Where a respondent indicates only one purpose for reading in performance of a given occupational task, the difficulty rating can be attributed solely to that purpose. But when two or more purposes for reading are indicated, the relationship between purpose for reading and difficulty of reading is not directly observable. In view of time and fatigue factors, it was not considered feasible to solicit separate ratings for each purpose for each occupational task listed. One method for addressing this limitation, which was not included in the present approach, would be correlational analysis relating purpose to difficulty ratings.

No attempt is made in the present approach to validate difficulty ratings against other measures of reading difficulty, such as readability estimates or performance on reading tests. Indeed, as noted previously, the inventory approach is specifically designed to avoid the requirement for applying readability formulas or constructing reading task tests for all specialties. In further developmental work, however, it might be informative to compare estimates of difficulty obtained by inventory to those obtained by other means, for some sample of career ladders.

Even such a comparison, of course, would not unequivocally establish the validity of the ratings in terms of job performance. Establishing the validity of such an inventory is particularly difficult, because the contribution of reading performance to job performance is difficult to isolate. When a high correlation is found between knowledge of welding techniques and performance on a welding proficiency test, inferring that welding knowledge contributes significantly to welding performance is not a great step. Since job knowledge may be acquired by means other

than reading, however, a strong relation between reading skill and job proficiency cannot be so easily explained.¹

Evidence of the usefulness of the inventory, however, would be indicated by agreement among incumbents concerning the difficulty of reading for a given purpose and, given such interrater reliability, by the capacity of the inventory to detect differences in reading requirements across career ladders. A prerequisite to the latter, of course, is agreement among incumbents concerning which purposes for reading are associated with particular occupational tasks and with career ladders. A third indicator of validity, which in the present study is examined only subjectively, is the extent to which the kinds of reading reported conform to expectations based on the nature of the tasks performed in the specialty. As an obvious example, clerical personnel would be expected to report reading to transcribe, or type, more frequently than would aircraft mechanics.

PROCEDURE

General Procedure

Task-related and general reading task inventories were constructed for selecting career ladders, and an initial trial was conducted at Travis AFB. Both inventory instruments were then revised, and a second trial was conducted at Norton AFB with incumbents in four career ladders, including three of those in the first trial. On the basis of these trials, a task-related approach was selected to be field tested. The task-related version of the inventory was further revised, converted to a format that could be optically scanned and scored, and prepared for two career ladders. This version was then field tested by the Air Force at Castle and Ellsworth AFBs.

Selection of Career Ladders

To support the development of task-specific instruments, occupational task lists were required for specific career ladders. It was desired that the trials be conducted with personnel in career ladders that (a) represented both maintenance and nonmaintenance career fields, (b) exhibited a negative literacy "gap" according to Mockovak (1974c), and (c) contained substantial numbers of personnel with relatively low

¹Sticht et al. (1976), pp. 137-139, discuss the peculiar difficulties of establishing validity in literacy research in general.

reading ability levels.² The following career ladders were selected for trials:

1. AFSC 431X2 - Airlift/Bombardment Aircraft Maintenance
2. AFSC 645X0 - Inventory Management
3. AFSC 645X1 - Materiel Facilities
4. AFSC 702X0 - Administration
5. AFSC 811X0 - Security Police

Trial No. 1

Four reading inventory instruments were developed for the first trial. (Sample items are shown in Appendix B). The Reading Task Inventory for each AFSC was a sample of from 256 to 275 tasks, stratified by duty category, from task lists provided by the Manpower and Personnel Division of the Air Force Human Resources Laboratory. The Reading Analysis Questionnaire contained six items and answers used in conjunction with the Reading Task Inventory. The Reading Analysis Inventory was a non-task-related version of the Reading Analysis Questionnaire. In addition to these instruments, a Reading Interview Guide was constructed for conducting structured interviews with some of the subjects.

Subjects using the task-related instruments first indicated, for each task on the Reading Task Inventory, whether the task was performed in the previous three months and whether reading was involved in task performance. The task number of each task in which reading had occurred, up to a maximum of 15 tasks, was then entered on the Reading Analysis Questionnaire. (This two-step procedure proved inexpedient; a one-step procedure was introduced in the second trial.) For each of the tasks indicated on the Reading Analysis Questionnaire, the subject then indicated a purpose for reading, the time spent reading, whether part or all of the material had been re-read to understand it, whether unusual stress had been involved, whether the object being read about was something near at hand, and how difficult the reading was.

Subjects using the non-task-related instruments first indicated, for a given purpose for reading, whether they had done any reading for that purpose during the previous three months. If so, the subject then responded as with the task-related format.

²Mockovak (1974a) identified 10 Air Force career fields as the primary contributors to base-level reading improvement courses: Aircraft Maintenance (42 & 43), Civil Engineering (54 & 55), Transportation (60), Food and Fuel Services (62 & 32), Administration (70), Supply (64), and Security Police (81).

The interviews followed the format of the non-task-related Reading Analysis Inventory. Before asking the incumbent questions about particular purposes for reading, however, the interviewer solicited instances when the subject had done "some kind of reading" on the job. The purpose of this first phase of the interview was to collect examples of purposes for reading and examples of materials read.

Questionnaires were administered to 212 incumbents at Travis AFB, as shown in Table 1. Interviews were then conducted with 17 of these incumbents.

Table 1. Trial No. 1 Sample

AFSC	Format		Total
	Task-Related	General	
431X2	38	29	67
645X0	15	20	35
645X1	28	25	53
702X0	27	30	57

Results of Trial No. 1

Reading was reported to have been involved in approximately two-thirds of the performed tasks. The incidence of reading reported for the nine reading purposes represented on the task-related inventory is shown in Table 2. (Purposes are listed in the order they were listed on the Reading Analysis Questionnaire.) The basis for the percentages is the number of tasks reported to have been performed in the preceding three months. The basis for the percentages shown for the general instrument (Table 3) is the number of subjects who completed the inventory. Thus, the percentages shown for the latter instrument are higher, sometimes reaching 100% of subjects in a given career ladder.

The task-related instrument revealed the highest incidence of reading in three categories: reading a written notice that a task is to be done, reading directions about how to do a specific procedure, and reading to find a specific fact. The task-related inventory revealed the greatest agreement among career ladders in frequency of reading in two categories: reading about a topic or situation and reading aloud.

Table 2. Purpose for Reading:
Task-Related Format

Trial No. 1

Purpose for Reading	Percentage Reading in Most Recent Performance of Task			
	431X2	645X0	645X1	702X0
Reading for at least one purpose	59	58	70	70
1. Read that a task is to be done	37	36	41	20
2. Read how to do a procedure	44	38	38	30
3. Look up a fact	28	46	55	37
4. Find out about a topic	8	11	12	11
5. Find out what material is about	4	14	17	29
6. Sort	2	14	17	29
7. Transcribe (type)	2	6	5	23
8. Summarize, edit	2	2	7	7
9. Read aloud	2	-	-	-

Table 3. Purpose for Reading:
General Format
Trial No. 1

Purpose for Reading	Percentage of Incumbents Who Reported Reading			
	431X2	645X0	645X1	702X0
1. Read that a task is to be done	90	89	100	97
2. Read how to do a procedure	69	69	63	67
3. Look up a fact	86	97	100	76
4. Find out about a topic	29	56	63	43
5. Find out what material is about	86	92	100	93
6. Sort	43	56	100	80
7. Transcribe (type)	36	56	88	70
8. Summarize, edit	21	40	38	63
9. Read aloud	29	11	38	13

The general, non-task-related instrument showed considerable agreement across AFSCs in frequency of usage in five reading categories: reading a written notice that a task is to be done, reading directions about how to do a specific procedure, reading to look up a specific fact, reading about a topic, and reading to find out what written material is about.

Ratings of reading difficulty and time spent in reading are shown in Tables 4 and 5. Task-related instruments tended to show more agreement across AFSCs in ratings of reading difficulty and time spent in reading in the different categories of reading than did the general instrument. Ratings of difficulty and time spent in reading are related in task-related data but less so, if at all, in data obtained with the general inventory.

Overall, task-related versions of the inventory discriminated both among jobs and among some of the purposes for reading. General versions of the inventory did not discriminate well among jobs, although they, like the task-related inventories, discriminated among some categories of reading.

Interviews with incumbents indicated that the intended meanings and differences among very different categories of reading purposes were readily understood--for example, reading to type versus reading aloud. However, there was confusion among closely related types of reading--reading a notice versus reading about a topic, for example. In some cases, errors in classifying a type of reading apparently occurred because incumbents failed to report their original purpose, and they responded instead on the basis of an inference made subsequently (reporting reading of a log that described an equipment malfunction, for example, as reading an order to repair the malfunction).

Accordingly, the wording of some categories was simplified prior to the second trial, and the descriptions of some categories were altered to reflect purposes for reading mentioned to the interviewers. Reading off checklists and reading over the phone were added to the examples of the reading aloud category. Reading to determine the proper disposition of correspondence, messages, etc., was added as a purpose. The category of reading about a topic or situation and the category of reading to find out what a message is all about were combined into a new category: to examine background information.

Further, the problem of categorizing purpose for reading was simplified by requiring an indication of the type of material being read, thus making the process of categorization less abstract. (Instead of asking "Why was I reading the last time I evaluated special project requests?" the incumbent might ask, "Why was I reading a tech order the last time I evaluated special project requests?"). Accordingly,

Table 4. Ratings of Reading Difficulty
Trial No. 1

Purpose for Reading	AFSC			
	431X2	645X0	645X1	702X0
Task-Related Format				
1. Read that a task is to be done	1.87	2.22	2.52	2.05
2. Read how to do a procedure	2.58	2.58	2.24	2.47
3. Look up a fact	2.06	1.80	1.97	2.12
4. Find out about a topic	3.18	2.33	2.00	3.20 ^a
5. Find out what material is about	2.67 ^a	3.33 ^a	2.10	2.71
6. Sort	1.33 ^a	2.38	1.14	2.08
7. Transcribe (type)	1.67 ^a	2.50	2.00 ^a	2.32
8. Summarize, edit	2.29	—	3.63 ^a	2.30
9. Read aloud	2.00 ^a	—	—	—
General Format				
1. Read that a task is to be done	2.74	2.59	2.50	2.59
2. Read how to do a procedure	2.81	2.48	2.40 ^a	2.64
3. Look up a fact	2.96	2.22	2.13	1.95
4. Find out about a topic	2.50	2.62	2.25 ^a	2.33
5. Find out what material is about	2.71	2.20	2.25	2.66
6. Sort	2.45	1.76	2.17	1.44
7. Transcribe (type)	3.10	1.50	2.00	2.95
8. Summarize, edit	2.17	2.69	2.00 ^a	1.63
9. Read aloud	3.25	1.75 ^a	2.67 ^a	3.25 ^a

^aFive or fewer responses

Table 5. Time Spent Reading
Trial No. 1

Purpose for Reading	AFSC			
	431X2	645X0	645X1	702X0
Task-Related Format				
1. Read that a task is to be done	1.76	1.66	2.36	2.10
2. Read how to do a procedure	2.20	2.37	2.32	2.06
3. Look up a fact	1.73	1.81	1.68	1.62
4. Find out about a topic	2.31	3.33 ^a	2.67	2.20 ^a
5. Find out what material is about	1.67 ^a	3.66 ^a	2.00	2.17
6. Sort	3.00 ^a	1.88	2.00	1.80
7. Transcribe (Type)	2.67 ^a	1.29	2.00 ^a	2.08
8. Summarize, edit	2.11 ^a	—	1.88 ^a	2.10
9. Read aloud	1.00 ^a	—	—	—
General Format ^b				
1. Read that a task is to be done	1.74	1.85	1.25	2.03
2. Read how to do a procedure	2.19	2.18	1.60 ^a	2.14
3. Look up a fact	2.40	1.68	1.25	1.65
4. Find out about a topic	2.37	2.05	1.50 ^a	2.00
5. Find out what material is about	2.48	1.94	1.50	2.00

^aFive or fewer responses

^bGeneral format permitted omitting time when confounded by other activities, e.g., typing.

the following list of types of reading material was added to the inventory prior to the second trial:

1. Work card, job guide, inspection card
2. Publication: e.g., manual, technical order, regulation, report, pamphlet, circular
3. Catalog
4. Textbook, book, Career Development Course (CDC), study materials
5. Letter, message (TWX), Time Compliance Technical Order (TCTO)
6. Bulletin board
7. Handout, mimeographed notice
8. Label or instructions appearing on equipment, aircraft, facilities, or materiel
9. Newsletter, magazine, periodical
10. Computer printout
11. Draft material: i.e., material to be typed, edited, checked, summarized
12. Microfilm, microfiche, computer display
13. Documentation, record
14. Forms to be completed

Sticht et al. (1976) had used a similar, but longer, list of printed materials in conducting interviews with Navy personnel concerning general reading. The categories just listed were intended to focus on job reading, although some materials (e.g., manuals, forms) will be found on both lists.

To solicit separate reports of purpose for reading for each type of material read (or vice versa) would impose a considerable burden on the incumbent's recall of past behavior and was not considered feasible, even if time and fatigue factors were ignored. It was not the intent, then, to define a job reading task simply as a two-dimensional event bounded by a purpose on one hand and a type of content on the other. Nevertheless, beyond their utility in aiding recall, the categories of reading material are of interest in their own right. There is obviously some relation, for example, between the type of material being read and the message variables, such as abstractness. The content of a job guide, an inspection card, or a label can be presumed to be fairly concrete. More abstract content would be found in regulations, textbooks, periodicals, and the like (although any of these, of course, could also contain concrete content).

Another variable represented by the range of content types is simply that of page layout, or format. An illustrated job aid, for example, has many visual and structural indicators to meaning, such as headings and arrows. An Air Force regulation presented in the conventional prose format has fewer such indicators. It is reasonable to expect--other factors being equal--that a tabular format or other arrangement intended to facilitate quick reference does indeed make information easier to retrieve and thereby lowers the reading difficulty of the material. As with message variables, a relationship between some of the descriptive categories of reading material and page format can be inferred that could be of practical value in understanding job reading. The following categories of job reading materials, which are used extensively in Air Force occupations, imply a rather highly structured format:

1. Work card, job guide, inspection card
2. Forms to be completed
3. Tables
4. Labels, signs, markers, abbreviated instructions appearing on equipment, etc.

It should also be noted that the categories overlap. A diagram, for example, might be found on a work card; a job guide might be a technical order itself; a mimeographed notice could appear on a bulletin board. This characteristic of the categories is consistent with their primary purpose: to stimulate recall by suggesting as many situations to the incumbent as possible.

Trial No. 2

Both task-related and general instruments were used in the second trial. (Sample items are shown in Appendix C). To simplify the two-step procedure initially used to administer the task-related questionnaire, the task list and the inventory questions were combined in a single booklet. To keep the booklet (and the subject's task) to a manageable size, only 46 to 52 tasks were included in each, and two or three forms of the inventory were used to cover a sample of 94 to 156 tasks in each career ladder.

Subjects using the task-related format indicated first whether they had performed the task in the preceding three months and whether reading had been involved. If so, the subject then indicated what type(s) of reading material had been used, indicated a purpose for reading each type, estimated the time spent reading each, and rated the difficulty of reading. Subjects using the general format estimated time spent and rated the difficulty of reading, both for types of material read and for purposes for reading. In both cases, difficulty was rated on a five-point scale, as in the first trial.

In interviews, from one to five of the tasks in which a subject had reported reading were discussed. The subject was asked to describe the reading that had taken place, and the interviewer noted any problems that the subject appeared to have in categorizing the purpose for reading.

Questionnaires were administered to 136 incumbents at Norton AFB, as shown in Table 6. Interviews were conducted with 16 incumbents.

Table 6. Trial No. 2 Sample

AFSC	Format		Total
	Task-Related	General	
431X2	19	18	37
645X0	21	20	41
702X0	23	24	47
811X0	7	6	13

Results of Trial No. 2

Reading was reported to have been involved in from 37% (AFSC 702X0 and 811X0) to 61% (AFSC 431X2) of tasks performed. The incidence of reading reported on the task-related inventory is shown in Table 7 by purpose for reading and in Table 8 by type of material. The frequency of reading reported on the general inventory is shown in Table 9 by purpose for reading and Table 10 by type of material.

Frequency of purpose reported for reading was found to vary by type of inventory used in assessment in some jobs but not in others. In AFSCs 431X2 and 811X0, both task-related and general instruments showed the most frequent reason for reading to be to check procedural information or directions about how to do a task. In AFSCs 645X0 and 702X0, task-related instruments also showed checking of procedural information as the most frequent reason for reading, but general instruments showed a rank of 5 out of 8 for this reason.

Frequency of type of materials reported being read varied by type of inventory. Task-related instruments showed the highest frequency of reading to occur with publications, forms to be completed, and work-cards/job guides. General instruments showed the highest frequency of reading to occur with bulletin boards, miscellaneous materials, and forms to be completed. The interviews revealed some confusion between the category "To check procedural directions about how to do a task" and the category "To examine background information to decide a course of action." Several subjects indicated the latter purpose when the former was more appropriate. In other instances, the category "To determine

Table 7. Purpose for Reading:
Task-Related Format

Trial No. 2

Purpose	Percentage Reading in Most Recent Performance of Task			
	431X2	645X0	702X0	811X0
Check procedural directions	53	33	16	21
Look up factual information	19	23	4	11
Examine background information	24	5	4	9
Copy, type	8	11	2	—
Read aloud	1	—	1	3
Determine disposition of material	7	4	6	3
Edit or summarize	5	5	3	13
Alphabetize, sort	6	4	11	3

Table 8. Materials Read:
Task-Related Format

Trial No. 2

Type of Material	Percentage Reading in Most Recent Performance of Task			
	431X2	645X0	702X0	811X0
Work card, job guide	40	13	6	11
Manual, technical order	33	26	24	19
Catalog	1	3	4	1
Textbook, CDC	2	3	3	4
Letter, TWX	6	6	3	4
Bulletin Board	2	—	2	3
Handout	6	2	3	7
Label on equipment	6	1	1	—
Newsletter	2	1	9	3
Computer printout	8	17	4	3
Material to be typed	2	3	3	6
Microfilm	1	4	1	—
Documentation	9	3	7	1
Forms	23	15	6	3
Other	1	2	1	—

Table 9. Purpose for Reading:
General Format
Trial No. 2

Purpose	Mean Rating of Reading Frequency			
	431X2	645X0	702X0	811X0
Check procedural directions	4.50	3.78	3.77	4.67
Look up factual information	4.33	4.26	3.73	2.83
Examine background information	3.56	3.39	3.68	3.00
Copy, type	2.94	4.15	4.59	1.83
Read aloud	2.72	3.20	2.95	2.17
Determine disposition of material	2.89	3.80	4.64	2.67
Edit or summarize	2.06	2.79	3.86	2.00
Alphabetize, sort	2.67	4.16	4.45	2.00

Table 10. Materials Read:
General Format
Trial No. 2

	Mean Rating of Reading Frequency			
	431X2	645X0	702X0	811X0
Work card, job guide	3.35	1.88	1.33	3.67
Manual, tech order	3.44	2.05	3.48	3.00
Catalog	1.56	1.50	1.39	.33
Textbook, CDC	1.89	1.74	2.38	2.67
Letter, TWX	2.56	1.84	2.91	1.33
Bulletin Board	3.61	2.47	3.46	3.50
Handout	2.94	2.22	2.96	3.00
Label on equipment	3.44	1.74	1.75	3.33
Newsletter	3.00	3.10	3.25	2.83
Computer printout	2.50	3.60	3.00	1.00
Material to be typed	1.29	1.67	3.42	1.50
Microfilm	1.61	2.00	1.48	—
Documentation	2.61	2.00	2.75	1.67
Forms	3.83	3.28	3.23	2.67
Other	—	—	4.00	4.00

proper disposition of written material" was inappropriately selected, and in others, the category "To edit or summarize written material" was used to mean simply extract information from one form and record it on another--i.e., to transcribe.

As a result, an effort was made prior to the field test to make the wording of purposes for reading simpler and more concrete and to eliminate sources of ambiguity. Two categories were deleted: "To examine background information to decide a course of action: e.g., decide approach to task, schedule work, diagnose equipment failure, plan activities, decide quantity to make or order" and "To edit or summarize written material: e.g., review reports and documents for proper form, correct teletype copy, classify messages, prepare summary of reports." The first purpose for reading listed on the first trial--reading a notice that a task was to be done--was restored to the list of purposes instead of being treated separately as it had been in the second trial. The simplified list was as follows:

1. Reading to find out that this task needed to be done.
2. Reading to learn the procedures or check directions.
3. Reading to look up facts: e.g., stock number, ZIP code.
4. Reading to copy, type, keypunch, etc.
5. Reading aloud: e.g., read off checklist, over public address system, phone.
6. Reading to give out or determine distribution of written material.
7. Reading to alphabetize, sort, or file.

Another difficulty became apparent after the interviews, when the task-related inventory responses were being tallied: many respondents did not provide estimates of purpose, time required to read, and difficulty of reading for each type of material separately. In the face of this outcome, it did not seem advisable to continue the use of comprehensive, interdependent items like those in the second trial instruments, which require the respondent to analyze and provide information about one dimension of reading behavior in terms of another--e.g., difficulty by purpose. Accordingly, items for the field trial were revised to be self-contained and inquire about a single dimension of reading behavior at a time.

DEVELOPMENT OF THE FIELD TRIAL INVENTORY

The task-related inventories generally appeared to provide more consistent information than did the general inventories; because of this and their advantage in permitting literacy data to be related to other occupational analysis data, the task-related format was selected for the field trial.

Forms of the reading inventory were developed for job incumbents in the Airlift/Bombardment Aircraft Maintenance Career Ladder (AFSC 431X2) and the Administration Career Ladder (AFSC 702X0). The inventories are shown in Appendix A. For each job, the 40 tasks performed by the largest number of incumbents were identified from occupational task lists. This set of tasks was selected to obtain the greatest expected number of instances of reading. This procedure naturally tends to bias the selection of tasks in favor of those performed by the greater proportion of incumbents in the population, lower-ranking personnel, and away from supervisory tasks. Although this effect is not likely to be of great magnitude, it is noted here because the type of occupational task being performed may affect purpose for reading and hence difficulty. In any future use of the inventory, at least two methods for avoiding the effects of a skewed distribution are available: (a) using separate task lists for incumbents in different pay grades and (b) analyzing survey results separately by technical and supervisory tasks.

