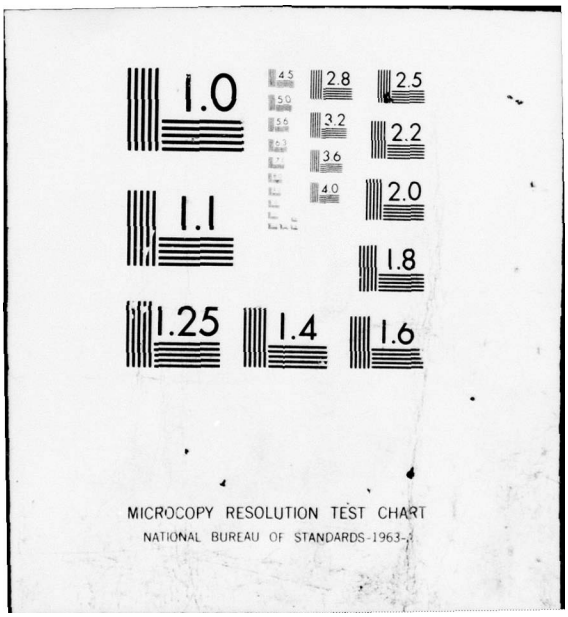
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March 1979

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U.S. ARMY AEROMEDICAL RESEARCH LABORATORY
FORT RUCKER, ALABAMA 36362

79 04 26 027

USAARL

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REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: N/A	2. GOVT ACCESSION NO.
3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle): Editorial Guide	5. TYPE OF REPORT & PERIOD COVERED: Final report
6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s): June Greer	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS: SGRD-UAX-AE US Army Aeromedical Research Laboratory PO Box 577, Ft Rucker, AL 36362	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: 2192040 975 8104 P 612773. SA7
11. CONTROLLING OFFICE NAME AND ADDRESS: U.S. Army Medical R&D Command Fort Detrick Frederick, MD 21701	12. REPORT DATE: March 1979 13. NUMBER OF PAGES: 147 p.
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report): UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

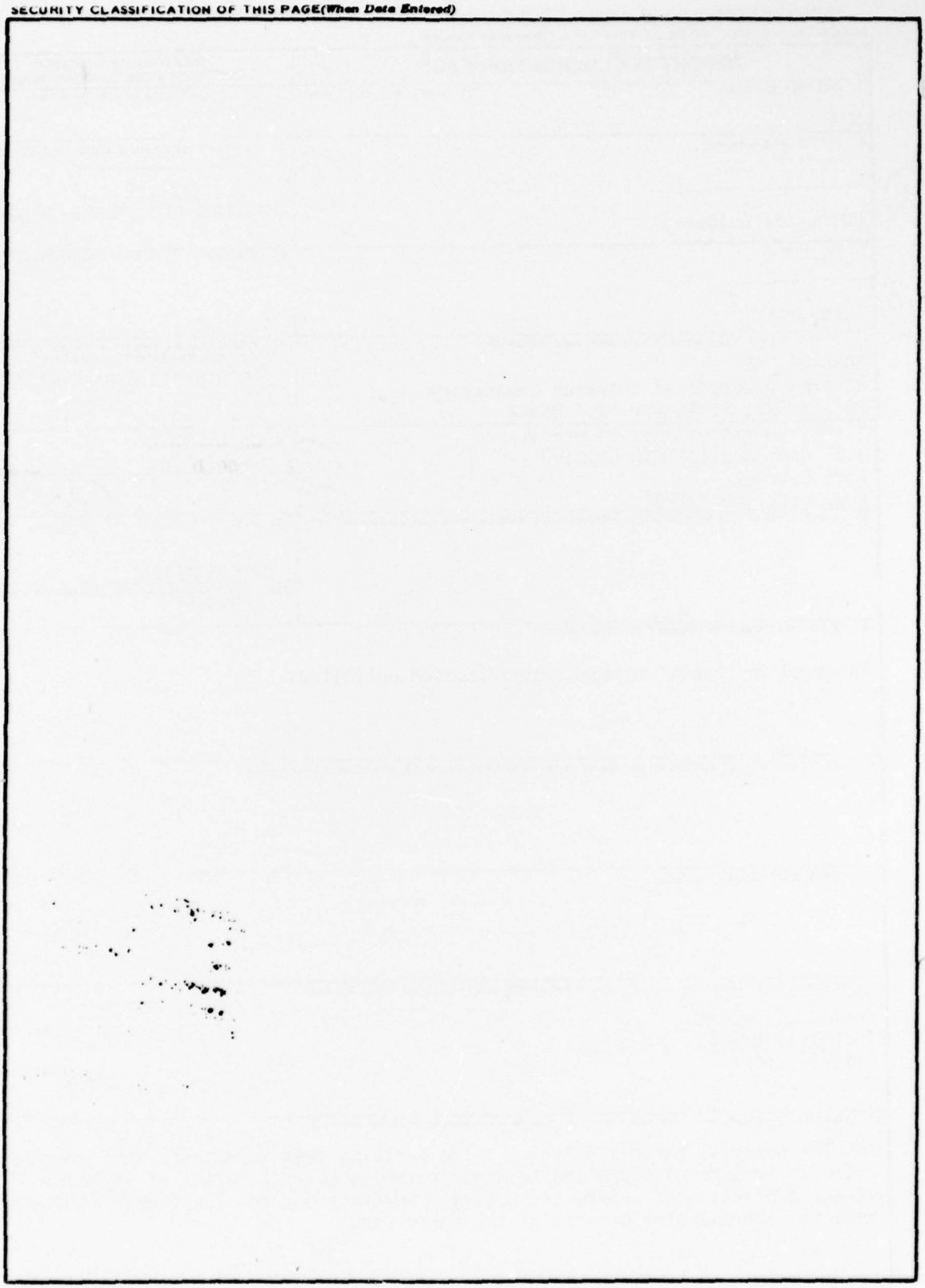
Format of Reports
Technical Report
Letter Report

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The material in the *Editorial Guide* pertains both to matters that are set by official Army regulations and to those established as a matter of style for USAARL publications. There are detailed instructions for the format of USAARL reports with examples of many of the forms used.

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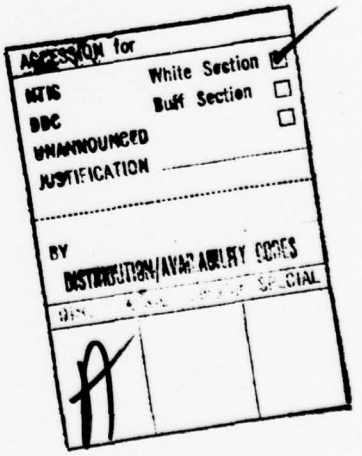
FOREWORD

The communication of the results of our work is a vital step in our research programs. No matter how great the work we do, if the results of that work are not available in a usable form, our efforts might as well not have been made. Technical reports, letter reports, articles in open literature, and presentations before our peers are the media we use to make our work known and available.

Effective presentation of our work requires we use a complete, accurate, clear, precise and consistent format in both written and oral presentation. This guide was prepared to help USAARL personnel to effectively present their work.

This guide and the regulations covering scientific and technical reporting are to be followed by all members of USAARL.

STANLEY C. KNAPP
Colonel, MC
Commanding



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INTRODUCTION

Many scientific disciplines are required to carry out the research and development programs of the U.S. Army Aeromedical Research Laboratory (USAARL). Technical publications are a vital part of the research and development programs.

Diversity of scientific disciplines is reflected in the style and format of USAARL publications. Although each format is correct, there are too many formats or styles in use.

The need for a "standard publication style" at USAARL has grown as the size of the Laboratory and number of publications have increased. Therefore, this *Editorial Guide* is presented as a guide for a "standard publication style" for USAARL.

The guide was prepared to ease the work of authors and typists who prepare USAARL publications and to bring about a uniformity of format in all publications.

The material in the *Editorial Guide* pertains both to matters that are set by official Army regulations and to those established as a matter of style for USAARL publications. Not all of the items discussed may appear in any one individual USAARL publication; however, certain items are covered by official regulation and hence their inclusion in every publication is mandatory.

The provisions of Military Standard 847A, *Format Requirements for Scientific and Technical Reports*, are mandatory for Department of Defense in-house, contractor, or grantee reports. The implementing regulations are: AR 70-31, *Standards for Technical Reporting*, OTSG Regulation 70-31, *US Army Medical Research and Development Technical Report*, and USAARL Policy 70-31, *Standards for Technical Reporting*. This guide was prepared in accordance with these regulations; however, regulations change. If at any time this guide differs with published regulatory guidance, the published regulations should be followed. Any recommended user changes in this guide should be sent to the USAARL editor. Copies of MIL-STD-847A and implementing regulations are contained in Appendix A.

MATTERS OF STYLE

The rules of grammar and writing styles are not discussed in this guide because there are many good reference books available that answer detailed questions of grammar and style. The bibliography in Appendix H lists a number of such books.

The *Government Printing Office Style Manual* is a basic reference manual that can be of value for both authors and typists. It deals extensively with two irksome problems: the writing of compound words and the use of numerals.

Often it is difficult to know exactly how to go about the mechanics of writing a report. Appendix B suggests the "what next" steps an author might follow to complete a report.

TECHNICAL REPORTS

A technical report is any preliminary or final technical document written for the permanent record to document results obtained from, or recommendations made on, USAARL (USAMRDC or other DoD) sponsored or cosponsored scientific and technical activities (MIL-STD-847A 1973, p. 3). A technical report usually is investigative, analytical or theoretical in nature.

A technical report is USAARL's principal method of in-depth reporting on technical subjects to the outside world. It reflects USAARL's thinking and documents USAARL's official position on a particular subject. It is used to give information on the research, development, test, and evaluation activities of USAARL. Technical reports are of interest not only to the department, agency or command sponsoring the work but also to cognizant government groups and laboratories.

LETTER REPORTS

A letter report is a document prepared to fulfill a task or assignment normally not considered to be repetitive. Characteristically, they are short, to the point, and usually require limited research. Letter reports are written to answer a specific question or to document a specific item of research and are disseminated on a need-to-know basis.

When letter reports are used to answer a request from an agency, the external distribution of such letter reports is limited to the requesting agency and HQ, USAMRDC. Any additional distribution of letter reports outside USAARL must be accompanied by a cover letter signed by the adjutant for the commander.

A letter report used to provide an interim report of work performed at USAARL, while definitive for the subject presented, usually reports the progress of a project, task or subtask. This type of letter report covers day-to-day operations or short-range projects that the division director determines are not of sufficient magnitude to warrant a publication of their own. It is a means of documenting subject matter in writing for internal dissemination.

TECHNICAL ARTICLES FOR OPEN LITERATURE

A technical article for open literature is a manuscript relating to an author's work prepared for professional journals; also, articles prepared for general newspaper or magazine readers not necessarily versed in the subject. Preparation must be in accordance with the *Editorial Guide* or the individual professional journal.

Reprints or preprints of an article may be used in lieu of a technical report (AR 70-31 1966, p. 2). When this is done, the requirements for a technical report must be accomplished. A Report Documentation Page (DD Form 1473), front and back covers, and the initial distribution list must be prepared and included. This will enable copies to be forwarded to Defense Documentation Center (DDC) and sent to those on the distribution list in accordance with the intent of AR 70-45.

To assure that enough reprints of an article will be available, authors should coordinate with the librarian to make sure a purchase request is submitted prior to actual publication. If a purchase request is not sent before publication, the author would be liable for the cost of publication and reprints; the government does not pay after the fact.

PRESENTATIONS

Presentations, manuscripts and abstracts must be cleared before release. Appendix C gives the routing for clearance of a manuscript. Oral presentations of an article, which is akin to publication, will not be scheduled prior to receipt of appropriate clearance. Two copies of a presentation or manuscript will be forwarded through division director and Chairman, Scientific Review Committee, to the Commander for clearance. When clearance is granted, a copy of the presentation or manuscript and approved clearance form will be sent to the editor's office for file.

COPYRIGHT

Authors should be aware that all rights to work produced while employed by the Laboratory, work within the scope of their employment, vest in the Laboratory. There is no copyright in U.S. Government works. (See letter SGRD-JA, dated 29 August 1978, Appendix D.)

ELEMENTS OF A TECHNICAL REPORT

Technical reports have three major sections: front matter, body, and back or reference material. All reports do not necessarily contain all the items listed below. The starred items are required in all USAARL reports (AR 70-31, p. 25).

FRONT MATTER	*Outside front cover *Inside front cover *DD Form 1473 (front and back) Summary Foreword or Preface *Table of Contents (If report contains less than 8 pages, the table of contents is not mandatory.) List of Illustrations List of Tables
BODY	*Introduction *Main Text (Body of Report) *Conclusions Recommendations
REFERENCE MATERIAL	References Bibliography Appendixes Glossary List of abbreviations and symbols *Distribution list *Back cover

FRONT MATTER

This section discusses the preparation and content of the front matter of USAARL technical reports. Items are generally discussed in the order of their appearance in the normal publication rather than in the order of their relative importance, as such arrangement lends itself to easy reference.

OUTSIDE FRONT COVER

USAARL report covers will be used for all reports going outside the laboratory. These covers will be sent to the printers with the manuscript. The editorial staff will send the completed manuscript and the covers to the printers. Figure 1 is an example of a technical report cover with the size and style of lettering indicated. A typed copy of the outside front cover is sent to the editorial office with the draft manuscript so a camera-ready layout can be requested from Scientific Arts.

Report Number

The report number is assigned at Headquarters, USAARL, after the report is approved by the Commander. This number is centered above the title of the report. It will be placed in line with the top of the crest.

Title

The title should be brief and describe the contents as explicitly as possible. It should be written in telegraphic style. "Progress Report of," "A Method for," "A Study of" are not usually necessary. For information retrieval purposes, titles should be limited to 100 characters and spaces, if possible. A title of two or more lines is set as an inverted pyramid. The title begins two spaces below the report number, all capitals. Subtitles, if used, will be set in smaller type and subordinate to the main title. When a report is prepared in more than one volume, repeat the primary title and have the subtitles identify specific volumes.

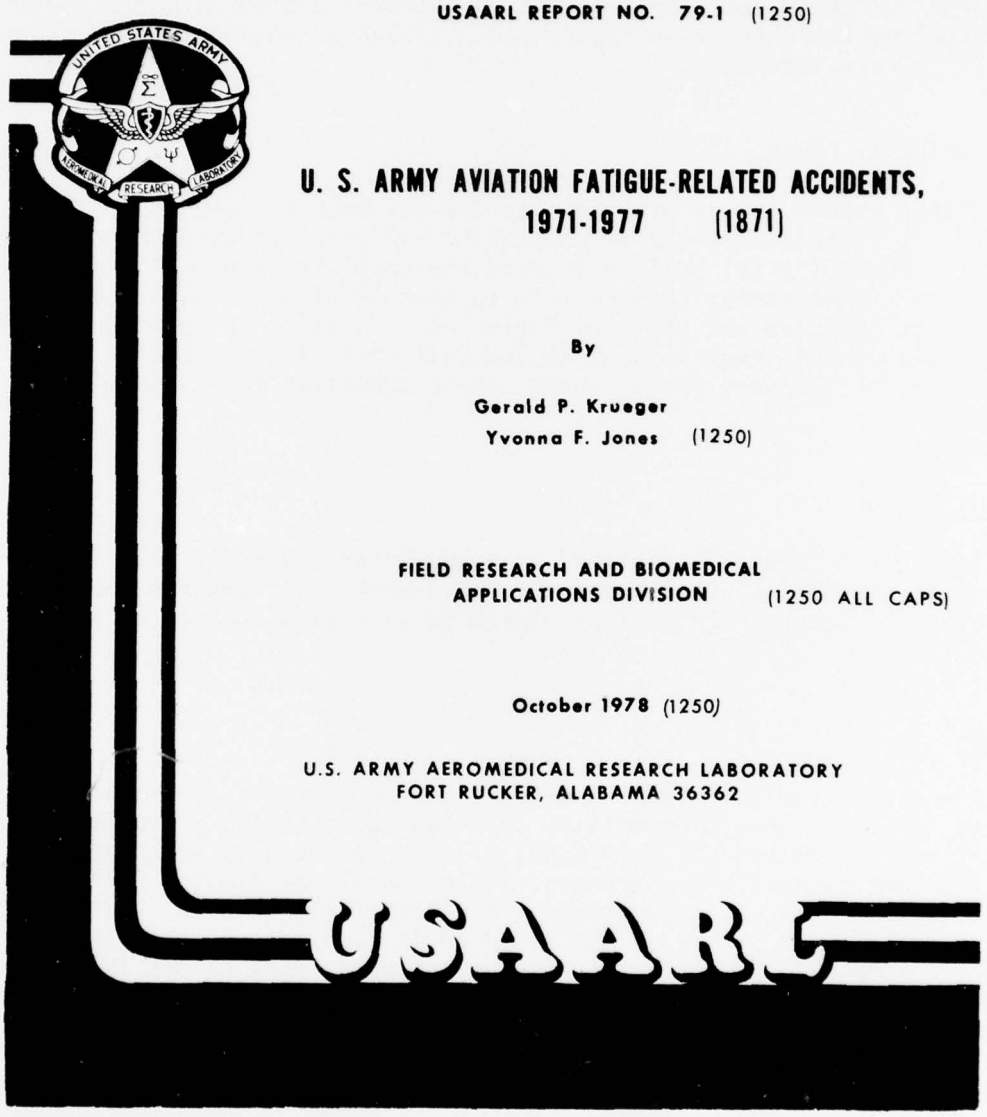


FIGURE 1. Example of a USAARL Report Cover. The numbers at the end of the lines indicate the style and size of lettering to be used for each entry.

Type of Report

Indicate the type of report--interim, final, annual, etc. If applicable, add the dates covered by the report. No such designation is required if the report is a one-time, self-contained document.

Author(s)

The name(s) of the author(s) will appear appropriately spaced several lines below the title. The names are preceded by the word "by." No military rank or scholastic degree will be indicated after author's name(s).

Authors are those persons who wrote major portions of the report and only they should be listed on the cover. No one should be listed as an author unless he or she is prepared to defend some portion of the report. Other contributors should be acknowledged in the Preface or Foreword.

Technicians performing the bulk of the work but playing no role in the writing of the final report will not have their names on the report. If it is the desire of the primary authors to give credit to technicians and research assistants, these technicians and research assistants should play a significant role in the development of the thoughts and conclusions contained in the report; and they should assist in the writing of the final words.

A coauthored paper lists the authors' names on separate lines, but uses "and" between the names. The "and" indicates equal responsibility for the work. If there are a primary and secondary author, or to indicate varying degrees of responsibility for a report, the names are listed in the order of responsibility on separate lines.

Releasing Division

The name of the author's division or the responsible releasing division is set two or three lines below the author's name, all capitals. If the group designation is to appear on the cover, it should be immediately below the name of releasing division, initial caps. When authors are from different divisions both divisions will be listed, primary author's division first.

Date

Date consists of the month and year of the report. This date is the date the report goes to the printers. The date is placed two or three lines below the name of the releasing division.

Distribution Statement

Two distribution statements are listed in Appendix II, AR 70-31, for use on official documents. One of these statements will appear immediately below the USAARL lettering on the report cover. The Division Director is responsible for assigning the A or B distribution statement. This statement will be typed on camera-ready paper so as to fit within 1 inch on either side of the lettering on the bottom of the report cover. The distribution statement is required on the title page, also. Military Standard 847A makes the DD Form 1473 the title page and the same statement must appear on this page as is on the front cover.

The two statements and instructions for their use, as provided by Appendix II, AR 70-31, are:

Statement	Reason	Discussion
A		
Approved for public release; distribution unlimited.		Indicates document has been cleared for public release by competent authority. It may be made available or sold to the general public and foreign nationals. Never to be used on classified documents.
B		
Distribution limited to U.S. Gov't. agencies only; (fill in reason); (date statement applied). Other requests for this document must be referred to (insert controlling DoD office).		May be used on classified documents if necessary to ensure distribution limitation in addition to need-to-know requirements imposed by DoD Directive 5200.1, *Safeguarding Official Information in the Interests of the Defense of the United States*, July 10, 1968, or in the event the document is declassified.

Statement	Reason	Discussion
	Foreign Info.	Information furnished by a foreign government with the understanding that it will not be transmitted outside the U.S. Government.
	Proprietary Info.	To protect information not owned by the U.S. Government and not protected by a contractor's "limited rights" statement but received with the understanding that it would not be transmitted outside of the U.S. Government.
	Test and Evaluation	Covers the test and evaluation of commercial products or military hardware.
	Contractor Performance	Management reviews, records of contract performance evaluation, or other advisory documents evaluating programs of contractors.

INSIDE FRONT COVER

The inside of the front cover contains the notices, the review and approval (releasing) statements and signatures. (Sample, Figure 2.)

Qualified Requesters

Qualified requesters may obtain copies from the Defense Documentation Center (DDC), Cameron Station, Alexandria, Virginia. Orders will be expedited if placed through the librarian or other person designated to request documents from DDC. When distribution statement B is used on a report, do not include this statement.

Change of Address

Organizations receiving reports from the U.S. Army Aeromedical Research Laboratory on automatic mailing lists should confirm correct address when corresponding about laboratory reports.

Disposition

Destroy this report when it is no longer needed. Do not return it to the originator.

Disclaimer

The following statement will appear on the inside cover of all reports:

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation (TWX, DA, DACS-DMO, 1978).

Trade Names

If trade names or names of manufacturers are used in a report to describe instrumentation or equipment, the following statement will appear on the inside cover of the report. It may be part of the disclaimer statement.

Citation of trade names in this report does not constitute an official Department of the Army endorsement or approval of the use of such commercial items (AR 70-31, p. 26).

Certification of Review and Publication Approval

Certification of review and publication approval are shown on the inside of the front cover. Signature blocks will be shown as:

Reviewed:

_____
Name
Division Director

Released for Publication:

_____
Name
Chairman, Scientific Review Committee

_____
STANLEY C. KNAPP
Colonel, MC
Commanding

NOTICE

Qualified Requestors

Qualified requesters may obtain copies from the Defense Documentation Center (DDC), Cameron Station, Alexandria, Virginia. Orders will be expedited if placed through the librarian or other person designated to request documents from DDC.

Change of Address

Organizations receiving reports from the U.S. Army Aeromedical Research Laboratory on automatic mailing lists should confirm correct address when corresponding about laboratory reports.

Disposition

Destroy this report when it is no longer needed. Do not return it to the originator.

Disclaimer

The views, opinions, and/or findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation. Citation of trade names in this report does not constitute an official Department of the Army endorsement or approval of the use of such commercial items.

Reviewed:

Roger W. Wiley, MAJ, MSC
Director, Human Tolerance &
Survivability Division

Released for Publication:

David D. Glick, MAJ, MSC
Chairman, Scientific Review
Committee

STANLEY C. KNAPP
Colonel, MC
Commanding

FIGURE 2. Example of "NOTICE" Page.

REPORT DOCUMENTATION PAGE, DD FORM 1473

The Report Documentation Page, DD Form 1473, for use by the Defense Documentation Center (DDC), is included in each formal technical publication and is bound in the book as the first right-hand page after the cover. This page is intended to serve as the title page. This form does not carry a page number, and it is not listed in the table of contents, but it is included in the page count for the printers (NWC editorial guide, p. 2-18). An instruction for completing the form is attached to each copy. A sample form is shown in Figures 3 and 3A.

Since the DD Form 1473 serves as the title page, care must be taken to make sure that the information on the form agrees with that on the cover of the publication.

"Completion of all data on the form is vitally important to DDC. For example, Block 10, Program Element, Project, Task Areas, and Work Unit Numbers, may be used to cross-reference the technical reports to the Work Unit Information System and the R&D Program Planning data bank" (DDC Contributors' Guide, p. 8). It is very important that Block 10, and 8 when appropriate, be filled in.

Key words for use in Block 19 of DD Form 1473 are select terms or short phrases that identify the principal subjects covered in the report and are sufficiently specific and precise to be used as index entries for cataloging, conforming to standard terminology. The DoD *Thesaurus of Engineering and Scientific Terms* can be helpful. This thesaurus is in the USAARL library.

Block 20, Abstract, should not exceed 200 words. Abstracts must contain an abbreviated but definitive statement of the problem, an outline of experimental design, and the key results with the resulting conclusions. The abstract enables a prospective reader to determine whether or not the publication contains information of interest to him, and it is also a bibliographic device. If the abstract is short and will fit in the space on the front of the DD Form 1473, type it there. However, if it exceeds this space, it is preferable to type *See back of form*, and type the entire abstract on the back.

SUMMARY

A summary may be included to provide a digest of the report, to explain the reason for the initiation of the work, and to outline principal conclusions and recommendations (MIL-STD-847A 1973, p. 6). Since the abstract on the DD Form 1473 contains most of this information, it should not be repeated in a summary. However, a summary may be used to provide an extensive digest of the report's contents that was not

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER USAARL Report No. 78-14	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) AN EVALUATION OF PERCEPTUAL-MOTOR WORKLOAD DURING A HELICOPTER HOVER MANEUVER		5. TYPE OF REPORT & PERIOD COVERED Final Report 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) M. G. Sanders, R. T. Burden, Jr., R. R. Simmons, M. A. Lees, & K. A. Kimball		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS SGRD-UAP U.S. Army Aeromedical Research Laboratory Fort Rucker, Alabama 36362		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 6.11.01.A, 3A761101A91C, 293
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Medical R&D Command Fort Detrick Frederick, MD 21701		12. REPORT DATE May 1978 13. NUMBER OF PAGES 21
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Portions of the data contained in this technical report were presented at the Aerospace Medical Panel Specialists' Meeting at Fort Rucker, AL, 1-5 May 1978 and at the Aerospace Medical Association 49th Annual Scientific Meeting, 8-11 May 1978, at New Orleans, LA.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Aviation Rotary Wing (Helicopter) Stability Augmentation System (SAS) Aviator Performance Workload Multivariate Analysis MEDEVAC Hover		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) See back of form.		

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FIGURE 3. Example of a Completed DD Form 1473.

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20. ABSTRACT:

Stability augmentation systems are purported to reduce pilot workload during hover, nap-of-the-earth, and IFR maneuvers. The current research project examines a method of aiding the MEDEVAC pilot in performing a hover maneuver while perhaps reducing workload. A modular, four-axes stability augmentation system (Ministab) with integrated rate attitude and heading retention was installed on the USAARL JUH-1H helicopter. Participating personnel for the project were nine U.S. Army aviators with a total average of 1172 flight hours. The aviators hovered at 30 feet above ground level for five minutes under each of the three following flight control conditions: (1) Unaided--"normal" hover with visual flight rules conditions, (2) using Force Trim, and (3) using the Ministab. Continuous information from twenty pilot and aircraft monitoring points was recorded on an incremental digital recorder for all flights. Multivariate analyses were performed on both aircraft status variables and control input workload/activity measures. Under the conditions tested, the stability augmentation system evaluated did not provide a clear-cut improvement in flight performance and workload across all flight parameters.

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FIGURE 3A. Back of a DD Form 1473. When the abstract exceeds the space in Block 20 on the face of the DD Form 1473, it is put in its entirety on the back.

possible in the abstract. Normally, a summary will not be included in USAARL technical reports.