Each task was listed on a separate set of facing pages of the inventory, together with the heading: "Have you performed this task in your present job?" If the task had been performed, the respondent then answered the following questions, responding for each of the 40 tasks in turn:

1. The last time you did this task, did you do any reading? (List of purposes follows.) Information about both frequency of reading for a particular task and purpose for reading is extracted from this item. Like the frequency of particular purposes for reading, the overall frequency with which reading occurs in any given occupational task and in all tasks together is estimated by averaging the reported frequencies of a sample of incumbents.

2. If you did any reading, how difficult was it? Direct estimates of reading task difficulty are solicited by having the incumbent rate the difficulty, on a seven-point scale, of any reading undertaken in conjunction with the performance of an occupational task.

3. Did you need any help to understand what you read? This item provides an additional, indirect index of difficulty. An operational definition of reading difficulty was expected to provide a less abstract measure of difficulty than that provided by the rating scale. Soliciting ratings poses an inherent problem: regardless of how a rating scale is anchored, definition of the variable to be evaluated is ultimately a subjective matter controlled by the rater. In the case of ratings of reading difficulty, raters may respond to the trouble they have in reading, to the level of complexity of the content of reading, or to the level of difficulty in relating what they read to the task they are performing. An additional advantage of asking whether or not an incumbent needed help in reading is that such information may be of more direct use to the Air Force. If a person is able to accomplish the reading required in performing a task, it is probably of somewhat less consequence whether the reading is perceived as easy or difficult.

4. If instructions are needed for doing this task, can they be obtained without reading? Item 4 was introduced to provide one measure of the degree to which reading is required to perform a task. This degree of importance will be termed "criticality," but without the meaning that reading is absolutely either necessary or not necessary. In this item, the inventory solicits information about the criticality of reading for a particular purpose: obtaining instructions for performing a task. The availability of sources of instructions other than reading (such as from a co-worker) is viewed as lessening the criticality of reading.

5. If you ever do any reading in this task, what materials do you read? (List of materials follows.) Item 5 contains the categories of reading materials described earlier.

FIELD TEST RESULTS AND DISCUSSION

The inventories were administered by Air Force personnel to 169 job incumbents in AFSC 431X2 and 257 incumbents in AFSC 702X0 at Castle AFB and at Ellsworth AFB. Sample distributions are shown in Table 11, by pay grade. Comparisons of the two AFSCs for reading behavior and reading requirements are based on data for all 40 survey tasks within each

Table 11. Reading Inventory Field Test Sample

Grade	AFSC 431X2			AFSC 702X0		
	Castle AFB	Ellsworth AFB	Total	Castle AFB	Ellsworth AFB	Total
E1	—	1	1	—	2	2
E2	16	4	20	20	20	40
E3	22	20	42	46	50	96
E4	28	27	55	29	24	53
E5	15	6	21	8	16	24
E6	7	10	17	11	13	24
E7	3	2	5	4	3	7
E8	—	2	2	1	1	2
Unknown	6	—	6	3	6	9
Total	97	72	169	122	135	257

AFSC, combined. These consist of 4,503 occurrences of incumbent/task performance in AFSC 431X2 and 5,892 occurrences of incumbent/task performance in AFSC 702X0. The number of incumbents who performed a given task in AFSC 431X2 ranged from 11 to 155, and in AFSC 702X0, from 90 to 241. The number of incumbents who reported reading in conjunction with a given task ranged from 8 to 130 in AFSC 431X2 and from 37 to 150 in AFSC 702X0.

As noted previously, a goal of the inventory is to obtain information about Air Force job reading in terms of the frequency, difficulty, and criticality of specific reading tasks. The results of the field test will be discussed in this order. The primary inventory factor viewed as affecting reading difficulty is the reader's purpose. Comparisons of purpose for reading and of materials read will be shown across AFSCs, occupational tasks within AFSCs, and subgroups of incumbents.

Frequency and Purpose for Reading by Occupational Task

Patterns of reading in the performance of occupational tasks indicate the extent to which incumbents discriminate among tasks in their inventory responses and provide a basis for estimating the usefulness of a task-related reading survey instrument. The inventory would be of considerable value if it merely captured broad differences between Air Force occupations. However, its practical utility--and also the opportunity to use information about the literacy requirements of individual tasks in combination with other task-specific occupational analysis information--will be much enhanced if actual differences in reading requirements among occupational tasks are reflected in inventory responses for different tasks. To investigate this, an analysis was done of the percentage of persons reading in the performance of individual survey tasks. The results are shown for AFSC 431X2 in Table 12 and for AFSC 702X0 in Table 13. In both AFSCs, there are clear differences in these samples between tasks in percentage of incumbents who reported reading for task performance, ranging from 95% to 17% in AFSC 431X2 and from 95% to 22% in AFSC 702X0.

This finding is very promising. If these differences between job tasks prove to be stable, the inventory could be of considerable practical value in identifying aspects of job performance where reading is especially important. In the present study, the sample was not split to permit estimating the consistency of the findings. In light of the promising results of this first field trial, repeat administration of the survey instrument to other samples is clearly warranted.

Some corroboration of this discriminative capacity of the inventory is seen when the reported magnitude of reading is compared to expectations based on the nature of the task itself. In many cases, it is

Table 12. Percent of Task Performers
Who Read for One or More Purposes

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	95
2. Defuel aircraft using single-point methods (102)	92
3. Inspect landing gear components (108)	89
4. Conduct on-the-job training (103)	87
5. Review aircraft records or maintenance forms (152)	86
6. Prepare reparable item processing tag forms (135)	85
7. Inspect struts (118)	81
8. Supervise apprentice maintenance specialists (90)	80
9. Inspect flight control surfaces (115)	77
10. Coordinate with maintenance personnel (120)	77
11. Inspect hydraulic system reservoirs (95)	75
12. Check cargo ramp systems (11)	73
13. Check aircraft doors (99)	71
14. Inspect maintenance equipment (143)	71
15. Inspect blow-in, sucker, or flipper doors (65)	69
16. Inspect hydraulic system lines (116)	69
17. Operate aircraft auxiliary power plants (72)	69
18. Drain fuel sumps (120)	68
19. Check aileron, rudder, elevator systems (73)	68
20. Prepare maintenance data collection record forms (149)	66
21. Inspect 780 equipment for serviceability (65)	65
22. Operationally check fire/overheat detection systems (75)	65
23. Check wing flaps (106)	61
24. Visually inspect single-point receptacles (105)	59
25. Inspect hydraulic system sight gages (111)	59
26. Post entries to maintenance discrepancy forms (148)	59
27. Lubricate struts (95)	58
28. Safety wire aircraft hardware (126)	56
29. Inspect aircraft external lights (119)	52
30. Remove or replace aircraft access panels (143)	51
31. Remove/replace aircraft light lenses (107)	49
32. Remove/replace aircraft light bulbs (123)	46
33. Sign for parts (126)	42
34. Clean polished surfaces of struts (129)	41
35. Ground aircraft (147)	40
36. Position Aerospace Ground Equipment (AGE) to aircraft (148)	39
37. Operate maintenance stands (155)	26
38. Tow nonpowered AGE (83)	24
39. Issue or receive tools (132)	23
40. Position or remove aircraft chocks (145)	17

Table 13. Percent of Task Performers
Who Read for One or More Purposes

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Establish publication libraries (116)	95
2. Develop documentation files (140)	94
3. Direct maintenance of administrative files (161)	92
4. Prepare Airman Performance Reports (143)	88
5. Determine requirements for space, personnel, etc. (107)	84
6. Review files maintenance and disposition plans (132)	83
7. Determine work priorities (163)	82
8. Review publication bulletins (171)	80
9. Develop work methods or procedures (126)	79
10. Type blank forms (192)	78
11. File documentation (179)	77
12. Post standard publications (187)	77
13. Prepare file guides or labels (169)	76
14. Edit drafts of administrative communications (164)	75
15. Compose drafts of administrative communications (135)	74
16. Type final form administrative communications (190)	73
17. Distribute publications (111)	72
18. Review outgoing administrative communications (165)	72
19. Send sponsorship kits or welcome letters (95)	72
20. Review publication requirements (151)	70
21. Destroy non-current documentation (144)	69
22. Prepare cross-reference sheet forms (120)	68
23. Type drafts of administrative communications (190)	67
24. Sort documentation for filing (159)	66
25. Post publication bulletins (131)	66
26. Schedule leaves or passes (116)	66
27. Maintain suspense files (174)	61
28. Prepare requests for reproduction services (192)	61
29. Maintain locator card files (90)	60
30. Package unclassified materials (126)	56
31. Coordinate administrative communication suspenses (129)	56
32. Notify personnel of appointments, details, training (138)	54
33. Conduct daily security checks (98)	53
34. Charge out documents (123)	42
35. Maintain office supply stock levels (129)	42
36. Deliver administrative communications (160)	41
37. Perform operator maintenance on typewriters (98)	38
38. Operate office copy machines (189)	37
39. ^a Answer telephones (241)	22

^aOne of the task titles was inadvertently duplicated in the printing of the AFSC 702X0 inventory. As a result the inventory contained 39 instead of 40 tasks.

reasonable to infer the nature of task content from the task title, and the magnitude of reported reading generally appears to be appropriate to the nature of the task. In AFSC 431X2, four of the five tasks with the largest percentage of persons reading are "Locate part numbers in illustrated breakdowns" (95%); "Defuel aircraft using single-point method" (92%), where safety requirements prescribe that defueling be done in accordance with a written checklist; "Conduct on-the-job training" (87%), where instructional and other printed materials are typically used; and "Review aircraft records or maintenance forms" (86%). At the low end of reading frequency are two relatively simple tasks that would be expected not to require reading very often: "Issue or receive tools" (23%) and "Position or remove aircraft chocks" (17%).

Similarly, in AFSC 702X0, tasks in which reading would seem necessary and in which a high percentage of persons reported reading are "Establish publication libraries" (95%); "Review files maintenance and disposition plans" (83%); "Review publication bulletins" (80%); "Post standard publications" (77%); "Edit drafts of administrative communications" (75%); and "Review outgoing administrative communications" (72%). The task with the fewest persons reading, "Answer telephones" (22%), is one that would not generally be expected to have reading associated with it.

Responses do not conform completely, however, to the expectations of such rational analysis. For example, only 75%, rather than 100%, of performers of the task "Edit drafts of administrative communications" reported reading, even though editing implies reading. Although occasional error of this magnitude seems tolerable, it may also indicate that response options for additional reading purposes should be added to the inventory. As already noted, reading to edit had been listed as a purpose in earlier trial versions of the inventory but was omitted from the final version to simplify the purposes. A person who reads for the purpose of editing but who finds no such option on the inventory might mark "No reading done." While it is not possible to list all potential purposes for reading in the inventory, perhaps editing should be reintroduced. Also, since other purposes for reading may be imbedded in the purposes studied here, it would be useful if further developmental work on the survey instrument included a deeper analysis of the range of purposes.

Further evidence of the dependability of the data obtained with the inventory is found by comparing the purposes given for reading to expectations based on the nature of the occupational task, as inferred from the task title. Purposes for reading are given by task in Appendices D and E for AFSCs 431X2 and 702X0, respectively. When purposes for reading are examined, they often correspond to expectation. In AFSC 431X2, for example, the purpose of reading to look up facts is given by 81% of persons performing the task "Locate part numbers in illustrated breakdowns," a purpose clearly implied by the task title. The percentages of persons who indicate reading in this task for other, less obvious reasons range from only 8% to 36%.

In summary, the wide range of incidence of reading across tasks within each AFSC indicates that incumbents do discriminate reading requirements among job tasks. This conclusion is reinforced by evidence that incumbents discriminate not only with respect to frequency of reading overall, but also with respect to particular purposes. For AFSCs in which occupational task lists are available, then, data from a reading inventory regarding the frequency with which reading is done in conjunction with task performance could be collected in a manner that would allow direct combination with data currently being collected and used within the Air Force Occupational Analysis Program (Christal, 1944). For example, the utility or importance of reading in the performance of a task could be determined as a joint function of the frequency of task performance and the difficulty of reading when the task is performed.

Occupational Tasks Combined

For all 40 occupational tasks in each AFSC combined, the percentage of persons reading and their purposes for reading are shown in Table 14. Some type of reading was reported in 61% of the occurrences of incumbent/task performance in AFSC 431X2 and in 67% of the occurrences in AFSC 702X0. From 24% to 67% of the job-related reading reported in this study is done to look up facts, to find out that a task is to be performed, or to learn or check a procedure. Persons in AFSC 702X0 read far more frequently for such purposes as copying, typing, distributing written material, alphabetizing, sorting, and filing, all tasks of obvious relevance to work in the administration career ladder.

Frequency and Purpose for Reading, by Grade

The sample was of sufficient size to permit comparison of the reasons given for reading for pay grades E1 through E3 combined (Airman Basic, Airman, and Airman First Class), E4 (Senior Airman and Sergeant), and E5 and E6 combined (Staff Sergeant and Tech Sergeant). These particular combinations of pay grades were used because they correspond approximately to Air Force skill level classifications.

The percentage of persons reading and their reasons for reading are given by grade in Tables 15 and 16. In both AFSCs, the percentage of persons who read in the course of task performance remains fairly constant over grade, whereas the number of purposes reported for reading tends to rise somewhat with grade.

It is plausible that higher ranking personnel read for more purposes because supervisor-level activities, such as teaching and problem solving, are more complex. The apparent pattern in the sample data, of course, does not by itself constitute a sufficient basis for this conclusion. Nevertheless, the trend toward reading for more purposes in the higher grades seems strong enough to warrant additional administrations of the inventory to see if the trend is consistent. It is also

Table 14. Comparison of Incidence and Purpose of Reading in Two Air Force Jobs

Purpose for reading	Percentage reading in most recent performance of task		Differ- ence	χ^2 between jobs
	431X2	702X0		
Reading for at least one purpose	60.6	66.9	6.3	$\chi^2=43.97$, df=1, p<.01
Learn procedure or check direction	44.5	42.6	1.9	$\chi^2= 3.71$, df=1, NS
Find out task to be done	32.9	34.6	1.7	$\chi^2=11.80$, df=1, p<.01
Look up facts	23.6	25.0	1.4	$\chi^2= 2.74$, df=1, NS
Read aloud	8.8	8.0	.8	$\chi^2= 2.27$, df=1, NS
Copy, type, keypunch, etc.	7.1	20.4	13.3	$\chi^2=357.70$, df=1, p<.01
Distribute written material	6.2	20.7	14.5	$\chi^2=434.29$, df=1, p<.01
Alphabetize, sort, or file	4.6	21.3	16.7	$\chi^2=581.42$, df=1, p<.01

Table 15. Purpose for
Reading by Grade
AFSC 431X2

Purpose	Percentage reading		
	E1-E3 ^a	E4 ^b	E5-E6 ^c
Reading for at least one purpose	58.6	60.3	58.2
Learn procedure or check directions	40.8	44.8	41.0
Find out task to be done	36.3	38.5	32.9
Look up facts	14.2	24.2	25.6
Read aloud	4.7	9.6	11.6
Copy, type, keypunch, etc.	3.4	6.1	8.4
Distribute written material	2.5	6.5	7.4
Alphabetize, sort or file	2.0	4.5	6.0

^aBased on 1,522 incumbent/task occurrences

^bBased on 1,684 incumbent/task occurrences

^cBased on 1,003 incumbent/task occurrences

Table 16. Purpose for
Reading by Grade
AFSC 702X0

	Percentage reading		
	E1-E3 ^a	E4 ^b	E5-E6 ^c
Reading for at least one purpose	65.0	71.0	65.6
Learn procedure or check directions	40.2	40.7	47.4
Find out task to be done	31.4	37.4	37.5
Look up facts	23.3	26.5	27.0
Read aloud	7.7	5.4	10.0
Copy, type, keypunch, etc.	20.1	20.4	21.9
Distribute written material	18.8	18.5	24.7
Alphabetize, sort or file	20.7	20.4	24.1

^aBased on 2,916 incumbent/task occurrences

^bBased on 1,167 incumbent/task occurrences

^cBased on 1,400 incumbent/task occurrences

possible that the older, more experienced incumbents are more conscientious in completing the inventory and consequently recall or report more of the kinds of reading that they do. This question would probably best be addressed by follow-up interviews with incumbents in various grades.

The most notable difference between grades in purpose for reading was found in AFSC 431X2, in which approximately 25% of E4 to E6 personnel reported reading to look up facts, versus only 14.2% of those in grades E1 to E3. In AFSC 431X2, however, the general pattern is attenuated with respect to reading to learn procedures or check directions and reading to find out that a task is to be done. For both of these purposes, the greatest percentages of persons reading were found in grade E4.

Reliability of the inventory item for obtaining information about purposes for reading was estimated based on an analysis of variance model (Winer 1962, pp. 124-132). Reliability coefficients for pay grades E1 to E3 combined, E4, and E5 to E8 combined, are given in Tables 17 and 18. These coefficients indicate the error of measurement in AFSC 431X2 to be quite low but in AFSC 702X0 to be somewhat greater. It is not known whether the differences in agreement about the purposes for reading between AFSCs is related to their differences in AFQT (see Table 19). If such differences in the reliability of purposes for reading are found to be general, the suitability of the inventory for persons at lower aptitude levels may be open to question.

Frequency of Reading: Type of Material

Types of material read are compared in Table 20. In AFSC 431X2, 56% of task performance occurrences include reading work cards, job guides, and inspection cards. In AFSC 702X0 these same materials are consulted only 11% of the time. Publications such as manuals, technical orders, and regulations provide the most frequent reading content in AFSC 702X0. Reading occurs in both jobs with intermediate frequency using forms (24%); records, documentation and logs (21%); and textbooks and Career Development Course materials (21% and 19%).

Major differences in the materials in which reading occurs in the two jobs is found in the categories of work cards, job guides, and inspection cards (56% in AFSC 431X2; 11% in AFSC 702X0), messages, letters, TWXs, and TCTOs (12% in 431X2; 21% in 702X0), and in material to be copied, typed, or reproduced (6% in 431X2; 21% in 702X0). Like purposes for reading, these differences in types of material conform to differences in the nature of the AFSCs; indeed, the differences between AFSCs is more obvious in relation to the type of material being read than it is to the purpose for reading.

As with purpose for reading, when the types of material read are examined by individual task, they appear to be appropriate to task content. Types of material read are given by task in Appendices F and G

Table 17. Estimated Reliability of
Purposes for Reading in 40 Tasks
AFSC 431X2

Task No. ^a	Pay Grade			Task No.	Pay Grade		
	1-3	4	5+		1-3	4	5+
1	.90	.77	.89	21	.97	.95	.90
2	.68 ^b	.95	.92	22	.98	.97	.95
3	.96	.93	.91	23	.97	.97	.94
4	.96	.87	.87	24	.96	.95	.83
5	.94	.94	.95	25	.93	.97	.90
6	.97	.93	.90	26	.96	.97	.93
7	.92	.88	.66	27	.97	.97	.93
8	.88	.87	.79	28	.97	.96	.92
9	.95	.93	.95	29	.97	.97	.92
10	.83	.77	.80	30	.96	.97	.93
11	.55 ^b	.63	.20 ^b	31	.97	.97	.92
12	.97	.97	.94	32	.93	.94	.85 ^b
13	.97	.97	.97	33	.96	.97	.87
14	.97	.93	.93	34	.95	.95	.84 ^b
15	— ^b	— ^b	— ^b	35	.96	.98	.96
16	.87	.85	.76	36	.92	.98	.95
17	.96	.92	.75 ^b	37	.97	.98	.95
18	.86 ^b	.90	—	38	.90	.70 ^b	.40 ^b
19	.97	.94	.85 ^b	39	.91	.95	.65 ^b
20	.96	.94	.86 ^b	40	.95	.96	.93

^aSee Appendix A for list of task titles.

^bN = 10 or less

Table 18. Estimated Reliability of
Purposes for Reading in 39 Tasks

AFSC 702X0

Task No. ^a	Pay Grade			Task No.			
	1-3	4	5+		1-3	4	5+
1	.44	.12	.94	21	.90	.85	.74
2	.82	.81	.86	22	.83	.80	.78
3	.90	.75	.93	23	.82	.70	.70
4	.78	—	.83	24	.94	.91	.87
5	.93	.84	.93	25	.94	.92	.85
6	.81	.75	.91	26	.93	.85	.84
7	.94	.88	.96	27	.93	.74	.80
8	.84	.06 ^b	.50 ^b	28	.96	.90	.88
9	.84	.69	.87	29	.93	.85	.84
10	.84	.81	.51	30	.91	.78	.84
11	.06	.70	.72	31	.87	.82	.70
12	.20	—	.74	32	.81	.52 ^b	.46
13	.89	.71	.87	33	.96	.93	.93
14	.85	.91 ^b	.83	34	.97	.85	.95
15	.92	.86	.81	35	.94	.92	.88
16	.88	.78	.57	36	.91	.92	.69
17	.90	.77	.93	37	.95	.90	.94
18	.58	.46	.72	38	.94	.88	.89
19	.89	.83	.85	39	.93	.93	.83
20	.86	.72	.31				

^aSee Appendix A for list of task titles

^bN = 10 or less

Table 19. AFQT Scores

Year Group	AFSC 431X2		AFSC 702X0	
	Mean	S.D.	Mean	S.D.
1978	59.47	18.88	52.31	18.70
1979	60.00	18.69	52.53	18.11

Table 20. Comparison of Types of Material Read in Two Air Force Jobs

Type of Material	Percentage reading in performance of task		Difference	χ^2	Between Jobs
	431X2	702X0			
Work card, job guide, inspection card	56.0	11.4	44.6	$\chi^2=2391.99$	df=1, p<.01
Manual, tech order, regulation, circular, etc.	51.3	55.8	4.5	$\chi^2=$	20.92, df=1, p<.01
Forms	24.2	24.9	.7	$\chi^2=$	.73, df=1, NS
Record, documentation, log	21.9	21.5	.4	$\chi^2=$	.18, df=1, NS
Textbook, CDC	20.6	18.6	2.0	$\chi^2=$	6.54, df=1, p<.01
Labels, signs, instructions on equipment	12.8	11.4	1.4	$\chi^2=$	5.17, df=1, p<.05
Diagrams, figures, graphs	11.9	9.9	2.0	$\chi^2=$	10.93, df=1, p<.01
Message, letter, TWX, TCTO	11.6	20.7	9.1	$\chi^2=$	152.45, df=1, p<.01
Tables	9.8	9.4	.4	$\chi^2=$	.42, df=1, NS
Computer printout	8.0	11.0	3.0	$\chi^2=$	26.36, df=1, p<.01
Material to be copied, typed, reproduced	6.1	21.8	15.7	$\chi^2=$	488.89, df=1, p<.01
Mimeographed notice, handout	5.2	9.5	4.3	$\chi^2=$	66.53, df=1, p<.01
Microfilm, microfiche, computer display	3.6	4.9	1.3	$\chi^2=$	9.83, df=1, p<.01

for AFSC 431X2 and AFSC 702X0, respectively. In AFSC 431X2, 90% of those who had performed the task "Inspect landing gear components" reported using work cards, job guides, and inspection cards; and 64% reported using manuals, technical orders, regulations, and circulars. By contrast, performers reported reading less obvious types of materials to a much lesser extent (e.g., forms - 23%; textbook or CDC - 21%; tables - 6%; materials to be typed - 4%). In AFSC 702X0, 51% of those performing the task "Type blank forms" reported reading forms to be completed, and 34% reported reading material to be typed. Except for reading done in manuals, technical orders, etc.--which was a category of reading material with a high frequency of reading for most tasks--reading in less obvious categories ranged from only 3% to 22%. In two other tasks where there is typing, "Type drafts of administrative communications" and "Type final form of administrative communications," 47% and 42% of performers indicated that the type of material they read was material to be typed. Reading in less obvious categories ranged from 3% to 19% and from 3% to 24% for the two tasks, respectively.