FOREWORD OR PREFACE

"The terms foreword and preface are now increasingly differentiated, a foreword being a statement by someone other than the author, a preface the author's own statement about his work" (A manual of style 1969, p. 13). The relationship of the work to the overall program will be stated in the preface. If copyrighted material is used, a statement of the permission to use such material will be placed in the preface. If animal experimentation is described in the body of the report, the following statement will be included in the preface:

In conducting the research described in this report, the investigator(s) adhered to the "Guide for Laboratory Animal Facilities and Care," as promulgated by the Committee on the Guide for Laboratory Animal Resources, National Academy of Sciences-National Research Council (AR 70-31 1966, p. 29).

Acknowledgment of significant assistance in data reduction, analysis, data collection and finalization, etc., should be acknowledged here. This is where the contributions of each individual should be identified along with his name, title, and rank, if military. If a preface consists only of acknowledgments, the title should be changed to "Acknowledgments."

TABLE OF CONTENTS

A table of contents is mandatory when a report exceeds eight pages, but it is recommended that all reports have a table of contents. Normally, a table of contents lists all primary (first-order) headings and secondary (second-order) headings beginning with the first item after the table of contents. The first page of a table of contents must be a right-hand (odd-numbered) page. When the pages do not fall so that a table of contents is a right-hand page, the preceding page is left blank.

LIST OF ILLUSTRATIONS

The list of illustrations will provide the number, full title, and initial page number of all illustrations. When the list of illustrations is (or begins) on the same page as the table of contents, it will not be entered in the contents listing.

LIST OF TABLES

The list will provide the number, full title, and initial page number of all tables. The list of tables follows the list of illustrations.

BODY OF THE REPORT

Technical reports provide a complete, accurate account of the work accomplished (AR 70-31 1966, p. 25). Arrangement of the material within the main text of a report is largely the author's responsibility. Appendix B contains steps to be taken in developing a report. However, all USAARL technical reports will conform with the following basic outline.

INTRODUCTION

The introduction provides a statement of the problem, background information, and purpose and objectives of the investigators. There should be a crisp presentation of any hypothesis to be tested. Any directives, letters, protocols, DD 1498's, etc. that led to the research effort should be referenced in the introduction and listed in the references cited list.

In the letter reports, the requesting organization will be identified and the extent of their request for assistance or information noted. In addition, there will be a definitive statement of how we became involved in the work. Letter reports will contain a definite statement of the problem or conditions leading to the research.

The introduction will begin on a right-hand page. Succeeding sections within the body of the report will normally begin on the page (right- or left-hand) where the preceding section ends. However, if there is less than one-third of a page of space remaining (approximately 16 line spaces), a new page will be started. A review of other investigators' approach to the same problem may be discussed in the introduction (APA publications manual 1975, p. 16).

MAIN TEXT

This section describes what was done (experimental procedures, equipment and facilities, test performed, etc.). The main text contains sections on methods, materials, results, discussion of results, conclusions, and recommendations.

Methods

The methods section describes how the study was conducted. From the information given in the materials and methods sections, any competent investigator should be able to replicate the experiment.

The use of subjects will be described here. Who participated, how many participated, and how they were selected should be discussed, briefly.

"When animals are part of the study, report the genus, species, strain number, or other specific identification such as the name of the supplier. Give the number of animals used, and their sex, age, and physiological condition. In addition, specify all details of their treatment and handling essential to the successful replication of the investigation" (APA publications manual 1975, p. 17).

Materials

This section should give a brief description of the materials or apparatus used and their function in the experiment. When complex or custom-made equipment is used, a drawing or photograph is often beneficial to the reader.

Materials and methods may be combined if there is insufficient materials used to create a separate section.

In the materials and methods sections, there are no presentations of results, conclusions or recommendations. There is no further discussion of background.

Results

Include here a factual presentation using pictures, line drawings, graphs, and tables of the data. These devices should give all the information amplified and explained with accompanying narrative. The results should not discuss the relative merits, conclusions, or comparisons with other investigative work. Results will be the original

output of the researcher. When the results are few, it is permissible to combine the results and the discussion. Whenever this is done, however, it must be so labeled--results and discussion.

There should never be a presentation of a result for which the method to obtain that result has not been presented in the previous section. Do not omit negative results. Negative results are as important as positive.

Discussion

The discussion is the amplifying narrative of the results obtained from the methods used. This section allows you to examine, interpret, qualify and draw inferences from your results.

There should be no discussion about anything for which there has not been presented results. The absence of results from a described method should be explained. Reasons for competing data in the results section should be provided. The influences of assumptions on the results should be covered in the discussion section.

This section provides an opportunity for a critical review of other investigators' work in comparison to the results obtained in this work.

The discussion section should never be used as a vehicle for describing the author's personal bias on any subject except his method and assumptions.

Conclusions

The conclusions give the author's evaluation of the results or a summation of his findings. They are basically summary statements of the results obtained.

The conclusion section is the last major section. Conclusions can be correlated to the statement of the problem in the introduction. They contain whatever general statements the previous discussion requires.

All manuscripts to be published in the open literature should have a conclusions section that can stand alone and be understood without an entire reading of the work. The conclusion section gives a short naming of the data that has been derived, etc.

Recommendations

Recommendations are inappropriate for manuscripts to be published in the open literature and for technical reports unless the technical report is a test and evaluation report. Recommendations may be acceptable in letter reports where the work has been done to answer a particular question. The more appropriate place for recommendations is in a covering letter signed with a command line signature.

If called for, recommendations present a solution to the problem or the author's opinion regarding further study or further action.

FORMAT

The guidelines on format to be used in the USAARL technical reports are based on prevalent usage in the Laboratory at the time of compiling this guide. The size page, the margins, etc., are established by regulations, but much of the format is a matter of choice. These choices are made to give a uniform and professional appearance to reports issued by USAARL. The gothic element, elite 12, will be used to prepare camera-ready manuscript copy.

Page Size

The basic page size is 8 by 10 1/2 inches. All technical and letter reports will be typed on this size paper. Technical reports and letter reports that are sent to the printer will be on Typing Guide for 100% Copy, USAAVNC Form 508.

Preprinted blue guidelines indicate the placement of the text block and the page number. NO reproducible material will fall outside these guidelines.

Figures, figure legends, tables, and footnotes should fall within the 6- by 8-inch text area. Text matter, tables, or illustrations too wide for a normal page may be turned on the page. This should always be done so that the page can be read by turning the book 90 degrees to the right. Turned pages are to be avoided as much as possible.

Headings

Headings serve two purposes in a publication: they indicate to the reader the plan for presenting the material, and they serve as guides for the reader who uses the report as a reference work. The typography and the physical location of the various headings show the reader the

relation of the parts of the publication to one another and enable him to scan the entire publication rapidly.

Headings should be as brief as possible and should be in title style rather than in sentence style. Articles (a, an, the) should not be used unless they serve some useful purpose, and punctuation should be kept to a minimum. Parallel sections should be given parallel headings. Consistency in format and style should be observed throughout the publication.

Four orders of headings are used in USAARL technical reports. It will not always be necessary to use all four orders of headings; seldom is a fifth-order heading necessary.

A publication without internal headings should have the title as the first-order heading on the first text page. When internal headings are used, the title is not placed on the first text page. The DD Form 1473 serves as the title page and it is not necessary to repeat the title on the text page. Figure 4 illustrates the order of headings and their placement.

Spacing

The lines in the text of a normal publication are single-space with double spacing between paragraphs. Double-spaced texts should not be used for reproduction unless the text contains many equations or other typographical devices that require special handling. Paragraph indention is four spaces, with typing beginning on the fifth. Ideally, the last line of a paragraph is never carried over to the following page, nor does the first line of a paragraph ever stand alone at the bottom of a page.

Line spacing for particular text situations will be as specified in the following tabulation:

Between	Spacing
First-order head and text or second-order head.	.Triple
Second- or third-order head and text.	.Double
Text of previous section and first-, second-, third-, or fourth-order head.	.Triple
Text and table title.	.Triple
Table title and body of table	.Double

FIRST-ORDER HEADING

A first-order heading is typed in capital letters and is centered on the page; one of two lines or more is typed in an inverted pyramid, the top line no longer than 4 inches. The sinkage of the first primary heading may be varied somewhat according to the typography of the first page of text. With the typewriter set for single spacing, strike the return key four times before a first-order heading and three times after it. If a first-order heading within the text starts a new page, type it on the line immediately below the blue guideline of the page.

SECOND-ORDER HEADING

A second-order heading is typed in capital letters and flush left on the page with no end period. Strike the return key three times before a second-order heading and two times after it to start text. A flush-left heading should stop at least 2 inches short of the right margin; two or more lines may be used if necessary, with all lines beginning flush left. The second and succeeding lines should be shorter than the first.

Third-Order Heading

A third-order heading is typed flush left with initial capital letters and is underscored. No end period is used. Three strikes of the return key precede the third-order heading, and two follow it before the text.

Fourth-order heading. This underscored run-in heading is typed with initial capital letters and is followed by a period and two spaces. Run-in headings may govern several paragraphs. The fourth-order heading is preceded by two strikes of the return key and has a normal paragraph indention of four spaces, with typing beginning on the fifth.

Strike the return key twice for interparagraph spacing within text.

FIGURE 4. Examples of Headings Used in USAARL Publications.

Between	Spacing
End of table and text	Triple
Text and top of illustration	Triple
Illustration and caption	Double
Figure caption and text	Triple
Numbered/lettered items under a paragraph* (*When items in such a listing are very short, single spacing may be used.)	Double

Front matter heads (PREFACE, TABLE OF CONTENTS, LIST OF ILLUSTRATIONS, LIST OF TABLES), first-order heads that begin a page, and back matter heads (REFERENCES, BIBLIOGRAPHY, APPENDIX, DISTRIBUTION) will be placed 3 line spaces (type on 4th line) below the top blue line on USAAVNC Form 508 in the image area, except that in cases where any of these sections are considerably less than one page in length, the title may be further lowered so that the information on the page presents a better appearance (NUSC technical publication guide 1977, p. C-19).

Numbering of Pages (Pagination)

All pages following the Report Documentation Page, DD Form 1473, will be numbered consecutively at the bottom center in arabic numerals (MIL-STD-847A, p. 13). Recto (right-hand) pages are given odd numbers; verso (left-hand) pages are given even numbers. The DD Form 1473 carries no page number; page 1 is the first recto page following the DD Form 1473. Succeeding pages are numbered consecutively at the bottom center in arabic numerals, continuing through the body and supplementary matter to the end of the publication. The inside back cover does not carry a page number even if all or part of the distribution list appears on it.

Informational Aids

Informational aids--tables, charts, graphs, drawings, artists' sketches, photographs and computer printouts--should be used wherever they are needed in a report to increase reader interest and understanding. The delineation of subject matter by graphs, illustrations or photographs can often eliminate ambiguities that pages of descriptive text cannot. However, you should amplify, discuss, and explain each informational aid in your report. The author and editor should remember

that an illustration must serve some useful purpose and must never be used solely for decorative purposes.

Photographs and illustrations for technical reports should be so identified when they are requested from Scientific Arts. When artwork, graphs, schematics, artists' sketches, photographs, etc. are requested for a technical report, it is imperative you submit the request for ALL the Scientific Arts support at one time. Piecemeal requests result in a variance in prepared material that indicates a less than professional product. By taking all requests for one report to Scientific Arts at one time, it enables them to format and size all work for that report to maintain uniformity of design and size. In addition, this reduces cost in materials, man-hours, and frustration.

Planning for the photographs and artwork for a publication should begin early in the preliminary planning stages for the entire publication and usually before any writing has been done. You should remember that lead time out of Scientific Arts Branch is a minimum of 14 days. Planning and consulting with the Chief, Scientific Arts Branch, before requesting artwork and photos for reports will assure a much more satisfactory product.

Most of the photographs and illustrations should be planned for a final 5- by 7-inch format. This is a general rule and there will be exceptions. However, always keep in mind that the content page size of the report is 6 by 8 inches. The table or figure that must be rotated 90 degrees from normal must still fit a 6- by 8-inch format. It is advisable to have four sets of all the photographic prints you need. Use three for coordination and errors, reserving the fourth for submission with the camera-ready manuscript.

When requesting photographs and artwork, give the report title for which the work is to be used, and give the program element, project number, and work unit number. Use work order DA Form 3903-R and fill out in detail; give an exact description of work to be done. Figures 5 and 7 list details needed to complete DA Form 3903-R. Figures 6 and 8 are completed examples of DA Form 3903-R. This type of information makes it possible to file, to retrieve, and to reproduce work within a minimum of time when additional requests are made in the future. This information greatly assists in establishing the audit trail of each project as well.

Note that in most cases photographs and artwork prepared for technical reports are not appropriate as visual aids in presentations because of the size. A 35mm slide made from work prepared for a technical report may not be of readable size when projected for a viewing audience. Conversely, photographs and artwork prepared for visual presentations will be too large or too heavy when reduced for use in technical reports.

TRAINING–AUDIOVISUAL WORK ORDER

For use of this form, see AR 108-2; the proponent agency is CDCSOPS.

WORK ORDER NUMBER: Project Information

SECURITY CLASSIFICATION:

SECTION I – REQUIREMENT

TO: *(Include ZIP Code)*	FROM: *(Unit or Activity)*
Scientific Arts Br (Photo)	Division, Group, Branch

REQUESTOR *(Name, Grade and Phone Number)*	DATE REQUESTED
John Q. Doe, GS-12, 6417	Today's Date
ALTERNATE POINT OF CONTACT	**DATE REQUIRED**
Another person having knowledge of job	Date Finished Job Needed

DESCRIPTION OF WORK *(Attach diagrams, script, sketch, etc., and list inclosure(s).)*

OR

☒ STILL PHOTO ☐ GRAPHIC AR ☐ TV ☐ AUDIO ☒ MOTION PICTURE

☐ FABRICATION AIDS & DEVICES ☐ OTHER SERVICES *(Specify)* _____

If photographer is to report to someone, Who? Give name, date and time.

Number Views
Print Size
No. B&W Prints
No. Color Prints
No. B&W Trans
No. Color Trans
No. Polaroids
Amt of B&W or Color Motion Picture Footage
Title of Project

Description of Equipment, Artwork, Reprint, Copy, Process or Subject to be Photographed.

JUSTIFICATION FOR REQUESTED SERVICE	VALIDATION SIGNATURE
Research Publication Project Briefing Project Support	Requested service is for official purposes and is required by stated deadline. SIGNATURE

SECTION II – JOB ASSIGNMENT *(SECTIONS II THRU VII FOR AUDIOVISUAL OFFICE USE ONLY)*

DATE RECEIVED	DATE ASSIGNED	AUDIOVISUAL FACILITY APPROVAL *(Signature)*

SPECIAL INSTRUCTIONS

SECTION III – PRODUCT RECEIPT

ITEM	SIZE	AMOUNT	DATE COMPLETED
AFTER JOB IS COMPLETED			

CUSTOMER NOTIFIED	RECEIVED BY: *(Signature)*	DATE
	Signed by Person Receiving Job	Date Work Picked Up

DA Form 3903–R, 1 Jun 76 REPLACES DA FORM 3903, 1 AUG 72, WHICH IS OBSOLETE

FIGURE 5. Information Requirements For Photographic Work Orders.

TRAINING–AUDIOVISUAL WORK ORDER

For use of this form, see AR 108-2; the proponent agency is ODCSOPS.

WORK ORDER NUMBER: 6.11.02.A 3E161102BS07, 00026

SECURITY CLASSIFICATION: Unclassified

SECTION I – REQUIREMENT

TO: (Include ZIP Code)	FROM: (Unit or Activity)
Scientific Arts Br (Photo)	HTS Div, Sensory Phy.

REQUESTOR (Name, Grade and Phone Number)	DATE REQUESTED
R. Verona, CPT 6415	20 Feb 79
ALTERNATE POINT OF CONTACT	DATE REQUIRED
B. Dillard	6 Mar 79

DESCRIPTION OF WORK (Attach diagrams, script, sketch, etc., and list inclosure(s).)

TITLE: Research of electro-optical systems & human visual systems.

☒ STILL PHOTO ☐ GRAPHIC AR ☐ TV ☐ AUDIO ☐ MOTION PICTURE

☐ FABRICATION AIDS & DEVICES ☐ OTHER SERVICES (Specify) _____

Photographer report to CPT Verona, bldg 8709, 0900, 21 Feb 79. Still photos of subjects wearing IHADDS helmet--4 subjects.

Number of Views: 4--front, left side, right side, back ea subject
Print Size: 5 x 7
No. B&W: 4 copies ea view
No. Color Prints: 1 ea view size 8 x 10
No. Color Trans: 2 ea view

JUSTIFICATION FOR REQUESTED SERVICE	VALIDATION SIGNATURE
Briefing - (Slides) Technical Report - 5 x 7 B&W Research File - 8 x 10 Color	Requested service is for official purposes and is required by stated deadline. R. VERONA, CPT, SC

SECTION II – JOB ASSIGNMENT (SECTIONS II THRU VII FOR AUDIOVISUAL OFFICE USE ONLY)

DATE RECEIVED	DATE ASSIGNED	AUDIOVISUAL FACILITY APPROVAL (Signature)

SPECIAL INSTRUCTIONS

SECTION III – PRODUCT RECEIPT

ITEM	SIZE	AMOUNT	DATE COMPLETED

CUSTOMER NOTIFIED	RECEIVED BY: (Signature)	DATE

DA Form 3903–R, 1 Jun 76 REPLACES DA FORM 3903, 1 AUG 72, WHICH IS OBSOLETE.

FIGURE 6. Example of Completed Photographic Work Order. Section II is the responsibility of Scientific Arts Branch. Section III is filled in and signed by person who requested the work on completion and pickup of work.

TRAINING–AUDIOVISUAL WORK ORDER

For use of this form, see AR 108-2; the proponent agency is ODCSOPS.

WORK ORDER NUMBER: Project Information

SECURITY CLASSIFICATION:

SECTION I – REQUIREMENT

TO: *(Include ZIP Code)*	FROM: *(Unit or Activity)*
Scientific Arts Br (Illustration)	Division, Group, Branch

REQUESTOR *(Name, Grade and Phone Number)*	DATE REQUESTED
John Q. Doe, GS-12, 7001	Today's Date
ALTERNATE POINT OF CONTACT	DATE REQUIRED
Another person having knowledge of job	Date Finished Job Needed

DESCRIPTION OF WORK *(Attach diagrams, script, sketch, etc., and list inclosure(s).)*

☐ STILL PHOTO ☒ GRAPHIC AR ☐ TV ☐ AUDIO ☐ MOTION PICTURE

☐ FABRICATION AIDS & DEVICES ☐ OTHER SERVICES *(Specify)* _____

If illustrator is to report to someone, Who? Give name, date and time.

Designate if art work is for:
Prints
Slides
Publication
Black & White
Color
Trans

Title of Project

Description or sketch of information on which artwork is to be performed.

JUSTIFICATION FOR REQUESTED SERVICE	VALIDATION SIGNATURE
Research Publication Project Briefing Project Support	Requested service is for official purposes and is required by stated deadline. SIGNATURE

SECTION II – JOB ASSIGNMENT *(SECTIONS II THRU VII FOR AUDIOVISUAL OFFICE USE ONLY)*

DATE RECEIVED	DATE ASSIGNED	AUDIOVISUAL FACILITY APPROVAL *(Signature)*

SPECIAL INSTRUCTIONS

SECTION III – PRODUCT RECEIPT

ITEM	SIZE	AMOUNT	DATE COMPLETED
AFTER JOB IS COMPLETED			

CUSTOMER NOTIFIED	RECEIVED BY: *(Signature)*	DATE
	Signed by Person Receiving Job	Date Work Picked Up

DA Form 3903-R, 1 Jun 76 REPLACES DA FORM 3903, 1 AUG 72, WHICH IS OBSOLETE.

FIGURE 7. Information Requirements For Illustration Work Orders.

TRAINING–AUDIOVISUAL WORK ORDER

For use of this form, see AR 108-2; the proponent agency is ODCSOPS.

WORK ORDER NUMBER 6.11.02.A
3E161102BS07, 00026

SECURITY CLASSIFICATION
Unclassified

SECTION I – REQUIREMENT

TO: (Include ZIP Code)	FROM: (Unit or Activity)
Scientific Arts Br (Illustration)	HTS Div, Sensory Phy.

REQUESTOR (Name, Grade and Phone Number)	DATE REQUESTED
R. Verona, CPT 6415	20 Feb 79
ALTERNATE POINT OF CONTACT	DATE REQUIRED
B. Dillard	6 Mar 79

DESCRIPTION OF WORK (Attach diagrams, script, sketch, etc., and list inclosure(s).)

TITLE: Research of electro-optical systems and human visual systems.

☐ STILL PHOTO ☒ GRAPHIC AR ☐ TV ☐ AUDIO ☐ MOTION PICTURE

☐ FABRICATION AIDS & DEVICES ☐ OTHER SERVICES (Specify) _____

Graphs of data; sketch of information attached with data plotted. Graphs to be used in technical reports. Request a graph for a transparency also be prepared for a briefing presentation.

Artwork to be used for slides and black and white prints.

JUSTIFICATION FOR REQUESTED SERVICE	VALIDATION SIGNATURE
Briefing - Slides Technical Report - 5 x 7 B&W print Manuscript	Requested service is for official purposes and is required by stated deadline. R. VERONA, CPT, SC

SECTION II – JOB ASSIGNMENT *(SECTIONS II THRU VII FOR AUDIOVISUAL OFFICE USE ONLY)*

DATE RECEIVED	DATE ASSIGNED	AUDIOVISUAL FACILITY APPROVAL (Signature)

SPECIAL INSTRUCTIONS

SECTION III – PRODUCT RECEIPT

ITEM	SIZE	AMOUNT	DATE COMPLETED

CUSTOMER NOTIFIED	RECEIVED BY: (Signature)	DATE

DA Form 3903–R, 1 Jun 76 REPLACES DA FORM 3903, 1 AUG 72, WHICH IS OBSOLETE

FIGURE 8. Example of Completed Illustration Work Order. Section II is the responsibility of Scientific Arts Branch. Section III is filled in and signed by person who requested the work on completion and pickup of work.

It is important that the work be prepared for the medium in which it is to be used.

Appendix E contains suggested placement for a number of proportionately sized 5 x 7 photos. This should enable the typist to leave adequate room for photos when both text and photos appear on a page.

Tables

A table is a systematic, condensed presentation of related data for ready reference. Tables are widely used in technical publications to show multiple relationships that would otherwise be difficult to express. Tables will be kept as simple as possible so that the reader can easily grasp the meaning of the data.

To be effective, a table must be logical in design and unencumbered by extraneous details. Several simple tables are usually better than an obscurely complex one that contains too many kinds of information. A table that is merely long can be printed on successive pages without difficulty, but a table that is oversize in two dimensions is often difficult to read as well as difficult to print and bind (NWC editorial style guide 1975, p. 3-16).

Tables will be located after and as near as possible to the first text reference. A quantity of tables will often be more appropriate in the appendix. If a table or figure does not immediately follow first mention in the text, the page number where it is located will be shown; e.g., (Table 5, p. 21).

Rules. Horizontal rules are used above and below the body of the table, between column headings, and between spanners and the columns they span. A double rule is used above the body of the table.

Vertical rules are used between columns when they would enhance clarity; however, they are not used at the sides of the tables because they are not necessary for clarity. When vertical rules are needed, very lightly mark the vertical line placement on your table with a blue pencil. You need only mark your table with a short dash at the beginning and ending of the lines. Scientific Arts Branch will insert the needed vertical rules when the final copy is edited.

Numbering. Tables are numbered in arabic numerals consecutively throughout the body of the report. The table number is centered at the top, all capitals. Tables within appendixes should be numbered in a manner consistent with the appendix.

Titles. All tables are titled. Table titles or captions should be precise and brief. They should not furnish background information or describe the results illustrated by the table. Editorial comment should not be implied by a title. A table should give merely facts--discussion and comment are for the text. The table title appears centered just below the table number and is in all capital letters.

Headnotes. A table may contain a headnote that supplies information, qualifications, and values to the table as a whole. A headnote is placed on the second line below the caption. A short headnote is centered, but a long headnote is set with paragraph indention and written the width of the table. Sentence capitalization and punctuation are used for headnotes.

Footnotes. A table may contain a number of footnotes that are used to give information relating to specific portions of the table or to individual entries. The use of a footnote often avoids a wordy column heading and other complexities.

Footnotes are placed immediately below the horizontal rule that closes the body of the table. To avoid conflict with exponents and reference citations, reference marks for footnotes will consist of symbols in the following sequence: * (asterick), † (dagger), § (section mark), # (number sign). Should more symbols be needed, double or triple these in the same sequence.

REMEMBER, a table must fit within the 6- by 8-inch format of the report page. A turned page still has only 6 by 8 inches for content. Photo reduction is possible, but MIL-STD-847A has a restriction against type size being any smaller than 8 point (approximately 1/16 inch). Occasionally it is necessary to use 6 point in reduction, but efforts should be made to avoid this.

If column lengths are too long to fit on a single page, start the next page with "TABLE 16 (Cont.)" and proceed. The title is not repeated, but column headings and governing stub entries and classifying internal spanners are repeated as necessary for easy reading. Footnotes to continued tables may be handled in three ways: (1) repeated as necessary on the pages to which they apply, (2) typed on the last page only, or (3) typed on the last page, but with the comment *See footnote(s) at end of table* typed on each applicable page except the last. A lightweight (hairline) horizontal rule is used at the bottom of the tabular matter on a page when the table is continued on the succeeding page. Figure 9 shows the placement of items in a table.

TABLE 1 ← (Number)

COMPOUND TABLE ILLUSTRATING A VARIETY OF STUB AND COLUMN ENTRIES ← (Title)

Columns illustrate alignment of entries; rows illustrate stub entries and turnover lines. ← (Headnote)

Stub heading	Turned head*	Alignment on decimal point	Whole numbers and fractions	Ranges and word entries
				← (Column headings)
Classifying Internal Spanner				← (Spanner heading)
Master stub entry on more than one line†				← (Footnote index)
First subentry	1	0	21 1/2	15-17
Second subentry.	3	12.42	1 16/64	6
Third subentry	5	1.001	20 3/4	25
Another master stub entry on two lines:				
Subentry on two or more lines	4	13.1	1 13/32	376
Short subentry	7	0.73	99 19/64	failure§
One-line master entry:				
Subentry	9	40.2	63/64	140-180
Subentry	10	142.433	8 11/16	deployed
Classifying Internal Spanner				
Stub entry of two or more lines governing several rows: .	11	0.027	10 1/4	18-20
	9	0.042	9 3/4#	3-5
	0	0.019	. . .#	7.0-7.5
	...	76.9	. . .	8
Short stub entry.	7	. . .#	6 1/9	. . . .#

NOTE: A general footnote precedes referenced footnotes.

* To be avoided if possible.

† Turned over lines in first-order stub entries are indented twice the indention of subentries whenever subentries occur.

§ Short word entries. Columns of long word entries are aligned on the left, with first word capitalized and turnover lines indented.

Method of footnoting an omission. Omissions need not be footnoted. Omissions are indicated by spaced periods.

FIGURE 9. Illustration of Table Components

Graphs and Figures

A graph should be used when it will convey information and portray significant features more efficiently than words or tabulations. The simpler a graph is, the smaller it may be; the more important or complex it is, the larger it may be.

A graph should be designed to require minimum effort on the part of the reader; consequently, it should be of a familiar form. It should be free of all lines and lettering that are not essential to the reader's clear understanding of its message. Supplementary data or formulas should preferably be placed in the legend or in the text or on the graph where they do not interfere with the curves. Ordinarily, no more than three or four curves should be shown on the same graph.

Scale. Since scale has a controlling influence on the apparent rate of change of the dependent variable, careful consideration should be given to the choice of scale. Scales should begin and end at labeled graduation points rather than at intermediate unlabeled points whenever possible. In general, scales should extend only as far as necessary (by complete increments) to include the matter of interest in the graph (NWC editorial style guide 1975, p. 3-16).

Numbering. Figures are numbered in arabic numerals in the order in which they appear in the text, and are numbered consecutively throughout the main body of the text. Figures within appendixes should be numbered in a manner consistent with the appendix designation; e.g., FIGURE B-1. The spelled out all capital for "FIGURE" is used, followed by the number. The initial capital, spelled out form "Figure" is used in referring to the figure in the text.

Legends. Every figure carries a clear and concise legend. A basic legend, generally not in sentence form, tells what is shown in the figure, and this may be followed by additional descriptive information that is usually in sentence form. Although a legend must describe the figure, each figure and legend as a unit does not have to be complete within itself, but may depend on the text for supporting explanation.

The figure legend is typed single-spaced and is centered on the width of the figure with turnover lines blocked with the first line. The top of the typed characters should be 1/4 inch (double space) below the lower edge of the figure. The basic legend is given title capitalization (initial capital letters) and is followed by an end period. Additional information and part legends are given sentence capitalization and punctuation.

Footnotes

Footnotes are of two classes: bibliographic notes and comment notes. Bibliographic footnotes are used to provide complete bibliographic data on the references cited. Comment footnotes are used to give additional information that is pertinent to the text but that is not an integral part of it. Any type of information that will aid the reader in understanding the text may be included in comment footnotes. Asterisks are used to reference comment notes. If several comment notes appear on a page, double and triple asterisks are used. The asterisk series begins anew on each page.

The Commander, USAARL, has waived the requirement for the use of bibliographic footnotes on the page where the reference occurs.* However, comment footnotes are used where there is a need for identification of proprietary or trademark information and to reference a personal communication or an unpublished work.

USAARL technical and letter reports use the reference-cited format. The reference-cited format consists of an in the text author-date citation and an alphabetical listing of references at the end of the report.

The surname of the author and the year of publication are enclosed within parentheses when cited in the text; e.g., (Adams 1973). The citation is placed just before a mark of punctuation or at a logical break in the sentence. Only the date of the cited work is placed in parentheses when an author's name is part of the text material.

When a specific page is referenced rather than just the work, the parenthetical name and date are followed by a comma and the page number (A manual of style 1969, p. 384).

"For works of multiple authorship use the full form of citation for one to three authors, but use an abbreviated form for four or more" (A manual of style 1969, p. 384).

A work by three authors would be cited: (Pollard, Boyter, Watson 1978). However, a work by Sanders, Burden, Simmons, Lees and Kimball would be cited: (Sanders and others 1978).

It could happen that another work of the same date would also abbreviate to Sanders and others 1978, in which case you would have to cite the reference in full: (Sanders, Burden, Kimball, Debonis 1978).

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* Knapp, S. C. Personal conversation, 8 Jan 1979.

Reference to a citation with a corporate author or no author uses all or part of the publication's title in lieu of the author's surname (APA publications manual 1975, p. 58).

A comment footnote, placed at the bottom of the page containing the referenced material, is separated from the text by a 2-inch line beginning at the left margin and at least one line below the text. More space may be left above the rule, depending upon layout, in order to have the last line of the footnote at the bottom of the page. The footnote begins on the second line below the rule.

The asterisk is placed at normal paragraph indention; one space is left between the asterisk and the first word of the footnote. Single line spacing is used within and between footnotes; sentence punctuation is used.

BACK MATTER

REFERENCES CITED

Most reports issued by USAARL will have a list titled "References Cited" rather than a bibliography.

References cited include all items referred to in the report, whether published or unpublished. References cited must appear in the reference list, and each entry in the reference list must be cited in the text.

If it is deemed pertinent to the report to include related literature not cited in the text, it may appear in a section entitled "Selected Bibliography." A bibliography is a compilation of selective literature on a particular subject that suggests sources of further reading. Often an investigator will have consulted many sources in his search of the literature pertaining to his research project but will not have needed to cite the literature in the report. A substantive bibliography could be of real value to a reader.

References are listed in alphabetical order at the end of the report without numbering. However, when a bibliography is included, references cited must be numbered consecutively throughout the report and listed in the order in which they are cited in the report. The bibliography entries are then listed alphabetically.

"There are significant advantages to the consistent sequencing of bibliographic elements within a reference, primarily the elimination of

the ambiguity that results from arbitrary or random ordering" (ANSI Z39.29-1977).

It is important to present entries in a uniform style. There are many acceptable styles of bibliographic citations, but the one chosen as the model to be followed by USAARL authors is based on the American National Standards Institute's bibliographic references, Z39.29-1977. According to MIL-STD-847A, we must "include authors, titles, sources, identifying numbers, publication dates, and applicable security classifications." All these requirements and specified groupings of information are contained in ANSI Z39.29-1977.

Generally, elements in a citation should be in the following groupings:

Author (Last name first. Initials are used for given names.)

Date of publication.

Title (Ordinary sentence style capitalization. Book or journal titles are set in italics; article titles in regular type.)

Edition statement.

Imprint (Includes facts of publication, extent of work, report identifier.)

It is probably quicker and easier to spell out the title of a periodical or journal than it is to have to check for the correct abbreviation before using it. Additionally, variations in the style of abbreviations or changes in the name of a journal or periodical can make it difficult, even impossible, to locate the cited material; therefore, all periodical and journal titles will be spelled out in references.

Remember, a citation is supposed to make it possible for another person to locate the material you used and to gather additional information.

The examples given here represent the citations most frequently found in USAARL technical reports.

Reference Examples

BOOKS

One author: This is a citation for a book, with author, date, title, facts of publication and extent of work shown.

Hays, R. 1965. *Principles of technical writing.* Reading, MA: Addison-Wesley Publishing Co. 342 p.

One author with affiliation: The same citation may use an author affiliation for indicating where the author is located or where the work being reported was done, if this will add to the citation's usefulness to the reader.

Hays, R. (Southern Technical Institute, Marietta, GA). 1965. *Principles of technical writing.* Reading, MA: Addison-Wesley Publishing Co. 342 p.

Two authors

Rhode, R. B., and McCall, F. H. 1976. *Introduction to photography.* 3d ed. New York: Macmillan Co.

Multiple authors: The first named author should always be recorded. However, when there are more than three authors, an abbreviated form is used. If one or more names of authors are omitted, indicate this omission by placing "[and others]" after the name used.

Skillin, M. E., Hay, R. M., Brown, J. W., Jordan, B. B. 1964. *Words into type.* Rev. ed. New York: Appleton-Century-Crofts. 596 p.

Abbreviated form of multiple authors

Skillin, M. E. [and others]. 1964. *Words into type.* Rev. ed. New York: Appleton-Century-Crofts. 596 p.

EDITED VOLUME

Jordan, S., ed. 1971. *Handbook of technical writing practices.* New York: Wiley-Interscience. 2v.

NO AUTHOR OR EDITOR GIVEN: Corporate author or sponsoring body.

University of Chicago Press. 1969. *A manual of style.* 12th ed., rev. Chicago: University of Chicago Press. 546 p.

United States Government Printing Office. 1973. *Style manual*. Rev. ed. Washington, D.C.: U.S. Government Printing Office. 548 p.

American National Standards Institute. 1971. *Specifications for sound level meters*. New York: American National Standards Institute. ANSI S1.4-1971.

American National Standards Institute. 1977. *American National Standards for bibliographic references*. New York: American National Standards Institute. ANSI Z39.29-1977.

Department of the Army. 1972. *Noise and conservation of hearing*. Washington, D.C.: Department of the Army. TB MED 251.

CHAPTER OR ARTICLE IN BOOK

Lambersten, C. J. 1974. Effects of excessive pressures of oxygen, nitrogen, carbon dioxide, and carbon monoxide: Implications in aerospace and undersea environments. In: Mountcastle, V. B., ed. *Medical physiology*. 12th ed. St. Louis: C. V. Mosley. 1:836-867 2v. (Shows more than one volume in the series.)

Walter, John A. 1971. Style manuals. In: Jordan, S., ed. *Handbook of technical writing practices*. New York: Wiley-Interscience. 2:1267-71. 2v.

Rothstein, Arthur. 1974. Privileges and restrictions: Ethics and the law. *Photojournalism*. 3d ed. Garden City, NY: American Photographic Book Publishing Co. 202-215.

ARTICLE IN AN EDITED BOOK: No chapter author given.

Dixon, W. J., ed. 1973. *BMD biomedical computer programs*. 3d ed., reprinted 1974. Berkley and Los Angeles: Univ. of California Press. 387-397.

JOURNAL ARTICLE

Carder, H. M., and Miller, J. D. 1972. Temporary threshold shifts from prolonged exposure to noise. *Journal of Speech and Hearing Research*. 15(3):603-623.

Foreign title: Translation and availability information for an article in a foreign language are shown.

Kozyrkova, M. G. 1969. Izuchenie dinamich eskoy ostroty zreniya (Study of dynamic visual acuity). Trans. ASCI. *Problemy Fizioloquckeskoy Optiki*. 15:138-141. Springfield, VA: U.S. Army Foreign Service Technology Center. FSTC-HT-23-446-71.

REPORTS

Camp, R. T., Jr., and Marrow, R. H. 1978. *Internal noise characteristics of a U. S. Army C-12A aircraft*. Ft. Rucker, AL: U.S. Army Aeromedical Research Laboratory. USAARL-LR-78-13-2-2.

Hixson, W. C., and Spezia, E. 1977. *Incidence and cost of orientation-error accidents in regular Army aircraft over a five-year study period*. Pensacola, FL: Naval Aerospace Medical Research Laboratory. NAMRL-1238 and USAARL 77-19.

Report published under contract: This shows a report published by a corporation under government contract. The AD number indicates availability of the report; contract number and issuing company report numbers are also given.

Petersen, H. E. and Dugas, D. J. 1971. *The relative importance of contrast and motion in target detection*. Santa Monica, CA: Rand Corporation. R-688-PR. Contract No. F44620-67-6-0045. AD 722 407.

REGULATIONS

Department of Defense. 1973. *Military standard format requirements for scientific and technical reports*. Washington, DC: Dept. of Defense. MIL-STD-847A.

Department of the Army. 1966. *Research and development standards for technical reporting*. Washington, DC: Dept. of the Army. AR 70-31, C1, 3.

CONTRIBUTION TO A SYMPOSIUM OR VOLUME OF CONFERENCE PAPERS

Sanders, M. G. [and others]. 1977. Visual workload of copilot/navigator during terrain flight. In: Auffert, R., *Study of Pilot Workload:* Aerospace Medical Panel Specialist Meeting, 1977 April 18-22; Cologne, Germany. London: Technical Editing and Reproduction Ltd. p. B2-1--B2-9. AGARD-CP-217.

UNPUBLISHED PAPER: Presented at conference or symposium.

DeBias, D. A. [and others]. 1974. *Effect of carbon monoxide inhalation on the vulnerability of the heart to induced fibrillation.* Presented at the AMA Air Pollution Medical Research Conference; 1974 December 1-5; San Francisco, CA.

SEVERAL WORKS BY THE SAME AUTHOR: If an author or team of authors appears more than once in an alphabetically arranged reference list, it is usual to substitute a long dash followed by a period (six hyphens set tight) for the author's name or names after the first appearance.

Buettner-Janusch, J. 1962. Biochemical genetics of the primates--hemoglobins transferrins. *Annals of the New York Academy of Sciences.* 102:235-248. (or 102:235-48.)

------. 1964. The breeding of galagos in captivity and some notes on their behavior. *Folia Primatologica.* 2:93-110.

------. 1966. *Origins of man.* New York: Wiley.

Buettner-Janusch, J., and Andrew, R. J. 1962. Use of the incisors by primates in grooming. *American Journal of Physical Anthropology.* 20:129-132.

If two or more works by the same author bear the same publication date, they are distinguished by letters after the date:

Edwards, G. 1966a.

------. 1966b.

APPENDIXES

Material that supplements the main body of a technical publication, but is not an integral part of it, is usually placed in one or more appendixes located immediately after the reference material, or if none, after the conclusion of the main text. That is the logical place for basic data that should accompany the publication but that would distract the reader if inserted in the main text. Supporting information, such as detailed specifications, complicated mathematical derivations, and similar material that should be recorded but that is of little interest to the majority of readers, also should be placed in appendixes. An appendix usually includes some text, but occasionally contains only a series of equations, figures, or tables.

Equations, figures, and tables are numbered with the letter designation of the appendix in which they fall (e.g., FIGURE A-1) unless the matter has been taken intact from another source. Pages normally continue in the numbering sequence begun with the main text and do not carry a letter designation.

Each appendix should be called out in the body of the report. Each is given a title and identified by a letter (Appendix A, Appendix B, etc.).

Start the first appendix on a new page. The heading, Appendix A, for example, is written with initial capital letters and is centered at the normal sinkage (or less if necessary for page layout). The title of the appendix is centered on the second line below this and is typed in all capital letters.

When the appendix consists of full-page figures or tables that would leave no room for the appendix heading and title, these items may appear on a half-title page preceding the appendix proper.

NOMENCLATURE LIST

When a considerable number of symbols are used in a publication, a nomenclature list is desirable. A short nomenclature that is closely associated with the text may be presented as displayed text typed where it is introduced by running text. The nomenclature should be carefully checked to determine that definitions given in the list agree with those given in the text. The entry *Nomenclature* should be listed in the table of contents when a separate list is used.

A list of acronymns may also be placed at the end of the publication in the same manner as a nomenclature list.

DISTRIBUTION LIST

All reports include an initial distribution list.

The distribution list normally shows only the addresses off Fort Rucker, but the Fort Rucker addressees may be listed if desired. USAARL reports are sent to the other laboratories in USAMRDC, but these addresses are not listed in the distribution list (OTSG Reg 70-31).

The initial distribution list is typed on USAAVNC Form 508 and given normal sinkage for a main section. The addresses are typed in two columns, with the number of copies sent shown at the far right of the column on the last line of each address.

The distribution list is compiled in the editor's office. Additions to the initial distribution list are made by requesting the addition of a name and submitting a correct mailing address to the editor. The name and address will then be added to the computerized list. Requests for removal of a name from the distribution list also should be sent to the editor. A copy of USAARL's current distribution list is at Appendix F.

In-house or laboratory distribution is not listed as part of the report. However, copies of USAARL technical and letter reports are to be circulated internally to insure that all members of the Laboratory are kept abreast of the work being done throughout the different divisions. The Commander has directed the following in-house distribution of both technical and letter reports.

Headquarters	3 copies
Scientific Information Center	1 copy letter report, 25 copies technical reports
Human Tolerance and Survivability Division	3 copies
Field Research and Biomedical Applications Division	3 copies
Technical and Logistical Services Division	3 copies
Research Systems Division	3 copies
Editor	1 copy

Pages continue the serial numbering of the report. However, if part of the list is placed inside the back cover, the back cover does not carry a number.

NOTE: Distribution of 12 copies to DDC is used for reports using distribution statement A. For reports using distribution statement B, only 2 copies go to DDC.

BACK COVER

The back cover of USAARL technical reports is part of the wrap-around cover. It is pre-printed with the mailing indicia. The mailing labels are available by calling the Computer Branch. These labels are placed in the center below the indicia. It is not necessary to put class of mail on technical reports; nor is it necessary to staple them on the right side.

PRINTING REQUEST

Two copies of a printing request, DD Form 843, are completed and forwarded with the final copy of a technical or letter report. One copy of the printing request is retained in the editorial office. A completed DD Form 843 is shown at Appendix G.

The total number of copies of a report needed will be determined by adding the number needed for initial distribution, 25 copies for each author, and the copies required for in-house distribution.

REFERENCES CITED

American National Standards Institute. 1977. *American National Standards for bibliographic references.* New York: American National Standards Institute. ANSI Z39.29-1977.

American Psychological Association. 1974. *Publication manual.* 2d ed. Washington, DC: American Psychological Association.

Defense Documentation Center. n.d. *Contributors' guide to DDC.* Alexandria, VA: Defense Logistics Agency.

Department of the Army. 1978. *Control of studies and analyses reports.* Washington, DC: Dept. of the Army. TWX, DACS-DMO, 7 May 78.

Department of the Army. 1966. *Research and development standards for technical reporting.* Washington, DC: Dept. of the Army. AR 70-31, C1, 3.

Department of the Army Office of the Surgeon General. 1969. *U.S. Army medical research and development technical report.* Washington, DC: Office of the Surgeon General. OTSG 70-31, C1.

Department of Defense. 1973. *Military standard format requirements for scientific and technical reports.* Washington, DC: Dept. of Defense. MIL-STD-847A.

Naval Underwater System Center. 1977. *NUSC technical publications guide.* New London, CT: Naval Underwater System Center. NUSC TD 5329. AD A048 066.

Naval Weapons Center. 1975. *Editorial style guide: A publishers guide for editors, writers, and compositors of scientific and technical reports.* China Lake, CA: Naval Weapons Center. NWC AdPub 157. AD A021 627.

United States Army Aeromedical Research Laboratory. 1979. *Research and development standards for technical reporting.* Ft Rucker, AL: U.S. Army Aeromedical Research Laboratory. USAARL Policy No. 70-31.

United States Government Printing Office. 1973. *Style manual.* Rev. ed. Washington, DC: U.S. Government Printing Office. 548 p.

University of Chicago Press. 1969. *A manual of style.* 12th ed. Chicago: University of Chicago Press. 546 p.

APPENDIX A

MIL-STD-847A and Implementing Regulations

MIL-STD-847A
31 January 1973
SUPERSEDING
MIL-STD-847 (USAF)
25 February 1965

MILITARY STANDARD

FORMAT REQUIREMENTS FOR SCIENTIFIC AND TECHNICAL REPORTS

PREPARED BY OR FOR THE DEPARTMENT OF DEFENSE

FSC - MISC
MISC-0763

DEPARTMENT OF DEFENSE
WASHINGTON, D.C. 20301

Format Requirements for Scientific and Technical Reports Prepared by or for the Department of Defense

MIL-STD-847A

1. This military standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Recommended corrections, additions, or deletions should be addressed to:

Administrator
Defense Documentation Center
ATTN: DDC-T
Cameron Station
Alexandria, Virginia 22314

FOREWORD

This standard implements for the Department of Defense the "Guidelines to Format Standards for Scientific and Technical Reports Prepared by or for the Federal Government" developed by the Federal Council for Science and Technology, Committee on Scientific and Technical Information (COSATI), Panel on Operational Techniques and Systems. Its provisions are mandatory for in-house, contractor, or grantee reports.

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FORMAT REQUIREMENTS FOR SCIENTIFIC AND TECHNICAL REPORTS PREPARED BY OR FOR THE DEPARTMENT OF DEFENSE

1. SCOPE

1.1 Purpose. This standard establishes format requirements for scientific and technical reports prepared by or for the departments and agencies of the Department of Defense. Its purposes are to aid the interchange of scientific and technical information and to reduce the costs of preparing, storing, retrieving, reproducing, and distributing such reports.

1.2 Application.

1.2.1 Forms of reports. This standard applies to scientific and technical reports (for definition see paragraph 3.1, Technical report) under the DoD scientific and technical information program in any of the following forms:

1.2.1.1 Manuscript copy: Text and illustrations suitably assembled for review and editing.

1.2.1.2 Reproducible copy: A set of text and illustration pages that has been corrected, laid out, and made ready for reproduction.

1.2.1.3 Reproduced copy: Reports that have been duplicated or printed and are ready for distribution.

1.2.1.4 Microform: Reports photographed in miniature on film.

1.2.2 Excluded documents.

1.2.2.1 Letter reports, manuals, catalogs, and computer printouts. This standard does not apply to letter reports, training manuals, catalogs, administrative or fiscal reports, or reports consisting only of computer printouts.

1.2.2.2 Intelligence reports. Assignment of responsibility for format for technical intelligence reports prepared by or for the Defense Intelligence Agency is contained in DIA Manual 75-1, "Scientific and Technical Intelligence Production," and is excluded from the scope of this standard.

1.2.2.3 Preprints, reprints, books, theses, and dissertations. Journal article preprints, reprints, commercially published books or chapters of books, theses, or dissertations submitted in lieu of a technical report are excluded from compliance with the provisions of this standard except that the Report Documentation Page, DD Form 1473, shall be made a part of each copy of such publication which is submitted to the Department of Defense.

1.2.2.4 Waiver of requirements. The Commanding Officer, Technical Director or equivalent, of the organization responsible for the conduct of the work set forth in the report, for example, Naval Weapons Laboratory, may grant a waiver of the requirements contained herein except for the inclusion of a DD Form 1473 (see paragraph 5.3.1, Report Documentation Page, DD Form 1473) and other mandatory requirements, for example, security markings. Such waivers will be granted on a case by case basis.

2. REFERENCED DOCUMENTS

The issues of the following documents in effect on the date of invitation for bids form a part of this standard to the extent specified herein.

(a) DoD 5200.1-R, "Information Security Program Regulation." (Available from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania, 19120, and the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.)

(b) DoD Directive 5200.20, "Distribution Statements on Technical Documents." (Available from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania, 19120.)

(c) DoD 5220.22-M, "Industrial Security Manual for Safeguarding Classified Information." (Available to Navy activities from: Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania, 19120; to Army and Air Force activities from: Commanding Officer, U.S. Army AG Publications Center, 2800 Eastern Boulevard, Baltimore, Maryland, 21220; to others from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.)

(d) "Armed Services Procurement Regulation." (Available from the Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, Pennsylvania, 19120)

(e) "Government Printing and Binding Regulations." (Available from the Joint Committee on Printing, U.S. Congress, Committee Room S-151, U.S. Capitol, Washington, D.C., 20510.)

(f) "Government Paper Specification Standards." (Available from the Joint Committee on Printing, U.S. Congress, Committee Room S-151, U.S. Capitol, Washington, D.C., 20510.)

(g) "Abstracting Scientific and Technical Reports of Defense-Sponsored RDT&E." Defense Documentation Center, AD-667 000. (Available from the National Technical Information Service, Springfield, Virginia, 22151.)

3. DEFINITIONS

3.1 Technical report. Any preliminary or final technical document written for the permanent record to document results obtained from, or recommendations made on, Department of Defense sponsored or cosponsored scientific and technical activities.

3.2 Controlling DoD office. The DoD activity, under whose immediate program a document is generated, whether the work was done in-house or by contract. In the case of joint sponsorship, the controlling office is determined by advance agreement, and may be either party, or a group or committee representing more than one activity or service or agency.

4. GENERAL REQUIREMENTS (Not applicable)

5. DETAILED FORMAT REQUIREMENTS

5.1 Order of elements. Although all reports do not necessarily contain all the following elements, those that are used will appear in the following order with the abstract appearing only on the Report Documentation Page, DD Form 1473:

5.1.1 Front matter.
- Front cover (required)
- Report Documentation Page, DD Form 1473 (required)
- Summary
- Preface
- Table of contents
- List of illustrations
- List of tables

5.1.2 Body of report.
- Introduction
- Main text
- Conclusions
- Recommendations

5.1.3 Reference material.
- References
- Bibliography
- Appendixes
- Glossary of terms
- List of abbreviations, acronyms, and symbols
- Index
- Distribution list
- Back cover (required)

5.2 Front cover.

5.2.1 Outside front cover. Self covers (of the same paper as the text) or separate covers of different paper from the text are acceptable. Include on the cover the information shown in the following paragraphs plus special markings, such as security classification and schedule for downgrading and declassification. Military Services regulations for marking classified information shall be followed. (See DoD 5200.1-R, DoD 5220.22-M, and the respective Service implementing regulations.) Group related items as shown in Figure 1.

5.2.1.1 Group I. Report number. Each report will carry a unique alphanumeric designation, or report number, in the upper portion of the cover using one of the following types:

(a) An alphanumeric designation provided by the controlling office (for example, FML-RD-68-100); or, if none has been assigned,
(b) An alphanumeric designation established by the performing organization (for example, ORNL-8737); or if none has been established,
(c) An alphanumeric designation derived from the contract or grant number (for example, AF19618-69-C-0001).

5.2.1.2 Group II

(a) Title and subtitle. Display the title prominently and make it indicate clearly and briefly the subject of the report. Set subtitle, if used, in smaller type or otherwise subordinate it to the main title. When a report is prepared in more than one volume, repeat the primary title and have the subtitles identify specific volumes.
(b) Author(s). Give the name(s) of the author(s) in conventional order (for example, John R. Doe, or if author prefers, J. Robert Doe). An exception to the "Government Printing and Binding Regulations," granted by JCP, permits authors' names to appear on the covers of scientific and technical reports.
(c) Performing organization name and address. For contractor reports, give name, city, state, and ZIP Code. List no more than two levels of an organizational hierarchy.
(d) Date. Each report will carry a date consisting of at least the month and year.
(e) Type of report and period covered. Indicate interim, final, etc., and, if applicable, dates covered.