In summary, incumbents appear to discriminate as well or better between types of material read as between their purposes for reading. As with purposes for reading, the data area in accordance with rational expectations and provide evidence of the validity of a questionnaire approach to analysis of job reading requirements.

Types of Material Read, by Grade

Types of material read are shown by pay grade in Tables 21 and 22. For most types of material in AFSC 431X2, there is a pattern similar to that of purposes for reading: increased reading with increasing grade. This is especially pronounced with respect to the categories "manual, technical order, regulation, circular," "forms," and "record, documentation, log." In AFSC 702X0, a pattern of increased reading with increasing grade is found not only for these three categories, but also for three others: "message, letter, TWX, TCTO," "computer printout," and "microfilm, microfiche, computer display." Overall, however, the trend toward increasing types of material read with increasing grade is less pronounced in AFSC 702X0; in many categories of reading material, the second highest occurrence of reading was found in the lowest pay grades.

Like the patterns that emerged with respect to purposes for reading, these results appear to warrant verification by repeat administration of the inventory and/or interviews. One question in particular that could be addressed by interviews is whether pay grade has less effect on types of materials read in AFSC 702X0 or whether the effect is merely obscured by the somewhat greater amount of reading overall in this AFSC.

Reading Difficulty

The ratings of difficulty of reading in individual tasks proved to be the aspect of the inventory of least certain usefulness. The reliability of reading difficulty (Table 23) was estimated based on an analysis of variance model (Winer 1962, pp. 124-132). The low coefficients

Table 21. Types of Material
Read by Grade
AFSC 431X2

Type of Material	Percentage reading		
	E1-E3 ^a	E4 ^b	E5-E6 ^c
Work card, job guide, inspection card	50.8	60.2	55.8
Manual, tech order, regulation, circular, etc.	47.7	46.1	62.0
Forms	15.7	27.8	28.6
Record, documentation, log	14.1	24.2	25.1
Textbook, CDC	21.0	18.6	20.6
Labels, signs, instructions on equipment	7.4	14.2	14.4
Diagrams, figures, graphs	10.2	10.9	13.0
Message, letter, TWX, TCTO	7.8	11.8	13.6
Tables	6.4	9.1	12.3
Computer printout	3.9	8.3	10.0
Material to be copied, typed, reproduced	2.7	6.2	8.0
Mimeographed notice, handout	1.4	5.7	7.3
Microfilm, microfiche, computer display	1.6	3.9	3.1

^aBased on 1,522 incumbent/task occurrences

^bBased on 1,684 incumbent/task occurrences

^cBased on 1,003 incumbent/task occurrences

Table 22. Types of Material
Read by Grade
AFSC 702X0

Type of Material	Percentage reading		
	E1-E3 ^a	E4 ^b	E5-E6 ^c
Work card, job guide, inspection card	12.3	9.2	10.9
Manual, tech order, regulation, circular, etc.	51.7	53.1	65.9
Forms	20.9	22.4	33.8
Record, documentation, log	19.8	18.5	27.8
Textbook, CDC	20.6	11.5	21.6
Labels, signs, instructions on equipment	11.5	7.7	14.0
Diagrams, figures, graphs	9.5	7.4	12.6
Message, letter, TWX, TCTO	17.5	17.7	29.7
Tables	9.4	6.0	12.4
Computer printout	8.9	8.7	16.3
Material to be copied, typed, reproduced	20.6	23.1	24.6
Mimeographed notice, handout	9.1	6.6	13.5
Microfilm, microfiche, computer display	3.8	3.7	8.3

^aBased on 2,916 incumbent/task occurrences

^bBased on 1,167 incumbent/task occurrences

^cBased on 1,400 incumbent/task occurrences

Table 23. Reliability Coefficients by AFSC
for Ratings of Reading Difficulty

AFSC	Pay Grade			Total
	1-3	4	5+	
431X2	.07	.04	.00	.24
702X0	.63	.00	.39	.72

indicate a lack of consistency in the ratings of the difficulty of reading associated with task performance. Thus, although there were differences³ across tasks in both specialties (Tables 24 and 25), agreement among incumbents about the level of difficulty was poor. When tasks are examined, there is evidence that incumbents may be responding to the complexity of task content rather than to the difficulty of any reading that may be associated with that content. For example, in AFSC 431X2 the tasks with the lowest ratings of reading difficulty are "Issue or receive tools" and "Clean polished surfaces of struts," tasks that would be expected to require little or no reading. The task with the highest difficulty rating, "Locate part numbers from illustrated parts breakdowns," may be somewhat painstaking but would not appear to involve reading that is particularly difficult.

Mean difficulty ratings in the two specialties (Table 26) were not significantly different, although perhaps they should have been. It can be estimated on the basis of differences in AFQT scores that incumbents in the maintenance ladder generally possess higher reading comprehension scores than do those in the administration ladder (Madden & Tupes 1966; Mockovak 1974). Further, ratings of the difficulty of reading might be expected to be related to differences in reading comprehension. On the other hand, AFQT also decreases with grade, and increasing difficulty of reading is reported with increasing grade in both specialties (Table 27). Since the readability level of the printed material read by respondents in each specialty is unknown, we can only speculate as to whether the lack of difference in perceived difficulty of reading between specialties is due to the observed unreliability of the ratings, a compensating difference in the difficulty of reading materials, or some other factor.

³Since difficulty ratings vary by pay grade, greater differentiation might have been found if grade had been controlled in the analysis.

Table 24. Rated Reading Difficulty by
Persons Who Read in Task Performance

AFSC 431X2

<u>Job Tasks (Number of Ratings)</u>	<u>Mean Rating</u>
1. Check cargo ramp systems (6)	4.00
2. Locate part numbers in illustrated breakdowns (116)	3.43
3. Supervise apprentice maintenance specialists (69)	3.36
4. Coordinate with maintenance personnel (84)	3.32
5. Tow nonpowered AGE (19)	3.32
6. Conduct on-the-job training (86)	3.22
7. Inspect maintenance equipment (93)	3.15
8. Sign for parts (53)	3.13
9. Prepare reparable item processing tag forms (114)	3.10
10. Operate aircraft auxiliary power plants (47)	3.09
11. Prepare maintenance data collection record forms (103)	3.02
12. Lubricate struts (52)	3.02
13. Inspect blow-in, sucker, or flipper doors (41)	3.00
14. Position AGE to aircraft (57)	2.98
15. Operationally check fire/overheat detection systems (46)	2.98
16. Position or remove aircraft chocks (25)	2.96
17. Review aircraft records or maintenance forms (129)	2.93
18. Inspect landing gear components (94)	2.93
19. Defuel aircraft using single-point methods (91)	2.93
20. Inspect 780 equipment for serviceability (40)	2.93
21. Remove/replace aircraft light lenses (50)	2.92
22. Check aircraft doors (67)	2.91
23. Post entries to maintenance discrepancy forms (89)	2.90
24. Operate maintenance stands (38)	2.89
25. Inspect struts (91)	2.89
26. Safety wire aircraft hardware (68)	2.85
27. Inspect hydraulic system reservoirs (67)	2.85
28. Check wing flaps (27)	2.82
29. Inspect hydraulic system sight gages (68)	2.82
30. Remove or replace aircraft access panels (71)	2.80
31. Visually inspect single-point receptacles (61)	2.79
32. Drain fuel sumps (80)	2.79
33. Inspect hydraulic system lines (76)	2.76
34. Remove/replace aircraft light lenses (58)	2.76
35. Check aileron, rudder, elevator systems (48)	2.75
36. Inspect flight control surfaces (85)	2.74
37. Inspect aircraft external lights (62)	2.73
38. Ground aircraft (57)	2.70
39. Issue or receive tools (28)	2.61
40. Clean polished surfaces of struts (51)	2.61

Table 25. Rated Reading Difficulty by
Persons Who Read in Task Performance

AFSC 702X0

<u>Job Tasks (Number of Ratings)</u>	<u>Mean Rating</u>
1. Develop documentation files (129)	3.46
2. Develop work methods or procedures (93)	3.44
3. Direct maintenance of administrative files (141)	3.42
4. Edit drafts of administrative communications (115)	3.31
5. Establish publication libraries (105)	3.26
6. Determine work priorities (122)	3.20
7. Review files maintenance and disposition plans (106)	3.19
8. Review outgoing administrative communications (118)	3.11
9. Determine requirements for space, personnel, etc. (83)	3.10
10. Post publication bulletins (80)	3.07
11. Post standard publications (141)	3.06
12. Maintain office supply stock levels (47)	3.04
13. Compose drafts of administrative communications (96)	3.04
14. Prepare APRs (123)	3.03
15. File documentation (130)	3.02
16. Sort documentation for filing (105)	3.02
17. Type final form administrative communications (146)	2.99
18. Destroy non-current documentation (98)	2.98
19. Type drafts of administrative communications (123)	2.96
20. Review publication bulletins (128)	2.94
21. Perform operator maintenance on typewriters (36)	2.92
22. Review publications requirements (104)	2.91
23. Coordinate administrative communication suspenses (70)	2.90
24. Prepare file guides or labels (121)	2.88
25. Package unclassified materials (69)	2.84
26. Maintain suspense files (101)	2.82
27. Type blank forms (146)	2.76
28. Send sponsorship kits or welcome letters (65)	2.58
29. Prepare cross-reference sheet forms (82)	2.55
30. Schedule leaves or passes (69)	2.52
31. Prepare requests for reproduction services (118)	2.51
32. Deliver administrative communications (67)	2.49
33. Notify personnel of appointments, details, training (70)	2.46
34. Distribute publications (76)	2.45
35. Conduct daily security checks (49)	2.43
36. Operate office copy machines (64)	2.33
37. Answer telephones (39)	2.28
38. Maintain locator card files (46)	2.22
39. Charge out documents (53)	2.17

Table 26. Mean Ratings of Reading
Difficulty in Two Air Force Jobs

AFSC	Number of ratings	Mean difficulty	S.D.
431X2	2645	2.96	1.21
702X0	3771	2.93	1.33
Difference between ratings		.03	
t = .84, p > .40 NS			

Table 27. Reading Difficulty
Ratings by Grade

Grade	AFSC 431X2			AFSC 702X0		
	Observations	Mean difficulty	S.D.	Observations	Mean difficulty	S.D.
E1 to E3	866	2.64	1.15	1813	2.70	1.32
E4	980	2.92	1.26	814	3.01	1.34
E5 to E6	607	3.31	1.06	869	3.29	1.26

The overall estimates of reading difficulty describe reading that has been undertaken for multiple purposes. While the inventory was not constructed to rate the difficulty of reading for different purposes, ratings of reading difficulty for distinct purposes can be isolated in those instances when only one purpose for reading was reported. The results of this analysis are given in Table 28. The data are restricted

Table 28. Reading Difficulty Ratings for Occurrences with Single Reading Purpose

Purpose	AFSC 431X2			AFSC 702X0		
	Occur- rences	Mean difficulty	S.D.	Occur- rences	Mean difficulty	S.D.
Learn procedure or check directions	472	3.06	1.11	497	2.62	1.25
Find out task to be done	288	2.55	1.28	264	2.48	1.39
Look up facts	175	3.07	1.24	117	2.79	1.44
Read aloud						
Copy, type, keypunch, etc.				125	2.80	1.51
Distribute written material				91	2.56	1.37
Alphabetize, sort, or file				96	2.61	1.34

Note. Data restricted to occurrences of incumbent/task performance in which a single purpose for reading was cited.

both to those occurrences of task performance in which an incumbent cited only a single purpose for reading and to those reading purposes for which a substantial number of observations were available. As in the ratings of reading difficulty for multiple purposes combined, differences between the AFSCs in perceived difficulty of reading for particular purposes are not consistent with estimates of reading ability for incumbents in these specialties. For each of the three purposes in which there was an adequate number of cases, reading was reported as more difficulty by those in AFSC 431X2, who have a higher estimated average reading ability than do 702X0 personnel, as based on AFQT scores for each AFSC.

Seven-Point Scale

Distributions of reading difficulty ratings are given in Figure 1.⁴ Examination of these distributions reveals that in both specialties most of the reading was viewed as either easy or of average difficulty. It is questionable whether any particular significance should be given to the relatively small number of responses to "slightly easier than average" in both distributions. The drop-off in this response may be due simply to the fineness of the distinction between the two categories of "easy" represented by the labels for scale points "easier than average" and "slightly easier than average." Faced with the task of choosing between these two points, respondents may have tended to opt for the more simply stated responses "easier than average" or "about average." These data suggest that nothing is gained by the use of a seven-point scale, and the relative simplicity of the five-point scale is to be preferred.

Need for Assistance

As described earlier, the inventory included an additional, more concrete measure of job reading difficulty: the need for assistance in reading. The percentage of reading occurrences in which help was needed to understand what was read is given for each specialty overall and by grade in Table 29.

In contrast to the ratings of reading difficulty which showed little difference between specialties, there is a greater need for assistance in reading in AFSC 702X0. Although incumbents in this specialty did not rate their reading as very difficult, they reported needing help to understand it an average of one out of every eight times they read something in task performance. By contrast, those in AFSC 431X2 reported needing help in reading less than one time in 20.

⁴In item 2, response option #1 was "No reading done"; ratings of difficulty 2 through 8 have been re-scaled from 1 through 7.

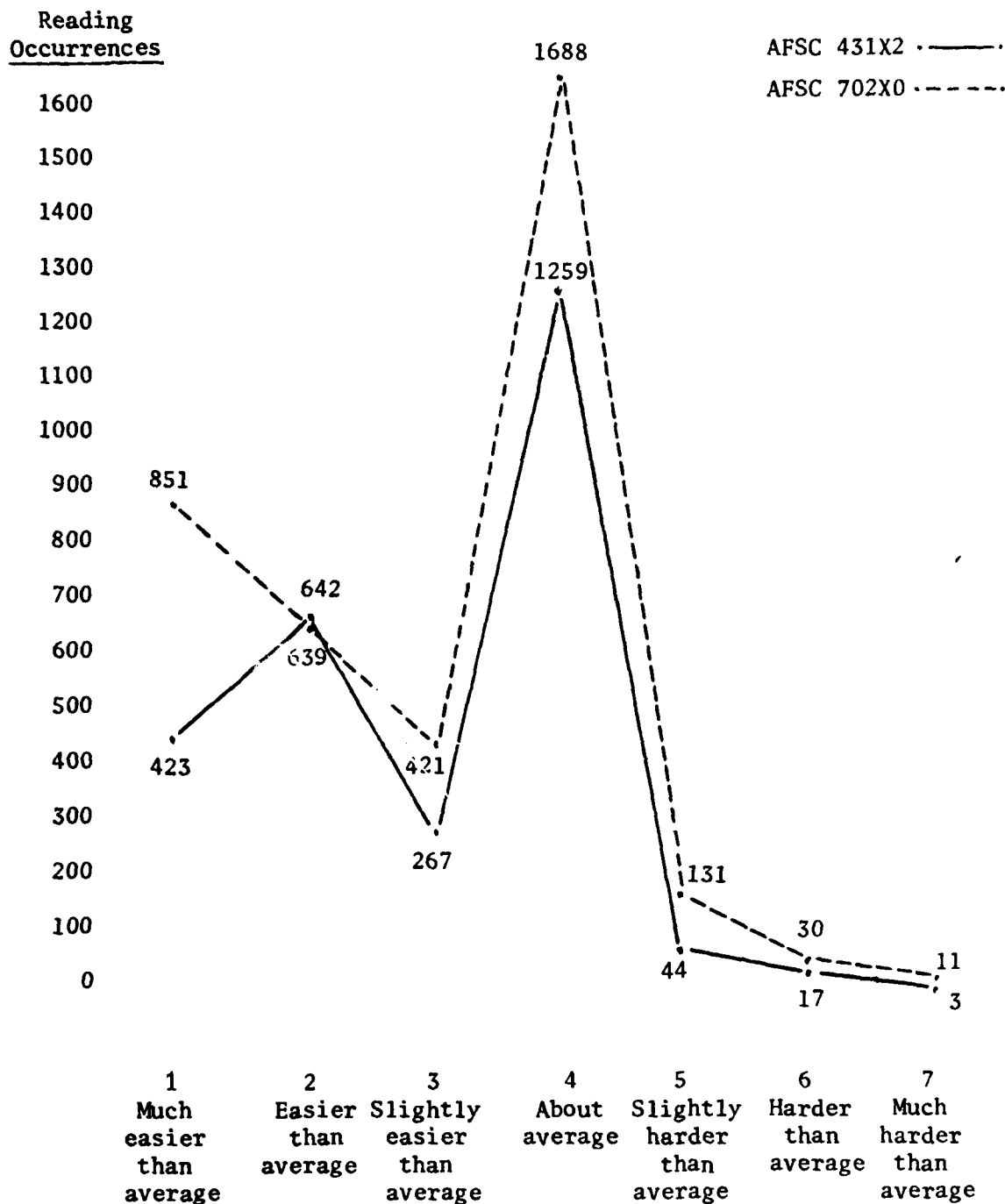


Figure 1. Frequency distribution of reading difficulty scale value usage in two Air Force jobs.

Table 29. Need for Assistance
in Reading by Grade

Pay Grade	AFSC 431X2		AFSC 702X0	
	Occurrences of reading	Percentage occurrences help needed	Occurrences of reading	Percentage occurrences help needed
All Grades	2680	4.3	3672	13.0
E1 to E3	883	6.8	1519	18.0
E4	966	3.1	775	13.9
E5 to E6	626	2.2	852	9.2

Unlike the ratings of reading difficulty, need for assistance in reading, however, decreases with increasing grade in both specialties. Thus the pattern of need for assistance in reading across grades is opposite to that expected if reading ability were the sole determinant of need for assistance. Apart from consideration of reading ability, the decrease in requests for help with increasing grade probably needs little explanation. For one thing, fewer peers are close at hand to provide assistance as grade increases. Further, the greater experience of persons in higher grades can be expected to aid them in interpreting what they have read; this would be expected to reduce the number of requests for assistance. As will be seen subsequently, the decreasing availability of aid with increasing grade is confirmed (particularly in AFSC 431X2) in response to another inventory item: "If instructions are needed for doing this task, can they be obtained without reading?"

A need for assistance in reading for task performance might also be expected to vary as a function of the frequency with which a task is performed or the frequency with which some reading is done for a task. To consider these possibilities, the need for help in reading was analyzed for tasks in the lower, middle, and upper third of frequency of task performance, and the lower, middle, and upper third of frequency of reading. The index of frequency of performance was based on the number of persons in the sample who reported performing a task in their present job. Frequency of reading was based on responses to Item 1 ("The last time you did this task, did you do any reading?"). These data are given in Tables 30 and 31.

Table 30. Need for Assistance in Reading
at Three Levels of Task Frequency

Frequency of task performance	AFSC 431X2		AFSC 702X0	
	Number of occurrences of reading	Percentage of occurrences help needed	Number of occurrences of reading	Percentage of occurrences help needed
Low	686	3.2	870	9.2
Middle	967	3.2	1351	14.3
High	1027	5.9	1451	14.2
	$\chi^2 = 11.62, df=2, p < .01$		$\chi^2 = 14.90, df=2, p < .01$	

Table 31. Need for Assistance in Reading
at Three Levels of Reading Frequency

Frequency of task performance	AFSC 431X2		AFSC 702X0	
	Number of occurrences of reading	Percentage of occurrences help needed	Number of occurrences of reading	Percentage of occurrences help needed
Low	514	1.6	728	8.2
Middle	913	1.8	1310	12.2
High	1253	7.2	1643	15.9
	$\chi^2 = 49.60, df=2, p < .01$		$\chi^2 = 26.94, df=2, p < .01$	

Regarding tasks with a higher frequency of reading, it is possible that the higher incidence of help required may simply reflect types of reading that are more likely to require assistance. The percentage of occurrences in which help was needed in reading for particular purposes is shown in Table 32. (As with ratings of reading difficulty, the need

Table 32. Need for Assistance in
Reading for Particular Purposes

Purpose for reading	AFSC 431X2		AFSC 702X0	
	Reading occurrences	Percentage help needed	Reading occurrences	Percentage help needed
Reading for at least one purpose	2680	4.3	3672	13.0
Learn procedure or check directions	471	2.3	486	9.7
Find out task to be done	292	5.8	260	8.5
Look up facts	170	6.5	114	14.9
Read aloud				
Copy, type, keypunch, etc.			124	12.1
Distribute written material			89	11.2
Alphabetize, sort, or file			92	3.3

for help for reading for particular purposes is identified in those instances when only one purpose for reading was reported and the data restricted to those purposes for which a substantial number of observations were available.) The three most frequently cited purposes for reading, accounting for 67% of all purpose citations in both AFSCs combined, were reading to learn a procedure or check directions, reading to find out that a task is to be done, and reading to look up facts. All of these types of reading would appear to involve higher levels of comprehension than less frequently cited purposes, such as reading aloud, reading to copy or type, and reading to distribute material.

Responses indicating a need for help in reading for particular purposes show considerable variation across purposes. They range from a low of 2% in reading to learn a procedure or check directions in AFSC 431X2 to a high of 15% in reading to look up facts in AFSC 702X0.

There is no clear basis for concluding whether ratings of difficulty or reports of need for assistance in reading provide a more effective index of reading problems. The level of difficulty of reading content in the two specialties has neither been measured nor controlled. Therefore it has not been possible to determine the reason for the absence of a difference in ratings of reading difficulty across the specialties when there is a known difference in reading ability among the incumbents in the specialties. Ratings of reading difficulty do show an increase with grade, and this is consistent with the known decrease in reading ability with grade. On the other hand, reports of need for assistance in reading differ across specialties and are consistent with the differences in reading ability. This measure, however, shows a decrease rather than an increase in grade. Again, without additional information about how difficulty of reading varies with grade, this finding is difficult to interpret.

Criticality

As noted regarding item 4 on the inventory, the degree of criticality, or necessity, of reading in a job has been defined here as the extent to which the functions served by reading can be provided by other means, such as obtaining information needed in performance from a co-worker rather than from printed material. The percentage of incumbent/task occurrences in which incumbents reported that directions for performance are available without reading is given, by grade, in Table 33.

Table 33. Availability of Directions for Task Performance Without Reading, by Grade

Grade	AFSC 431X2		AFSC 702X0	
	Occurrences of task performance	Percentage of directions available without reading	Occurrences of task performance	Percentage of directions available without reading
E1 to E3	1405	88.8	2576	78.8
E4	1546	84.7	1054	76.5
E5 to E6	925	76.4	1262	73.1

In most instances of task performance in either job, it is not necessary to obtain directions for the task solely by means of reading. Overall, in 17% of reports of task performance in AFSC 431X2, it was reported that directions could not be obtained without reading; the corresponding result for AFSC 702X0 was 25%. Care should be taken, however, not to interpret these results to mean that only 17% and 25% of the tasks in the two sample AFSCs are "reading-dependent" tasks. As shown in Table 33, these percentages are based on the total number of reported task occurrences, not the number of tasks. (For responses to this item over all tasks, see Tables 34 and 35.)

As grade increases, directions are apparently less available without reading. A reasonable explanation of this result is that higher-ranking, supervisory personnel have fewer peers close at hand from whom to ask assistance.

Need for Assistance vs Availability of Assistance

The impact on job performance of a need to obtain directions for task performance through reading is a function of both the job holder's reading ability and the availability of other sources of directions. To estimate the impact on job performance of a need to read for directions, it is appropriate to compare incumbents' needs for assistance in reading (Table 32) with the opportunity to obtain directions without having to read (Table 33). Taken together, these two measures would appear to be a useful combined indicator of situations in which a problem may exist, as when a high frequency of persons needing help in reading is coupled with a high degree of unavailability of task information except through reading.⁵ Incumbents in AFSC 431X2 reported needing help in reading in 4.3% of the occurrences and indicated that directions for performing tasks are available without having to read in 83% of the occurrences of performance. The corresponding results for AFSC 702X0 are 13% AND 75.2%. Thus, in these two specialties, the need for assistance appears encouragingly low, while the availability of alternate means of obtaining directions is encouragingly high.

These same variables, need for assistance in reading and availability of directions without reading, are compared by occupational task in Tables 34 and 35. In AFSC 431X2, assistance was required in 0% to 13% of the occurrences of reading, and directions are available only by reading in 8% to 51% of task occurrences.

⁵Reading for directions, of course, is only one of the several purposes for reading. If sources of directions other than through reading are available, a question still remains whether other requirements for reading in performance can also be circumvented.

Table 34. Need for Assistance in Reading
vs
Availability of Task Directions Without Reading
AFSC 431X2

Job Task	Percentage of Readers Needing Help in Reading for Task Performance		Percentage of Occurrences in Which Directions Could Only Be Obtained by Reading	
	Number Reading	%	Number Occurrences	%
1. Prepare reparable item processing tag forms	111	13	130	28
2. Coordinate with maintenance personnel	85	12	109	20
3. Locate part numbers in illustrated breakdowns	114	12	124	35
4. Defuel aircraft using single-point methods	90	10	96	38
5. Prepare maintenance data collection record forms	94	9	141	21
6. Review aircraft records or maintenance forms	130	8	147	23
7. Post entries to maintenance discrepancy forms	88	7	138	21
8. Inspect landing gear components	93	6	101	27
9. Safety wire aircraft hardware	65	5	116	10
10. Sign for parts	53	4	116	13
11. Lubricate struts	52	4	87	11
12. Operationally check fire/overheat detection systems	47	4	65	18
13. Check aileron, rudder, elevator systems	51	4	66	23
14. Inspect hydraulic system lines	81	4	106	21
15. Supervise apprentice maintenance specialists	68	3	88	34
16. Inspect maintenance equipment	94	3	133	26
17. Issue or receive tools	30	3	119	10
18. Inspect struts	94	3	112	21
19. Inspect flight control surfaces	87	3	106	13
20. Inspect hydraulic system reservoirs	68	3	88	17
21. Conduct on-the-job training	83	2	97	32
22. Position AGE to aircraft	58	2	134	7
23. Operate aircraft auxiliary power plants	50	2	66	11
24. Remove/replace aircraft light bulbs	61	2	112	12
25. Remove or replace aircraft access panels	69	1	129	14
26. Inspect hydraulic system sight gages	68	1	102	11
27. Drain fuel sumps	83	1	110	13
28. Check aircraft doors	67	0	90	27
29. Check cargo ramp systems	5	0	5	60
30. Operate maintenance stands	40	0	137	09
31. Position or remove aircraft chocks	27	0	131	5
32. Ground aircraft	59	0	134	6
33. Clean polished surfaces of struts	53	0	119	8
34. Check wing flaps	70	0	98	14
35. Inspect aircraft external lights	65	0	109	7
36. Remove/replace aircraft light lenses	53	0	95	9
37. Visually inspect single-point receptacles	62	0	96	15
38. Tow nonpowered AGE	20	0	74	5
39. Inspect 780 equipment for serviceability	42	0	58	10
40. Inspect blow-in, sucker, or flipper doors	43	0	a	a

^aResponses regarding need for assistance were inadvertently deleted during optical scanning.

Table 35. Need for Assistance in Reading
vs
Availability of Task Directions Without Reading
AFSC 702X0

Job Task	Percentage of Readers Needing Help in Reading for Task Performance		Percentage of Occurrences in Which Directions Could Only Be Obtained by Reading	
	Number Reading	%	Number Occurrences	%
1. Develop documentation files	124	29	128	48
2. Maintain office supply stock levels	46	26	115	17
3. Direct maintenance of administrative files	135	22	154	51
4. Edit drafts of administrative communications	113	20	147	21
5. File documentation	127	20	166	30
6. Establish publication libraries	104	18	109	47
7. Review publication bulletins	121	18	155	29
8. Maintain suspense files	98	16	161	17
9. Type drafts of administrative communications	120	16	175	18
10. Type blank forms	144	15	178	24
11. Review files maintenance and disposition plans	99	15	119	42
12. Perform operator maintenance on typewriters	35	14	83	23
13. Destroy non-current documentation	96	14	131	34
14. Prepare file guides or labels	119	14	153	34
15. Develop work methods or procedures	90	13	120	34
16. Review publications requirements	103	13	138	31
17. Post publication bulletins	82	12	122	20
18. Sort documentation for filing	104	12	a	a
19. Prepare APR	120	11	133	41
20. Review outgoing administrative communications	114	11	145	26
21. Distribute publications	76	11	107	23
22. Post standard publications	134	11	170	32
23. Type final form administrative communications	142	10	189	21
24. Answer telephones	44	9	207	09
25. Notify personnel of appointments, details, training	68	9	125	17
26. Operate office copy machines	64	9	170	11
27. Prepare requests for reproduction services	111	9	180	17
28. Package unclassified materials	66	9	112	14
29. Prepare cross-reference sheet forms	81	9	109	22
30. Determine work priorities	121	8	153	23
31. Send sponsorship kits or welcome letters	60	7	85	19
32. Compose drafts of administrative communications	97	7	127	28
33. Determine requirements for space, personnel, etc.	80	6	94	29
34. Schedule leaves or passes	68	6	108	30
35. Conduct daily security checks	47	6	88	11
36. Coordinate administrative communication suspenses	70	6	119	20
37. Deliver administrative communications	67	4	143	8
38. Charge out documents	50	4	112	13
39. Maintain locator card files	43	2	81	15

^aResponses regarding need for assistance were inadvertently deleted during optical scanning.

When a need for assistance in reading is related to a requirement to read, the jobs appear distinctly different. In only four tasks in AFSC 431X2 was help in reading required in as many as 10% of reading occurrences. For those tasks, incumbents reported 20% to 38% occurrences where directions cannot be obtained without reading. For AFSC 702X0, however, in 11 tasks 15% or more of the reading occurrences involved assistance, and in 17% to 51% of the occurrences of those tasks reading was reportedly required to obtain directions. Thus, in AFSC 702X0 there are more occurrences of a larger number of tasks in which directions for performance can be obtained only by reading and a higher percentage of occurrences in which help was required to understand what was read.

CONCLUSIONS AND RECOMMENDATIONS

Frequency of Job Reading

The inventory is effective in capturing differences between career ladders and among job tasks in the frequency of job reading overall, for different purposes, and with different types of material. On the basis of job task titles and obvious differences between maintenance and clerical occupations, the frequency of reading reported appears appropriate to the nature of the incumbents' activities. The fact that incumbents do discriminate reading requirements across tasks indicates that data from the reading inventory could be used conjointly with data collected in the Air Force Occupational Analysis Program conducted by the USAF Occupational Measurement Center.

Difficulty of Job Reading

Direct ratings of reading difficulty by job task were found to be of low reliability, and the question persists whether incumbents are responding to the difficulty of reading itself or to job task variables other than reading. Hence, firm conclusions cannot be drawn regarding (a) the observed increase in rated difficulty with increasing grade, (b) the lack of significant difference in rated difficulty between career ladders, (c) the differences in rated difficulty among purposes for reading, or (d) the fact that difficulty ratings are consistent with estimated reading ability across grades, but not across career ladders.

To the extent that incumbents read for diverse purposes for a given job task, the reliability of difficulty ratings by task would be expected to be low. The results of the field test, on the contrary, indicate strong agreement among incumbents regarding purpose for reading associated with a given job task, and hence the low reliability remains unexplained. Difficulty in reading is perhaps inevitably confounded with difficulty in understanding the writer's meaning--even

though the two are logically distinct. Attempting to capture the distinction between the difficulty of content and the difficulty of reading itself seems likely to remain particularly troublesome.

A more effective way to solicit information about the difficulty of job reading may be to ask about the need for assistance. Although the response to this item was not consistent with estimated reading ability across pay grades, it was consistent with estimated differences between career ladders, and the item showed far greater discrimination than rated difficulty. This variable warrants further utilization and investigation.

Criticality of Job Reading

The inventory appears to be effective in capturing differences between career ladders and among job tasks regarding the need to obtain directions by reading. The criticality of reading, so defined, is slightly greater in AFSC 702X0. The fact that the need to obtain directions for reading appears task-specific and to a lesser extent AFSC-specific indicates that the inventory could be used to select areas in which job reading training or selective revision of job materials would yield higher-than-average benefits.

Feasibility of the Inventory Approach

A principal objective of this research was to develop an inventory approach to estimate functional Air Force job reading requirements. The overall results indicate that the approach described here is feasible and practical. The inventory was easily compiled from existing occupational analysis data, mass produced, mass administered using current Air Force procedures, optically scanned, and analyzed using existing Air Force equipment and resources.

The experimental forms of the inventory developed in the present study were administered to relatively small samples of incumbents in only two AFSCs. As a result, the stability of the current findings regarding reading in the two specimen AFSCs and the general adequacy of the inventory for describing reading in other AFSCs is not known. Consequently it is recommended that the inventory:

1. Be administered to additional samples of incumbents in AFSCs 431X2 and 702X0, to determine the stability of these findings and thereby the dependability and value of the current instrument for operational use in these career ladders.

2. Be compiled for and administered to additional career ladders to determine its generality and the adequacy of the current items and response options, particularly purposes for reading and types of material read.

It is recommended that any further development follow the task-related approach rather than a general approach not referenced to job tasks. When occupational analysis data are available, little effort is involved in selecting tasks for the reading inventory. The added cost of printing and administering the more lengthy task-related inventory then seems justified by the additional information obtained. Further, given the difficulty incumbents experienced in rating difficulty even when the reading was associated with a particular job task, the prospect of obtaining reliable information by asking about difficulty in general is even less promising. Finally, the differentiation in reading requirements among occupational tasks that was obtained with the task-related instrument demonstrates that data about reading requirements for particular tasks can be directly related to task-specific Occupational Analysis Program information.

Item 1 (Purpose for Reading)

During the development of the inventory in field tryouts, successive revisions were made to the list of purposes for reading. One measure of the comprehensiveness of these categories is the number of incumbent/task occurrences in which incumbents report "no reading done" when reading is clearly implied by the job task. The example of reading to edit has already been given. When a substantial number of respondents indicate that they did no reading for such tasks, this implies that the appropriate purpose for such reading may not have been listed. If the inventory is to be refined further, additional purposes for reading should be investigated. However, the total number of purposes presented to the subject must remain reasonably few and not closely related in meaning.

Item 2 (Difficulty)

No advantage was found in the seven-point rating scale used in the field test. The five-point scale used in the trials is adequate, and it should be used in subsequent versions of the inventory.

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APPENDIX A

FINAL VERSION OF THE READING INVENTORY



UNITED STATES AIR FORCE

READING INVENTORY

Airlift/Bombardment Aircraft Maintenance Career Ladder
AFSC 431X2 including all shred-outs

March 1980

Human Resources Research Organization
Contract No. F33615-78-C-0056

Technical Training Division
USAF Human Resources Laboratory
Lowry AFB, Colorado 80230

1

Following is the list of tasks 2 through 40, which were included in the Reading Inventory for AFSC 431X2. These tasks were listed in the same format as that shown for Task 1.

2. Supervise apprentice maintenance specialists
3. Inspect maintenance equipment
4. Review aircraft records or maintenance forms
5. Conduct on-the-job training
6. Prepare reparable item processing tag forms
7. Prepare maintenance data collection record forms
8. Post entries to maintenance discrepancy forms
9. Locate part numbers in illustrated breakdowns
10. Sign for parts
11. Issue or receive tools
12. Safety wire aircraft hardware
13. Check aircraft doors
14. Remove or replace aircraft access panels
15. Check cargo ramp systems
16. Operate maintenance stands
17. Position AGE to aircraft
18. Position or remove aircraft chocks
19. Ground aircraft
20. Clean polished surfaces of struts
21. Lubricate struts
22. Inspect landing gear components
23. Inspect struts
24. Operate aircraft auxiliary power plants
25. Operationally check fire/overheat detection systems
26. Check aileron, rudder, elevator systems
27. Inspect flight control surfaces
28. Check wing flaps
29. Inspect hydraulic system sight gages
30. Inspect hydraulic system reservoirs
31. Inspect hydraulic system lines
32. Remove/replace aircraft light bulbs
33. Inspect aircraft external lights
34. Remove/replace aircraft light lenses
35. Defuel aircraft using single-point methods
36. Visually inspect single-point receptacles
37. Drain fuel sumps
38. Tow nonpowered AGE
39. Inspect 780 equipment for serviceability
40. Inspect blow-in, sucker, or flipper doors

UNITED STATES AIR FORCE

READING INVENTORY

Administration Career Ladder
AFSC 702X0 including all shred-outs

March 1980

Human Resources Research Organization
Contract No. F33615-78-C-0056

Technical Training Division
USAF Human Resources Laboratory
Lowry AFB, Colorado 80230

DETERMINE REQUIREMENTS FOR SPACE, PERSONNEL, EQUIPMENT, OR SUPPLIES Have you performed this task in your present job? ☐ YES ☐ NO (Check one) If your answer is "yes", complete questions 1-5 below. If your answer is "no", skip the questions below and go on to the next task.	
To answer the following questions, blacken the appropriate numbered circles to the right of each question. Caution: <u>Completely fill in the appropriate circle, but do not overlap into other circles on the same line.</u>	
The last time you did this task, did you do any reading? <u>Blacken circle (1) for each answer below that applies.</u>	
1. No reading done.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
2. Reading to find out that this task needed to be done.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
3. Reading to learn the procedures or check directions.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
4. Reading to look up facts: e.g., stock number, ZIP code.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
5. Reading to copy, type, keypunch, etc.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
6. Reading aloud: e.g., read off checklist, over PA system, phone.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
7. Reading to give out or determine distribution of written material.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
8. Reading to alphabetize, sort or file.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
NOTE: If you read for any reason not listed, please check box below and specify on blank page at end of booklet.	
☐ (Check if read for other reasons.)	
. If you did any reading, how difficult was it? <u>Blacken only one circle on this line.</u>	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1. No reading done	
2. Much easier than average	
3. Easier than average	
4. Slightly easier than average	
5. About average	
6. Slightly harder than average	
7. Harder than average	
8. Much harder than average	
. Did you need any help to understand what you read? <u>Blacken only one circle on this line.</u>	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
1. No reading done	
2. Yes, I needed help to understand what I read.	
3. No, I didn't need help to understand what I read.	

CODE 99

1

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?

Following is the list of tasks 2 through 40, which were included in the Reading Inventory for AFSC 702X0. These tasks were listed in the same format as that shown for Task 1.

2. Determine requirements for space, personnel, etc.
3. Determine work priorities
4. Establish publication libraries
5. Direct maintenance of administrative files
6. Develop work methods or procedures
7. Prepare APRS
8. Answer telephones
9. Conduct daily security checks
10. Maintain locator card files
11. Maintain office supply stock levels
12. Notify personnel of appointments, details, training
13. Operate office copy machines
14. Perform operator maintenance on typewriters
15. Prepare requests for reproduction services
16. Send sponsorship kits or welcome letters
17. Compose drafts of administrative communications
18. Coordinate administrative communication suspenses
19. Deliver administrative communications
20. Edit drafts of administrative communications
21. Maintain suspense files
22. Package unclassified materials
23. Review outgoing administrative communications
24. Type blank forms
25. Type final form administrative communications
26. Type drafts of administrative communications
27. Distribute publications
28. Post standard publications
29. Review publications bulletins
30. Review publications requirements
31. Post publication bulletins
32. Review publication bulletins
33. Charge out documents
34. Destroy non-current documentation
35. Develop documentation files
36. File documentation
37. Prepare cross-reference sheet forms
38. Prepare file guides or labels
39. Review files maintenance and disposition plans
40. Sort documentation for filing

APPENDIX B

TRIAL INSTRUMENTS USED
AT TRAVIS AIR FORCE BASE

READING ANALYSIS INVENTORY

Preliminary Version of General Reading Inventory

Administered at Travis Air Force Base

READING ANALYSIS INVENTORY

NAME _____
 (Last) (First) (M.I.)

ORGANIZATION _____

RANK _____

AFSC _____

Length of Time in AFSC _____

DIRECTIONS

This inventory is used to analyze the kinds of reading that are required in different AFSCs. We would like you to provide information about the reading you may do in your job. On the following pages, different types and purposes of job reading are described. Please read each description and answer the questions that follow it.

Type of Reading: Reading a written notice or order that something is to be done - for example: reading a work order; bulletin board notice; message; etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

- ☐ YES. If YES, please answer questions 2-6.
- ☐ NO. If NO, please go on the next Type of Reading.

2. Think about the last time you read a written notice or order that something was to be done. About how long did it take to read the notice or order?

- ☐ Less than one minute.
- ☐ 1 - 5 minutes.
- ☐ 5 - 20 minutes.
- ☐ More than 20 minutes.

3. Did you read any of the notice or order more than once in order to understand it?

- ☐ Re-read part or all of it.
- ☐ Didn't need to re-read any of it.
- ☐ Wasn't able to read it more than once because _____
(reason)
-

4. Was there more than normal stress or pressure during reading of the notice or order?

☐ YES: _____
(describe situation)

☐ NO

5. Was the notice or order about something that was visible to you while you were reading (like reading a work order about a vehicle you could see)?

OR

Was it about something that was not in sight (like reading an order to attend a training lecture or a notice to prepare for a future inspection)?

☐ The notice or order was about something in sight.

☐ The notice or order was about something that was not visible.

6. How difficult to read was the notice or order? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

About
the same

Much more
difficult

1

2

3

4

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

Type of Reading: Reading instructions or directions about how to do a specific procedure - for example: reading installation instructions for parts kit; directions for filling out a form; procedure for converting to metric measurement; etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-6.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you read instructions or directions about how to do a specific procedure. About how long did it take to read the instructions or directions?

☐ Less than one minute.

☐ 1 - 5 minutes.

☐ 5 - 20 minutes.

☐ More than 20 minutes.

3. Did you read any of these instructions or directions more than once in order to understand them?

☐ Re-read part or all of them.

☐ Didn't need to re-read any of them.

☐ Wasn't able to read them more than once because _____
(reason)

4. Was there more than normal stress or pressure during reading of the instructions or directions?

☐ YES: _____
(describe situation)

☐ NO

5. Were the instructions or directions about something that was visible to you while you were reading (like equipment you were working on, or following written directions while driving)

OR

Something you could not look at (like equipment that was not in sight, or procedures for survival in Arctic conditions)?