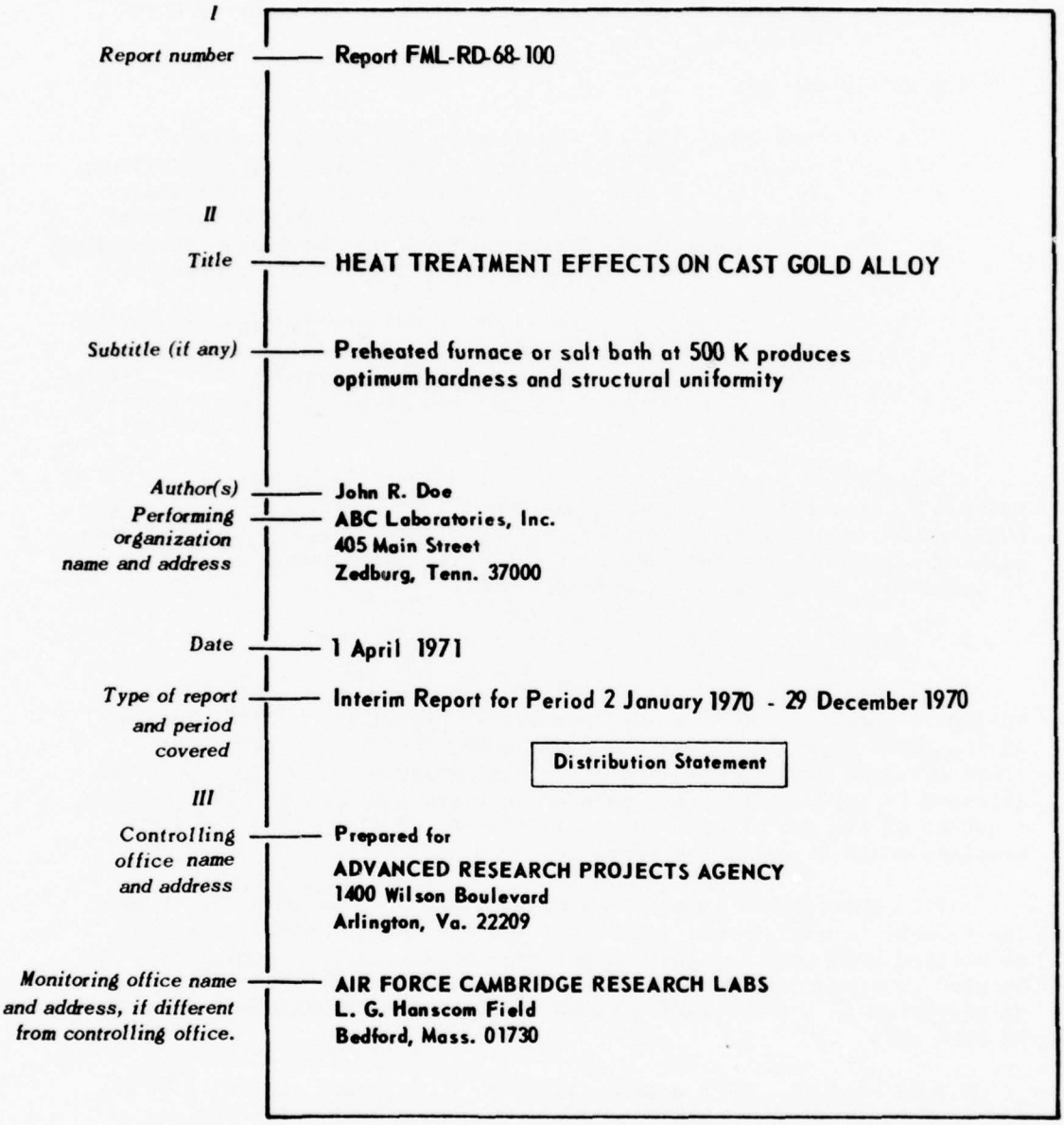


Figure 1. Sample unclassified report cover (reduced in size). Other layouts and type faces may be used if related items are grouped in the manner indicated. Required security markings must be added to covers of classified reports.

(f) Distribution statement. (See DoD Directive 5200.20.) The same statement that appears here must also appear in Block 16 of the Report Documentation Page, DD Form 1473.

5.2.1.3 Group III

(a) Controlling office. (Equates to sponsoring/funding activity. For definition see paragraph 3.2, Controlling DoD office.) The name and mailing address, including ZIP Code, will appear in the lower portion of the front cover. The words "Prepared for" will be placed immediately above the sponsoring activity's name on all contractor/grantee reports.

(b) Monitoring agency. The name and mailing address, including ZIP Code, will appear under the controlling office in those cases where the administrative responsibility for a project, contract, or grant has been delegated to another activity.

5.2.2 Inside front cover. A review and approval statement and special notices such as reproduction limitations, espionage, legal and supersedure information, safety precautions, sponsor's disclaimers, compliance with special regulations, or disposition instructions will be included here or on the outside front cover.

5.3 Introductory material.

5.3.1 Report Documentation Page, DD Form 1473. (See Figure 6.) Include a completed DD Form 1473 (Revised), Report Documentation Page, as the first right-hand page after the cover in each report. (See Armed Services Procurement Regulation, paragraph 4-113.) This page is intended to replace the title page and revises the DD Form 1473 formerly required at the end of each technical report. Instructions for its completion are given in the appendix.

5.3.2 Summary. A summary may be included to provide a digest of the report, to explain the reason for the initiation of the work, and to outline principal conclusions and recommendations. A summary may be used to give more information on the content of the report than can be presented in the abstract entered on the Report Documentation Page, DD Form 1473.

5.3.3 Preface. If a preface is used, it may show the relation of the work reported on to associated efforts, give credit for the use of copyrighted material, or acknowledge significant assistance received.

5.3.4 Table of contents. Seldom used in a report of eight pages or less. If used, list principal headings as they appear in the report with the page numbers on which the headings occur. Start the table of contents on a new right-hand page.

5.3.5 List of illustrations. Include only if considered essential. List figure number, legend, and page number for each illustration. Abbreviate lengthy legends.

5.3.6 List of tables. Include only if considered essential. List table number, heading, and page number for each table. Abbreviate lengthy headings.

5.4 Body of report.

5.4.1 General. Start the first section on a new page. This section usually provides background information and work objectives. Succeeding sections may describe work procedures, apparatus involved, tests performed, results achieved, and related matters, as appropriate. The terminal sections usually present conclusions and recommendations.

5.4.2 Headings. Headings will stand out from the text with their relative importance apparent. They may be prepared on a standard typewriter or on composing equipment. Typical heading styles are illustrated in Figure 2.

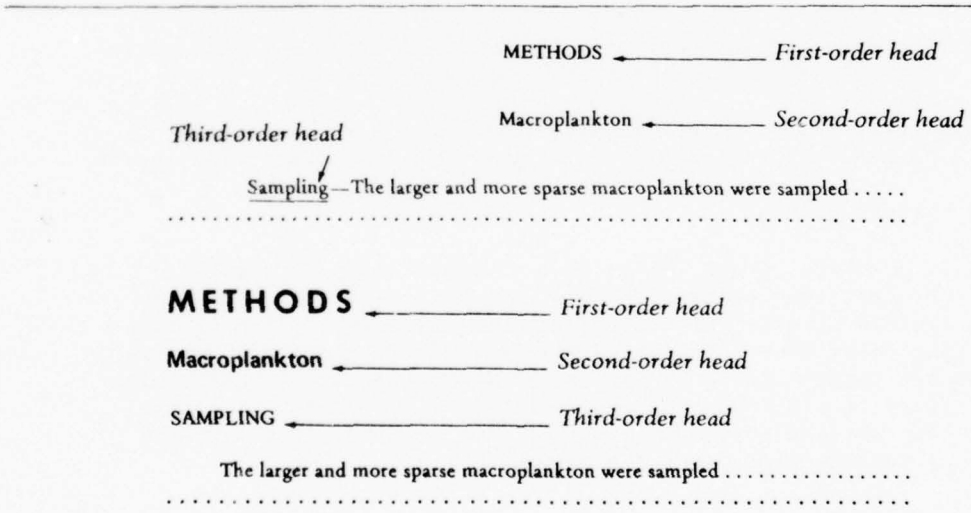


Figure 2. Two examples of headings. Top example shows standard typewriter headings; bottom example shows headings prepared on composing equipment. Other type styles may be used as long as the headings stand out and relative importance is apparent.

5.4.3 Numbering systems. Number headings and paragraphs only when needed for clarity.

5.5 Reference material.

5.5.1 References and bibliography. Include complete identification of references on bottom of page where first cited to aid in reading from microform. When references are numerous, they should be repeated in a reference list in the back of the report. Arrange bibliographic entries not included in the text but supplied as supplementary information under "Bibliography." Present entries in a uniform style. Include authors, titles, sources, identifying numbers, publication dates, and applicable security classifications.

5.5.2 Appendixes. When one or more appendixes are used, designate them Appendix A, Appendix B, etc. Number figures, tables, and equations with the letter designation of the appendix in which they fall. Each appendix will be titled. Start the first appendix on a new page.

5.5.3 Glossary of terms. Define unusual terms either in the text or as a footnote the first time they are used in the text. When many such terms are used, list them in alphabetical order with definitions in a glossary.

5.5.4 Abbreviations, acronyms, and symbols. Define abbreviations, acronyms, and symbols when first introduced in the text. If they are numerous, include a list of definitions in the reference material.

5.5.5 Index. If an index is included, make it as complete as the nature of the report and its probable usage requires.

5.5.6 Distribution list. A distribution list may be included within a report. If included, it will appear at the end of the report.

5.6 Illustrations.

5.6.1 General. Treat illustrations consistently throughout a report. Prepare them so that details and callouts (labels) will be clearly legible after final reduction. When practical, crop or mask photographs to eliminate insignificant detail. Do not add a border frame or use background tones in line drawings unless they contribute substantially to clarity. For reproducible copy, submit only clean tone or line art and only original photographs rather than screened (halftone) reproductions when practical.

5.6.2 Placement. Locate illustrations as near as possible after the first text reference except in special situations, such as a report containing only a few text pages and many illustrations. In such cases, place the illustrations in numerical sequence in the back of the report. Unless it is not possible to do so and maintain readability, place illustrations so that they may be viewed without turning the page sideways. If this is not possible, place the illustrations sideways so that they can be seen by rotating the page clockwise.

5.6.3 Callouts (Labels). So far as practical, place callouts horizontally, unboxed, and near the item called out as shown in Figure 3. Make callouts consistent in size and typeface throughout a report. Use lettering of at least 8-point or 1/9-inch high in a final reproduced size.

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FROM COPY FURNISHED TO DDC

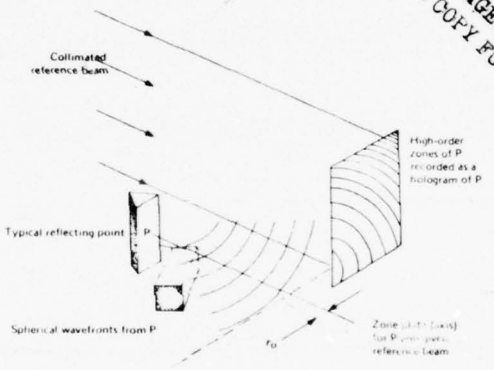


Figure 3. Placement of callouts in illustrations.

5.6.4 Color. Color will not be used unless specifically authorized by the controlling office as the only means of presenting data clearly. Often screens, crosshatching, reverses, dots, or similar techniques can be effective substitutes for color (Figure 4).

5.6.5 Foldouts. Wherever possible, avoid the use of oversize illustrations that must be folded. Often a large illustration can be divided to appear on facing pages. When foldouts cannot be avoided make them begin on a right-hand page and number as one page.

5.6.6 Numbering. Number illustrations to which reference is made in the text in Arabic numerals, preceded by the word "Figure." Number illustrations within appendixes in a manner consistent with the appendix designation.

5.6.7 Legends. Accompany each illustration, except self-explanatory sketches, by a descriptive legend. Place the legend under the illustration following the figure number.

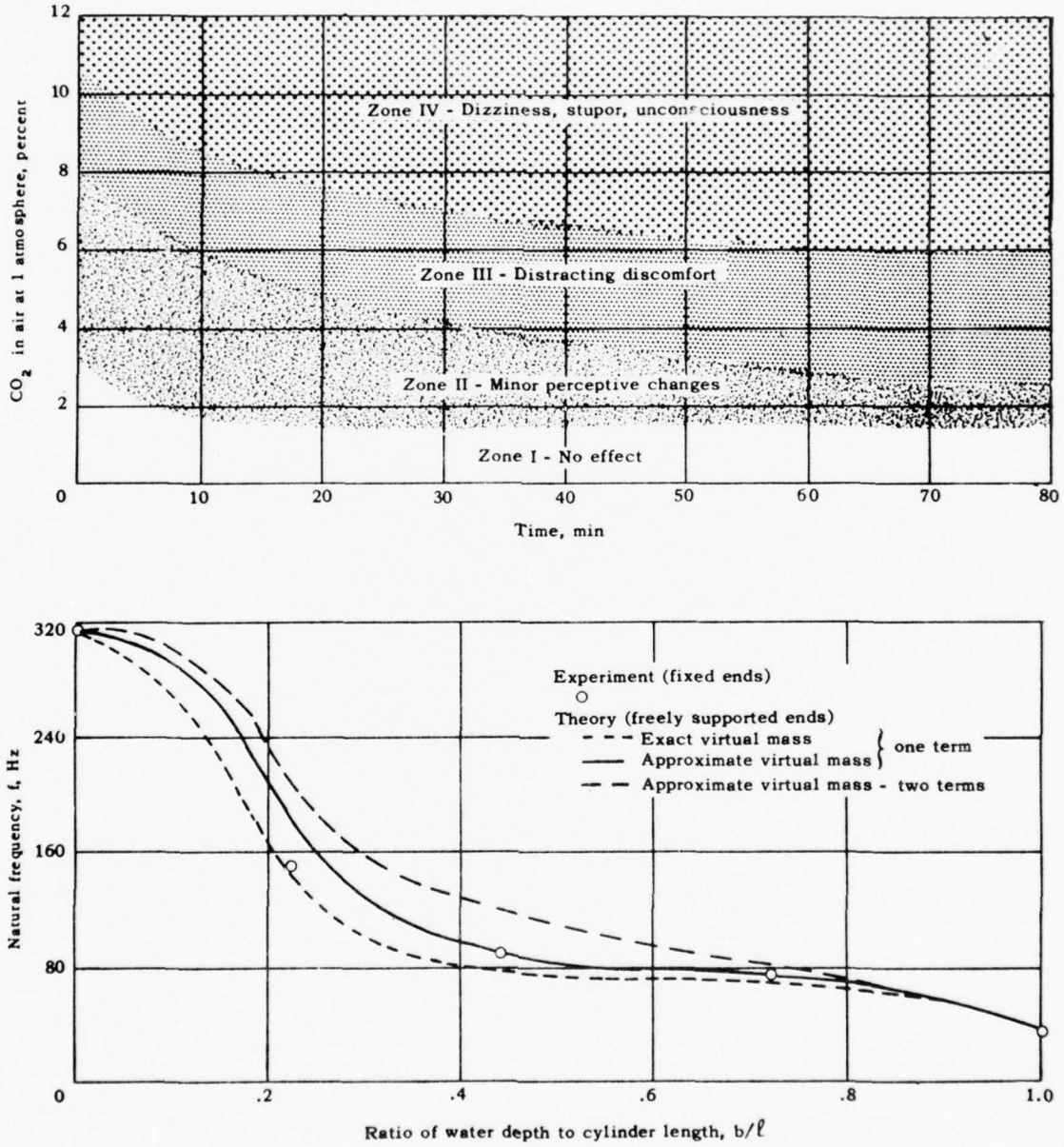


Figure 4. Screening (top) and coding (bottom) used as substitutes for color.

5.7 Tables.

5.7.1 General. Tables should be as simple as possible so that the reader can easily grasp the meaning of the data. Avoid vertical and horizontal lines wherever spacing can be used effectively. Use letters and numbers in tables that will be at least 8-point or 1/9-inch high in the final reproduced report. Letters and numbers on printout sheets from electronically tabulated data used for direct reproduction should be sharp and unbroken. See Figure 5.

TABLE 1. SHORT-TIME XXXXXXXXXXXXXXXXXXXX ← *Heading*

Boxhead ↓

Temperature (K)	Specimen type[a] ↑	Ultimate tensile strength, (N/m^2)	Elongation between buttonheads, (cm)	Reduction of area, (percent)
Footnote reference →		Tungsten		
1700	1	2200×10^3	1.57	95
1900	1	1312	1.60	75
2060	1	987	.69	36
2260	1	674	.51	25
		Molybdenum		
1650	2	9301×10^3	0.95	96
1922	2	4068	1.55	99
2255	2	1472	1.75	99

[a]Recrystallized at 2370 K for 1/2 hour in vacuum. ← *Footnote*

Figure 5. Typical table layout.

5.7.2 Placement. Locate tables as near as possible after their first text reference except in special situations, such as when a report contains only a few text pages and many tables. In such cases place the tables in numerical sequence in the back of the report. Unless it is not possible to do so and maintain readability, place tables so that they may be viewed without turning the page sideways. If this is not possible, place each table sideways so that it can be seen by rotating the page clockwise.

5.7.3 Columns and column headings. Give applicable units of measure or degree in the column headings of tables. Do not repeat in the columns. When tables continue on two or more pages, note the continuation and repeat the column headings and rules on each page, except column headings need not be repeated on the second page for continuations on two facing pages turned sideways.

5.7.4 Numbering. Number tables in the text consecutively in Arabic numerals, preceded by the word "Table." Tables within appendixes should be numbered in a manner consistent with the appendix.

5.7.5 Headings. Give each table, except short ones run in with the text, a descriptive heading following the table number. Place heading above the table.

5.8 Equations.

5.8.1 General. Prepare mathematical matter with extreme care. Use machine or transfer-type composition when available. When necessary, identify symbols after first use in order to simplify reading from any type of microform, otherwise include in a separate list. Make opening and closing parentheses, brackets, and braces the same height as the tallest expression they enclose. Separate the numerator from the denominator with a line as long as the longer of the two. Center both numerator and denominator on the line.

5.8.2 Placement. Indent or center a displayed equation in the line immediately following the first text reference made to it. Break equations before an equal, plus, or multiplication sign. Align a group of separate but related equations by the equal signs and indent or center the group as a whole. Short equations not part of a series or identified by number will be placed in the text rather than displayed.

5.8.3 Numbering. Number equations which are part of a series or which are referred to in the text consecutively in Arabic numerals. Enclose each number in parentheses at the right margin on the last line of the equation to which it refers. Equations within appendixes should be numbered in a manner consistent with the appendix.

5.9 Production.

5.9.1 Composition.

5.9.1.1 Type size. The size of type for the main text shall provide for final page copy, including reproduction thereof, in which letters and numbers are at least as large as 8-point type; 10-point, or equivalent, is preferred.

5.9.1.2 Line spacing. Use single or 1½ spacing for reports prepared by typewriter for reproduction, except when double spacing between lines is necessary to assure clarity of equations or symbols. Use 1½ or double spacing for manuscripts.

5.9.1.3 Margins. Use margins of at least 1 inch on all sides of text pages.

5.9.1.4 Columns. Prepare text pages with a single column, not necessarily justified on the right margin, unless the controlling agency authorizes justification or use of more than one column.

5.9.1.5 Page numbering and usage. All pages following the Report Documentation Page, DD Form 1473, will be numbered consecutively at the bottom center in Arabic numerals. Separate volumes may be numbered independently. Odd-numbered pages are right-hand pages and even-numbered pages are left-hand pages. Use both sides of the sheet to the maximum extent practical.

5.9.1.6 Typewriter ribbons. Use black ribbon to type reproducible copy. Carbon ribbon is preferred.

5.9.2 Duplication vs. printing. Contractors or grantees shall not become prime sources of printing for departments or agencies unless so authorized by the Joint Committee on Printing nor shall printing be a preplanned contractual requirement. Duplicating shall conform to the requirements of the "Government Printing and Binding Regulations."

5.9.3 Workmanship. Filled-in or broken letters, illegible text or illustrations (including lettering) or similar imperfections are not acceptable. Only reproduced reports that will be legible in microform are acceptable.

5.9.4 Cover size, stock, and ink. Reproduced reports may have self covers cut to page size or separate covers. If separate covers are used, GPO standard 100-pound basis weight antique or vellum finish (or comparable quality) is preferred. (See "Government Paper Specification Standards.") Black ink will be used on covers. Do not use covers with windows.

5.9.5 Page size, stock, and ink. Reproduced reports shall be 8 X 10½ or 8½ X 11 inches in size. Use black ink on GPO standard 32- to 40-pound (or comparable quality) writing paper stock for text pages. (See "Government Paper Specification Standards.")

5.9.6 Binding. Bind reports by using saddle stitching or side stitching. Other types of binding such as glued-on covers, perfect binding, or case binding must have prior approval of the controlling DoD office.

5.9.7 Decorative features and advertising. Only simple organizational symbols or logos are permissible. Advertising display shall not be used.

Custodians:
Army - MU
Navy - NM
Air Force - 10

Preparing activity:
Defense Supply Agency - DD

Review activities:
Army - EL, MI, ME, AV, WC, MR, GL, AD
Navy - None
Air Force - 11, 13, 17, 19
Defense Communications Agency - DC
Defense Nuclear Agency - DS
National Security Agency - NS

User activities:
Army - AT
Navy - None
Air Force - 18

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)*		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
		13. NUMBER OF PAGES
14. MONITORING AGENCY NAME & ADDRESS*(if different from Controlling Office)*		15. SECURITY CLASS. *(of this report)*
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT *(of this Report)*		
17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*		
20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

Figure 6. Report Documentation Page.

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

APPENDIX

INSTRUCTIONS FOR PREPARATION OF

REPORT DOCUMENTATION PAGE

(Revised Version of DD Form 1473)

10. SCOPE

10.1 Responsibility. This appendix is a mandatory part of this military standard. The controlling DoD office will be responsible for completion of the Report Documentation Page, DD Form 1473, in all technical reports prepared by or for DoD organizations.

10.2 Classification. Since this Report Documentation Page, DD Form 1473, is used in preparing announcements, bibliographies, and data banks, it should be unclassified if possible. If a classification is required, identify the classified items on the page by the appropriate symbol.

20. COMPLETION GUIDE

20.1 General. Make Blocks 1, 4, 5, 6, 7, 9, 11, 12, 14, 15, and 16 agree with the corresponding information on the report cover. Leave Blocks 2 and 3 blank.

20.2 Block 1. Report Number. Enter the unique alphanumeric report number shown on the cover and described in paragraph 5.2.1.1, Report number.

20.3 Block 2. Government Accession No. Leave blank. This space is for use by the Defense Documentation Center.

20.4 Block 3. Recipient's Catalog Number. Leave blank. This space is for the use of the report recipient to assist in future retrieval of the document.

20.5 Block 4. Title and Subtitle. Enter the title in all capital letters exactly as it appears on the publication. Titles should be unclassified whenever possible. Write out the English equivalent for Greek letters and mathematical symbols in the title (see "Abstracting Scientific and Technical Reports of Defense-sponsored RDT&E," AD-667 000). If the report has a subtitle, this subtitle should follow the main title, be separated by a comma or semicolon if appropriate, and be initially capitalized. If a publication has a title in a foreign language, translate the title into English and follow the English translation with the title in the original language. Make every effort to simplify the title before publication.

20.6 Block 5. Type of Report and Period Covered. Indicate here whether report is interim, final, etc., and, if applicable, inclusive dates of period covered, such as the life of a contract covered in a final contractor report.

20.7 Block 6. Performing Organization Report Number. Only numbers other than the official report number shown in Block 1, such as series numbers for in-house reports or a contractor/grantee number assigned by him, will be placed in this space. If no such numbers are used, leave this space blank.

20.8 Block 7. Author(s). Include corresponding information from the report cover. Give the name(s) of the author(s) in conventional order (for example, John R. Doe or, if author prefers, J. Robert Doe). In addition, list the affiliation of an author if it differs from that of the performing organization.

20.9 Block 8. Contract or Grant Number(s). For a contractor or grantee report, enter the complete contract or grant number(s) under which the work reported was accomplished. Leave blank in in-house reports.

20.10 Block 9. Performing Organization Name and Address. For in-house reports enter the name and address, including office symbol, of the performing activity. For contractor or grantee reports enter the name and address of the contractor or grantee who prepared the report and identify the appropriate corporate division, school, laboratory, etc., of the author. List city, state, and ZIP Code.

20.11 Block 10. Program Element, Project, Task Areas, and Work Unit Numbers. Enter here the number code from the applicable Department of Defense form, such as the DD Form 1498, "Research and Technology Work Unit Summary," or the DD Form 1634, "Research and Development Planning Summary," which identifies the program element, project, task area, and work unit or equivalent under which the work was authorized.

20.12 Block 11. Controlling Office Name and Address. Enter the full, official name and address, including office symbol, of the controlling office. (Equates to funding/sponsoring agency. For definition see paragraph 3.2, Controlling DoD office, or DoD Directive 5200.20.)

20.13 Block 12. Report Date. Enter here the day, month, and year or month and year as shown on the cover.

20.14 Block 13. Number of Pages. Enter the total number of pages.

20.15 Block 14. Monitoring Agency Name and Address (if different from Controlling Office). For use when the controlling or funding office does not directly administer a project, contract, or grant, but delegates the administrative responsibility to another organization.

20.16 Blocks 15 and 15a. Security Classification of the Report: Declassification/Downgrading Schedule of the Report. Enter in 15 the highest classification of the report. If appropriate, enter in 15a the declassification/downgrading schedule of the report, using the abbreviations for declassification/downgrading schedules listed in paragraph 4-207 of DoD 5200.1-R.

20.17 Block 16. Distribution Statement of the Report. Insert here the applicable distribution statement of the report from DoD Directive 5200.20.

20.18 Block 17. Distribution Statement (of the abstract entered in Block 20, if different from the distribution statement of the report). Insert here the applicable distribution statement of the abstract from DoD Directive 5200.20.

20.19 Block 18. Supplementary Notes. Enter information not included elsewhere but useful, such as: Prepared in cooperation with ... Translation of (or by) ... Presented at conference of ... To be published in ....

20.20 Block 19. Key Words. Select terms or short phrases that identify the principal subjects covered in the report, and are sufficiently specific and precise to be used as index entries for cataloging, conforming to standard terminology. The DoD "Thesaurus of Engineering and Scientific Terms" (TEST), AD-672 000, can be helpful.

20.21 Block 20. Abstract. The abstract should be a brief (not to exceed 200 words) factual summary of the most significant information contained in the report. If possible, the abstract of a classified report should be unclassified and the abstract to an unclassified report should consist of publicly-releasable information. If the report contains a significant bibliography or literature survey, mention it here. For information on preparing abstracts see "Abstracting Scientific and Technical Reports of Defense-Sponsored RDT&E," AD-667 000.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL	OMB Approval No. 22-R255

INSTRUCTIONS: The purpose of this form is to solicit beneficial comments which will help achieve procurement of suitable products at reasonable cost and minimum delay, or will otherwise enhance use of the document. DoD contractors, government activities, or manufacturers/vendors who are prospective suppliers of the product are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity.

DOCUMENT IDENTIFIER AND TITLE

NAME OF ORGANIZATION AND ADDRESS	CONTRACT NUMBER
	MATERIAL PROCURED UNDER A ☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?
   A. GIVE PARAGRAPH NUMBER AND WORDING.

   B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?
   ☐ YES ☐ NO *(If "Yes", in what way?)*

4. REMARKS

SUBMITTED BY *(Printed or typed name and address - Optional)*	TELEPHONE NO.
	DATE

DD FORM 1 JAN 72 1426 REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED S/N 0102-014-1802

APPENDIX A-2

Research and Development Standards for Technical Reporting, AR 70-31, C1, 3

CHANGE
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *15 January 1971*

RESEARCH AND DEVELOPMENT
STANDARDS FOR TECHNICAL REPORTING

Effective 1 March 1971

This change is generated by revised DOD Directive 5200.20 and a change in the distribution requirements under DOD Instruction 5100.38.

AR 70-31, 9 September 1966, is changed as follows:

Page 1. Paragraph 2*b* is superseded as follows:

b. Distribution statement. See paragraph III–A, DOD Directive 5200.20 (app II).

Page 6. Paragraph III–A is superseded as follows:

A. *Technical report.* See paragraph III–C–2, DOD Directive 5200.20 (app II).

Page 8. Paragraph II, *Document Control Data—R&D.* Add to the paragraph: "See appendix II of this regulation regarding substitute instruction for item 10, Distribution Statement."

Page 15. Appendix II is superseded as follows:

APPENDIX II
DISTRIBUTION STATEMENTS

Department of Defense Directive DODD 5200.20, dated 24 September 1970, subject: Distribution Statements on Technical Documents, is hereby incorporated as an integral part of this regulation, and its provisions will govern the use of distribution statements prescribed therein.

AVIATION SCHOOL LIBRARY

*This change supersedes C 2, 20 July 1967.