☐ Reading about something in sight.

☐ Reading about something that was not in sight.

6. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

Type of Reading: Reading about a topic or situation (not looking up a specified procedure or fact) - for example: reading about a topic like nutrition, or principles of flight; obtaining information to solve problems or make plans; reading reports to evaluate a situation, etc.

Questions

1. Have you done any of this type of reading in the last three (3) months, as part of performing a job task?

- ☐ YES. If YES, please answer questions 2-6.
- ☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you did this type of reading to do a job task. About how long did the reading take?

- ☐ Less than one minute.
- ☐ 1 - 5 minutes.
- ☐ 5 - 20 minutes.
- ☐ More than 20 minutes.

3. Did you read any of the material more than once in order to understand it?

- ☐ Re-read part or all of it.
- ☐ Didn't need to re-read any of it.
- ☐ Wasn't able to read it more than once because _____
(reason)
-

4. Was there unusual stress or pressure during the reading?

☐ YES: _____
(describe situation)

☐ NO

5. Were you reading about something that was visible to you while you were reading (like equipment you were troubleshooting)

OR

Something you could not look at (like equipment that was not in sight, or a subject like the Code of Conduct)?

☐ Reading about something in sight.

☐ Reading about something not visible.

6. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes this reading compared in difficulty to other reading.

Type of Reading: Reading written material to find out what it is about -
for example: reading letters, messages, circulars, etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-5.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you read written material to find out what it was about. About how long did the reading take?

☐ Less than one minute.

☐ 1 - 5 minutes.

☐ 5 - 20 minutes.

☐ More than 20 minutes.

3. Did you read any of the written material more than once in order to understand it?

☐ Re-read part or all of it.

☐ Didn't need to re-read any of it.

☐ Wasn't able to read it more than once because _____
(reason)

4. Was there more than normal stress or pressure during the reading?

☐ YES: _____
(describe situation)

☐ NO

5. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

About
the same

Much more
difficult

1

2

3

4

5

Circle the number on the scale that best describes
how this reading compared in difficulty to other
job reading.

Type of Reading: Reading to look up a specific fact, quantity, or specification - for example: looking up a stock number; amount of anti-freeze for radiator capacity; mailing address; etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-4.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you looked up a specific fact, quantity, or specification. About how long did the reading take?

☐ Less than one minute.

☐ 1 - 5 minutes.

☐ 5 - 20 minutes.

☐ More than 20 minutes.

3. Was there more than normal stress or pressure during reading.

☐ YES: _____
(describe situation)

☐ NO

4. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

Type of Reading: Reading to sort materials by title or subject (not by reading content) - for example: alphabetizing; filing by title or writer; etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-3.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you did this kind of reading? Was there more than normal stress or pressure during the task?

☐ YES. _____
(describe situation)

☐ NO.

3. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

Type of Reading: Reading to type, transcribe, copy, send code, teletype, etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-3.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you did this kind of reading. Was there more than normal stress or pressure during the task?

☐ YES. _____
(describe situation)

☐ NO.

3. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

AD-A130 667

TASK-RELATED JOB READING INVENTORY: DEVELOPMENT AND
FIELD TRIAL OF A PROT. (U) HUMAN RESOURCES RESEARCH
ORGANIZATION ALEXANDRIA VA R VINEBERG ET AL. JUL 83
AFHRL-TP-82-46 F33615-78-C-0056

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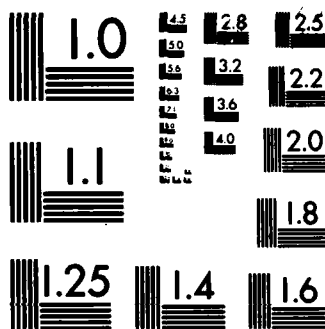
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11

BTIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Type of Reading: Reading to summarize, combine, or edit written information - for example: preparing summary of several reports; correcting technical reports; inspecting messages for proper classification; correcting teletype transmissions; etc.

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-3.

☐ NO. If NO, please go on to the next Type of Reading.

2. Think about the last time you read to summarize, edit, or correct written material. Was there more than normal stress or pressure during the task?

☐ YES: _____
(describe situation)

☐ NO

3. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how this reading compared in difficulty to other job reading.

Type of Reading: Reading aloud: public address announcements,
weather reports; radio/television reporting, etc.

Questions

1. Have you done any of this type of reading in the last three (3) months?

☐ YES. If YES, please answer questions 2-3.

☐ NO. If NO, please go to the last page.

2. Think about the last time you read aloud. Was there more than normal stress or pressure during the task?

☐ YES: _____
(describe situation)

☐ NO.

3. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

1

2

About
the same

3

4

Much more
difficult

5

Circle the number on the scale that best describes how the reading compared in difficulty to other job reading.

OTHER TYPES OF READING

Do you do any other reading in your job that has not been included in the types described in this booklet?

Please describe briefly these other types of reading.

READING ANALYSIS QUESTIONNAIRE

Preliminary Version of Task-related Reading Inventory
Administered at Travis Air Force Base, Sample Items

READING ANALYSIS QUESTIONNAIRE

NAME _____
 (Last) (First) (M.I.)

ORGANIZATION _____

RANK _____

AFSC _____

Length of time in AFSC _____

Directions

1. First, find the tasks you marked YES for READING in the Task Inventory. Copy the numbers of these tasks onto the left hand pages of this booklet (up to 15 tasks maximum). Use a separate page for each task.
2. Next, answer the six questions for each task.

Human Resources Research Organization
Air Force Contract F33615-78-C-0056

Enter Task Number here: _____

1. What was the purpose or kind of reading you did the last time you did this task? (Check more than one if they apply.)

- ☐ Reading a written notice or order that the task is to be done - for example: work order; bulletin board notice; message; etc.
- ☐ Reading instructions or directions about how to do a specific procedure - for example: installation instructions for parts kit; directions for filling out a form; procedure for converting to metric measurement; etc.
- ☐ Reading to look up a specific fact, quantity, or specification - for example: stock number; amount of anti-freeze for radiator capacity; mailing address; etc.
- ☐ Reading about a topic or situation (not looking up a specified procedure or fact) - for example: reading about nutrition; obtaining information to solve problems or make plans; reading reports to evaluate a situation; etc.
- ☐ Reading to find out what written material is about - for example: reading letters, messages, circulars, etc.
- ☐ Reading to sort materials by title or subject (not by reading content) - for example: alphabetizing; filing by title or writer; etc.
- ☐ Reading to type, transcribe, copy, send code, teletype, etc.
- ☐ Reading to summarize, combine, or edit written information - for example: preparing summary of several reports; correcting technical reports; inspecting messages for proper classification; correcting teletype transmissions; etc.
- ☐ Reading aloud: public address announcements; weather reports; radio/television reporting; etc.
- ☐ Other: _____
(describe)

2. About how long did you spend reading for this task?

- ☐ Less than one minute.
- ☐ 1 - 5 minutes.
- ☐ 5 - 20 minutes.
- ☐ More than 20 minutes.

3. Did you read any of the material more than once in order to get it?

- ☐ Re-read part or all of it.
- ☐ Didn't need to re-read any of it.
- ☐ Not able to read it more than once because _____
(reason)

4. Was there unusual stress or pressure during reading?

- ☐ Yes: _____
(describe)
- ☐ No

5. Were you reading about something that was visible (like equipment you were working on, or following written directions while driving) OR something you could not look at (like reading about equipment that was not in sight, or the Code of Conduct, or why it is important to be on time)?

- ☐ Reading about something in sight.
- ☐ Reading about something that was not in sight.
- ☐ Both

6. How difficult was the reading? Compare it to your estimate of Air Force job reading in general.

Much less
difficult

About
the same

Much more
difficult

1

2

3

4

5

Circle the number on the scale that best describes how reading for this task compares in difficulty to other reading.

APPENDIX C

TRIAL INSTRUMENTS USED
AT NORTON AIR FORCE BASE

AIR FORCE READING INVENTORY

Preliminary Version of General Reading Inventory

Administered at Norton Air Force Base

AIR FORCE READING INVENTORY

NAME _____
(Last) (First) (M.I.)

ORGANIZATION _____

RANK _____ AFSC _____

Length of time
in AFSC _____

DIRECTIONS

This is an Air Force reading inventory. It is not a test. Its purpose is to find out what kinds of reading Air Force personnel do when working in their jobs.

Please turn the page and answer the questions about the reading you do in your job.

FORM RG

1. Below is a list of KINDS OF MATERIALS you may read in your job. For each kind of material, enter a Code Letter (A, B, C, D, or E) in the box to show how often you read that material.

CODES

- A Read once a day or more.
B Read once a week or more.
C Read once a month or more.
D Read less than once a month.
E Never read this kind of material.

KINDS OF READING MATERIALS

- ☐ Work card, Job Guide, Inspection Card
☐ Publication: e.g., Manual, Tech Order, Regulation, Report, Pamphlet, Circular
☐ Catalog
☐ Textbook, book, CDC, study materials
☐ Letter, TMX, TCTO
☐ Bulletin board
☐ Handout, mimeographed notice
☐ Label or instructions appearing on equipment, aircraft, facilities, or materiel
☐ Newsletter, magazine, periodical
☐ Computer print-out
☐ Draft material: i.e., material to be typed, edited, checked, summarized
☐ Microfilm, microfiche, computer display (CRT)
☐ Documentation, record
☐ Forms to be completed
☐ Other _____
(Describe)

2. Below is the same list of MATERIALS. For each kind of material that you read in your job (those you marked A, B, C, or D in Question #1), enter the number below (1, 2, 3, 4, or 5) that best describes how difficult it is to read that kind of material. Make your estimate in comparison to other Air Force job reading.

Much less difficult		About the same		Much more difficult
1	2	3	4	5

KINDS OF READING MATERIALS

- ☐ Work card, Job Guide, Inspection Card
- ☐ Publication: e.g., Manual, Tech Order, Regulation, Report, Pamphlet, Circular
- ☐ Catalog
- ☐ Textbook, book, CDC, study materials
- ☐ Letter, TWX, TCTO
- ☐ Bulletin board
- ☐ Handout, mimeographed notice
- ☐ Label or instructions appearing on equipment, aircraft, facilities, or material
- ☐ Newsletter, magazine, periodical
- ☐ Computer print-out
- ☐ Draft material: i.e., material to be typed, edited, checked, summarized
- ☐ Microfilm, microfiche, computer display (CRT)
- ☐ Documentation, record
- ☐ Forms to be completed
- ☐ Other _____
(Describe)

3. Below is a list of TYPES OF READING. For each type, enter a Code Letter (A, B, C, D, or E) in the box to show how often you do that type of reading.

CODES

- A Read once a day or more.
- B Read once a week or more.
- C Read once a month or more.
- D Read less than once a month.
- E Never do this type of reading

TYPES OF READING

- ☐ To check PROCEDURAL INFORMATION or directions about how to do a task or part of it.
- ☐ To look up FACTUAL INFORMATION (e.g., stock number, spark plug setting, ZIP code) or recognize or identify a LABEL OR MARKER (e.g., switch position, labeled part, block on form).
- ☐ To examine BACKGROUND INFORMATION to decide a course of action: e.g., decide approach to task, schedule work, diagnose equipment failure, plan activities, decide quantity to make or order.
- ☐ To copy, type, transcribe, teletype, keypunch, encode, input data, etc.
- ☐ To read aloud: e.g., read off checklist, read over intercom or public address system, proofread, read printed information over phone.
- ☐ To determine proper disposition of written material: e.g., correspondence, messages, memos, reports.
- ☐ To edit or summarize written material: e.g., review reports and documents for proper form, correct teletype copy, classify messages, prepare summary of reports.
- ☐ To alphabetize, sort, file, categorize, route, etc.
- ☐ Other _____
(Describe)

4. Below is the same list of TYPES OF READING. For each type of material that you read in your job (those you marked A, B, C, or D in Question #3), enter the number below (1, 2, 3, 4, or 5) that best describes how difficult it is to do that type of reading. Make your estimate in comparison to other Air Force job reading.

Much less difficult		About the same		Much more difficult
1	2	3	4	5

TYPES OF READING

- ☐ To check PROCEDURAL INFORMATION or directions about how to do a task or part of it.
- ☐ To look up FACTUAL INFORMATION (e.g., stock number, spark plug setting, ZIP code) or recognize or identify a LABEL OR MARKER (e.g., switch position, labeled part, block on form).
- ☐ To examine BACKGROUND INFORMATION to decide a course of action: e.g., decide approach to task, schedule work, diagnose equipment failure, plan activities, decide quantity to make or order.
- ☐ To copy, type, transcribe, teletype, keypunch, encode, input data, etc.
- ☐ To read aloud: e.g., read off checklist, read over intercom or public address system, proofread, read printed information over phone.
- ☐ To determine proper disposition of written material: e.g., correspondence, messages, memos, reports.
- ☐ To edit or summarize written material: e.g., review reports and documents for proper form, correct teletype copy, classify messages, prepare summary of reports.
- ☐ To alphabetize, sort, file, categorize, route, etc.
- ☐ Other _____
(Describe)

AIR FORCE READING INVENTORY

**Preliminary Version of Task-related Reading Inventory
Administered at Norton Air Force Base, Sample Items**

AFSC 431X2
AIR FORCE READING INVENTORY

NAME _____ (Last) _____ (First) _____ (M.I.)
ORGANIZATION _____
RANK _____
Length of time in AFSC _____

DIRECTIONS

This is an Air Force reading inventory. It is not a test. Its purpose is to find out what kinds of reading Air Force personnel do when working in their jobs.

The inventory contains descriptions of 46 tasks done in AFSC 431X2.

Please follow these steps:

1. Read the description of each task and check whether you have done the task in the last three months. (Question #1)
2. If you check "YES" for Question #1, also answer Questions #2 - #6 about the task.
3. Repeat these steps for each task in the inventory.

Please turn the page and read the description of the first task.

FORM RS/B

4. WHY DID YOU READ? For each kind of material you checked in Question #3, enter in Column 4 on the opposite page the code listed below (A, B, C, D, E, F, G, or H) that best describes your reason for reading the material. (You may use different codes if you checked more than one kind of material.)

CODE

(Heading to get information or directions for doing a task.)

- A To check PROCEDURAL INFORMATION or directions about how to do the task or part of it.
- B To look up FACTUAL INFORMATION (e.g., stock number, spark plug setting, ZIP code) or recognize or identify a LABEL OR MARKER (e.g., switch position, labeled part, block on form).
- C To examine BACKGROUND INFORMATION to decide a course of action: e.g., decide approach to task, schedule work, diagnose equipment failure, plan activities, decide quantity to make or order.

(Reading material to perform a task on it.)

- D To copy, type, transcribe, teletype, keypunch, encode, input data, etc.
- E To read aloud: e.g., read off checklist, read over intercom or public address system, proofread, read printed information over phone.
- F To determine proper disposition of written material: e.g., correspondence, messages, memos, reports.
- G To edit or summarize written material: e.g., review reports and documents for proper form, correct teletype copy, classify messages, prepare summary of reports.
- H To alphabetize, sort, file, categorize, route, etc.

5. HOW LONG DID YOU SPEND READING? For each kind of material you checked in Question #3, enter in column 5 on the opposite page the code listed below (I, J, K, or L) that best describes how long you spent reading the material. (You may use different codes if you checked more than one kind of material.)

- I Less than one minute.
- J 1 - 5 minutes.
- K 5 - 20 minutes.
- L More than 20 minutes.

6. HOW DIFFICULT WAS THE READING? For each kind of material you checked in Question #3, enter in Column 6 on the opposite page the number below (1, 2, 3, 4, 5) that best describes how difficult it was to read the material the last time you did this task. (You may use different numbers if you checked more than one kind of material.) Make your estimate in comparison to other Air Force job reading.

	Much less difficult	About the same	Much more difficult
1	2	3	4
			5

APPENDIX D

PURPOSES FOR READING — AFSC 431X2

PERCENT OF TASK PERFORMERS WHO
READ TO FIND OUT THAT TASK NEEDED
TO BE DONE

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Inspect landing gear components (108)	60
2. Inspect struts (118)	58
3. Check aileron, rudder, elevator systems (73)	55
4. Inspect flight control surfaces (115)	55
5. Review aircraft records or maintenance forms (152)	54
6. Inspect hydraulic system reservoirs (95)	54
7. Conduct on-the-job training (103)	53
8. Inspect hydraulic system lines (116)	52
9. Drain fuel sumps (120)	51
10. Inspect blow-in, sucker, or flipper doors (65)	51
11. Supervise apprentice maintenance specialists (90)	50
12. Defuel aircraft using single-point methods (102)	50
13. Check aircraft doors (99)	49
14. Inspect maintenance equipment (143)	48
15. Check wing flaps (106)	48
16. Inspect hydraulic system sight gages (111)	46
17. Visually inspect single-point receptacles (105)	46
18. Coordinate with maintenance personnel (120)	44
19. Operationally check fire/overheat detection systems (75)	44
20. Lubricate struts (95)	43
21. Inspect 780 equipment for serviceability (65)	42
22. Safety wire aircraft hardware (126)	41
23. Inspect aircraft external lights (119)	41
24. Post entries to maintenance discrepancy forms (148)	39
25. Remove or replace aircraft access panels (143)	38
26. Check cargo ramps systems (11)	36
27. Operate aircraft auxiliary power plants (72)	32
28. Remove/replace aircraft light lenses (107)	31
29. Prepare reparable item processing tag forms (135)	29
30. Clean polished surfaces of struts (129)	29
31. Prepare maintenance data collection record forms (149)	28
32. Locate part numbers in illustrated breakdowns (129)	27
33. Remove/replace aircraft light bulbs (123)	27
34. Position AGE to aircraft (148)	25
35. Ground aircraft (147)	23
36. Sign for parts (126)	17
37. Tow nonpowered AGE (83)	14
38. Position or remove aircraft chocks (145)	13
39. Operate maintenance stands (155)	12
40. Issue or receive tools (132)	09

PERCENT OF TASK PERFORMERS WHO READ
TO LEARN PROCEDURES OR CHECK DIRECTIONS

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Defuel aircraft using single-point methods (102)	85
2. Conduct on-the-job training (103)	83
3. Supervise apprentice maintenance specialists (90)	69
4. Inspect landing gear components (108)	69
5. Check aircraft doors (99)	65
6. Inspect blow-in, sucker, or flipper doors (65)	63
7. Inspect flight control surfaces (115)	62
8. Inspect maintenance equipment (143)	61
9. Inspect struts (118)	60
10. Operate aircraft auxiliary power plants (72)	60
11. Check aileron, rudder, elevator systems (73)	60
12. Inspect hydraulic system reservoirs (95)	58
13. Drain fuel sumps (120)	55
14. Inspect hydraulic system lines (116)	53
15. Operationally check fire/overheat detection systems (75)	52
16. Check wing flaps (106)	50
17. Visually inspect single-point receptacles (105)	50
18. Inspect 780 equipment for serviceability (65)	63
19. Lubricate struts (95)	48
20. Safety wire aircraft hardware (126)	45
21. Check cargo ramp systems (11)	45
22. Inspect hydraulic system sight gages (111)	44
23. Prepare reparable item processing tag forms (135)	42
24. Inspect aircraft external lights (119)	42
25. Review aircraft records or maintenance forms (152)	41
26. Coordinate with maintenance personnel (120)	40
27. Prepare maintenance data collection record forms (149)	38
28. Remove or replace aircraft access panels (143)	38
29. Remove/replace aircraft light bulbs (123)	37
30. Locate part numbers in illustrated breakdowns (129)	36
31. Remove/replace aircraft light lenses (107)	36
32. Ground aircraft (147)	35
33. Post entries to maintenance discrepancy forms (148)	33
34. Position AGE to aircraft (148)	30
35. Clean polished surfaces of struts (129)	30
36. Sign for parts (126)	21
37. Operate maintenance stands (155)	21
38. Tow nonpowered AGE (83)	18
39. Issue or receive tools (132)	16
40. Position or remove aircraft chocks (145)	14

PERCENT OF TASK PERFORMERS WHO
READ TO LOOK UP FACTS

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	81
2. Prepare reparable item processing tag forms (135)	73
3. Supervise apprentice maintenance specialists (90)	54
4. Coordinate with maintenance personnel (120)	52
5. Conduct on-the-job training (103)	47
6. Review aircraft records or maintenance forms (152)	45
7. Prepare maintenance data collection record forms (149)	44
8. Post entries to maintenance discrepancy forms (148)	30
9. Inspect maintenance equipment (143)	29
10. Sign for parts (126)	29
11. Inspect landing gear components (108)	23
12. Inspect 780 equipment for serviceability (65)	20
13. Inspect flight control surfaces (115)	22
14. Inspect struts (118)	21
15. Inspect blow-in, sucker, or flipper doors (65)	20
16. Operationally check fire/overheat detection systems (75)	19
17. Check aileron, rudder, elevator systems (73)	19
18. Defuel aircraft using single-point methods (102)	19
19. Check cargo ramp systems (11)	18
20. Remove/replace aircraft light bulbs (123)	18
21. Check aircraft doors (99)	16
22. Lubricate struts (95)	16
23. Inspect hydraulic system reservoirs (95)	16
24. Inspect hydraulic system lines (116)	16
25. Remove/replace aircraft light lenses (107)	15
26. Operate aircraft auxiliary power plants (72)	14
27. Inspect aircraft external lights (119)	14
28. Remove or replace aircraft access panels (143)	13
29. Check wing flaps (106)	13
30. Inspect hydraulic system sight gages (111)	12
31. Visually inspect single-point receptacles (105)	11
32. Drain fuel sumps (120)	11
33. Safety wire aircraft hardware (126)	10
34. Ground aircraft (147)	10
35. Tow nonpowered AGE (83)	10
36. Issue or receive tools (132)	09
37. Clean polished surfaces of struts (129)	09
38. Operate maintenance stands (155)	08
39. Position AGE to aircraft (148)	08
40. Position or remove aircraft chocks (145)	06