September 24, 1970
NUMBER 5200.20

DDR&E

Department of Defense Directive

SUBJECT Distribution Statements on Technical Documents

Refs.: (a) DoD Directive 5400.7, "Availability to the Public of Department of Defense Information", June 23, 1967
(b) DoD Directive 5100.36, "DoD Technical Information", December 31, 1962
(c) DoD Directive 5200.20, "Distribution Statements (Other Than Security) on Technical Documents", March 29, 1965 (hereby cancelled)
(d) DoD Directive 5200.1, "Safeguarding Official Information in the Interests of the Defense of the United States", July 10, 1968
(e) DoD Instruction 5210.47, "Security Classification of Official Information", December 31, 1964
(f) Armed Services Procurement Regulation (ASPR), Section IX, Part 2
(g) DoD Directive 5230.9, "Clearance of DoD Public Information", December 24, 1966

I. PURPOSE AND APPLICABILITY

This Directive supplements the provisions of subsection IV.A. of reference (b); it standardizes policies and procedures for use by all components of the Department of Defense in "marking" certain documents to control the conditions of their availability for distribution, release, and disclosure if they contain information of a proprietary or privileged nature, and if they contain certain Government or contractor information which may be controlled under the provisions of reference (a). Scientific and technical intelligence is specifically excluded from the requirements of this Directive by reference (b). Also, domestic intelligence information requiring the marking "CONTROLLED DISSEM" is excluded. This Directive

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does not govern the disposition of requests for documents from members of the public which is governed by reference (a). If a member of the public requests a document to which Distribution Statement B (see page 4 below) is affixed, the request shall be referred to the controlling DoD office (III. E., below) which shall dispose of the request as provided in reference (a).

II. CANCELLATION

Reference (c) is hereby superseded and cancelled.

III. DEFINITIONS

A. Distribution Statement. A statement used in marking a technical document to denote the conditions of its availability for distribution, release or disclosure at the initiation of a component of the Department of Defense. If used to impose a degree of control on the distribution, the reasons must be other than for protection of classified information as prescribed by references (d) and (e).

B. Document. Any recorded information or data regardless of its physical form or characteristics, including, without limitation, the following:

1. Written or printed material (whether handwritten, printed or typed).

2. Data processing cards or tapes.

3. Maps, charts, photographs, negatives, moving or still films, or film strips.

4. Paintings, drawings, engraving, or sketches.

5. Sound, voice, or electronic recordings.

6. Reproduction of the foregoing by any means or process.

C. Types of Documents.

1. Technical Document. Any document, as described in subsection B., above, which contains technical information. When used herein, the word "document" shall refer only to technical documents.

2. Technical Report. Any preliminary or final technical document written for the permanent record to document results obtained from, or recommendations made on, Department of Defense sponsored or co-sponsored scientific and technical activities.

D. Technical Information. Information or data, including scientific information, which relates to research, development, engineering, test, evaluation, production, operation, use, or maintenance of munitions and other military supplies and equipment.

E. Controlling DoD Office. The DoD activity, under whose immediate program a document is generated, whether the work was done in-house or by contract. In the case of joint sponsorship, the controlling office is determined by advance agreement, and may be either party, or a group or committee representing more than one activity or service or agency.

F. Primary Distribution. The initial distribution of technical documents to recipients whose names appear on a distribution list developed under the auspices of the controlling DoD office, although the actual distribution may be performed by a contractor, grantee, publisher or other activity designated by the controlling DoD office. The term does not include movement of documents within the generating activity or between such activity or contractor and controlling DoD office.

G. Secondary Distribution. Any distribution or disclosure of a technical document subsequent to the primary distribution. It includes the loan of a document as well as the outright release.

IV. DoD-IMPOSED DISTRIBUTION STATEMENTS

A. For DoD purposes, the following distribution statements are hereby established:

DISTRIBUTION STATEMENTS

Statement	Reason	Discussion
A		
Approved for public release; distribution unlimited		Indicates document has been cleared for public release by competent

Statement	Reason	Discussion
(A continued)		authority (reference (g)). It may be made available or sold to the general public and foreign nationals. Never to be used on classified documents.
B Distribution limited to U. S. Gov't. agencies only; (fill in reason); (date statement applied). Other requests for this document must be referred to (insert controlling DoD office).		May be used on classified documents if necessary to ensure distribution limitation in addition to need-to-know requirements imposed by reference (d) or in the event the document is declassified.
	Foreign Info.	Information furnished by a foreign government with the understanding that it will not be transmitted outside the U. S. Government.
	Proprietary Info.	To protect information not owned by the U. S. Government and not protected by a contractor's "limited rights" statement but received with the understanding that it would not be transmitted outside of the U. S. Government.
	Test and Evaluation	Covers the test and evaluation of commercial products or military hardware.
	Contractor Performance Evaluation	Management reviews, records of contract performance evaluation, or other advisory documents evaluating programs of contractors.

V. CONTRACTOR-IMPOSED DISTRIBUTION STATEMENT

A. Section IX, Part 2, of the ASPR (reference (f)) stipulates control procedures for contractor-controlled technical information in which the government has "limited rights". In this case the approved statement in reference (f) must appear on all copies of each such document. The controlling DoD office will not impose an additional controlling distribution statement. Unmarked or improperly marked technical documents supplied by a contractor will be handled pursuant to reference (f).

B. The "limited rights" statement shall remain in effect until (1) changed or cancelled pursuant to contract terms or with the permission of the contractor, and (2) the controlling DoD office notifies recipients of the document that the statement may be thus changed or cancelled. Upon cancellation of the statement, the distribution, disclosure, or release of the technical document will then be controlled by its security classification, or if unclassified, by reference (g).

VI. POLICY

A. This Directive is issued in furtherance of fundamental DoD policy of making maximum information available to the public. Specific justification must exist to support each case in which the availability of a document is restricted. Distribution statements authorized by this Directive will be the only distribution statements used on DoD technical documents. Distribution statement A or B must be applied to unclassified DoD technical documents except that unclassified Department of Defense engineering drawings, specifications, standards, operational manuals, maintenance manuals or other similar technical documents as may be specifically designated by the Assistant Secretary of Defense (I&L) which have been approved for public release need not be marked with statement A. Distribution statement B may be applied to classified DoD technical documents.

B. All technical documents generated by all DoD programs will be reviewed by controlling DoD offices to determine the status

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of their availability and will be appropriately marked before primary distribution, except for those documents which are marked with a contractor imposed "limited rights" statement and those documents containing staff advice, opinions, suggestions, or recommendations which are prepared for internal Department of Defense use only. The latter internal use documents, however, may be marked "For Official Use Only" where authorized by reference (a) while their circulation is restricted to the Department of Defense. When they become eligible for primary distribution outside the Department of Defense, they must be marked in accordance with this Directive.

C. In order to make the most effective use of a document, as well as provide proper control, the distribution statement must be readily recognizable to all recipients.

1. If the document is written or printed material:

   a. The statement shall appear on both the cover and title page of the document.

   b. Parts of the document (such as paragraphs, pages, pictures, graphs, tables, etc.) that contain the information causing a controlling distribution statement on the overall document, will be specifically identified wherever practicable.

   c. Where possible, parts containing the affected information should be prepared as an appendix so that separation would permit broader distribution of the basic document.

   d. Wherever possible, bibliographic citations including the abstract of the document will be written in such a way that the information will not be subject to distribution statement B.

2. If the document is not prepared as written or printed material, and does not have a cover or title page (such as separate graphs, engineering drawings, pictures or charts), indication of the applicable statement shall be made in a conspicuous location.

D. Distribution statement B shall remain in effect until changed by the controlling DoD office. Each such office shall establish and maintain a procedure requiring biennial review of documents for which it is cognizant, with the objective of removing distribution statement B as soon as conditions permit. Upon finding that distribution statement B can be removed, the controlling components will process unclassified documents for public release in accordance with reference (g). When clearance has been obtained, distribution statement A will be applied, and primary distribution recipients and cognizant document handling facilities will be so notified.

E. Documents which have been marked with distribution statements 3, 4 and 5 under procedures prescribed by superseded DoD Directive 5200.20 (reference (c)) will continue to be controlled under those procedures until normal expiration dates, pending re-evaluation under the provisions of this Directive.

1. Documents bearing distribution statement no. 1 need not be re-evaluated.

2. Documents bearing distribution statement no. 2 shall be reviewed and redesignated in accordance with the provisions of this Directive by January 1, 1972. In this regard, in accordance with existing DoD policy, distribution statement B shall not be used as a means of preventing export of a document or the technical data contained therein. If the review indicates that uncontrolled distribution, including foreign export, of a particular document, would create an adverse effect on U.S. national defense interests, security classification will be considered under reference (e). If a particular document is unclassified and it is felt that it should be classified or if it is felt that its classification should be raised, the controlling DoD office shall consider the degree to which classification or upgrading would be effective. Determination to classify or to raise the classification would depend on the nature and degree of harm to the interests of national defense that might occur from uncontrolled distribution and the degree of effectiveness of the classification or upgrading action in view of the distribution already made of the document. For classification or upgrading to be effective, it would be necessary to ensure that all current holders of copies of the document in question could be reached and,

if outside DoD, that they are under currently effective security agreements with DoD.

VII. EFFECTIVE DATE AND IMPLEMENTATION

This Directive is effective immediately. Two (2) copies of implementing documents shall be forwarded to the Director of Defense Research and Engineering within sixty (60) days.

David Packard

Deputy Secretary of Defense

Page 16. (As changed by C 2, 20 Jul 67) Reference (f) August 17, 1957 is changed to read December 24, 1966.

Page 26, paragraph 1f. Delete the portion enclosed in parentheses, and add the following to the paragraph: "Legible copies of each technical report, at least one of which is of good graphic quality to permit reproduction of legible copies on a mass production basis, will be transmitted direct to the Defense Documentation Center (DDC) no later than on the instance of primary distribution. For unclassified/unlimited technical reports, 12 copies are required. For classified and/or limited distribution technical reports, only two copies are required."

Page 28. (As changed by C 2, 20 Jul 67):

Paragraph 2*j*(1), second paragraph, delete that portion beginning with the words "if a properly executed —" and ending with "—Alexandria, Va. 22314." and substitute "However, if a finally reproducible copy of the report in the form it will be published is furnished to the Defense Documentation Center (DDC) together with an executed DDC Form 50, DDC will accession the copy for reproduction and promptly return the Form 50 with the assigned AD number stamped on it. This number may then be included on the remaining copies for the primary distribution. DDC Form 50 may be obtained from the Defense Documentation Center, Cameron Station, Alexandria, Va. 22314."

Page 30. Paragraph 2*s* is superseded as follows:

s. Literature cited and/or selected bibliography. Where a reference is cited in the text, include the complete reference on the same page, even though a reference list is appended. (This is a help when reading from microfiche or when reproducing extracts.) If five or more citations are used, they may also be listed in a "Literature Cited" section, in the order in which cited. If it is deemed pertinent to the report to include related literature not cited in the text, it should be related by appropriate footnotes, but may appear in a section entitled "Selected Bibliography." In both "Literature Cited" and "Selected Bibliography" each entry should be complete, including, as appropriate, the title, author(s), corporate author, date, publisher, contract or grant number, report number, journal name and volume, and page numbers.

Page 30. Paragraph 2*t* is superseded as follows:

t. Glossary of terms. When unfamiliar abbreviations, acronyms, symbols, and unusual technical terms are used in the text, they should be defined on the page where they first occur, even though they appear in a glossary. If it would be advantageous to the reader, they may be listed after the body of the report as a "Glossary of Terms."

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *12 February 1967*

RESEARCH AND DEVELOPMENT

STANDARDS FOR TECHNICAL REPORTING

AR 70–31, 9 September 1966, is changed as follows:

Page 1, paragraph 2. Subparagraph *e* is added at the end of the paragraph.

e. Responsible DA staff agency. That section of the Department of Army Staff having general staff responsibility for the program under which the technical report was generated.

Page 3. Paragraph 7 is added after paragraph 6.

7. Supplemental responsibility. *a.* A one-page summary of each operations research and operations analysis study and report produced by a contractor for an Army agency or comparable in-house produced studies and reports will be prepared in accordance with instructions in appendix IV. The Summary of Operations Research/Operations Analysis Report, Reports Control Symbol, OSD–1399 will be a synopsis of the content of the paper itself and will also indicate the purpose of the study, its relationship to other efforts in progress, and the significance of its findings and recommendations. Study sponsors will coordinate summaries with interested agencies of the DA staff or, if the sponsor is not a DA staff agency, will forward summaries to the responsible DA staff agency for coordination. The sponsor or responsible DA staff agency will forward three copies of summaries to OCRD, ATTN: Chief, Human Factors and Operations Research Division, and will forward one copy to the Director of Special Studies, Office of the Chief of Staff of the Army. OCRD will forward two copies to DDR&E for subsequent distribution to the Secretary of Defense and to the Deputy Secretary of Defense.

b. The above requirement is in addition to the preparation of Technical Report—Document Control Data—R&D, RCS OSD–1366.

c. The Secretary of Defense and Deputy Secretary of Defense will make specific requests for copies of those studies and reports desired for detailed examination. They will not routinely be provided copies of the actual reports. Sponsors may recommend for forwarding to the Secretary of Defense any complete report (along with the required summary) which they consider to warrant his full review.

d. This requirement is retroactive to include any report or study prepared *on or after 1 November 1966.*

Page 27. Paragraph 1*u* of appendix III is rescinded.

Page 30. Appendix IV and figure 1 are added as follows:

APPENDIX IV

INSTRUCTIONS FOR PREPARING SUMMARY OF OPERATIONS RESEARCH/ OPERATIONS ANALYSIS REPORT, RCS OSD–1399

a. The Summary of Operations Research/ Operations Analysis Report, RCS OSD–1399 will be prepared in the format shown in figure 1.

The first page will be completed by the responsible DA staff agency. Authentication of this page indicates that in the opinion of this agency the summary has been adequately coordinated within the Army.

b. OCRD will review content and staffing, remove the first page; and forward the second page to DDR&E. OCRD will authenticate the second page.

c. Page format will be strictly followed. Pages will not be numbered.

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Subject: Summary of Operations Research/Operations Analysis Report, RCS OSD–1399

To: Chief of Research and Development
Attn: Chief, Human Factors and Operations Research Division

1. Title of Study:

2. Coordination has been accomplished with the following agencies:

3. Recommend forwarding of summary to OSD.

(Authentication)

Figure 1

Subject: Summary of Operations Research/Operations Analysis Report, RCS OSD–1399

To: Director of Defense Research and Engineering

Title of Study:
Conducted by: for:
Purpose:

Related to: (project or other larger effort)

Summary of methodology and discussion:

Principal findings/recommendations:

Potential for further development: (new ideas, etc.)

Figure 1.— Continued

No. 70–31

DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *9 September 1966*

RESEARCH AND DEVELOPMENT

STANDARDS FOR TECHNICAL REPORTING

	Paragraph
Purpose	1
Definitions	2
Applicability and scope	3
Objectives	4
Policy	5
Responsibilities	6
Appendix I. Instructions for preparing DD Form 1473.	
II. Distribution statements.	
III. Instructions for preparing technical reports.	

1. Purpose. This regulation prescribes policy, responsibility, procedures, and standards governing the preparation, review, production, and distribution of Department of the Army technical reports (RCS OSD–1366). See AR 70–45.

2. Definitions. For the purpose of this regulation the following definitions will apply. (See DoD Instruction No. 3200.8 (app I) and DoD Directive No. 5200.20 (app II) for additional definitions.)

a. Contractor. An individual or organization outside the Department of Defense which has accepted any type of an agreement or order for providing supplies or services under procedures established by Armed Services Procurement Regulation (ASPR) and/or the Army Procurement Procedure (APP). The term specifically includes a prime contractor and a subcontractor.

b. Distribution statement. ~~A statement~~ used in marking a technical document to denote the conditions of its availability for distribution, release, or disclosure. (For security markings and special handling see AR 345–15, AR 380–5, ~~AR 380–6, AR 380–150~~), and ~~AR 381–1~~.
Superseded Ch 3.

c. Defense Documentation Center (DDC). The central repository of scientific and technical reports for the Department of Defense; a Department of Defense service directed toward the acquisition, storage, announcement, retrieval, and secondary distribution of technical documents.

d. Grantee. An organization outside the Department of Defense to which grant funds have ben awarded, in lieu of a contract, by a sponsoring Department of the Army activity.

e. Added See Change 1.

3. Applicability and scope. This regulation—

a. Applies to all organizational elements of the Department of the Army and their contractors and grantees.

b. Covers all technical reports (as defined *herein), including documents from outside DoD,* domestic or foreign, when they are considered pertinent to Army scientific and technical efforts. Specifically excluded are:

(1) Studies and reports used exclusively within the responsible organization or not intended for dissemination outside the cognizant Army agency.

(2) Reports prepared at the request of organizations outside the Department of the Army.

(3) Reports prepared to convey fiscal, administrative, or other nontechnical management information, such as QMDRs and QMDOs.

4. Objectives. The application of the stan-

* This regulation supersedes AR 70–31, 21 July 1965, including C 1, 8 October 1965.

dards for tecnical reporting and distribution statements prescribed in this regulation should—

a. Provide the basis for developing an integrated, comprehensive, and efficient technical reports program.

b. Improve the quality and utility of the Army research, development, test, and evaluation reports.

c. Contribute to the timely dissemination of research, development, test, and evaluation information by improving the techniques for producing and handling reports.

d. Enhance the development of automated techniques for the storage, search, retrieval, and dissemination of scientific and technical information, including interchange with other cognizant agencies throughout the Government and private industry.

e. Establish the procedures and controls for distribution of technical reports.

f. Further the fundamental policy of making maximum information available to the public.

5. Policy. *a.* The results of all scientific and technical efforts of the Department of the Army, to include studies in the scientific and technological areas, will be recorded in the form of technical documents, regardless of the source of the work, e.g., in-house, contract, subcontract, or grant.

b. All technical documentation will be directed in furtherance of the fundamental DA policy of making maximum information available to the public in keeping with security, ethical, proprietary, or privileged requirements.

c. Reports must be approved by the controlling DA office before they are released for publication. Generally, the Department of Army encourages publication in recognized scientific or professional journals as a means of recording scientific or technical results and making them widely available. However, when the results are of special significance or immediate interest to the Army, they should be expeditiously published as technical reports even though plans exist for later publication in a journal.

d. Reprints, preprints, or technical documents may be accepted in lieu of the technical report, in which case the controlling DA office, as defined herein, assumes the responsibility to complete the requirements for the technical report.

e. Normally manuscripts submitted for publication in scientific journals and those which are published by contractors or grantees will carry an acknowledgement such as "Research sponsored by _____ (Name of sponsoring organization) _____, Department of the Army, Grant, or Contract No.: _____." If the controlling DA office determines that the acknowledgment is not in the best interests of the U.S. Government, then it may be omitted.

6. Responsibilities. *a.* The Chief, Scientific and Technical Information Division, Office, Chief of Research and Development, Department of the Army will develop and recommend policy, procedures, and guidance governing these standards for technical reporting.

b. Commanders of major Army commands will implement the provisions of this regulation to provide specific guidance and procedures covering any unique problems which may require special treatment. Commanders may issue supplemental instructons not in conflict with this regulation.

c. Commanders of responsible organizations will establish internal procedures to assure that requirements of this regulation are complied with in the reports which are issued by or through their organizations.

d. Contracting officers will confer with the responsible organization as to its requirements for technical reports and assure that such requirements are incorporated into the contract by means of the DD Form 1423 (Contractor Data Requirements List).

e. Commanders of responsible organizations will insure that copies of technical reports delivered in accordance with formal and informal agreements by a governmental component of

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the United Kingdom, Canada, or Australia, will be forwarded promptly and directly to the Defense Documentation Center (DDC) under appropriate security protection, excluding those reports set forth in AR 70–11. The responsible organization will review and modify if necessary the primary distribution list to insure its completeness as to qualified DoD addressees and to insure that the U.S. recipients are within the scope of distribution limitations imposed by the originating country.

7. Added. See Change 1.

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f. The controlling DA office will complete the requirements for the technical report (RCS OSD–1366) as provided by appendix I (Instructions for Preparing DD Form 1473 (Document Control Data—R&D)), appendix II (Distribution Statements), and appendix III (Instructions for Preparing Technical Reports).

TAG

APPENDIX I

INSTRUCTIONS FOR PREPARING DD FORM 1473

The responsible organization will insure that a properly executed DD Form 1473 (Document Control Data—R&D) is included as the final pages in all copies of the report (RCS OSD–1366).

Two copies of DD Form 1473 will be prepared when the final draft of the report to be published has been completed, and will be forwarded to the Chief of Research and Development, ATTN: CRD/P, Department of the Army, Washington, D.C., 20310.

Reports will be prepared in accordance with the detailed instructions of Department of Defense Instruction number 3200.8, dated March 7, 1966, Subject: Standards for Documentation of Technical Reports under the DoD Scientific and Technical Information Program and Enclosure 1 with attachment 1, thereto.

The DoD Instruction No. 3200.8 including its enclosure 1 and attachment 1 is hereby incorporated as an integral part of this regulation.

NUMBER 3200.8
DATE March 7, 1966

Department of Defense Instruction DDR&E

SUBJECT: Standards for Documentation of Technical Reports under the DoD Scientific and Technical Information Program

Refs.: (a) DoD Instruction 5129.43, "Assignment of Functions for the Defense Scientific and Technical Information Program," January 22, 1963
(b) DoD Instruction 3200.8, subject as above, February 18, 196[illegible] (hereby cancelled)
(c) DoD Directive 5200.20, "Distribution Statements (Other Than Security) on Technical Documents," March 29, 1965

I. PURPOSE AND OBJECTIVE

A. This Instruction supplements reference (a); its primary purpose is to simplify and improve document control and cataloging procedures for technical reports derived from research and development (R&D) activities of the Department of Defense.

B. The objectives and concept of this Instruction and the enclosed R&D Report Documentation Standards are as follows:

1. Scientific and technical information is a primary product of research and development activities. Effective handling of the scientific and technical information is an integral part of the work performed under R&D.

2. Effective communication of scientific and technical information can be achieved, in part, by timely preparation and primary distribution of technical reports prepared by the organization performing the R&D. Handling of reports by receiving organizations can be simplified and improved if standard documentation procedures are adopted.

3. Long-term availability of the scientific and technical information to scientists and engineers not included in the primary distribution of a technical report depends upon efficient, comprehensive systems for storage and retrieval of technical reports containing the scientific and technical information.

4. Both the primary distribution of technical reports and the documentary processes for storage and retrieval of the reports can be made more efficient if all DoD technical reports adhere to a single standard for presentation of data used in descriptive cataloging and in the storage and retrieval of reports.

II. APPLICABILITY AND SCOPE

A. The provisions of this Instruction apply to the Military Departments and to other DoD components performing R&D. This Instruction covers technical reports prepared by in-house laboratories, contractors, subcontractors, and grantees.

B. Progress reports containing scientific and technical information of more than transient interest are included within the scope of this Instruction as a special form of technical report; administrative and managerial progress reports are not included. However, the Document Control Data form provided in this Instruction may be used in any report where subsequent storage and retrieval or bibliographic control is desirable.

C. It is not intended that the provisions of this Instruction affect the content, mode of presentation, or editorial style of the technical report.

III. DEFINITIONS

A. ~~Technical reports are documents written for the permanent~~ record to document results obtained from and recommendations made on scientific ~~and~~ technical activities relating to a single project, task, or contract or relating to a small group ~~of closely-connected efforts within the DoD R&D program.~~ Superseded See Ch 3.

B. An abstract is a brief and factual summary of a document. An indicative abstract tells what the author wrote about. It refers to the purpose, the method, the results, and the conclusions. For documentation purposes, it is highly desirable that the abstract of classified reports be unclassified. Therefore, the abstract should include only descriptive statements with the lowest possible security classification.

IV. PROCEDURES

A. Internal Technical Reports. All DoD components responsible for R&D work shall arrange for inclusion of a DD Form 1473, Document Control Data - R&D (Attachment 1 to Enclosure 1), in each copy of all technical reports issued on work performed in DoD laboratories and offices.

B. Contractor, Subcontractor, and Grantee Technical Reports.

1. All DoD scientific, technical and/or military personnel responsible for the management and direction of R&D work shall indicate in their statement of procurement requirements that a completed DD Form 1473 shall be included in each copy of all technical reports prepared by their contractors, subcontractors, and grantees.

2. Paragraph 4-211 of the Armed Services Procurement Regulations (ASPR) specifies this requirement. Failure

to include the Form in DoD scientific and technical reports shall bring into effect the provisions of ASPR 9-207 (Data Withholding of Payment).

V. CANCELLATION

Reference (b) is hereby superseded and cancelled.

VI. EFFECTIVE DATE AND IMPLEMENTATION

A. This Instruction is effective immediately.

B. Two (2) copies of implementing documents will be forwarded to the Director of Defense Research and Engineering within ninety (90) days.

John S. Foster, Jr.

JOHN S. FOSTER, JR.
Director of Defense Research and Engineering

Enclosure - 1
Standards for Documentation
of Technical Reports

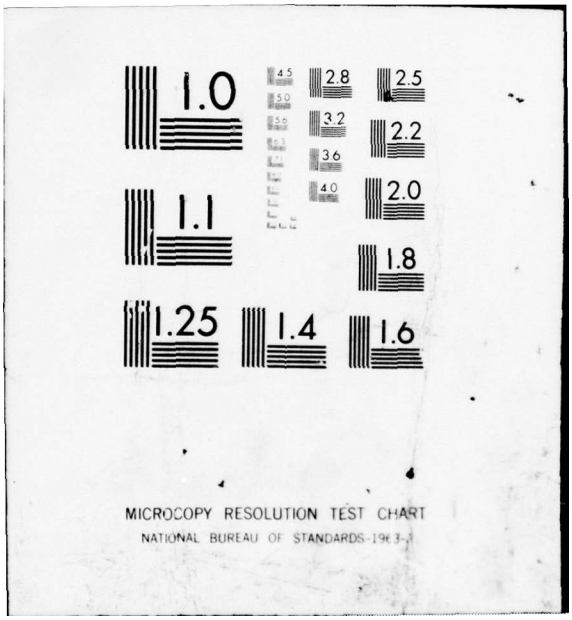
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STANDARDS FOR DOCUMENTATION OF TECHNICAL REPORTS

I. Mechanical Specifications

A. Technical reports will be printed in accordance with the current standards for U. S. Government printing. As of this date, these are contained in "Government Printing & Binding Regulations," published by the Joint Committee on Printing, Congress of the United States, May 1, 1965, No. 17.

B. All DoD technical reports are subject to further duplication by photographic processes. This requirement will be kept in mind during preparation and reproduction. Specifically:

1. Reproduced text material will be in the form of black characters on white opaque paper.

2. Halftones will be kept at an absolute minimum consistent with the communication of technical information; black-and-white linework is preferred. Linework will be sharp and clear, of consistent density, and reproduced on white opaque paper. Color will be used only when it serves a functional purpose.

3. Material presented in the form of charts, tables, or graphs will appear in a final reproduced size large enough to be clearly legible. Graph coordinate rulings or grid lines will be spaced as far apart as practical.