PERCENT OF TASK PERFORMERS WHO
READ TO COPY, TYPE, KEYPUNCH

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	21
2. Prepare reparable item processing tag forms (135)	19
3. Check cargo ramp systems (11)	18
4. Prepare maintenance data collection record forms (149)	17
5. Conduct on-the-job training (103)	16
6. Post entries to maintenance discrepancy forms (148)	16
7. Coordinate with maintenance personnel (120)	14
8. Review aircraft records or maintenance forms (152)	14
9. Supervise apprentice maintenance specialists (90)	12
10. Inspect maintenance equipment (143)	12
11. Sign for parts (126)	09
12. Inspect blow-in, sucker, or flipper doors (65)	06
13. Issue or receive tools (132)	05
14. Remove or replace aircraft access panels (143)	05
15. Defuel aircraft using single-point methods (102)	05
16. Visually inspect single-point receptacles (105)	05
17. Tow nonpowered AGE (83)	05
18. Inspect 780 equipment for serviceability (65)	05
19. Safety wire aircraft hardware (126)	04
20. Operate maintenance stands (155)	04
21. Lubricate struts (95)	04
22. Inspect landing gear components (108)	04
23. Check aileron, rudder, elevator systems (73)	04
24. Check wing flaps (106)	04
25. Inspect hydraulic system sight gages (111)	04
26. Inspect hydraulic system reservoirs (95)	04
27. Inspect hydraulic system lines (116)	04
28. Inspect aircraft external lights (119)	04
29. Drain fuel sumps (120)	04
30. Check aircraft doors (99)	03
31. Position AGE to aircraft (148)	03
32. Position or remove aircraft chocks (145)	03
33. Ground aircraft (147)	03
34. Inspect struts (118)	03
35. Operate aircraft auxiliary power plants (72)	03
36. Operationally check fire/overheat detection systems (75)	03
37. Inspect flight control surfaces (115)	03
38. Remove/replace aircraft light bulbs (123)	03
39. Remove/replace aircraft light lenses (107)	03
40. Clean polished surfaces of struts (129)	02

PERCENT OF TASK PERFORMERS WHO
READ ALOUD
AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Conduct on-the-job training (103)	38
2. Supervise apprentice maintenance specialists (90)	33
3. Defuel aircraft using single-point methods (102)	32
4. Coordinate with maintenance personnel (120)	23
5. Check cargo ramp systems (11)	18
6. Inspect maintenance equipment (143)	17
7. Locate part numbers in illustrated breakdowns (129)	15
8. Review aircraft records or maintenance forms (152)	13
9. Prepare maintenance data collection record forms (149)	11
10. Post entries to maintenance discrepancy forms (148)	11
11. Prepare reparable item processing tag forms (135)	10
12. Check aileron, rudder, elevator systems (73)	10
13. Inspect blow-in, sucker, or flipper doors (65)	08
14. Check aircraft doors (99)	07
15. Inspect landing gear components (108)	07
16. Inspect struts (118)	07
17. Operate aircraft auxiliary power plants (72)	07
18. Inspect flight control surfaces (115)	07
19. Check wing flaps (106)	07
20. Inspect hydraulic system lines (116)	06
21. Visually inspect single-point receptacles (105)	06
22. Inspect 780 equipment for serviceability (65)	06
23. Position AGE to aircraft (148)	05
24. Ground aircraft (147)	05
25. Lubricate struts (95)	05
26. Inspect hydraulic system reservoirs (95)	05
27. Inspect aircraft external lights (119)	05
28. Sign for parts (126)	04
29. Safety wire aircraft hardware (126)	04
30. Remove or replace aircraft access panels (143)	04
31. Clean polished surfaces of struts (129)	04
32. Operationally check fire/overheat detection systems (75)	04
33. Inspect hydraulic system sight gages (111)	04
34. Drain fuel sumps (120)	04
35. Issue or receive tools (132)	03
36. Operate maintenance stands (155)	03
37. Position or remove aircraft chocks (145)	03
38. Remove/replace aircraft light bulbs (123)	03
39. Remove/replace aircraft light lenses (107)	02
40. Tow nonpowered AGE (83)	02

PERCENT OF TASK PERFORMERS WHO
READ TO DISTRIBUTE WRITTEN MATERIAL

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Conduct on-the-job training (103)	19
2. Coordinate with maintenance personnel (120)	18
3. Supervise apprentice maintenance specialists (90)	17
4. Review aircraft records or maintenance forms (152)	17
5. Prepare reparable item processing tag forms (135)	16
6. Inspect maintenance equipment (143)	13
7. Locate part numbers in illustrated breakdowns (129)	13
8. Prepare maintenance data collection record forms (149)	12
9. Post entries to maintenance discrepancy forms (148)	11
10. Sign for parts (126)	09
11. Check cargo ramp systems (11)	09
12. Remove/replace aircraft light bulbs (123)	05
13. Issue or receive tools (132)	04
14. Check aileron, rudder, elevator systems (73)	04
15. Inspect flight control surfaces (115)	04
16. Inspect hydraulic system lines (116)	04
17. Defuel aircraft using single-point methods (102)	04
18. Remove or replace aircraft access panels (143)	03
19. Operate maintenance stands (155)	03
20. Position AGE to aircraft (148)	03
21. Ground aircraft (147)	03
22. Lubricate struts (95)	03
23. Inspect struts (118)	03
24. Check wing flaps (106)	03
25. Inspect hydraulic system sight gages (111)	03
26. Inspect hydraulic system reservoirs (95)	03
27. Inspect aircraft external lights (119)	03
28. Visually inspect single-point receptacles (105)	03
29. Drain fuel sumps (120)	03
30. Inspect 780 equipment for serviceability (65)	03
31. Inspect blow-in, sucker, or flipper doors (65)	03
32. Safety wire aircraft hardware (126)	02
33. Position or remove aircraft chocks (145)	02
34. Clean polished surfaces of struts (129)	02
35. Inspect landing gear components (108)	02
36. Remove/replace aircraft light lenses (107)	02
37. Tow nonpowered AGE (83)	02
38. Check aircraft doors (99)	01
39. Operate aircraft auxiliary power plants (72)	01
40. Operationally check fire/overheat detection systems (75)	01

PERCENT OF TASK PERFORMERS WHO
READ TO ALPHABETIZE, SORT, FILE

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Coordinate with maintenance personnel (120)	12
2. Supervise apprentice maintenance specialists (90)	12
3. Review aircraft records or maintenance forms (152)	11
4. Prepare reparable item processing tag forms (135)	11
5. Prepare maintenance data collection record forms (149)	11
6. Conduct on-the-job training (103)	10
7. Inspect maintenance equipment (143)	09
8. Check cargo ramp systems (11)	09
9. Post entries to maintenance discrepancy forms (148)	08
10. Locate part numbers in illustrated breakdowns (129)	08
11. Sign for parts (126)	05
12. Issue or receive tools (132)	05
13. Operate maintenance stands (155)	03
14. Position AGE to aircraft (148)	03
15. Ground aircraft (147)	03
16. Lubricate struts (95)	03
17. Inspect struts (118)	03
18. Check aileron, rudder, elevator systems (73)	03
19. Inspect flight control surfaces (115)	03
20. Check wing flaps (106)	03
21. Inspect hydraulic system sight gages (111)	03
22. Inspect hydraulic system reservoirs (95)	03
23. Inspect hydraulic system lines (116)	03
24. Remove/replace aircraft light bulbs (123)	03
25. Defuel aircraft using single-point methods (102)	03
26. Visually inspect single-point receptacles (105)	03
27. Drain fuel sumps (120)	03
28. Inspect 780 equipment for serviceability (65)	03
29. Safety wire aircraft hardware (126)	02
30. Remove or replace aircraft access panels (143)	02
31. Position or remove aircraft chocks (145)	02
32. Clean polished surfaces of struts (129)	02
33. Inspect aircraft external lights (119)	02
34. Remove/replace aircraft light lenses (107)	02
35. Tow nonpowered AGE (83)	02
36. Inspect blow-in, sucker, or flipper doors (65)	02
37. Check aircraft doors (99)	01
38. Inspect landing gear components (108)	01
39. Operate aircraft auxiliary power plants (72)	01
40. Operationally check fire/overheat detection systems (75)	01

APPENDIX E

PURPOSES FOR READING — AFSC 702X0

PERCENT OF TASK PERFORMERS WHO
READ TO FIND OUT THAT TASK NEEDED
TO BE DONE

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Establish publication libraries (116)	64
2. Develop documentation files (140)	59
3. Determine work priorities (163)	58
4. Develop work methods or procedures (126)	52
5. Direct maintenance of administrative files (161)	50
6. Destroy non-current documentation (144)	49
7. Post standard publications (187)	48
8. Review files maintenance and disposition plans (132)	45
9. Prepare APRS (143)	42
10. Review publication requirements (151)	42
11. Review publication bulletins (171)	40
12. Prepare file guides or labels (169)	40
13. Determine requirements for space, personnel, etc. (107)	39
14. Compose drafts of administrative communications (135)	39
15. Post publication bulletins (131)	39
16. Prepare cross-reference sheet forms (120)	39
17. Send sponsorship kits or welcome letters (95)	38
18. Coordinate administrative communication suspenses (129)	38
19. Type blank forms (192)	38
20. File documentation (179)	37
21. Sort documentation for filing (159)	36
22. Maintain suspense files (174)	34
23. Conduct daily security checks (98)	32
24. Notify personnel of appointments, details, training (138)	32
25. Prepare requests for reproduction services (192)	31
26. Edit drafts of administrative communications (165)	30
27. Type drafts of administrative communications (190)	30
28. Type final form administrative communications (206)	28
29. Distribute publications (111)	28
30. Review outgoing administrative communications (165)	27
31. Schedule leaves or passes (116)	25
32. Package unclassified materials (126)	24
33. Deliver administrative communications (160)	21
34. Charge out documents (123)	20
35. Perform operator maintenance on typewriters (98)	18
36. Maintain locator card files (90)	17
37. Maintain office supply stock levels (129)	15
38. Operate office copy machines (189)	12
39. Answer telephones (241)	03

PERCENT OF TASK PERFORMERS WHO READ
TO LEARN PROCEDURES OR CHECK DIRECTIONS

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Develop documentation files (140)	84
2. Establish publication libraries (116)	80
3. Prepare APRS (143)	76
4. Direct maintenance of administrative files (161)	75
5. Develop work methods or procedures (126)	67
6. Review files maintenance and disposition plans (132)	59
7. Determine requirements for space, personnel, etc. (107)	58
8. Type blank forms (192)	58
9. Prepare file guides or labels (169)	57
10. Determine work priorities (163)	56
11. Post standard publications (187)	53
12. Compose drafts of administrative communications (135)	49
13. Destroy non-current documentation (144)	13
14. Prepare cross-reference sheet forms (120)	49
15. Send sponsorship kits or welcome letters (95)	46
16. File documentation (179)	44
17. Schedule leaves or passes (116)	43
18. Review publications requirements (151)	42
19. Type final form administrative communications (206)	41
20. Review publication bulletins (171)	40
21. Prepare requests for reproduction services (192)	39
22. Maintain suspense files (174)	39
23. Review outgoing administrative communications (165)	38
24. Conduct daily security checks (98)	37
25. Type drafts of administrative communications (190)	24
26. Perform operator maintenance on typewriters (98)	34
27. Post publication bulletins (131)	34
28. Package unclassified materials (126)	33
29. Distribute publications (111)	33
30. Coordinate administrative communication suspenses (129)	31
31. Edit drafts of administrative communications (164)	30
32. Sort documentation for filing (159)	30
33. Maintain locator card files (90)	26
34. Operate office copy machines (189)	26
35. Notify personnel of appointments, details, training (138)	25
36. Charge out documents (123)	24
37. Maintain office supply stock levels (129)	21
38. Deliver administrative communications (160)	16
39. Answer telephones (241)	08

PERCENT OF TASK PERFORMERS WHO
READ TO LOOK UP FACTS

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine requirements for space, personnel, etc. (107)	60
2. Establish publication libraries (116)	45
3. Determine work priorities (163)	44
4. Direct maintenance of administrative files (161)	43
5. Develop documentation files (140)	41
6. Compose drafts of administrative communications (135)	40
7. Send sponsorship kits or welcome letters (95)	39
8. Develop work methods of procedures (126)	37
9. Prepare APRS (143)	37
10. Schedule leaves or passes (116)	32
11. Type blank forms (192)	32
12. Maintain locator card files (90)	30
13. Edit drafts of administrative communications (164)	30
14. Review outgoing administrative communications (165)	30
15. Maintain office supply stock levels (129)	29
16. Review publication bulletins (171)	29
17. Review files maintenance and disposition plans (132)	29
18. Package unclassified materials (126)	27
19. Review publications requirements (151)	24
20. Coordinate administrative communication suspenses (129)	23
21. Prepare file guides or labels (169)	22
22. Maintain suspense files (174)	21
23. Type drafts of administrative communications (190)	21
24. Post publication bulletins (131)	21
25. Prepare cross-reference sheet forms (120)	20
26. Prepare requests for reproduction services (192)	18
27. Type final form administrative communications (206)	18
28. Distribute publications (111)	18
29. Post standard publications (187)	18
30. Destroy non-current documentation (144)	18
31. Sort documentation for filing (159)	18
32. File documentation (179)	16
33. Notify personnel of appointments, details, training (138)	15
34. Perform operator maintenance on typewriters (98)	14
35. Conduct daily security checks (98)	13
36. Answer telephones (241)	11
37. Charge out documents (123)	11
38. Deliver administrative communications (160)	10
39. Operate office copy machines (189)	07

PERCENT OF TASK PERFORMERS WHO
READ TO COPY, TYPE, KEYPUNCH

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Type final form administrative communications (206)	46
2. Determine work priorities (163)	44
3. Prepare APRS (143)	41
4. Type drafts of administrative communications (190)	41
5. Compose drafts of administrative communications (135)	39
6. Determine requirements for space, personnel, etc. (107)	36
7. Type blank forms (192)	36
8. Edit drafts of administrative communications (164)	36
9. Direct maintenance of administrative files (161)	28
10. Establish publication libraries (116)	27
11. Develop work methods or procedures (126)	27
12. Send sponsorship kits or welcome letters (95)	27
13. Schedule leaves or passes (116)	26
14. Develop documentation files (140)	26
15. Prepare requests for reproduction services (192)	25
16. Coordinate administrative communication suspenses (129)	22
17. Review outgoing administrative communications (165)	21
18. Prepare file guides or labels (169)	21
19. Prepare cross-reference sheet forms (120)	19
20. Notify personnel of appointments, details, training (138)	18
21. Maintain locator card files (90)	16
22. Maintain off e supply stock levels (129)	16
23. Maintain suspense files (174)	16
24. Operate office copy machines (189)	14
25. Review files maintenance and disposition plans (132)	14
26. Post standard publications (187)	12
27. Post publication bulletins (131)	11
28. Charge out documents (123)	11
29. File documentation (179)	10
30. Conduct daily security checks (98)	09
31. Review publications requirements (151)	09
32. Perform operator maintenance on typewriters (98)	08
33. Package unclassified materials (126)	07
34. Sort documentation for filing (159)	07
35. Answer telephones (241)	06
36. Distribute publications (111)	06
37. Review publication bulletins (171)	06
38. Destroy non-current documentation (144)	05
39. Deliver administrative communications (160)	03

PERCENT OF TASK PERFORMERS WHO
READ ALOUD
AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Develop work methods or procedures (126)	21
2. Notify personnel of appointments, details, training (138)	20
3. Determine requirements for space, personnel, etc. (107)	19
4. Establish publication libraries (116)	19
5. Determine work priorities (163)	18
6. Direct maintenance of administrative files (161)	15
7. Conduct daily security checks (98)	15
8. Schedule leaves or passes (116)	14
9. Coordinate administrative communication suspenses (129)	14
10. Answer telephones (241)	12
11. Maintain locator card files (90)	11
12. Review outgoing administrative communications (165)	10
13. Prepare APRS (143)	09
14. Edit drafts of administrative communications (164)	09
15. Review files maintenance and disposition plans (132)	08
16. Maintain office supply stock levels (129)	07
17. Review publications requirements (151)	07
18. Develop documentation files (140)	07
19. Compose drafts of administrative communications (135)	06
20. Type blank forms (192)	06
21. Review publication bulletins (171)	06
22. Perform operator maintenance on typewriters (98)	05
23. Maintain suspense files (174)	05
24. Type final form administrative communications (206)	05
25. Type drafts of administrative communications (190)	05
26. Distribute publications (111)	05
27. Prepare requests for reproduction services (192)	04
28. Send sponsorship kits or welcome letters (95)	04
29. Package unclassified materials (126)	04
30. Post standard publications (187)	04
31. Post publication bulletins (131)	04
32. Destroy non-current documentation (144)	04
33. File documentation (179)	04
34. Prepare cross-reference sheet forms (120)	04
35. Sort documentation for filing (159)	04
36. Operate office copy machines (189)	03
37. Deliver administrative communications (160)	03
38. Charge out documents (123)	03
39. Prepare file guides or labels (169)	02

PERCENT OF TASK PERFORMERS WHO
READ TO DISTRIBUTE WRITTEN MATERIAL

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Establish publication libraries (116)	51
2. Distribute publications (111)	49
3. Determine work priorities (163)	48
4. Develop work methods or procedures (126)	37
5. Coordinate administrative communication suspenses (129)	33
6. Determine requirements for space, personnel, etc. (107)	30
7. Direct maintenance of administrative files (161)	30
8. Deliver administrative communications (160)	29
9. Compose drafts of administrative communications (135)	28
10. Review outgoing administrative communications (165)	27
11. Notify personnel of appointments, details, training (138)	25
12. Prepare requests for reproduction services (192)	25
13. Package unclassified materials (126)	25
14. Review publication bulletins (171)	24
15. Send sponsorship kits or welcome letters (95)	23
16. Review publications requirements (151)	23
17. Maintain suspense files (174)	21
18. Post standard publications (187)	21
19. Type blank forms (192)	20
20. Type final form administrative communications (206)	19
21. Schedule leaves or passes (116)	18
22. Edit drafts of administrative communications (164)	18
23. Sort documentation for filing (159)	18
24. Post publication bulletins (131)	17
25. Prepare APRS (143)	16
26. Develop documentation files (140)	16
27. Maintain office supply stock levels (129)	15
28. File documentation (179)	15
29. Type drafts of administrative communications (190)	14
30. Destroy non-current documentation (144)	13
31. Prepare cross-reference sheet forms (120)	11
32. Review files maintenance and disposition plans (132)	11
33. Prepare file guides or labels (169)	08
34. Conduct daily security checks (98)	07
35. Maintain locator card files (90)	07
36. Operate office copy machines (189)	07
37. Charge out documents (123)	07
38. Answer telephones (241)	06
39. Perform operator maintenance on typewriters (98)	04

PERCENT OF TASK PERFORMERS WHO
READ TO ALPHABETIZE, SORT, FILE

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Direct maintenance of administrative files (161)	57
2. Establish publication libraries (116)	53
3. Sort documentation for filing (159)	46
4. Determine work priorities (163)	42
5. Maintain locator card files (90)	42
6. File documentation (179)	41
7. Develop documentation files (140)	40
8. Determine requirements for space, personnel, etc. (107)	36
9. Develop work methods or procedures (126)	33
10. Maintain suspense files (174)	29
11. Post standard publications (187)	28
12. Distribute publications (111)	26
13. Coordinate administrative communication suspenses (129)	22
14. Prepare file guides or labels (169)	22
15. Notify personnel of appointments, details, training (138)	21
16. Prepare cross-reference sheet forms (120)	21
17. Review publications requirements (151)	21
18. Review files maintenance and disposition plans (132)	21
19. Post publication bulletins (131)	20
20. Schedule leaves or passes (116)	19
21. Prepare APRS (143)	16
22. Maintain office supply stock levels (129)	16
23. Edit drafts of administrative communications (164)	16
24. Type blank forms (192)	16
25. Destroy non-current documentation (144)	16
26. Send sponsorship kits or welcome letters (95)	15
27. Type final form administrative communications (206)	14
28. Review publication bulletins (171)	13
29. Review outgoing administrative communications (165)	12
30. Type drafts of administrative communications (190)	12
31. Deliver administrative communications (160)	11
32. Prepare requests for reproduction services (192)	10
33. Compose drafts of administrative communications (135)	10
34. Package unclassified materials (126)	10
35. Charge out documents (123)	09
36. Conduct daily security checks (98)	06
37. Operate office copy machines (189)	05
38. Perform operator maintenance on typewriters (98)	04
39. Answer telephones (241)	02

APPENDIX F

TYPES OF MATERIAL READ — AFSC 431X2

PERCENT OF TASK PERFORMERS WHO
READ WORK CARD, JOB GUIDE, INSPECTION CARD
AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Inspect landing gear components (108)	90
2. Supervise apprentice maintenance specialists (90)	87
3. Inspect struts (118)	86
4. Inspect flight control surfaces (115)	83
5. Defuel aircraft using single-point methods (102)	83
6. Conduct on-the-job training (103)	80
7. Inspect hydraulic system reservoirs (95)	80
8. Inspect hydraulic system lines (116)	80
9. Inspect hydraulic system sight gages (111)	77
10. Check aileron, rudder, elevator systems (73)	75
11. Check wing flaps (106)	75
12. Inspect maintenance equipment (143)	74
13. Lubricate struts (95)	74
14. Drain fuel sumps (120)	74
15. Operationally check fire/overheat detection systems (75)	73
16. Visually inspect single-point receptacles (105)	70
17. Inspect aircraft external lights (119)	69
18. Check aircraft doors (99)	67
19. Clean polished surfaces of struts (129)	64
20. Remove/replace aircraft light bulbs (123)	64
21. Inspect 780 equipment for serviceability (65)	63
22. Operate aircraft auxiliary power plants (72)	61
23. Remove/replace aircraft light lenses (107)	61
24. Remove or replace aircraft access panels (143)	60
25. Coordinate with maintenance personnel (120)	58
26. Safety wire aircraft hardware (126)	55
27. Check cargo ramp systems (11)	55
28. Ground aircraft (147)	48
29. Prepare maintenance data collection record forms (149)	44
30. Post entries to maintenance discrepancy forms (148)	41
31. Position or remove aircraft chocks (145)	37
32. Position AGE to aircraft (148)	36
33. Prepare reparable item processing tag forms (135)	35
34. Review aircraft records or maintenance forms (152)	32
35. Operate maintenance stands (155)	25
36. Locate part numbers in illustrated breakdowns (129)	24
37. Tow nonpowered AGE (83)	20
38. Issue or receive tools (132)	14
39. Sign for parts (126)	08
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ MANUAL, TECH ORDER, REG, CIRCULAR
AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Conduct on-the-job training (103)	77
2. Locate part numbers in illustrated breakdowns (129)	76
3. Supervise apprentice maintenance specialists (90)	67
4. Prepare reparable item processing tag forms (135)	66
5. Inspect landing gear components (108)	64
6. Defuel aircraft using single-point receptacles (102)	63
7. Coordinate with maintenance personnel (120)	62
8. Inspect hydraulic system lines (116)	61
9. Prepare maintenance data collection record forms (149)	60
10. Inspect struts (118)	60
11. Operate aircraft auxiliary power plants (72)	60
12. Check wing flaps (106)	60
13. Check aircraft doors (99)	59
14. Lubricate struts (95)	58
15. Check aileron, rudder, elevator systems (73)	58
16. Inspect flight control surfaces (115)	58
17. Inspect hydraulic system reservoirs (95)	58
18. Operationally check fire/overheat detection systems (75)	55
19. Visually inspect single-point receptacles (105)	54
20. Inspect 780 equipment for serviceability (65)	54
21. Drain fuel sumps (120)	53
22. Inspect maintenance equipment (143)	52
23. Inspect hydraulic system sight gages (111)	52
24. Post entries to maintenance discrepancy forms (148)	51
25. Safety wire aircraft hardware (126)	51
26. Ground aircraft (147)	48
27. Clean polished surfaces of struts (129)	48
28. Remove or replace aircraft access panels (143)	46
29. Remove/replace aircraft light bulbs (123)	46
30. Review aircraft records or maintenance forms (152)	45
31. Check cargo ramp systems (11)	45
32. Inspect aircraft external lights (119)	45
33. Position AGE to aircraft (148)	44
34. Remove/replace aircraft light lenses (107)	44
35. Tow nonpowered AGE (83)	41
36. Operate maintenance stands (155)	37
37. Position or remove aircraft chocks (145)	31
38. Sign for parts (126)	25
39. Issue or receive tools (132)	21
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ TEXTBOOK, CAREER DEVELOPMENT COURSE
AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Conduct on-the-job training (103)	58
2. Supervise apprentice maintenance specialists (90)	48
3. Check cargo ramp systems (11)	36
4. Inspect maintenance equipment (143)	31
5. Coordinate with maintenance personnel (120)	28
6. Prepare maintenance data collection record forms (149)	28
7. Post entries to maintenance discrepancy forms (148)	28
8. Prepare reparable item processing tag forms (135)	26
9. Review aircraft records or maintenance forms (152)	24
10. Defuel aircraft using single-point methods (102)	22
11. Locate part numbers in illustrated breakdowns (129)	21
12. Lubricate struts (95)	21
13. Inspect landing gear components (108)	21
14. Position AGE to aircraft (148)	20
15. Inspect flight control surfaces (115)	20
16. Safety wire aircraft hardware (126)	19
17. Operate aircraft auxiliary power plants (72)	19
18. Operationally check fire/overheat detection systems (75)	19
19. Check aileron, rudder, elevator systems (73)	19
20. Check wing flaps (106)	19
21. Inspect hydraulic system reservoirs (95)	19
22. Inspect hydraulic system lines (116)	19
23. Check aircraft doors (99)	18
24. Ground aircraft (147)	18
25. Remove or replace aircraft access panels (143)	17
26. Operate maintenance stands (155)	17
27. Clean polished surfaces of struts (129)	17
28. Inspect 780 equipment for serviceability (65)	17
29. Inspect struts (118)	16
30. Inspect aircraft external lights (119)	16
31. Visually inspect single-point receptacles (105)	16
32. Drain fuel sumps (120)	16
33. Tow nonpowered AGE (83)	16
34. Inspect hydraulic system sight gages (111)	15
35. Remove/replace aircraft light bulbs (123)	15
36. Position or remove aircraft chocks (145)	14
37. Sign for parts (126)	13
38. Issue or receive tools (132)	13
39. Remove/replace aircraft light lenses (107)	13
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ RECORD, DOCUMENTATION, LOG

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Review aircraft records or maintenance forms (152)	58
2. Coordinate with maintenance personnel (120)	57
3. Conduct on-the-job training (103)	52
4. Supervise apprentice maintenance specialists (90)	47
5. Prepare reparable item processing tag forms (135)	44
6. Locate part numbers in illustrated breakdowns (129)	43
7. Inspect maintenance equipment (143)	36
8. Prepare maintenance data collection record forms (149)	36
9. Post entries to maintenance discrepancy forms (148)	36
10. Sign for parts (126)	32
11. Inspect 780 equipment for serviceability (65)	25
12. Defuel aircraft using single-point methods (102)	22
13. Check aileron, rudder, elevator systems (73)	21
14. Issue or receive tools (132)	18
15. Check aircraft doors (99)	18
16. Check cargo ramp systems (11)	18
17. Inspect hydraulic system lines (116)	18
18. Remove or replace aircraft access panels (143)	17
19. Drain fuel sumps (120)	17
20. Inspect hydraulic system reservoirs (95)	16
21. Operate maintenance stands (155)	15
22. Check wing flaps (106)	14
23. Inspect hydraulic system sight gages (111)	14
24. Remove/replace aircraft light bulbs (123)	14
25. Inspect landing gear components (108)	13
26. Inspect struts (118)	13
27. Operationally check fire/overheat detection systems (75)	13
28. Inspect flight control surfaces (115)	13
29. Inspect aircraft external lights (119)	13
30. Lubricate struts (95)	12
31. Remove/replace aircraft light lenses (107)	12
32. Operate aircraft auxiliary power plants (72)	11
33. Visually inspect single-point receptacles (105)	11
34. Tow nonpowered AGE (83)	11
35. Position AGE to aircraft (148)	09
36. Clean polished surfaces of struts (129)	09
37. Safety wire aircraft hardware (126)	07
38. Ground aircraft (147)	04
39. Position or remove aircraft chocks (145)	03
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ MIMEOGRAPHED NOTICE, HANDOUT

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Supervise apprentice maintenance specialists (90)	23
2. Coordinate with maintenance personnel (120)	21
3. Conduct on-the-job training (103)	18
4. Review aircraft records or maintenance forms (152)	13
5. Post entries to maintenance discrepancy forms (148)	11
6. Inspect maintenance equipment (143)	10
7. Check cargo ramp systems (11)	09
8. Prepare reparable item processing tag forms (135)	08
9. Prepare maintenance data collection record forms (149)	07
10. Locate part numbers in illustrated breakdowns (129)	06
11. Sign for parts (126)	06
12. Tow nonpowered AGE (83)	05
13. Issue or receive tools (132)	04
14. Check aileron, rudder, elevator systems (73)	04
15. Remove or replace aircraft access panels (143)	03
16. Operate maintenance stands (155)	03
17. Inspect landing gear components (108)	03
18. Inspect struts (118)	03
19. Inspect flight control surfaces (115)	03
20. Check wing flaps (106)	03
21. Inspect hydraulic system sight gages (111)	03
22. Inspect hydraulic system reservoirs (95)	03
23. Inspect hydraulic system lines (116)	03
24. Defuel aircraft using single-point methods (102)	03
25. Visually inspect single-point receptacles (105)	03
26. Drain fuel sumps (120)	03
27. Inspect 780 equipment for serviceability (65)	03
28. Safety wire aircraft hardware (126)	02
29. Position AGE to aircraft (148)	02
30. Ground aircraft (147)	02
31. Clean polished surfaces of struts (129)	02
32. Lubricate struts (95)	02
33. Remove/replace aircraft light bulbs (123)	02
34. Inspect aircraft external lights (119)	02
35. Remove/replace aircraft light lenses (107)	02
36. Check aircraft doors (99)	01
37. Position or remove aircraft chocks (145)	01
38. Operate aircraft auxiliary power plants (72)	01
39. Operationally check fire/overheat detection systems (75)	01
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ MESSAGE, LETTER, TWX

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Coordinate with maintenance personnel (120)	40
2. Supervise apprentice maintenance specialists (90)	34
3. Conduct on-the-job training (103)	23
4. Inspect maintenance equipment (143)	22
5. Post entries to maintenance discrepancy forms (148)	21
6. Review aircraft records or maintenance forms (152)	19
7. Inspect landing gear components (108)	19
8. Prepare reparable item processing tag forms (135)	18
9. Check cargo ramp systems (11)	18
10. Prepare maintenance data collection record forms (149)	15
11. Inspect struts (118)	15
12. Locate part numbers in illustrated breakdowns (129)	14
13. Inspect flight control surfaces (115)	13
14. Check aircraft doors (99)	12
15. Inspect hydraulic system lines (116)	12
16. Inspect 780 equipment for serviceability (65)	12
17. Remove or replace aircraft access panels (143)	11
18. Check aileron, rudder, elevator systems (73)	11
19. Sign for parts (126)	09
20. Lubricate struts (95)	08
21. Check wing flaps (106)	08
22. Inspect hydraulic system reservoirs (95)	08
23. Position AGE to aircraft (148)	07
24. Operationally check fire/overheat detection systems (75)	07
25. Visually inspect single-point receptacles (105)	07
26. Safety wire aircraft hardware (126)	06
27. Operate aircraft auxiliary power plants (72)	06
28. Inspect hydraulic system sight gages (111)	06
29. Remove/replace aircraft light bulbs (123)	06
30. Inspect aircraft external lights (119)	06
31. Remove/replace aircraft light lenses (107)	06
32. Drain fuel sumps (120)	06
33. Issue or receive tools (132)	05
34. Ground aircraft (147)	05
35. Clean polished surfaces of struts (129)	05
36. Defuel aircraft using single-point methods (102)	05
37. Tow nonpowered AGE (83)	05
38. Operate maintenance stands (155)	04
39. Position or remove aircraft chocks (145)	03
40. Inspect blow-in, sucker, or flipper doors (65)	

PERCENT OF TASK PERFORMERS WHO
READ COMPUTER PRINT-OUT

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Supervise apprentice maintenance specialists (90)	36
2. Coordinate with maintenance personnel (120)	33
3. Conduct on-the-job training (103)	25
4. Review aircraft records or maintenance forms (152)	24
5. Sign for parts (126)	18
6. Post entries to maintenance discrepancy forms (148)	16
7. Locate part numbers in illustrated breakdowns (129)	16
8. Inspect maintenance equipment (143)	15
9. Prepare maintenance data collection record forms (149)	15
10. Prepare reparable item processing tag forms (135)	12
11. Check cargo ramp systems (11)	09
12. Inspect 780 equipment for serviceability (65)	06
13. Remove or replace aircraft access panels (143)	05
14. Check aileron, rudder, elevator systems (73)	04
15. Inspect flight control surfaces (115)	04
16. Check wing flaps (106)	04
17. Inspect hydraulic system sight gages (111)	04
18. Inspect hydraulic system reservoirs (95)	04
19. Inspect hydraulic system lines (116)	04
20. Defuel aircraft using single-point methods (102)	04
21. Visually inspect single-point receptacles (105)	04
22. Drain fuel sumps (120)	04
23. Tow nonpowered AGE (83)	04
24. Issue or receive tools (132)	03
25. Safety wire aircraft hardware (126)	03
26. Operate maintenance stands (155)	03
27. Inspect landing gear components (108)	03
28. Inspect struts (118)	03
29. Operate aircraft auxiliary power plants (72)	03
30. Operationally check fire/overheat detection systems (75)	03
31. Remove/replace aircraft light bulbs (123)	03
32. Inspect aircraft external lights (119)	03
33. Remove/replace aircraft light lenses (107)	03
34. Check aircraft doors (99)	02
35. Position AGE to aircraft (148)	02
36. Ground aircraft (147)	02
37. Lubricate struts (95)	02
38. Position or remove aircraft chocks (145)	01
39. Clean polished surfaces of struts (129)	01
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ MATERIAL TO BE TYPED, REPRODUCED

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Supervise apprentice maintenance specialists (90)	23
2. Prepare maintenance data collection record forms (149)	18
3. Coordinate with maintenance personnel (120)	17
4. Conduct on-the-job training (103)	17
5. Prepare reparable item processing tag forms (135)	17
6. Review aircraft records or maintenance forms (152)	16
7. Locate part numbers in illustrated breakdowns (129)	14
8. Post entries to maintenance discrepancy forms (148)	13
9. Check cargo ramp systems (11)	09
10. Inspect maintenance equipment (143)	08
11. Sign for parts (126)	07
12. Issue or receive tools (132)	05
13. Check wing flaps (106)	05
14. Inspect 780 equipment for serviceability (65)	05
15. Inspect landing gear components (108)	04
16. Inspect hydraulic system lines (116)	04
17. Defuel aircraft using single-point methods (102)	04
18. Tow nonpowered AGE (83)	04
19. Inspect struts (118)	03
20. Check aileron, rudder, elevator systems (73)	03
21. Inspect flight control surfaces (115)	03
22. Inspect hydraulic system sight gages (111)	03
23. Inspect hydraulic system reservoirs (95)	03
24. Remove/replace aircraft light bulbs (123)	03
25. Visually inspect single-point receptacles (105)	03
26. Drain fuel sumps (120)	03
27. Safety wire aircraft hardware (126)	02
28. Check aircraft doors (99)	02
29. Remove or replace aircraft access panels (143)	02
30. Operate maintenance stands (155)	02
31. Position AGE to aircraft (148)	02
32. Ground aircraft (147)	02
33. Lubricate struts (95)	02
34. Inspect aircraft external lights (119)	02
35. Remove/replace aircraft light lenses (107)	02
36. Position or remove aircraft chocks (145)	01
37. Clean polished surfaces of struts (129)	01
38. Operate aircraft auxiliary power plants (72)	01
39. Operationally check fire/overheat detection systems (75)	01
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ FORMS TO BE COMPLETED

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Coordinate with maintenance personnel (120)	57
2. Supervise apprentice maintenance specialists (90)	56
3. Conduct on-the-job training (103)	51
4. Review aircraft records or maintenance forms (152)	49
5. Post entries to maintenance discrepancy forms (148)	47
6. Prepare reparable item processing tag forms (135)	41
7. Inspect maintenance equipment (143)	40
8. Prepare maintenance data collection record forms (149)	36
9. Check cargo ramp systems (11)	36
10. Defuel aircraft using single-point methods (102)	33
11. Locate part numbers in illustrated breakdowns (129)	30
12. Sign for parts (126)	27
13. Issue or receive tools (132)	27
14. Inspect 780 equipment for serviceability (65)	26
15. Safety wire aircraft hardware (126)	25
16. Remove or replace aircraft access panels (143)	23
17. Inspect landing gear components (108)	23
18. Check aircraft doors (99)	22
19. Inspect struts (118)	21
20. Inspect flight control surfaces (115)	21
21. Remove/replace aircraft light bulbs (123)	21
22. Remove/replace aircraft light lenses (107)	20
23. Drain fuel sumps (120)	20
24. Check aileron, rudder, elevator systems (73)	19
25. Inspect hydraulic system reservoirs (95)	18
26. Inspect aircraft external lights (119)	18
27. Inspect hydraulic system lines (116)	17
28. Operate aircraft auxiliary power plants (72)	15
29. Check wing flaps (106)	15
30. Inspect hydraulic system sight gages (111)	15
31. Lubricate struts (95)	14
32. Visually inspect single-point receptacles (105)	14
33. Operationally check fire/overheat detection systems (75)	13
34. Tow nonpowered AGE (83)	12
35. Operate maintenance stands (155)	10
36. Position AGE to aircraft (148)	08
37. Clean polished surfaces of struts (129)	08
38. Ground aircraft (147)	05
39. Position or remove aircraft chocks (145)	03
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ MICROFILM, COMPUTER TERMINAL

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	12
2. Supervise apprentice maintenance specialists (90)	09
3. Check cargo ramp systems (11)	09
4. Coordinate with maintenance personnel (120)	08
5. Conduct on-the-job training (103)	08
6. Post entries to maintenance discrepancy forms (148)	07
7. Prepare reparable item processing tag forms (135)	06
8. Review aircraft records or maintenance forms (152)	06
9. Sign for parts (126)	06
10. Inspect 780 equipment for serviceability (65)	05
11. Prepare maintenance data collection record forms (149)	04
12. Inspect hydraulic system sight gages (111)	04
13. Visually inspect single-point receptacles (105)	04
14. Inspect maintenance equipment (143)	03
15. Issue or receive tools (132)	03
16. Remove or replace aircraft access panels (143)	03
17. Operate maintenance stands (155)	03
18. Ground aircraft (147)	03
19. Check aileron, rudder, elevator systems (73)	03
20. Inspect flight control surfaces (115)	03
21. Check wing flaps (106)	03
22. Inspect hydraulic system reservoirs (95)	03
23. Inspect hydraulic system lines (116)	03
24. Remove/replace aircraft light bulbs (123)	03
25. Defuel aircraft using single-point methods (102)	03
26. Drain fuel sumps (120)	03
27. Safety wire aircraft hardware (126)	02
28. Position AGE to aircraft (148)	02
29. Position or remove aircraft chocks (145)	02
30. Lubricate struts (95)	02
31. Inspect struts (118)	02
32. Inspect aircraft external lights (119)	02
33. Remove/replace aircraft light lenses (107)	02
34. Tow nonpowered AGE (83)	02
35. Check aircraft doors (99)	02
36. Clean polished surfaces of struts (129)	02
37. Inspect landing gear components (108)	02
38. Operate aircraft auxiliary power plants (72)	01
39. Operationally check fire/overheat detection systems (75)	01
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ TABLES
AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	36
2. Coordinate with maintenance personnel (120)	34
3. Supervise apprentice maintenance specialists (90)	31
4. Prepare reparable item processing tag forms (135)	29
5. Conduct on-the-job training (103)	27
6. Inspect maintenance equipment (143)	19
7. Review aircraft records or maintenance forms (152)	16
8. Post entries to maintenance discrepancy forms (148)	15
9. Prepare maintenance data collection record forms (149)	14
10. Inspect 780 equipment for serviceability (65)	12
11. Defuel aircraft using single-point methods (102)	10
12. Check cargo ramp systems (11)	09
13. Inspect hydraulic system lines (116)	09
14. Inspect struts (118)	08
15. Inspect flight control surfaces (115)	08
16. Inspect hydraulic system reservoirs (95)	08
17. Sign for parts (126)	07
18. Remove/replace aircraft light bulbs (123)	07
19. Inspect landing gear components (108)	06
20. Inspect hydraulic system sight gages (111)	06
21. Issue or receive tools (132)	05
22. Remove or replace aircraft access panels (143)	05
23. Check aileron, rudder, elevator systems (73)	05
24. Remove/replace aircraft light lenses (107)	05
25. Visually inspect single-point receptacles (105)	05
26. Tow nonpowered AGE (83)	05
27. Safety wire aircraft hardware (126)	04
28. Lubricate struts (95)	04
29. Check wing flaps (106)	04
30. Inspect aircraft external lights (119)	04
31. Drain fuel sumps (120)	04
32. Check aircraft doors (99)	03
33. Operate maintenance stands (155)	03
34. Operate aircraft auxiliary power plants (72)	03
35. Operationally check fire/overheat detection systems (75)	03
36. Position AGE to aircraft (148)	02
37. Ground aircraft (147)	02
38. Clean polished surfaces of struts (129)	02
39. Position or remove aircraft chocks (145)	01
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ DIAGRAMS, FIGURES, GRAPHS

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Locate part numbers in illustrated breakdowns (129)	32
2. Conduct on-the-job training (103)	30
3. Coordinate with maintenance personnel (120)	28
4. Supervise apprentice maintenance specialists (90)	28
5. Check cargo ramp systems (11)	27
6. Inspect maintenance equipment (143)	22
7. Inspect landing gear components (108)	17
8. Defuel aircraft using single-point methods (102)	17
9. Prepare reparable item processing tag forms (135)	16
10. Inspect struts (118)	16
11. Review aircraft records or maintenance forms (152)	14
12. Prepare maintenance data collection record forms (149)	13
13. Post entries to maintenance discrepancy forms (148)	13
14. Safety wire aircraft hardware (126)	13
15. Inspect flight control surfaces (115)	12
16. Inspect hydraulic system lines (116)	12
17. Remove or replace aircraft access panels (143)	11
18. Inspect 780 equipment for serviceability (65)	11
19. Visually inspect single-point receptacles (105)	10
20. Drain fuel sumps (120)	10
21. Check aircraft doors (99)	09
22. Position AGE to aircraft (148)	09
23. Ground aircraft (147)	09
24. Inspect hydraulic system sight gages (111)	09
25. Inspect hydraulic system reservoirs (95)	09
26. Operate aircraft auxiliary power plants (72)	08
27. Check aileron, rudder, elevator systems (73)	08
28. Check wing flaps (106)	08
29. Remove/replace aircraft light lenses (107)	08
30. Position or remove aircraft chocks (145)	07
31. Lubricate struts (95)	07
32. Operationally check fire/overheat detection systems (75)	07
33. Remove/replace aircraft light bulbs (123)	07
34. Sign for parts (126)	06
35. Tow nonpowered AGE (83)	06
36. Clean polished surfaces of struts (129)	05
37. Issue or receive tools (132)	04
38. Inspect aircraft external lights (119)	04
39. Operate maintenance stands (155)	03
40. Inspect blow-in, sucker, or flipper doors (65)	*