II. Document Control Data - R&D. The attached DD Form 1473 will be completed and provided as the last pages of each DoD technical report. Instructions for preparation (including item 10, "Distribution Statements," in accordance with DoD Directive 5200.20 (reference (c)), are contained on the form. Added Ch 3. "See appendix II of this regulation regarding substitute instruction for item 10, Distribution Statement."

NOTE:
DD Form 1473
1 Jan 73
issued with new format and preparation instructions.

II. Optional Data

A. ~~If possible, the important terms (key words)~~ shall have their roles and weights listed under the column headings "A", "B" and "C" which in turn shall refer to paragraphs in the Abstract.

B. The "role indicators" shall be numbered from 0 (zero) through ~~10 (ten)~~ and shall have the following meanings:

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APPENDIX II

DISTRIBUTION STATEMENTS

~~Department of Defense Directive Number 5200.20, dated March 20~~, 1965, subject: Distribution Statements (Other Than Security) on Technical Documents, including revised pages 5 and 6, "~~Basis~~ of Statement Number 2," as required by Change 1, dated ~~December 7, 1965,~~ is hereby incorporated ~~as an integral~~ part of this regulation, and its provisions will ~~govern~~ the use of distribution statements prescribed therein.

Superseded. See Ch 3.

March 29, 1965
NUMBER 5200.20

DDR&E

Department of Defense Directive

SUBJECT Distribution Statements (Other Than Security) on Technical Documents

References:
(a) DoD Directive 5100.36, "DoD Technical Information," December 31, 1962
(b) DoD Directive 5200.6, "Policy Governing the Custody, Use, and Preservation of DoD Official Information Which Requires Protection in the Public Interest," March 22, 1957
(c) DoD Directive 5200.1, "Safeguarding Official Information in the Interests of the Defense of the United States," July 8, 1957
(d) DoD Instruction 5210.47, "Security Classificatio of Official Information," December 31, 1964
(e) Armed Services Procurement Regulation (ASPR), Section IX, Part 2
(f) DoD Directive 5230.9, "Clearance of DoD Public Information," August 17, 1957
(g) DoD Directive 2030.4, "DoD Support for Strategic Trade Control Program," December 11, 1962
(h) DoD Directive 5030.28, "Munitions Control Procedures for U. S. Munitions List Export License Applications Referred to the Department of Defense by the Department of State," February 20, 1964

I. PURPOSE AND APPLICABILITY

Information or data in a technical document is occasionally of such a nature that it requires a degree of distribution control to protect proprietary, privileged, ethical, or certain administrative types of government and contractor information or data by confining its distribution within a given category

of recipients. This Directive supplements references (a) and (b) by (1) establishing official distribution statements to be used by all Department of Defense components for this purpose; and (2) providing direction in their use.

II. DEFINITIONS

A. Distribution Statement. A statement used in marking a technical document to denote the conditions of its availability for distribution, release, or disclosure. If used to impose a degree of control on the distribution, the reasons must be other than for protection of classified information. (For security markings and special handling see references (c) and (d).)

B. Document. (Reference (d)). Any recorded information or data regardless of its physical form or characteristics, including, without limitation, the following:

1. Written or printed material (whether handwritten, printed or typed);

2. Data processing cards or tapes;

3. Maps, charts, photographs, negatives, moving or still films, or film strips;

4. Paintings, drawings, engravings, or sketches;

5. Sound, voice, or electronic recordings;

6. Reproductions of the foregoing by any means or process.

C. Technical Document. Any document, as described in subsection B above, which contains technical information or technical data. When used herein, the word "document" shall refer only to technical documents.

D. Technical Report. Any technical document written for the permanent record to document results obtained from, and recommendations made on, scientific and technical activities relating to a single task, project, or contract, or relating to a small group of closely related efforts.

E. Technical Information. Information or data, including scientific information, which relates to research, development, engineering, test, evaluation, production, operation, use, or maintenance of munitions and other military supplies and equipment.

F. Controlling DoD Office. The DoD activity, or its higher in-line authority, under whose immediate program a document is generated, whether the work was done in-house or by contract.

G. Primary Distribution. The initial distribution of technical documents to a distribution list of recipients under the auspices of the controlling DoD office although the act may be performed by a contractor, grantee, publisher or other activity designated by the controlling DoD office. It does not include movement of documents within the generating activity or between such activity or contractor and controlling DoD office.

H. Secondary Distribution. Any distribution or disclosure of a technical document subsequent to the primary distribution. (This usually occurs as the result of a request.) It includes the loan of a document as well as the outright release.

III. POLICY

A. This Directive is issued in furtherance of fundamental DoD policy of making maximum information available to the public. (Reference (b)). Distribution statements authorized by this Directive:

1. Will be the only distribution statements used on DoD technical documents;

2. Will be used as required herein on all copies of technical documents generated by all technical DoD programs;

3. Will not be used for security purposes but will be used in addition to the security classification marking in instances where documents contain both

security classified information or data and information or data described herein requiring separate distribution controls.

B. The proper use of distribution statements depends upon circumstances connected with each individual document. Specific justification must exist for each document whose availability to the public is prevented by a distribution statement or whose use is restricted or limited within the government. Any statement imposed must be with the intent of permitting widest possible distribution consistent with such justification.

C. In order to make the most effective use of a document, as well as provide proper control, the distribution statement must be readily recognizable to all recipients. If the document is a technical report, the statement shall appear on both the cover and title page of such report. Parts of a technical report, such as paragraphs, pages, pictures, graphs, tables, etc., that contain the information causing a controlling distribution statement on the overall report will be specifically identified wherever practicable; also, where possible, parts containing the affected information should be prepared as an appendix so that separation would permit broader distribution on the basic technical report. If the document is not prepared as a technical report and does not have a cover or title page (such as separate graphs, engineering drawings, pictures or charts), indication of the applicable statement shall be made in a conspicuous location.

D. Each document will be reviewed by the controlling DoD office prior to primary distribution to determine the status of its availability.

IV. CONTRACTOR-IMPOSED DISTRIBUTION STATEMENT

A. Section IX, Part 2, of the ASPR (reference (e)) stipulates control procedures for contractor-controlled technical information in which the government has "limited rights." When a contractor supplies a "limited rights" document, the approved

statement in reference (e) must appear on all copies of each such document. The controlling DoD office will not impose an additional controlling distribution statement unless the contractor's technical document also contains information requiring controlled distribution within the government. Unmarked or improperly marked technical documents supplied by a contractor will be handled pursuant to reference (e).

B. The "limited rights" statement shall remain in effect until (1) changed or canceled pursuant to contract terms or with the permission of the contractor, and (2) the controlling DoD office notifies recipients of the document that the statement may be thus changed or canceled. Upon cancellation of the statement, the distribution, disclosure, or release of the technical document will then be controlled by any DoD-imposed controls that may still remain in force and by its security classification, or if unclassified, by reference (f).

V. DOD-IMPOSED DISTRIBUTION STATEMENTS

A. For DoD purposes, the following distribution statements are hereby established:

DISTRIBUTION STATEMENTS

STATEMENT NO. 1

Distribution of this document is unlimited.

BASIS OF STATEMENT NO. 1

Indicates document has been cleared for public release by competent authority. Reference (f). Never to be used on classified documents.

STATEMENT NO. 2

If document is Unclassified:

This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of (controlling DoD Office). (fill in)

OR

BASIS FOR STATEMENT NO. 2

Information included that was furnished by a foreign government; commercial competition with foreign firms; protection of technical know-how relating to critical products or manufacturing processes, tests and evaluation of military operational weapon systems and

STATEMENT NO. 2 (cont'd)

If document is Classified:

In addition to security requirements which must be met, this document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of (controlling DoD office). (fill in)

BASIS FOR STATEMENT NO. 2 (cont'd)

installations and other technology restricted by U. S. Mutual Security Acts, reference (g) and (h).

STATEMENT NO. 3

If document is Unclassified:

Each transmittal of this document outside the agencies of the U.S. Government must have prior approval of (controlling DoD office). (fill in)

OR

If document is Classified:

In addition to security requirements which apply to this document and must be met, each transmittal outside the agencies of the U.S. Government must have prior approval of (controlling DoD office). (fill in)

BASIS FOR STATEMENT NO. 3

Ethical considerations relating to test or evaluation of commercial products; protection of property rights not owned by the government and not protected by a contractor's "limited rights" statement.

STATEMENT NO. 4

If document is Unclassified:

Each transmittal of this document outside the Department of Defense must have prior approval of (controlling DoD office). (fill in)

OR

BASIS FOR STATEMENT NO. 4

Negotiations between U.S. Government agencies; protection of statements which evaluate programs of contractors or other agencies; protection of trade secrets; consideration of

#First amendment (Ch 1, 12/7/65)

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

STATEMENT NO. 4 (cont'd)

If document is Classified:

In addition to security requirements which apply to this document and must be met, each transmittal outside the Department of Defense must have prior approval of (controlling DoD Office). (fill in)

BASIS FOR STATEMENT NO. 4 (cont'd)

differences in property right protection or technical disclosure procedures; and related causes requiring disclosure only within the Department of Defense.

STATEMENT NO. 5

If document is Unclassified:

This document may be further distributed by any holder only with specific prior approval of (controlling DoD Office). (fill in)

OR

If document is Classified:

In addition to security requirements which apply to this document and must be met, it may be further distributed by the holder only with specific prior approval of (controlling DoD Office). (fill in)

BASIS FOR STATEMENT NO. 5

Protection of documents containing administrative data; protection of staff studies containing evaluation of other DoD components; disclosure considerations relating to inventions by DoD personnel; and related causes requiring strict approval of all disclosures or releases by the controlling DoD office.

B. Each technical document prepared on or after January 1, 1966, and requiring a DoD-imposed distribution statement, will use the most nearly appropriate statement, and as worded in subsection V.A. above on all copies.

C. For unclassified technical reports, unless the contractor's "limited rights" statement appears, one of the statements in subsection V.A. above shall appear on the front cover and title page of all copies of each report prior to primary distribution.

D. For classified technical reports, only one of the statements numbered 2, 3, 4, or 5 may be used when fully justified.

E. Technical Documents other than Technical Reports. If any use is made of a DoD-imposed distribution statement on documents other than technical reports, such a statement shall be one of the five authorized herein. The position of marking on such documents is optional, except that it should be in a conspicuous position and shall appear on all copies.

F. Duration of DoD-Imposed Distribution Statements. The following subsections apply to those distribution statements which have a limiting effect; namely, statements 2, 3, 4, and 5.

1. Distribution statements numbered 3, 4, and 5 applied by DoD components shall remain in effect for a period of three (3) years from the date of issuance of the document unless the primary distribution list is notified of earlier termination or change in limitation. At the end of the period, any dissemination, release or disclosure of a technical document will be controlled solely by its security classification or, if unclassified, by reference (f).

2. Distribution statement number 2 will have no automatic termination date.

3. Distribution statements applied by DoD components may be extended for maximum periods of three (3) years upon notification of all recipients on the primary distribution list by the controlling DoD office.

4. Termination or change of a DoD-imposed distribution statement may be made at any time upon notification of all recipients on the primary distribution list by the controlling DoD office.

5. Except for those statements prohibiting foreign release, DoD-imposed distribution statements in existence on the effective date of this Directive

will terminate automatically three (3) years from this date. If the controlling DoD office determines, prior to such termination date, that a document requires further distribution control, it will notify all recipients on the primary distribution list of the appropriate distribution statement as provided for in this Directive. Otherwise the provisions of reference (f) apply.

G. Public Release of Downgraded Documents. Upon removal of the security classification, each technical document will be processed by any DoD component proposing public release in accordance with reference (f).

H. Public Release of Documents Formerly Containing Distribution Statements. Upon termination of Distribution Statements 3, 4, or 5, and if a security classification does not exist, each technical document will be processed by any DoD component proposing public release in accordance with reference (f).

VI. EFFECTIVE DATE AND IMPLEMENTATION

This Directive is effective immediately. Two (2) copies of implementing documents shall be forwarded to the Director of Defense Research and Engineering within sixty (60) days.

Cyrus Vance

Deputy Secretary of Defense

APPENDIX III

INSTRUCTIONS FOR PREPARING TECHNICAL REPORTS

1. **General.** All scientific and technical work and studies to include the research, development, test, and evaluation work conducted by Department of the Army components or their contractors or grantees will be documented in technical reports (RCS OSD–1366). Those reports will be published promptly and will be given distribution throughout the Department of Defense and scientific communities subject to the restrictions of this regulation and subject to such other limitations as may be imposed by the controlling DA office. In keeping with the objectives of this program, the Department of the Army will maintain and support a uniform reporting system that will meet all the requirements for technical information generated by components of the Department of the Army, including their contractors and grantees.

a. Review. Each document will be reviewed by the controlling DA office prior to primary distribution to determine the status of its availability.

b. Control procedures. Section IX, Part 2, ASPR stipulates control procedures for contractor controlled technical information.

c. Processing technical reports.

(1) Technical reports will provide a complete, accurate account of the work accomplished. In the preparation of the manuscript, those applicable requirements under this appendix and appendixes I and II should be considered and observed at this preliminary stage of publications processes (such as overall organization of the reports, security markings, content of abstracts, key words). The controlling DA office will conduct an editorial review of all draft reports to insure that they comply with the requirements of this regulation. It will also arrange for the preparation of the reproduction copy for dissemination in accordance with *h* below.

(2) The completed draft of a technical report including the body of the abstract and recommended indexing terms or key words will be reviewed for technical adequacy by the controlling DA office.

(3) Since the technical reports produced by the Department of the Army contractors are an integral part of the Army's technical publications program, it is essential that contractors' reports meet the same publication standards that apply to internally prepared reports.

d. Reporting patterns. Technical reports may be published in the following patterns:

(1) A single, self-contained document.

(2) A group of two or more reports dealing with separate aspects of the same general subject.

(3) A sequence of reports on a single project, task or work unit (in the form of a regular or progress or interim report, or a report prepared at a point when it was desirable and logical to document results or conclusions) leading up to a final report.

(4) Some other pattern necessitated by a unique situation.

e. Security requirements. Basic Department of the Army procedures which prescribe safeguarding of defense information are applicable to the preparation, classification, dissemination, and protection of technical reports. See AR 380–5 and appendix III thereto for guidance in

safeguarding military information. Downgrading of classified documents will be in accordance with AR 380–6.

f. Distribution of technical reports. Subject to security requirements, the controlling DA office will provide for the primary distribution of its technical reports to the Department of Defense components, other Government agencies, non-Government agencies and the Defense Documentation Center (20 copies of all technical reports will be sent to the Defense Documentation Center as a part of the initial distribution). The Defense Documentation Center will provide for the secondary distribution.

g. Limitation of distribution.

(1) All installations will make maximum use of the Defense Documentation Center. Hence, they will not maintain stocks of technical documents for purposes that would duplicate services available from DDC or Clearinghouse for Federal Scientific and Technical Information, Department of Commerce.

(2) Other limitations on distribution will be in accordance with DoD Directive No. 5200.20.

(3) Automatic distribution of classified technical reports will not be made to foreign nationals or foreign governments by the originator, except where specific international exchange exist. Procedures and instructions for the release of classified information to foreign governments are contained in DA–DCMI(A).

h. Distribution of technical reports to the public. Unclassified technical reports which require no special limitation on their distribution are automatically made available by Defense Documentation Center to the Clearinghouse for Federal Scientific and Technical Information, Department of Commerce for sale to the general public. The responsible organization will determine suitability of the report for dissemination or public release and, if limitations are required, will provide the proper distribution statement as prescribed in DoD Directive No. 5200.20, appendix II. If limitations on public release subsequently are no longer required, all recipients on the primary distribution list will be notified.

i. Trade names and manufacturers. Technical reports will not contain material which may be construed as advertising or which implies that the Government indorses or favors any product, commodity, or service. Products will be identified by either a generic name or by standard Army nomenclature or specifications. The use of trade names will be kept to a minimum. If it is essential that trade names, such as the names of commercial materials, computers, test apparatus, processes, gages, and computer programs, be used in order to uniquely and precisely describe research, development, test, evaluation, and similar situations for such purposes as reproducing an experiment or permitting analysis and evaluation or results, then it will be clearly stated in the report that citation of such name does not constitute an official indorsement or approval of the use of such commercial hardware or software.

j. Proprietary information.

(1) The right of a contractor to restrict the use of technical reports which contain information proprietary with him is determined by the terms of the contract under which the reports were prepared. All reports containing statements to this effect, and the proprietary information in the report will be specifically identified.

(2) Any claim by a contractor relating to proprietary interest with respect to the contents of a technical report will be made in writing at the time the draft of his report is submitted for review. The claim will be submitted with the draft.

k. Copyright material. A copyright is an exclusive property right granted by the Government to authors or proprietors for protection of their literary and other intellectual productions. When copyrighted material is used in Department of the Army technical reports, the provisions of AR 310–1 concerning copyright will be complied with. AR 310–1 prohibits the

incorporation of such material into publications prepared by or for the Department of the Army except with the written consent of the copyright owner or upon approval of the Secretary of the Army or his duly authorized representative. For this purpose, the duly authorized representative is The Judge Advocate General or his designee.

l. Patents.

(1) Unclassified reports which are deemed to include patentable subject matter will be referred immediately to patent personnel of the Army's legal staff for evaluation to determine whether prompt filing of a patent application is warranted. Such unclassified reports will not be distributed outside the U.S. Government and will be marked with distribution statement 4, (para V.A., app II). When a patent application covering the patentable items in a report has been filed with the Patent Office, all recipients on the primary distribution list will be instructed to delete the limiting statement and substitute the appropriate distribution statement; the report may then be distributed in accordance with the substitute distribution statement.

(2) Information received from a contractor about patentable ideas will be treated as any other proprietary information and will be distributed according to the terms set forth in the contract.

m. Disposition instructions. All technical reports must contain a statement giving disposition instructions, except that the disposition instructions will be deleted from the record copy. See AR 345–210. It is recognized that occasionally a report requiring special handling may have to contain special instructions regarding disposition. For all other reports, the following disposition statements will be used:

(1) *Unclassified reports.* Destroy this report when no longer needed. Do not return it to the originator.

(2) *Classified reports.* When a technical report is no longer needed, Department of the Army organizations will destroy it in accordance with the procedures given in AR 380–5.

n. Disclaimer. The following statement will appear on copies of technical reports:

The findings in this report are not to be construed as an official Department of the Army position.

Rescinded. See Ch. 1.

2. Mechanical specifications. *a. Size.* The technical report will be 8 by 10½ inches, with covers cut to the size of the pages. If unusual expense or difficulty is entailed by contractors or grantees in complying with this specification their reports may be submitted in 8-by 11-inch size, provided the limitations of *c* below are observed.

b. Paper to be used for technical reports. Front and back covers are required for all technical reports. The stock used for these will be of approximately 220 pound weight (JCP–L20 or JCP–K10). The text will be reproduced on good quality white offset paper of approximately 120-pound stock (JCP–A80 or JCP–A60).

c. Page layout. Text will be printed on both sides of the sheet with a 1-inch margin and will be single spaced except when mathematical expressions, chemical reactions, and similar phrases make other spacing desirable.

d. Type. Type size for the text will be equivalent to that used on standard typewriters (10 points). When copy is prepared for photo-offset reproduction, the type used will be large enough to be clearly legible after reduction. Any standard type face is acceptable. Unusual types, such as capitals, italic, or script will not be used as body type (that is, for the text, exclusive of headings). Special type faces can be used, however, in headings, titles, captions, equations, and other material requiring special emphasis.

e. Printing. Black ink and opaque white paper will be used for printing all technical reports. Unless special circumstances require otherwise, the text will be reported on both sides of the sheet. Pages will be numbered consecutively in arabic numerals from the first page of the text to the last page of the report, including any appendixes.

f. Binding. The reproduced technical report will be securely fastened along its left edge. The usual binding will be side or saddle-wire stitching. Looseleaf, spiral, plastic comb, and post bindings normally will not be used. Cloth backstrip (binding tape) will be used only when it serves a protective purpose (para 91*e*(3), AR 310–1).

g. Decorative features. Ornate or expensive covers, elaborate design, or other luxury features will not be used for technical reports.

h. Illustrations. Illustrative material will be included in technical reports when it is essential to an adequate understanding of the subject matter. Because of reproduction problems, line drawings are to be used whenever possible in preference to halftones, which will be kept to a minimum. Line work will be sharp, clear, and of consistent density. Color will be used only when it is functionally essential to the illustration.

i. Elements. Each technical report may consist of the following elements:

(1) Front cover.
(2) Reverse of front cover.
(3) Title page.
(4) Summary, abstract, or digest.
(5) Foreword (optional).
(6) Table of contents (if the printed report includes more than 10 pages).
(7) Lists of appendixes, illustrations, and tables, if applicable (may be combined with table of contents).
(8) Body of report.
(9) Literature cited or bibliography.
(10) Glossary (if required).
(11) Alphabetical index (optional for long reports).
(12) Appendixes.
(13) Distribution list.
(14) DD Form 1473 (Document Control Data—R&D).
(15) Back cover.

j. Front cover. The entries described in this paragraph (as applicable) will be shown on the obverse side of the front cover. These entries will be printed on the cover, not stamped or written in ink or with grease pencil. No entries will appear within 1 inch of the bound edge. The nature of these entries, as well as their arrangement, may have to be varied to suit specal circumstances—as in the case of a technical report covering a joint effort by Army and contractor personnel.

(1) *AD number.* If an AD number has been assigned by Defense Documentation Center, it will appear in a box in the upper right corner. If this number has not been provided by Defense Documentation Center by the time the technical report is printed, this entry will read "AD _____" with enough space being allowed to enter an eight-digit number.

Primary distribution of a technical report will not be delayed pending receipt of the applicable AD number. If a properly executed DDC Form 50 is included with the final draft of the technical report to be published and promptly forwarded to Defense Documentation Center, the AD number can usually be assigned and returned to controlling DA office before the report has been published. Therefore, the AD number may appear on the report in the primary distribution. DDC Form 50 may be obtained from Defense Documentation Center, Cameron Station, Alexandria, Va., 22314.

(2) *Report number.* The report number will be centered on the cover above the title of the report.

(3) *Title.* The title, which will appear in the top third of the cover, will describe the contents of the technical report as explicitly as possible within the limits of reasonable brevity. Noninformative statements such as "Progress Report No. 5" or "Semiannual Review" will not be used as titles. If the report is classified the security classification of the title will appear at the end of the title, enclosed in parentheses. In such a case, only the initial letter or letters of the classification will be used, that si, "U" for UNCLASSIFIED, "C" for

CONFIDENTIAL, "S–RD" for SECRET—RESTRICTED DATA.

(4) *Type of report.* The type of the technical report (final report, interim report, progress report) will be entered below the title. No such designation is required if the report is a one-time self-contained document.

(5) *Authors.* The name(s) of the author(s) will appear. An organizational subelement may be associated with the author's names.

(6) *Date.* The date will represent the month and year in which the final reproducible copy of the technical report is released for printing.

(7) *Responsible organization/controlling DA office.* Complete identification of the Army organization that performed or contracted for the work covered in in the report will be shown beneath the authors' name(s).

(8) *Preparing agency.* If a technical report is prepared by an outside agency, the name and address of that agency and the applicable contract or grant number will be shown.

(9) *Other markings.* Markings will be entered on the cover as required for security classification and handling purposes by AR 345–15, AR 380–5, AR 380–6, AR 380–15, and AR 381–1. The markings include the espionage statement; the group designation for downgrading and declassification, and the special handling notice on releasability to foreign nationals. Also, the appropriate distribution statement prescribed in paragraph V.A., appendix II.

k. Distribution statements. The distribution statement and the instructions for the selection of the proper statement are given in appendix II. The most appropriate statement will be included on the front cover and the title page of all technical reports.

l. Disclaimer. The following statement will appear on all copies of all technical reports:

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

m. Title page. This title page will repeat the entries on the front cover (not necessarily in the same order). In addition, the DA Project/Task Area/Work Unit Number will be included. Local project numers may also be included if desired. Neither authentication statements nor signatures will be used on the title page or elsewhere in the technical report.

n. Summary, abstract, or digest. The summary, abstract, or digest will serve as an indication of the content of the report. To make it an accurate reflection of the substance of the report, the summary, abstract, or digest should be brief, clear, and complete, and should contain, as a minimum, a statement of the purpose of the work, the methods by which it was accomplished, a summary of the results, and the conclusions derived.

o. Foreword. The foreword will contain statements to indicate authorization for the work, numbers and titles of the DA Project/Task Area/Work Unit under which the work was carried out, the relationship of the work to the overall program, and acknowledgment of the contribution of others who are not listed as authors. If copyrighted material has been quoted, a statement that permission has been obtained for such material to be used will be included in the foreword (see AR 310–1). If animal experimentation is described in the body of the report, the following statement will be included in the foreword (See AR 70–18):

In conducting the research described in this report, the investigator(s) adhered to the "Guide for Laboratory Animal Facilities and Care," as promulgated by the Committee on the Guide for Laboratory Animal, Resources, National Academy of Sciences-National Research Council.

p. Table of contents. As a minimum, the major section numbers, titles, and page numbers will be listed.

q. Lists of appendixes, illustrations, tables. These lists may be included, if required, either as separate lists or as part of the table of contents.

r. Body of report. The body (or text) will

be determined by the nature of the work being reported. In general, the body should include a statement of the problem, the background, the approach to the problem, results and discussion of the results, conclusions, and recommendations.

s. Literature cited and/or selected bibliography. If not more than four literature references are cited in the body of the report, the citations should be included as footnotes keyed to the appropriate portion of the text. If five or more citations are used, they should be grouped in a "Literature Cited" section and listed in the order in which cited. The text should include key numbers corresponding to the entry numbers. If it is thought desirable to list pertinent literature this may be accomplished by inserting appropriate footnotes or by referencing to a section titled "Selected Bibliography." Each entry should be complete and should include, as appropriate, the title, author(s), corporate author, date, publisher, contract or grant number, report number, journal name and volume, and page numbers.

t. Glossary. Unfamiliar abbreviations and symbols used in the report should be listed in the glossary if they are not defined in the text or if they are so numerous that the reader would require such a list for clarity. If the glossary is long, it may be included as an appendix.

u. Alphabetical index. In extremely long or involved reports, an alphabetical index may be included for ease of reference.

v. Appendixes. Detailed data and information, if voluminous or highly specialized in content, will be incorporated into one or more appendixes, as appropriate, and will be presented in the body of the report in summarized form only. Appendixes may also include illustrations of interest to only a part of the readers (for example, a group of drawings of special interest to an engineer, but not necessarily of interest to the military reader).

w. Distribution list. The distribution list will include the complete initial distribution of the report. The degree of detailed listing of recipient organizations outside of the issuing organization is optional, but the number of copies distributed to each organization listed will be shown.

x. Last page. The overall security classification of classified technical reports will be entered on the last page.

y. Back cover. The back cover of classified technical reports will contain the overall security classification of the report. No entries will appear within 1 inch of the bound edge.

[CRD/P]

Appendix IV, Fig. 1 Added. Ch 1.

By Order of the Secretary of the Army:

APPENDIX A-3

TRUE COPY

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
Washington, D. C. 20314

OTSG Reg 70-31
C1

Change
No. 1

14 January 1970

Research and Development

US ARMY MEDICAL RESEARCH AND DEVELOPMENT
TECHNICAL REPORT
(REPORTS CONTROL SYMBOL MEDDH-288(R1))

OTSG Regulation 70-31, 2 April 1969, is changed as follows:

Page 3. Add paragraph 7d.

d. Subordinate installations of the US Army Medical Research and Development Command will maintain close working relationships and open communications between each other on items of mutual interest. These installations will automatically exchange technical reports or other technical information, as appropriate. Installations, however, will not be listed in distribution list (app B) of published annual or technical reports.

MEDDH-S1 (12 Jan 70)

FOR THE SURGEON GENERAL:

OFFICIAL:

ROBERT E. WRIGHT
Major, MSC
Adjutant

ROBERT E. WRIGHT
Major, MSC
Adjutant

DISTRIBUTION:
AB

A TRUE COPY

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
Washington, D. C. 20315

*OTSG Reg 70-31

OTSG Regulation
No. 70-31

2 April 1969

Research and Development

U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT TECHNICAL REPORT
(REPORTS CONTROL SYMBOL MEDDH-288(R1))

1. References.

a. AR 70-9, "Research and Technology Resume--Work Unit Level (Reports Control Symbol CSCRD-103)."

b. AR 70-31, "Standards for Technical Reporting."

c. AR 380-10, "Department of the Army Policy for Disclosure of Military Information to Foreign Governments (U)."

d. OTSG Regulation 380-1, "Foreign Liaison Policy and Procedures."

2. Purpose. This regulation pertains to the preparation and submission of annual technical medical research and development reports in the execution, at the command level, of the DOD program for automation and dissemination of scientific and technical information and in facilitating the use of this information by research and development scientists in the U.S. Army Medical Research and Development Command, and elsewhere. It provides guidance in the preparation of the reports by--

a. Standardizing the format of these reports as prescribed by the Department of Defense.

b. Including the use of DD Form 1498-1 (Research and Technology Work Unit Summary) as an integral component of the reports on medical research and development.

3. Applicability. This regulation applies to all installations and activities receiving U.S. Army Medical Research and Development funds.

4. Scientific and Technical Information Program. A research scientist must have access to current research information in his field. Any opportunity for increasing his capability

* This regulation supersedes OTSG Regulation 705-2, 6 June 1966, including C1, 10 April 1967.

enhances his effectiveness. The Department of Defense has developed the Scientific and Technical Information Program to provide for this increased capability. One of the aims of the program is the standardization of technical report formats so as to permit subsequent operation of automated information retrieval systems.

5. Frequency and Due Dates. a. An annual report is required for each fiscal year. It consolidates under one cover all research performed at a medical facility during the fiscal period and is distributed within one month after receipt of approved draft.

b. A final report is required upon completion of a specific research effort and will cover all work performed under that research effort during the entire period. The report will contain a summary of all results obtained. Inclusion of references to previous progress reports is optional. Annual progress reports may be incorporated into the final report. Reports will be distributed within 30 working days following completion of the specific research effort.

c. An interim report is discretionary and may be submitted at any time when important developments, adversities, or other circumstances occur which should be brought to the attention of higher headquarters.

6. Specific Instructions. a. The format will be that prescribed in AR 70-31. Particular attention is invited to elements of the report that under the Army regulation may be considered optional. Sequence of elements which are used in the report is indicated in appendix A of this regulation. Prior to final printing and distribution, two draft copies will be submitted to this Headquarters, ATTN: MEDDH-SI, Department of the Army, Washington, D. C. 20315, for format review within 30 working days after the close of the fiscal year.

b. Brevity in preparation of report is encouraged. Full details of work should be published in other scientific literature. Detail sheets that follow each work unit (DD Form 1498-1) in this report may consist of as few as one to three pages.

c. Work units will constitute the basic elements of annual reports. These work units and the work units used in the DOD Research and Technology Resume and Work Unit Summary (DD Form 1498-1) System will be identical. Research and Technology Summaries, prepared for each work unit, will be utilized to summarize the results of each reporting element and in compilation will precede the detail sheets, as described in appendix A. A DD Form 1498-1 will be prepared and submitted to the DOD Resume System, before its duplicate is used in annual reports or any other reporting systems.

d. Reports will be so bound that the left margin side of any form used is not obscured by the binding. If necessary, reproductions of the forms should be offset or reduced to meet this requirement.

7. Distribution and Number of Copies. a. Annual and final reports will be distributed to the U.S. Army Medical Research and Development Command, the Defense Documentation Center, and the U.S. Army Combat Developments Command Medical Department Agency listed in appendix B.

b. Commands are encouraged to advise interested agencies and other personnel that copies of their reports prepared under this regulation are available at the Defense Documentation Center, Alexandria, Virginia 22314

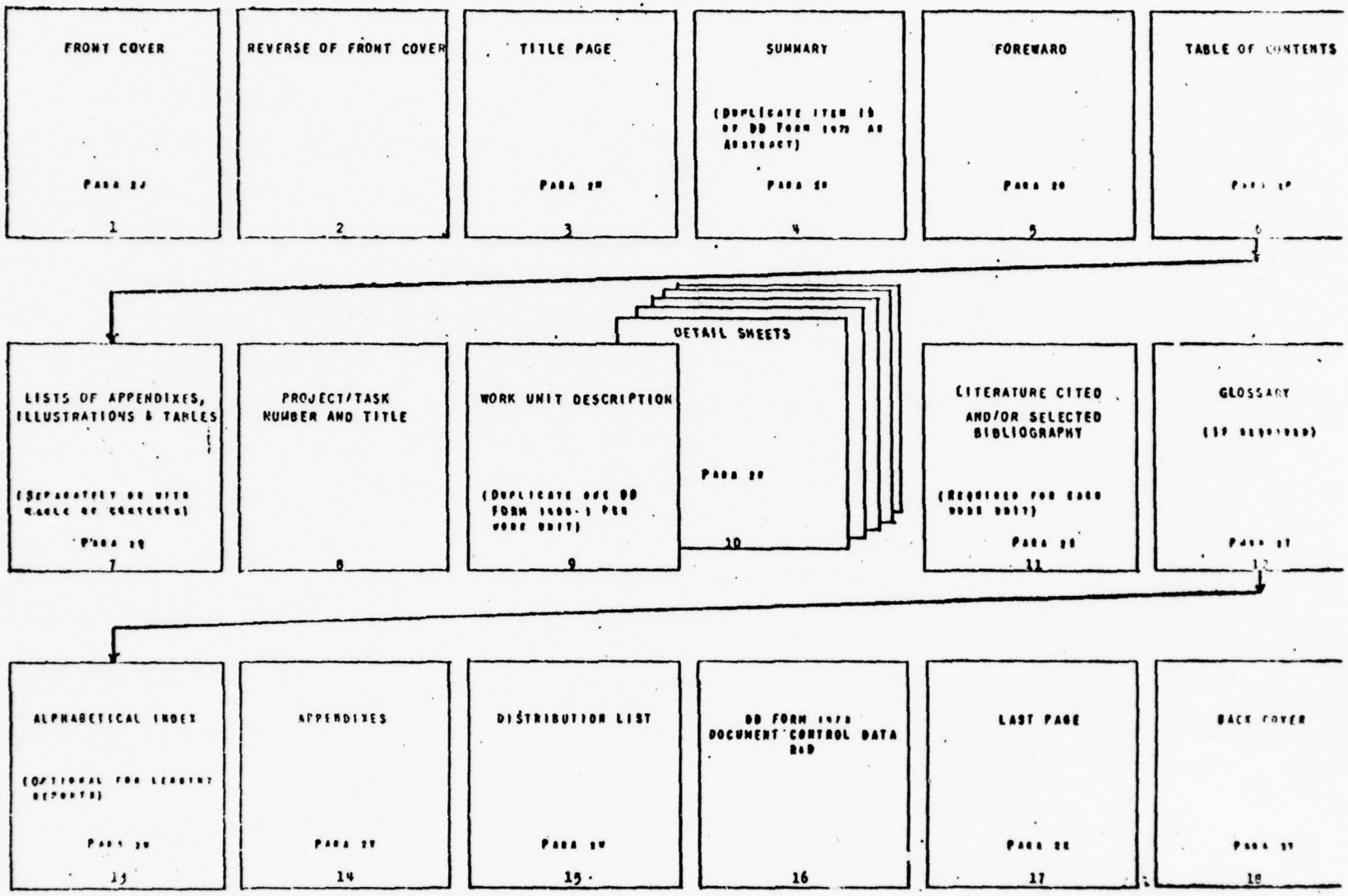
c. Interim reports will be forwarded to the U.S. Army Medical Research and Development Command, in five copies.

APPENDIX A

U.S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND

SEQUENCE OF ELEMENTS FOR TECHNICAL REPORTS

(APPENDIX III, AR 70-31)



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APPENDIX A-4

USAARL POLICY 70-31

In revision. This policy will
be issued at a later date.

Appendix B

SUGGESTED DEVELOPMENTAL STEPS OF A TECHNICAL REPORT OR LETTER REPORT

Coordination with Scientific Arts (Submit request for work to be used in the report. Conference with Chief, Scientific Arts, or the illustrator may be helpful.)

Write report.

Have first draft typed.

Zerox for division review.

Rewrite, change, etc., as required.

Second typed draft. (Clean draft--assemble a complete package. Have the pictures, illustrations, DD 1473, references, etc.)

Division director review. (Division will now decide on distribution statement to be used. If report is to have limited distribution, Statement B, director should check distribution list and add or delete addressees as needed.)

Editor.

Final typing.

Division director (approval).

Scientific review committee (signature).

Commander's signature.

Assignment of report number (Commander's secretary).

Printing request signed by adjutant.

Editor. Final package checked for completeness and sent to printer.

APPENDIX C

REQUEST FOR CLEARANCE OF MANUSCRIPT

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL	SUBJECT
SGRD-	Request for Clearance of Manuscript

~~XX~~THRU Dir, _____ Div FROM DATE CMT 1
Chairman, Scientific
Review Committee

TO Commander, USAARL

1. Reference USAARL Policy 70-31, I request clearance of attached _____.
Report Documentation Page, DD Form 1473 (is) (is not) attached.

Title _____

_____

Author(s) _____

_____

Intended for publication in _____

Intended for presentation before _____

Location _____ Date _____

2. Project title (if different from manuscript title) _____

_____

Program element _____, project _____,
task area _____, work unit number _____.

3. Attached manuscript contains no classified material. It meets accepted standards for scientific accuracy and propriety. It contains no potentially sensitive or controversial items.

Incl
as ( )

SGRD-UAC ( )

THRU Chairman, Scientific Review Committee
Dir, _____ Div

FROM Commander DATE CMT 2

TO

Clearance (is) (is not) granted.

STANLEY C. KNAPP
Colonel, MC
Commanding

CF:
Editor

DA FORM 1 FEB 62 2496 REPLACES DD FORM 96, WHICH IS OBSOLETE.

APPENDIX D

ASSIGNMENT OF COPYRIGHT

A TRUE COPY

DEPARTMENT OF THE ARMY
US ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND
FORT DETRICK, FREDERICK, MD 21701

SGRD-JA 29 Aug 1978

SUBJECT: Assignment of Copyrights

SEE DISTRIBUTION

1. Since the new copyright law of the United States, Public Law 94-553, (Title 17 of the U.S. Code) became effective 1 January 1978, several publishers have asked USAMRDC authors to sign forms assigning copyrights in articles to be published in professional journals and other commercial publications. It is a basic principle of American copyright law that all rights to a work produced by an employee within the scope of his or her employment (work made for hire) vest in the employer. There is no copyright in U.S. Government works. Supervisors are required to make initial determinations of government interest where the employee requests greater rights in an article.

2. All USAMRDC military and civilian employees are advised that they should not sign a copyright transfer agreement form for articles written as a part of official duties. To sign the form would create an inference that a copyright exists. Instead, the USAMRDC author should inform the publisher that the article is not copyrightable. A suggested format for response is attached as Inclosure 1.

3. Private writings done during nonduty hours and not as part of an official project are copyrightable by the authors. Personnel seeking to copyright such works should review AR 600-50, Standards of Conduct for Department of Army Personnel, and AR 360-50, Clearance of Manuscripts.

4. The Office of the Judge Advocate, USAMRDC, is available to answer copyright questions and provide opinions on questions of government interest in individual cases.

FOR THE COMMANDER:

/s/Michael L. Huggins
/t/MICHAEL L. HUGGINS
CPT, MS
Adjutant

Incl
as

DISTRIBUTION:
A&E

A TRUE COPY

FORMAT FOR RESPONSE TO PUBLISHERS

Dear _____:
(PUBLISHER)

I recently received from your office a document assigning copyright and republication rights in the submitted article, _____
_____.
(TITLE OF ARTICLE)

This article was written as part of my official duties as a United States government employee; therefore, I have no transferable copyright to the article. As a United States government work, the article cannot be copyrighted. It is freely available to you for publication without restrictions on your use of it, now or subsequently.

The United States Army Medical Research and Development Command Judge Advocate advises me that the following disclaimer should be published with the article:

> The views of the author do not purport to reflect the positions of the Department of the Army or the Department of Defense. (Para. 4-3, AR 360-5).

You have my assurance that I retain no rights in the article.

Sincerely,

_____
(Signed, THE AUTHOR)

APPENDIX E

PHOTO REDUCTIONS AND PLACEMENT

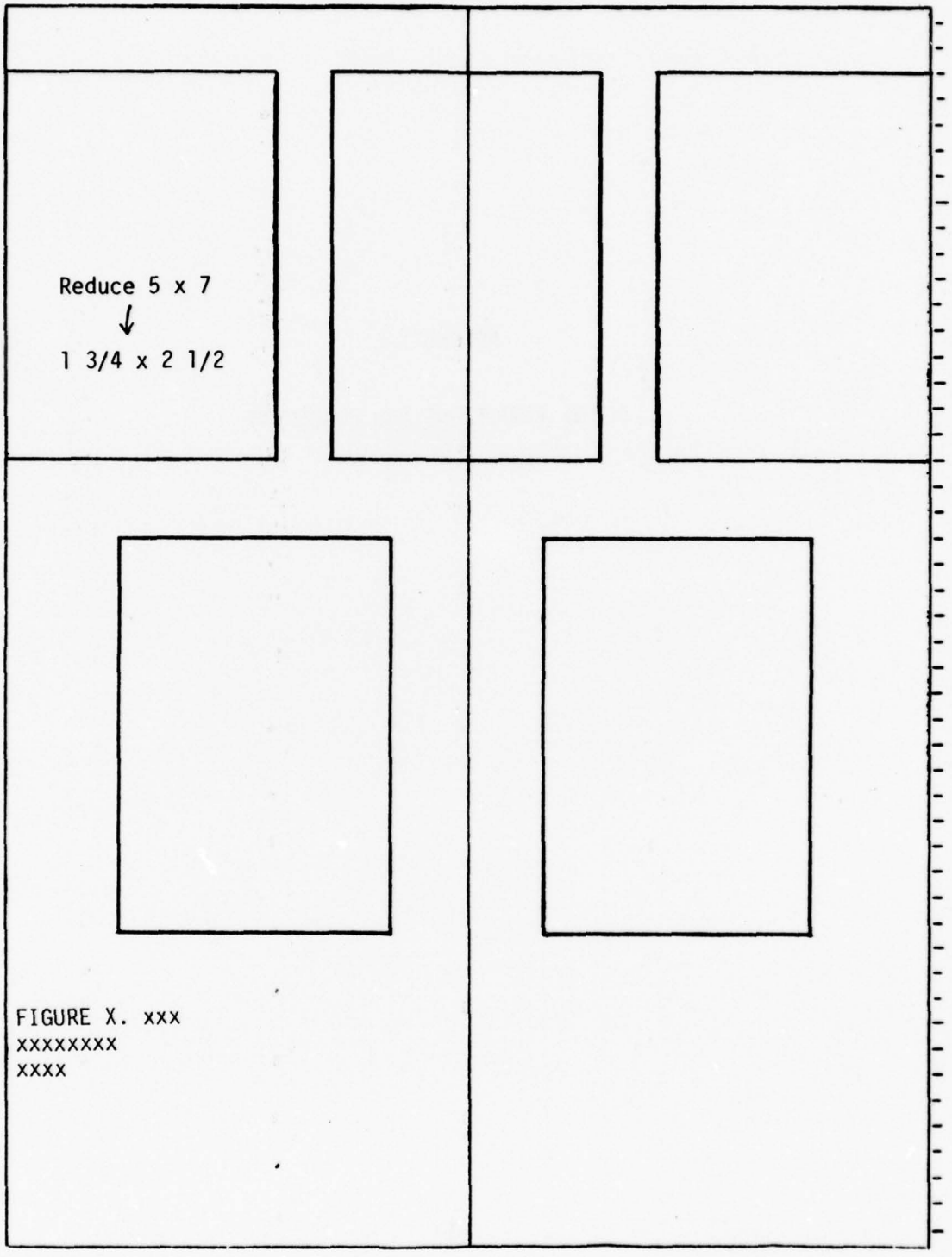


FIGURE X. xxx
xxxxxxxx
xxxx

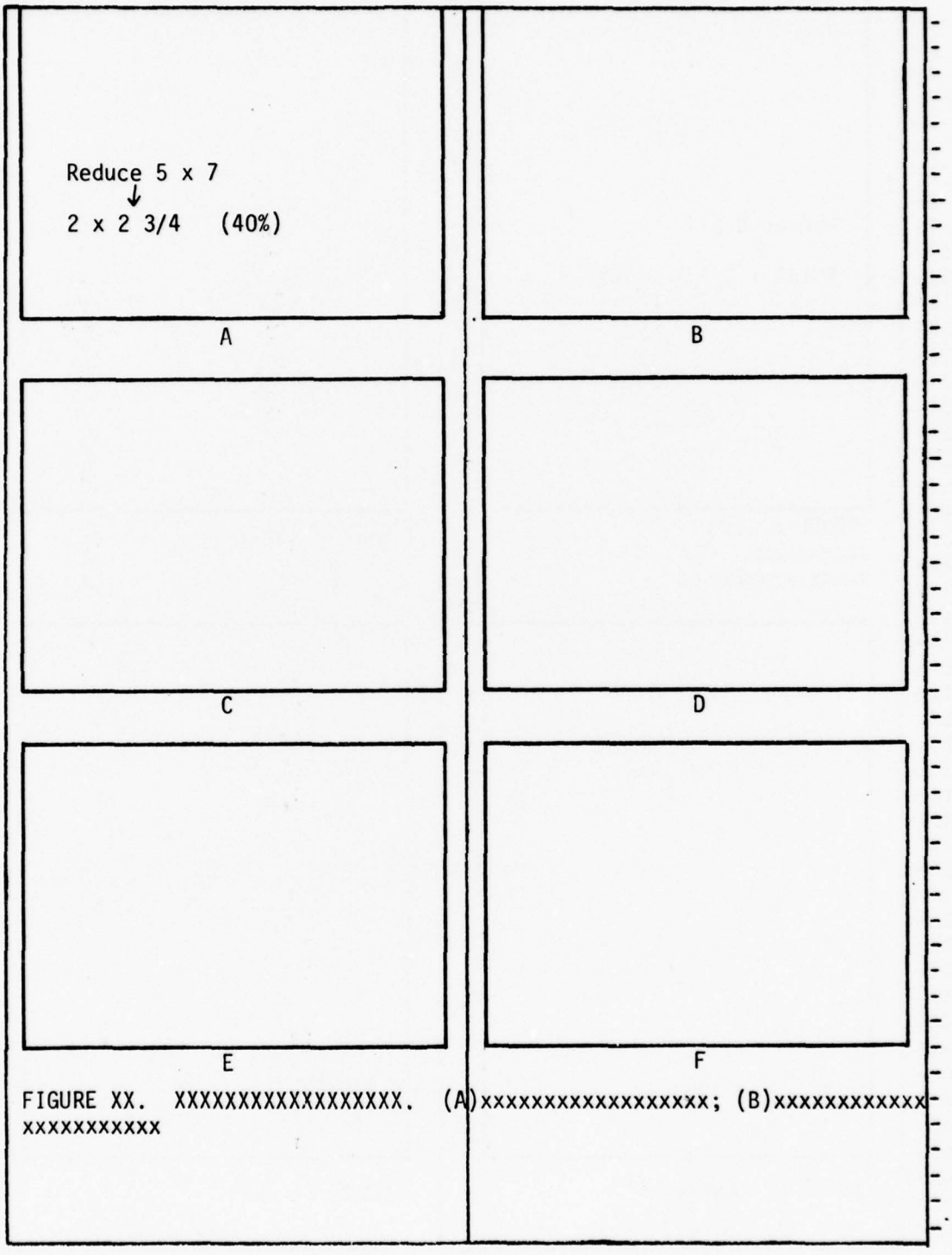


FIGURE XX. XXXXXXXXXXXXXXXXX. (A)xxxxxxxxxxxxxxxxxx; (B)xxxxxxxxxxx xxxxxxxxxx

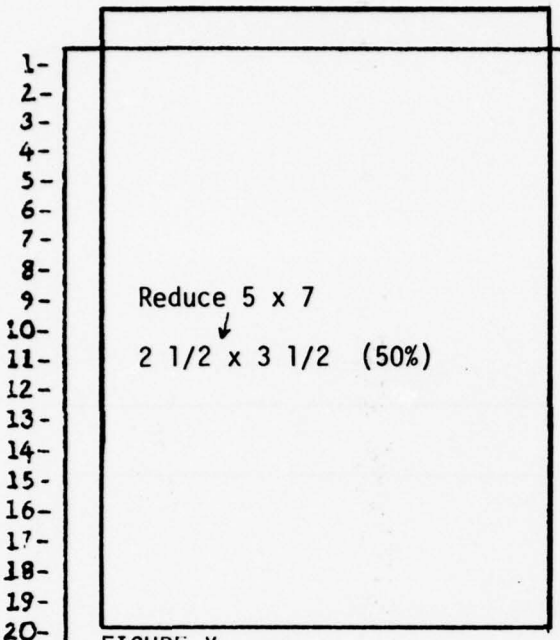


FIGURE X. xxx
xxxxxxxxxx
xxxxxxxxxxxx

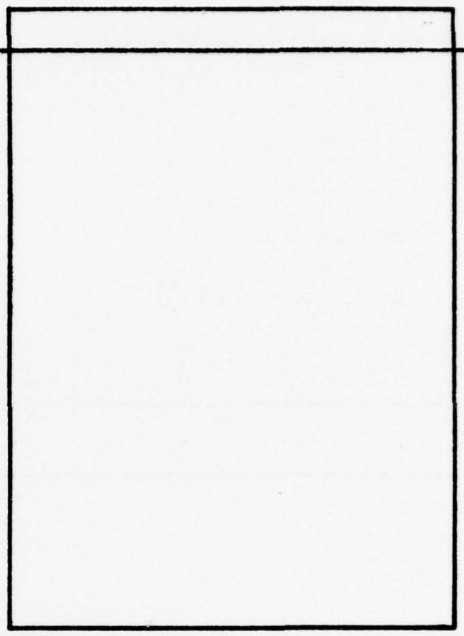


FIGURE X. xxxx

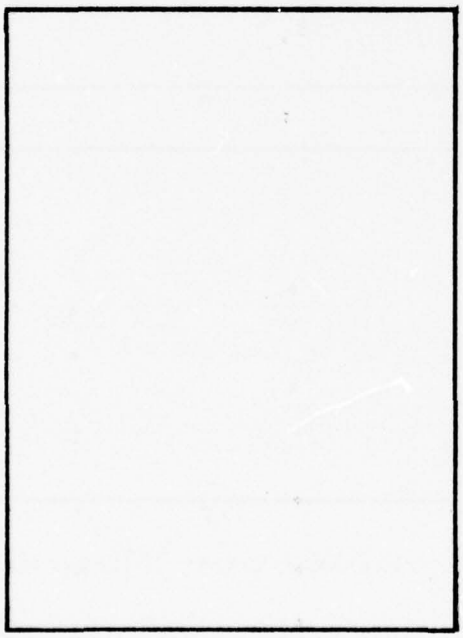


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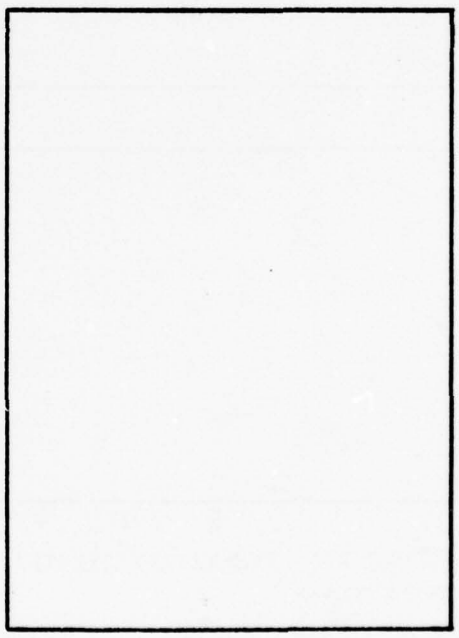
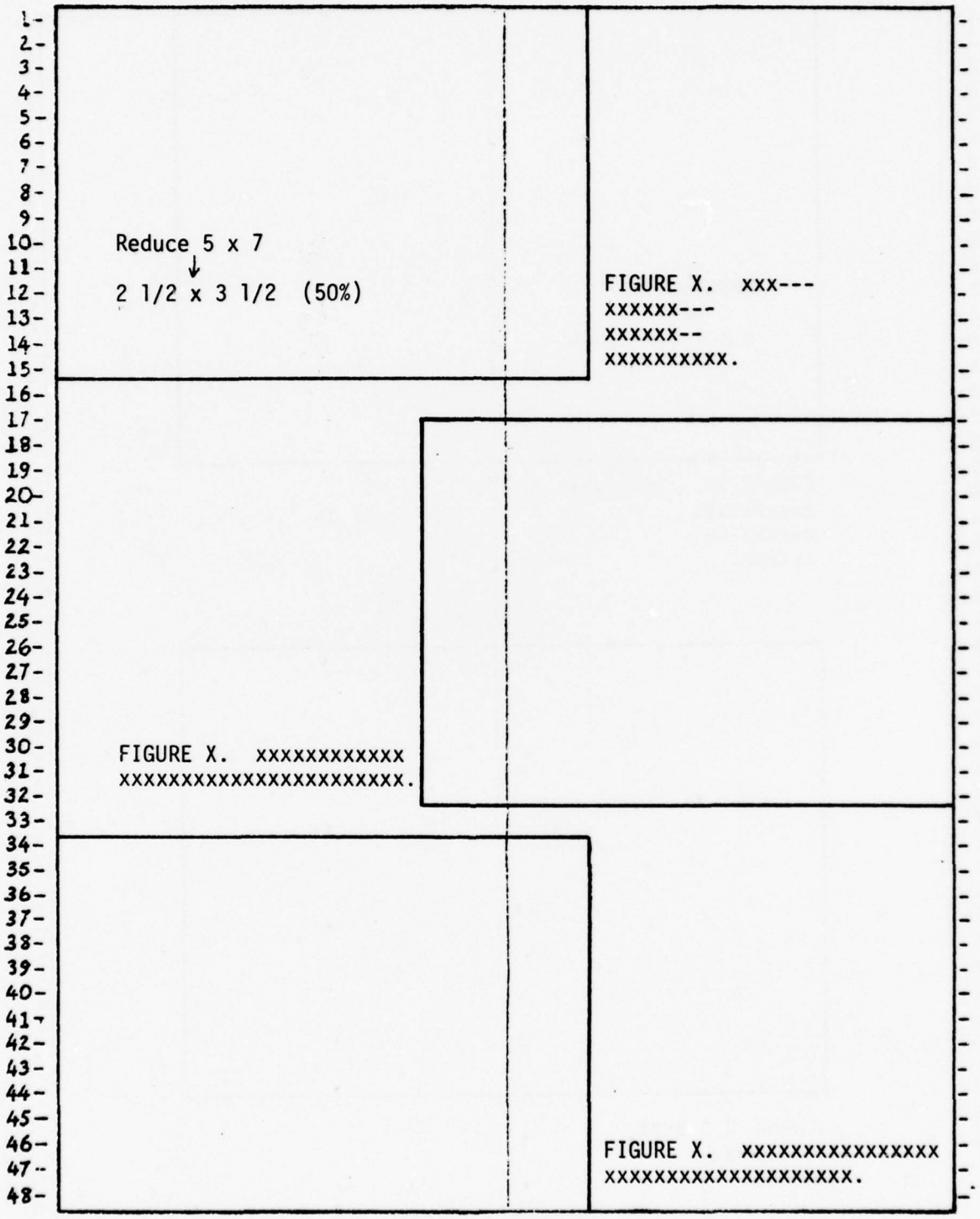


FIGURE X. xxx


Reduce 5 x 7
↓
2 1/2 x 3 1/2 (50%)
FIGURE X. xxx---
xxxxxx---
xxxxxx--
xxxxxxxxxx.
FIGURE X. xxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx.
FIGURE X. xxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxx.