PERCENT OF TASK PERFORMERS WHO
READ LABELS, SIGNS, INSTRUCTIONS ON EQUIPMENT

AFSC 431X2

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Supervise apprentice maintenance specialists (90)	37
2. Inspect maintenance equipment (143)	33
3. Conduct on-the-job training (103)	31
4. Coordinate with maintenance personnel (120)	28
5. Check cargo ramp systems (11)	27
6. Inspect 780 equipment for serviceability (65)	23
7. Prepare reparable item processing tag forms (135)	22
8. Review aircraft records or maintenance forms (152)	20
9. Locate part numbers in illustrated breakdowns (129)	19
10. Post entries to maintenance discrepancy forms (148)	17
11. Tow nonpowered AGE (83)	17
12. Prepare maintenance data collection record forms (149)	16
13. Operate aircraft auxiliary power plants (72)	15
14. Defuel aircraft using single-point methods (102)	14
15. Inspect hydraulic system reservoirs (95)	13
16. Drain fuel sumps (120)	13
17. Operate maintenance stands (155)	12
18. Inspect hydraulic system lines (116)	11
19. Sign for parts (126)	10
20. Remove or replace aircraft access panels (143)	10
21. Check aileron, rudder, elevator systems (73)	10
22. Inspect hydraulic system sight gages (111)	10
23. Check aircraft doors (99)	09
24. Position AGE to aircraft (148)	09
25. Inspect landing gear components (108)	09
26. Inspect flight control surfaces (115)	09
27. Inspect aircraft external lights (119)	09
28. Issue or receive tools (132)	08
29. Lubricate struts (95)	08
30. Inspect struts (118)	08
31. Check wing flaps (106)	08
32. Safety wire aircraft hardware (126)	07
33. Ground aircraft (147)	07
34. Remove/replace aircraft light bulbs (123)	07
35. Visually inspect single-point receptacles (105)	07
36. Remove/replace aircraft light lenses (107)	06
37. Operationally check fire/overheat detection systems (75)	05
38. Position or remove aircraft chocks (145)	02
39. Clean polished surfaces of struts (129)	02
40. Inspect blow-in, sucker, or flipper doors (65)	*

APPENDIX G

TYPES OF MATERIAL READ — AFSC 702X0

PERCENT OF TASK PERFORMERS WHO
READ WORK CARD, JOB GUIDE, INSPECTION CARD
AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Conduct daily security checks (98)	31
2. Develop work methods or procedures (126)	27
3. Maintain locator card files (90)	22
4. Determine requirements for space, personnel, etc. (107)	21
5. Direct maintenance of administrative files (161)	19
6. Determine work priorities (163)	17
7. Establish publication libraries (116)	17
8. Notify personnel of appointments, details, training (138)	15
9. Coordinate administrative communication suspenses (129)	15
10. Distribute publications (111)	14
11. Develop documentation files (140)	14
12. Prepare file guides or labels (169)	14
13. Prepare APRS (143)	13
14. Maintain office supply stock levels (129)	13
15. Destroy non-current documentation (144)	13
16. Perform operator maintenance on typewriters (98)	12
17. Type blank forms (192)	12
18. Review publications requirements (151)	12
19. Schedule leaves or passes (116)	11
20. Charge out documents (123)	11
21. File documentation (179)	11
22. Review files maintenance and disposition plans (132)	11
23. Operate office copy machines (189)	10
24. Compose drafts of administrative communications (135)	10
25. Post standard publications (187)	10
26. Maintain suspense files (174)	09
27. Type drafts of administrative communications (190)	09
28. Answer telephones (241)	08
29. Review outgoing administrative communications (165)	08
30. Post publication bulletins (131)	08
31. Deliver administrative communications (160)	07
32. Edit drafts of administrative communications (164)	07
33. Package unclassified materials (126)	07
34. Review publication bulletins (171)	07
35. Prepare cross-reference sheet forms (120)	07
36. Prepare requests for reproduction services (192)	06
37. Send sponsorship kits or welcome letters (95)	05
38. Type final form administrative communications (206)	04
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ MANUAL, TECH ORDER, REG, CIRCULAR

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Establish publication libraries (116)	91
2. Direct maintenance of administrative files (161)	88
3. Prepare APRS (143)	87
4. Develop documentation files (140)	86
5. Post standard publications (187)	82
6. Determine requirements for space, personnel, etc. (107)	78
7. Review files maintenance and disposition plans (132)	78
8. Develop work methods or procedures (126)	77
9. Determine work priorities (163)	74
10. Review publications requirements (151)	74
11. Compose drafts of administrative communications (135)	73
12. Distribute publications (111)	73
13. Post publication bulletins (131)	72
14. Prepare file guides or labels (169)	72
15. Review publication bulletins (171)	70
16. Schedule leaves or passes (116)	66
17. Prepare cross-reference sheet forms (120)	65
18. Destroy non-current documentation (144)	63
19. File documentation (179)	62
20. Type blank forms (192)	59
21. Review outgoing administrative communications (165)	55
22. Type final form administrative communications (206)	55
23. Conduct daily security checks (98)	53
24. Prepare requests for reproduction services (192)	52
25. Type drafts of administrative communications (190)	48
26. Package unclassified materials (126)	47
27. Coordinate administrative communication suspenses (129)	46
28. Maintain suspense files (174)	45
29. Edit drafts of administrative communications (164)	40
30. Charge out documents (123)	37
31. Send sponsorship kits or welcome letters (95)	36
32. Maintain locator card files (90)	34
33. Maintain office supply stock levels (129)	33
34. Perform operator maintenance on typewriters (98)	31
35. Notify personnel of appointments, details, training (138)	28
36. Deliver administrative communications (160)	26
37. Operate office copy machines (189)	20
38. Answer telephones (241)	19
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ TEXTBOOK, CAREER DEVELOPMENT COURSE

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Develop work methods or procedures (126)	38
2. Determine work priorities (163)	34
3. Determine requirements for space, personnel, etc. (107)	32
4. Direct maintenance of administrative files (161)	32
5. Edit drafts of administrative communications (164)	30
6. Establish publication libraries (116)	29
7. Compose drafts of administrative communications (135)	27
8. Review outgoing administrative communications (165)	25
9. Develop documentation files (140)	25
10. Type final form administrative communications (206)	24
11. Prepare APRS (143)	20
12. Answer telephones (241)	20
13. Review files maintenance and disposition plans (132)	20
14. Type blank forms (192)	19
15. Type drafts of administrative communications (190)	19
16. Post standard publications (187)	19
17. Prepare file guides or labels (169)	19
18. Perform operator maintenance on typewriters (98)	18
19. File documentation (179)	18
20. Package unclassified materials (126)	17
21. Distribute publications (111)	17
22. Review publications requirements (151)	17
23. Destroy non-current documentation (144)	17
24. Schedule leaves or passes (116)	16
25. Conduct daily security checks (98)	16
26. Coordinate administrative communication suspenses (129)	16
27. Prepare cross-reference sheet forms (120)	16
28. Review publication bulletins (171)	15
29. Post publication bulletins (131)	15
30. Maintain suspense files (174)	14
31. Notify personnel of appointments, details, training (138)	13
32. Prepare requests for reproduction services (192)	13
33. Deliver administrative communications (160)	13
34. Maintain office supply stock levels (129)	12
35. Maintain locator card files (90)	11
36. Charge out documents (123)	11
37. Send sponsorship kits or welcome letters (95)	06
38. Operate office copy machines (189)	05
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ RECORD, DOCUMENTATION, LOG

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Direct maintenance of administrative files (161)	48
2. Determine requirements for space, personnel, etc. (107)	39
3. Determine work priorities (163)	37
4. Develop documentation files (140)	36
5. Maintain suspense files (174)	33
6. Establish publication libraries (116)	31
7. Coordinate administrative communication suspenses (129)	31
8. Destroy non-current documentation (144)	31
9. File documentation (179)	31
10. Review files maintenance and disposition plans (132)	30
11. Develop work methods or procedures (126)	26
12. Distribute publications (111)	26
13. Schedule leaves or passes (116)	25
14. Prepare file guides or labels (169)	25
15. Charge out documents (123)	23
16. Conduct daily security checks (98)	22
17. Notify personnel of appointments, details, training (138)	22
18. Compose drafts of administrative communications (135)	22
19. Type blank forms (192)	22
20. Review publications requirements (151)	22
21. Review outgoing administrative communications (165)	21
22. Maintain locator card files (90)	19
23. Prepare cross-reference sheet forms (120)	19
24. Maintain office supply stock levels (129)	18
25. Deliver administrative communications (160)	18
26. Post publication bulletins (131)	18
27. Type final form administrative communications (206)	17
28. Review publication bulletins (171)	17
29. Prepare APRS (143)	16
30. Type drafts of administrative communications (190)	16
31. Edit drafts of administrative communications (164)	15
32. Post standard publications (187)	14
33. Send sponsorship kits or welcome letters (95)	13
34. Package unclassified materials (126)	13
35. Answer telephones (241)	12
36. Operate office copy machines (189)	12
37. Prepare requests for reproduction services (192)	10
38. Perform operator maintenance on typewriters (98)	07
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ MIMEOGRAPHED NOTICE, HANDOUT

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Notify personnel of appointments, details, training (138)	22
2. Determine requirements for space, personnel, etc. (107)	18
3. Develop work methods or procedures (126)	18
4. Determine work priorities (163)	17
5. Direct maintenance of administrative files (161)	17
6. Coordinate administrative communication suspenses (129)	17
7. Prepare APRS (143)	15
8. Schedule leaves or passes (116)	14
9. Compose drafts of administrative communications (135)	14
10. Establish publication libraries (116)	12
11. File documentation (179)	12
12. Maintain suspense files (174)	11
13. Type blank forms (192)	13
14. Prepare requests for reproduction services (192)	10
15. Review outgoing administrative communications (165)	10
16. Send sponsorship kits or welcome letters (95)	09
17. Deliver administrative communications (160)	09
18. Type final form administrative communications (206)	09
19. Type drafts of administrative communications (190)	09
20. Review publication bulletins (171)	09
21. Destroy non-current documentation (144)	09
22. Develop documentation files (140)	09
23. Operate office copy machines (189)	08
24. Edit drafts of administrative communications (164)	08
25. Review files maintenance and disposition plans (132)	08
26. Answer telephones (241)	07
27. Distribute publications (111)	07
28. Post publication bulletins (131)	07
29. Maintain locator card files (90)	06
30. Perform operator maintenance on typewriters (98)	06
31. Post standard publications (187)	06
32. Review publications requirements (151)	06
33. Maintain office supply stock levels (129)	05
34. Prepare cross-references sheet forms (120)	05
35. Conduct daily security checks (98)	09
36. Package unclassified materials (126)	04
37. Prepare file guides or labels (169)	04
38. Charge out documents (123)	03
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ MESSAGE, LETTER, TWX

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine work priorities (163)	52
2. Coordinate administrative communication suspenses (129)	40
3. Compose drafts of administrative communications (135)	39
4. Establish publication libraries (116)	37
5. Notify personnel of appointments, details, training (138)	37
6. Determine requirements for space, personnel, etc. (107)	36
7. Direct maintenance of administrative files (161)	33
8. Review outgoing administrative communications (165)	33
9. Develop work methods or procedures (126)	30
10. Send sponsorship kits or welcome letters (95)	29
11. Type final form administrative communications (206)	27
12. Type drafts of administrative communications (190)	27
13. Edit drafts of administrative communications (164)	26
14. File documentation (179)	26
15. Deliver administrative communications (160)	24
16. Post standard publications (187)	23
17. Develop documentation files (140)	22
18. Maintain suspense files (174)	20
19. Schedule leaves or passes (116)	19
20. Prepare APRS (143)	19
21. Type blank forms (192)	19
22. Review publications requirements (151)	19
23. Destroy non-current documentation (144)	18
24. Review files maintenance and disposition plans (132)	18
25. Distribute publications (111)	17
26. Conduct daily security checks (98)	16
27. Prepare requests for reproduction services (192)	14
28. Prepare cross-reference sheet forms (120)	13
29. Review publication bulletins (171)	12
30. Prepare file guides or labels (169)	11
31. Maintain locator card files (90)	09
32. Post publication bulletins (131)	09
33. Operate office copy machines (189)	08
34. Perform operator maintenance on typewriters (98)	08
35. Package unclassified materials (126)	08
36. Answer telephones (241)	07
37. Charge out documents (123)	07
38. Maintain office supply stock levels (129)	06
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ COMPUTER PRINT-OUT

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine requirements for space, personnel, etc. (107)	40
2. Determine work priorities (163)	36
3. Prepare APRS (143)	36
4. Notify personnel of appointments, details, training (138)	33
5. Send sponsorship kits or welcome letters (95)	29
6. Develop work methods or procedures (126)	18
7. Maintain locator card files (90)	18
8. Compose drafts of administrative communications (135)	18
9. Coordinate administrative communication suspenses (129)	17
10. Schedule leaves or passes (116)	16
11. Establish publication libraries (116)	13
12. Type drafts of administrative communications (190)	13
13. Direct maintenance of administrative files (161)	12
14. Maintain office supply stock levels (129)	12
15. Deliver administrative communications (160)	12
16. Maintain suspense files (174)	12
17. Type final form administrative communications (206)	12
18. Review outgoing administrative communications (165)	11
19. Edit drafts of administrative communications (164)	10
20. Type blank forms (192)	10
21. File documentation (179)	10
22. Destroy non-current documentation (144)	07
23. Answer telephones (241)	06
24. Develop documentation files (140)	06
25. Review files maintenance and disposition plans (132)	05
26. Conduct daily security checks (98)	04
27. Operate office copy machines (189)	04
28. Perform operator maintenance on typewriters (98)	04
29. Prepare requests for reproduction services (192)	04
30. Package unclassified materials (126)	04
31. Distribute publications (111)	04
32. Charge out documents (123)	04
33. Prepare cross-reference sheet forms (120)	04
34. Post standard publications (187)	03
35. Post publication bulletins (131)	03
36. Prepare file guides or labels (169)	03
37. Review publication bulletins (171)	02
38. Review publications requirements (151)	02
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ MATERIAL TO BE TYPED, REPRODUCED

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine work priorities (163)	52
2. Type drafts of administrative communications (190)	47
3. Type final form administrative communications (206)	42
4. Compose drafts of administrative communications (135)	40
5. Edit drafts of administrative communications (164)	37
6. Determine requirements for space, personnel, etc. (107)	36
7. Prepare APRS (143)	36
8. Type blank forms (192)	34
9. Develop work methods or procedures (126)	33
10. Direct maintenance of administrative files (161)	29
11. Prepare requests for reproduction services (192)	29
12. Review outgoing administrative communications (165)	29
13. Coordinate administrative communication suspenses (129)	28
14. Establish publication libraries (116)	27
15. Develop documentation files (140)	26
16. Schedule leaves or passes (116)	25
17. Send sponsorship kits or welcome letters (95)	25
18. Prepare cross-reference sheet forms (120)	23
19. Maintain suspense files (174)	21
20. Prepare file guides or labels (169)	20
21. Operate office copy machines (189)	19
22. Notify personnel of appointments, details, training (138)	17
23. File documentation (179)	17
24. Review files maintenance and disposition plans (132)	14
25. Distribute publications (111)	13
26. Maintain locator card files (90)	12
27. Maintain office supply stock levels (129)	12
28. Post publication bulletins (131)	12
29. Deliver administrative communications (160)	11
30. Package unclassified materials (126)	11
31. Post standard publications (187)	11
32. Destroy non-current documentation (144)	11
33. Review publication bulletins (171)	09
34. Review publications requirements (151)	07
35. Charge out documents (123)	07
36. Conduct daily security checks (98)	06
37. Answer telephones (241)	05
38. Perform operator maintenance on typewriters (98)	05
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ FORMS TO BE COMPLETED

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine requirements for space, personnel, etc. (107)	55
2. Prepare APRS (143)	54
3. Determine work priorities (163)	53
4. Type blank forms (192)	51
5. Schedule leaves or passes (116)	46
6. Establish publication libraries (116)	43
7. Conduct daily security checks (98)	42
8. Prepare requests for reproduction services (192)	40
9. Develop documentation files (140)	38
10. Coordinate administrative communication suspenses (129)	37
11. Direct maintenance of administrative files (161)	36
12. Develop work methods or procedures (126)	36
13. Maintain locator card files (90)	34
14. Prepare cross-reference sheet forms (120)	28
15. Charge out documents (123)	27
16. Compose drafts of administrative communications (135)	25
17. Review publications requirements (151)	25
18. Maintain suspense files (174)	24
19. Review files maintenance and disposition plans (132)	24
20. Notify personnel of appointments, details, training (138)	23
21. Edit drafts of administrative communications (164)	23
22. Maintain office supply stock levels (129)	22
23. Prepare file guides or labels (169)	22
24. Type final form administrative communications (206)	21
25. Destroy non-current documentation (144)	21
26. Distribute publications (111)	19
27. Review outgoing administrative communications (165)	18
28. Deliver administrative communications (160)	15
29. Post publication bulletins (131)	15
30. File documentation (179)	15
31. Package unclassified materials (126)	14
32. Type drafts of administrative communications (190)	14
33. Send sponsorship kits or welcome letters (95)	12
34. Answer telephones (241)	10
35. Operate office copy machines (189)	10
36. Post standard publications (187)	10
37. Review publication bulletins (171)	08
38. Perform operator maintenance on typewriters (98)	05
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ MICROFILM, COMPUTER TERMINAL

AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine requirements for space, personnel, etc. (107)	25
2. Establish publication libraries (116)	18
3. Determine work priorities (163)	13
4. Direct maintenance of administrative files (161)	11
5. Develop work methods or procedures (126)	11
6. Maintain office supply stock levels (129)	08
7. Schedule leaves or passes (116)	06
8. Prepare APRS (143)	06
9. Develop documentation files (140)	06
10. File documentation (179)	06
11. Coordinate administrative communication suspenses (129)	05
12. Review outgoing administrative communications (165)	05
13. Distribute publications (111)	05
14. Post standard publications (187)	05
15. Review files maintenance and disposition plans (132)	05
16. Notify personnel of appointments, details, training (138)	04
17. Operate office copy machines (189)	04
18. Edit drafts of administrative communications (164)	04
19. Review publication bulletins (171)	04
20. Post publication bulletins (131)	04
21. Charge out documents (123)	04
22. Destroy non-current documentation (144)	04
23. Prepare cross-reference sheet forms (120)	04
24. Conduct daily security checks (98)	03
25. Maintain locator card files (90)	03
26. Perform operator maintenance on typewriters (98)	03
27. Deliver administrative communications (160)	03
28. Type blank forms (192)	03
29. Type drafts of administrative communications (190)	03
30. Review publications requirements (151)	03
31. Answer telephones (241)	02
32. Prepare requests for reproduction services (192)	02
33. Compose drafts of administrative communications (135)	02
34. Maintain suspense files (174)	02
35. Type final form administrative communications (206)	02
36. Prepare file guides or labels (169)	02
37. Send sponsorship kits or welcome letters (95)	01
38. Package unclassified materials (126)	00
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ TABLES
AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Determine requirements for space, personnel, etc. (107)	25
2. Direct maintenance of administrative files (161)	21
3. Develop documentation files (140)	21
4. Determine work priorities (163)	20
5. Establish publication libraries (116)	20
6. Develop work methods or procedures (126)	17
7. File documentation (179)	16
8. Review files maintenance and disposition plans (132)	15
9. Notify personnel of appointments, details, training (138)	12
10. Destroy non-current documentation (144)	12
11. Prepare file guides or labels (169)	12
12. Schedule leaves or passes (116)	10
13. Prepare APRS (143)	10
14. Maintain office supply stock levels (129)	10
15. Edit drafts of administrative communications (164)	09
16. Maintain suspense files (174)	09
17. Type blank forms (192)	09
18. Type final form administrative communications (206)	09
19. Perform operator maintenance on typewriters (98)	08
20. Coordinate administrative communication suspenses (129)	08
21. Review outgoing administrative communications (165)	08
22. Type drafts of administrative communications (190)	08
23. Conduct daily security checks (98)	07
24. Maintain locator card files (90)	07
25. Compose drafts of administrative communications (135)	07
26. Deliver administrative communications (160)	07
27. Distribute publications (111)	07
28. Prepare cross-reference sheet forms (120)	07
29. Answer telephones (241)	06
30. Send sponsorship kits or welcome letters (95)	06
31. Post standard publications (187)	05
32. Review publication bulletins (171)	05
33. Review publications requirements (151)	05
34. Post publication bulletins (131)	05
35. Operate office copy machines (189)	04
36. Prepare requests for reproduction services (192)	04
37. Charge out documents (123)	03
38. Package unclassified materials (126)	02
39. Sort documentation for filing (159)	*

PERCENT OF TASK PERFORMERS WHO
READ LABELS, SIGNS, INSTRUCTIONS ON EQUIPMENT
AFSC 702X0

<u>Job Task (Number Performing)</u>	<u>%</u>
1. Direct maintenance of administrative files (161)	36
2. Determine requirements for space, personnel, etc. (107)	33
3. Establish publication libraries (116)	27
4. Operate office copy machines (189)	24
5. Determine work priorities (163)	23
6. Develop work methods or procedures (126)	22
7. Perform operator maintenance on typewriters (98)	22
8. Develop documentation files (140)	21
9. File documentation (179)	20
10. Prepare file guides or labels (169)	19
11. Package unclassified materials (126)	15
12. Destroy non-current documentation (144)	15
13. Conduct daily security checks (98)	14
14. Review files maintenance and disposition plans (132)	14
15. Maintain office supply stock levels (129)	12
16. Review outgoing administrative communications (165)	10
17. Schedule leaves or passes (116)	09
18. Coordinate administrative communication suspenses (129)	09
19. Type blank forms (192)	09
20. Prepare APRS (143)	08
21. Maintain suspense files (174)	08
22. Answer telephones (241)	07
23. Compose drafts of administrative communications (135)	07
24. Type final form administrative communications (206)	07
25. Distribute publications (111)	07
26. Maintain locator card files (90)	06
27. Deliver administrative communications (164)	06
28. Edit drafts of administrative communications (164)	06
29. Type drafts of administrative communications (190)	06
30. Post standard publications (187)	06
31. Review publications requirements (151)	06
32. Prepare cross-reference sheet forms (120)	06
33. Notify personnel of appointments, details, training (138)	04
34. Prepare requests for reproduction services (192)	04
35. Review publication bulletins (171)	04
36. Post publication bulletins (131)	04
37. Charge out documents (123)	04
38. Send sponsorship kits or welcome letters (95)	02
39. Sort documentation for filing (159)	*

END

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