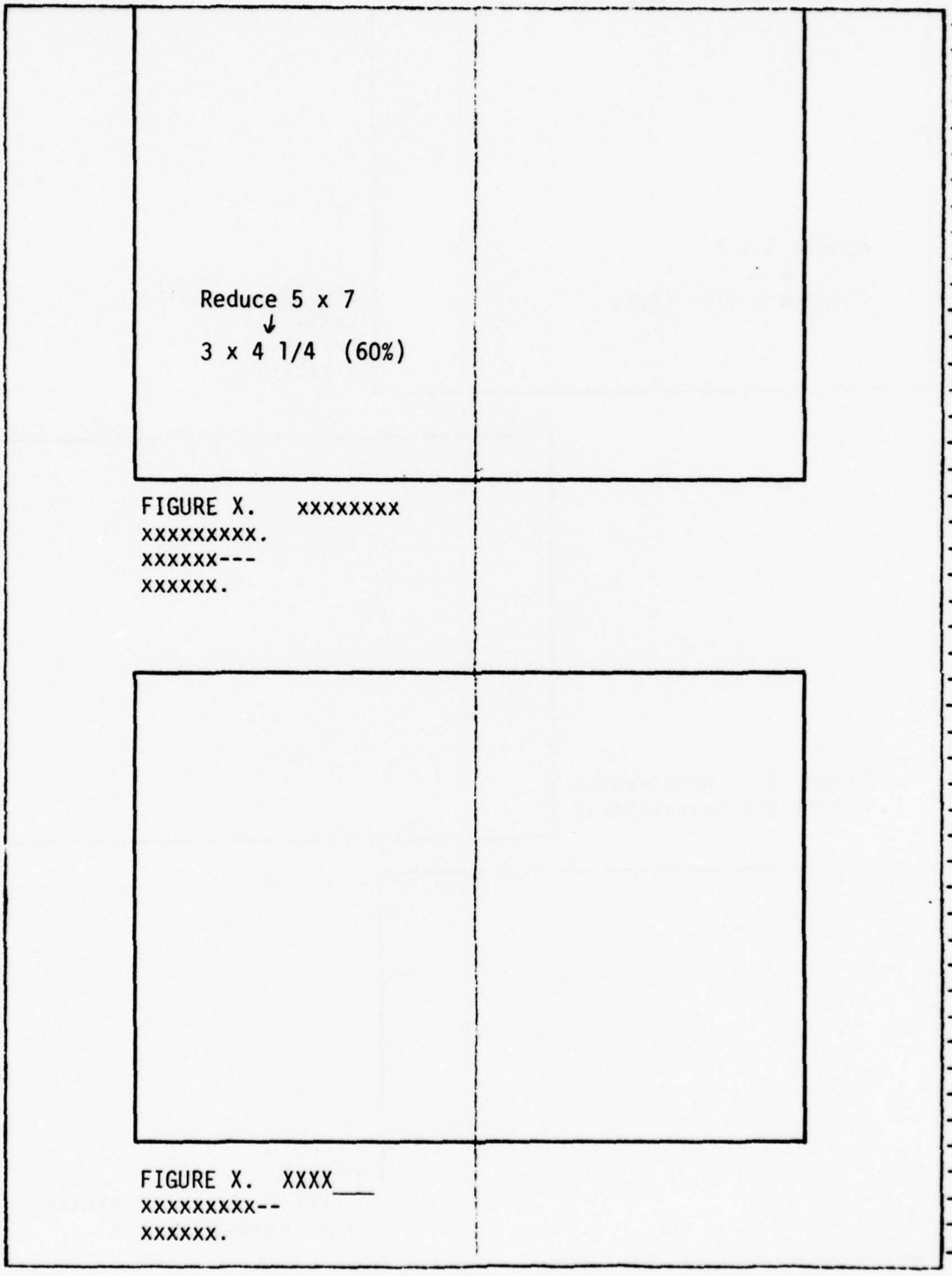


FIGURE X. xxxxxxxx
xxxxxxxxx.
xxxxxx---
xxxxxx.

FIGURE X. XXXX___
xxxxxxxxx--
xxxxxx.

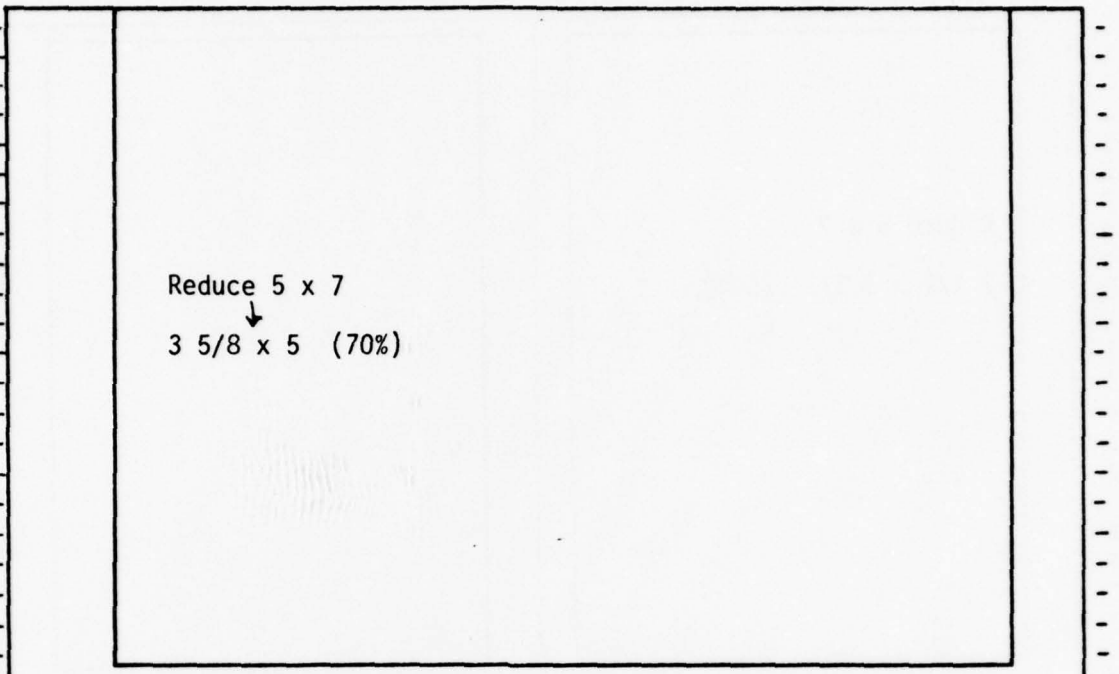


FIGURE x. xxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx.

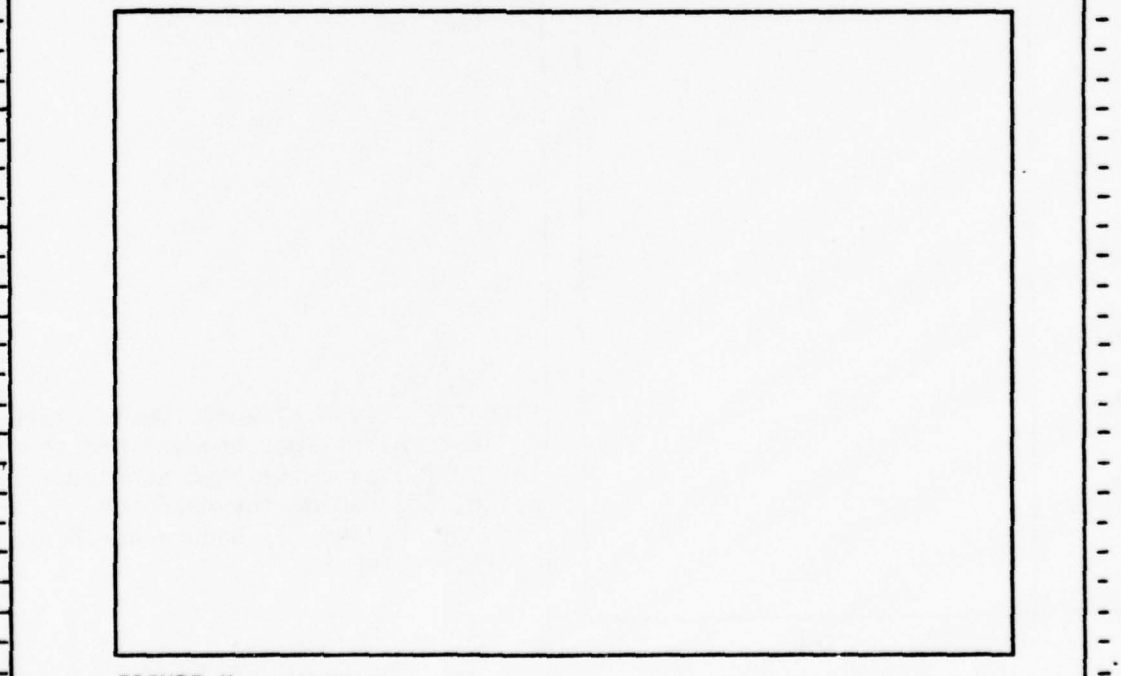


FIGURE X. xxxxxxx
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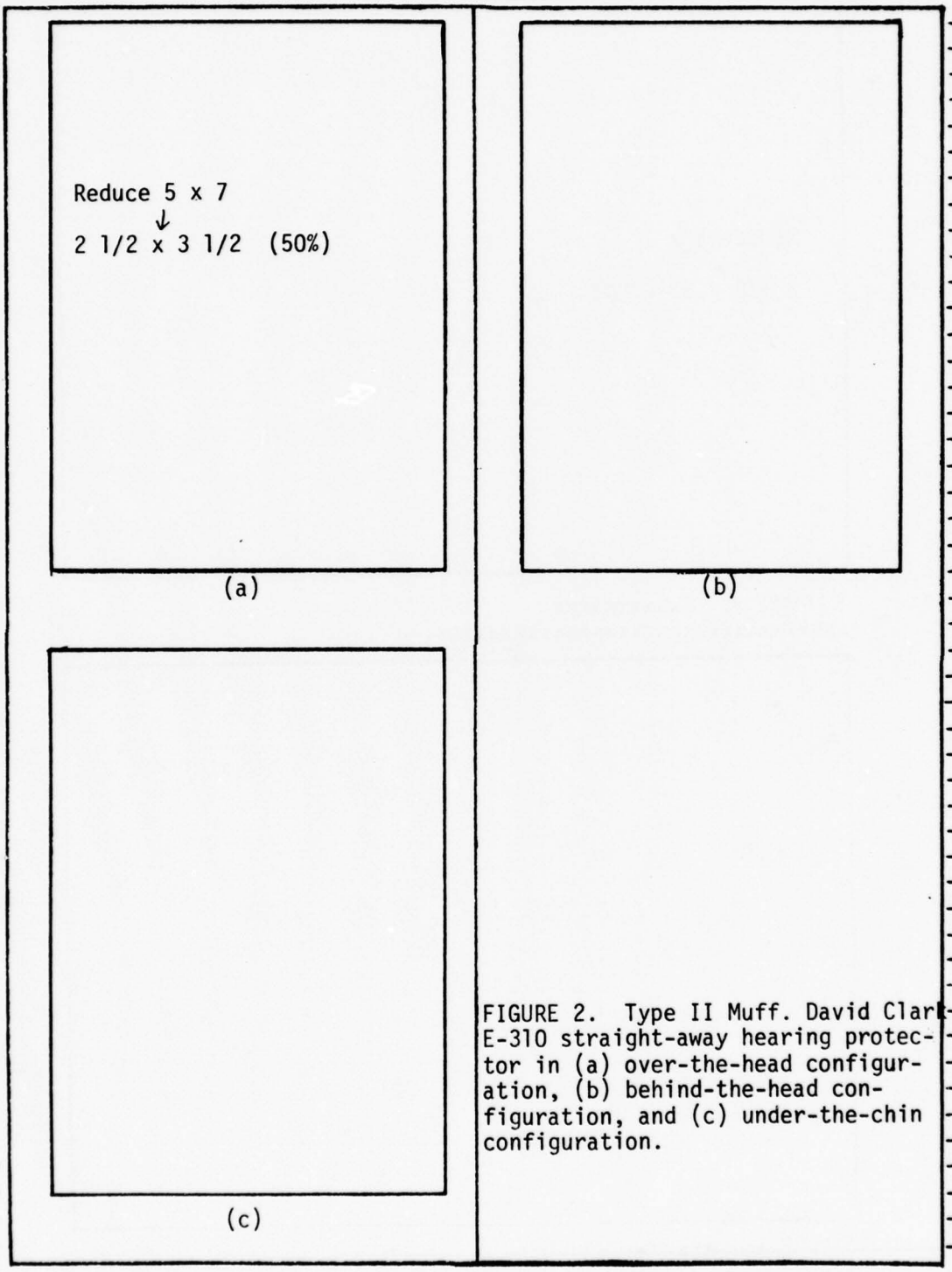
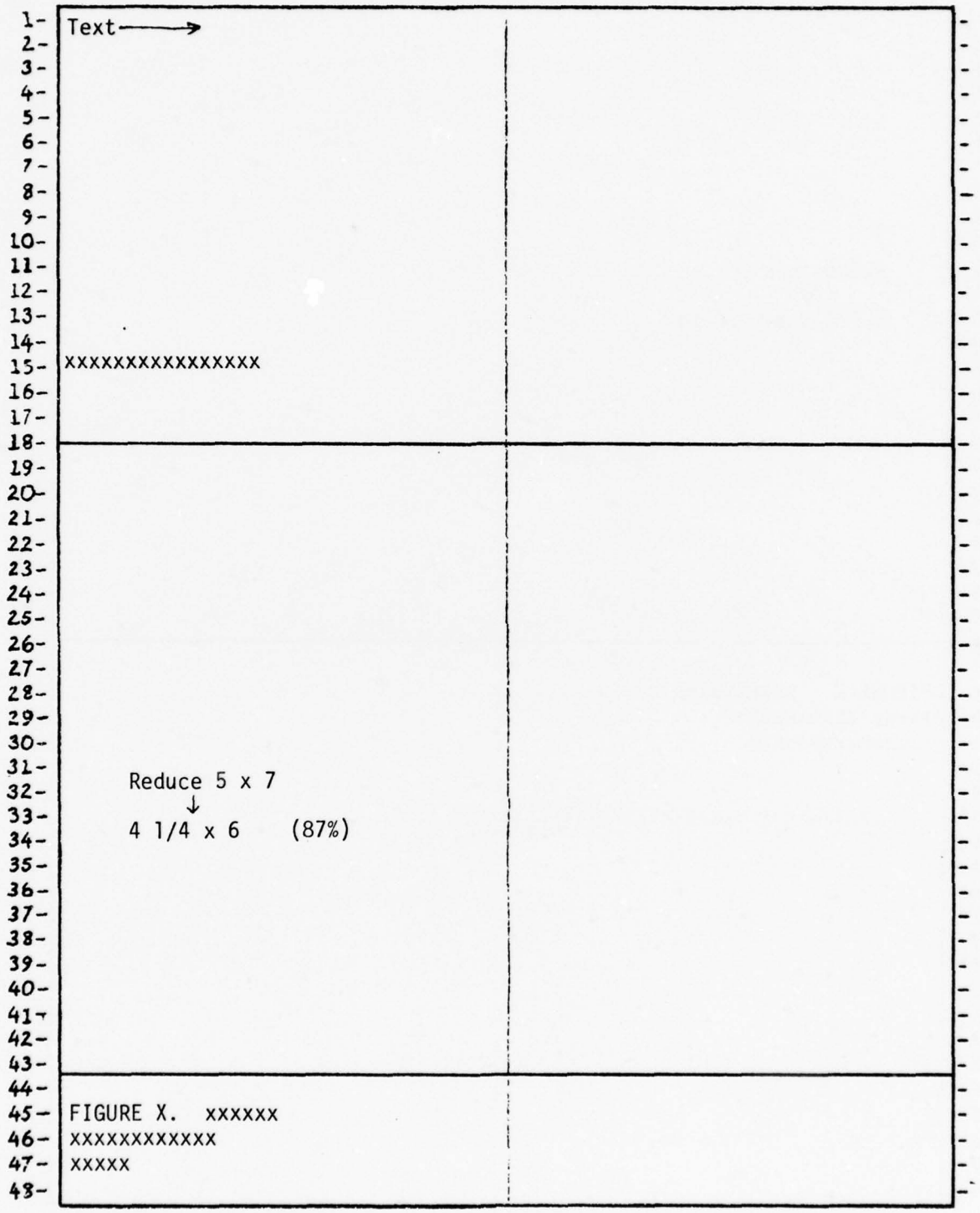


FIGURE 2. Type II Muff. David Clark E-310 straight-away hearing protector in (a) over-the-head configuration, (b) behind-the-head configuration, and (c) under-the-chin configuration.


Text
xxxxxxxxxxxxxxx
Reduce 5 x 7
4 1/4 x 6 (87%)
FIGURE X. xxxxxx
xxxxxxxxxxxx
xxxxx

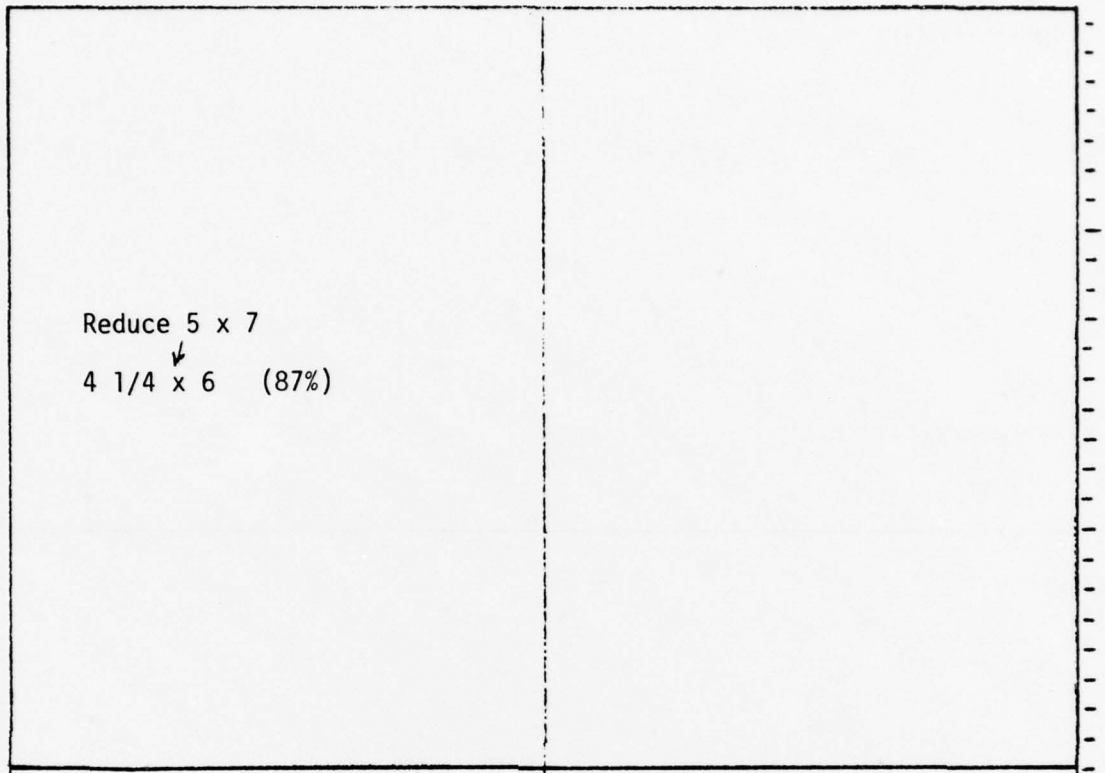


FIGURE X. xxxxxxxxx-
xxxxxxxxxxxxxxx
xxxxxxxxxxxxxx

XXxxxxxxxxxxxxxxxxxxxxxxTextxxxxx

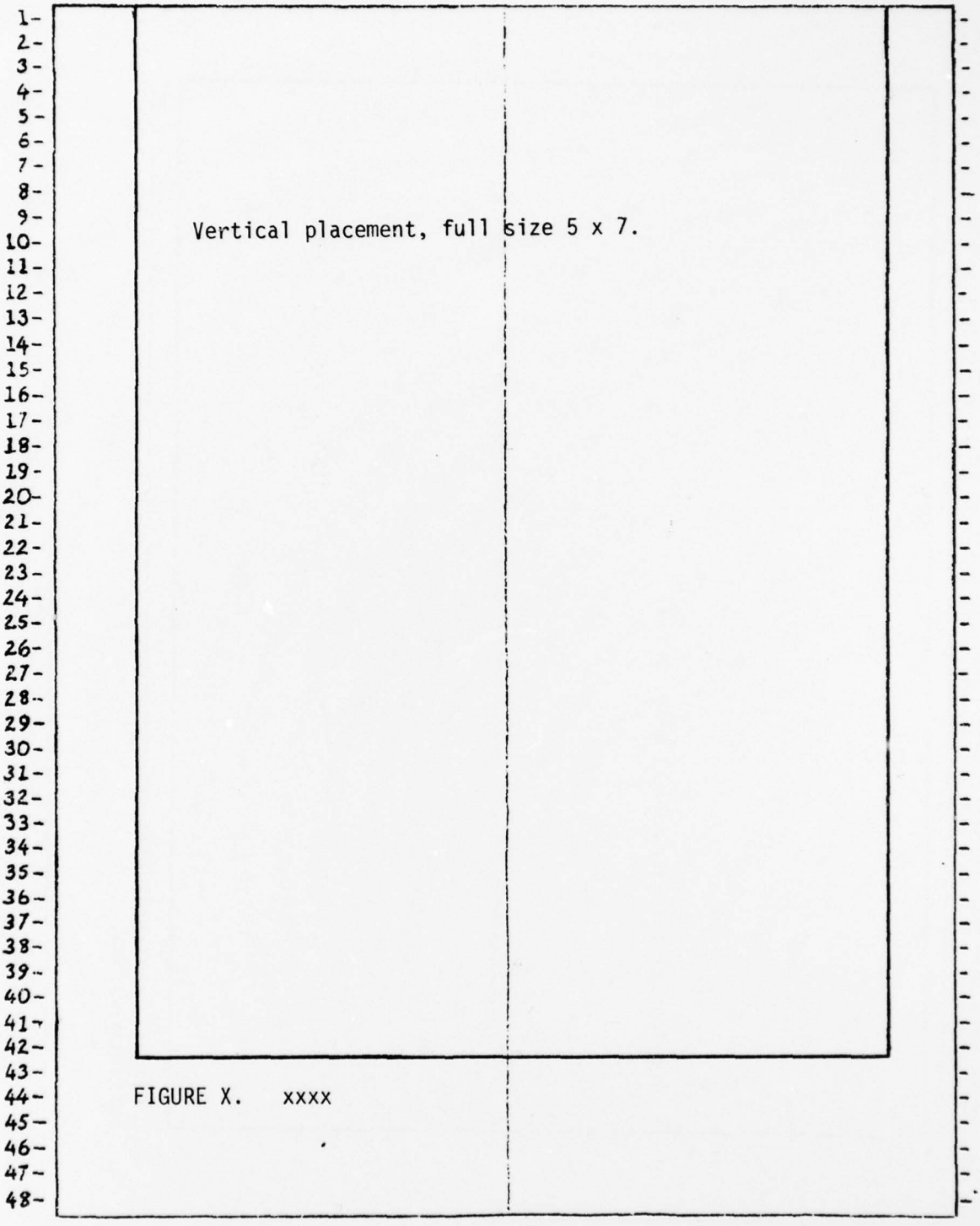


FIGURE X. xxxx

FIGURE X. xxxxxxxxxxxx----------
xxxxxxxxxxxxxxxx.

APPENDIX F

PRINTING REQUEST

REQUISITION FOR PRINTING AND BINDING SERVICE

FUND: [ ] APPROPRIATED [ ] NON-APPROPRIATED

DATE: 5 Dec 77

ACTIVITY ORDER NUMBER:

PLANT USE ONLY:

JOB NUMBER:

TO:
Army Field Printing Plant
USAAVNC
Ft Rucker, AL 36362

THRU: (Appropriate Printing Control Authority)

FROM: (Originating Agency and Person to contact & telephone extension)
Cdr, USAARL
Ft Rucker, AL 36362

1. TITLE OF PUBLICATION
Visual workload of copilot/navigator during terrain flight

2. NUMBER AND DATE
USAARL Report No. 78-5
December 1977

3. PURPOSE, FUNCTION, ECONOMIES EFFECTED AND CONCURRENCES
Report of scientific research efforts.

4. QUANTITY IN: [ ] SHEETS [ ] SETS [X] BOOKS [ ] PADS [ ] OTHER (Specify in Item 13)

a. PARTIAL DELIVERY REQUESTED — DATE: ; QUANTITY:

b. COMPLETE DELIVERY REQUESTED — DATE: 5 Jan 78; QUANTITY: 250

5. SIZE OF PUBLICATION — a. TRIM SIZE: WIDTH 8, LENGTH 10 1/2; b. FOLDED TO: WIDTH , LENGTH

6. NUMBER OF PAGES: 28

7. BINDING (Use Item 13 for additional instructions)
[ ] LOOSE [ ] SIDE STITCHED [ ] GLUED [ ] SADDLE STITCHED [X] OTHER Staple
PAD [ ] TOP [ ] LEFT [ ] RIGHT [ ] BOTTOM
SHEETS IN PAD: ; SETS IN PAD: ; SHEETS IN SET:

8. PAPER STOCK

COPIES	BASIS WEIGHT	KIND	COLOR
1		Bond	W
2			
3			
4		Report covers	
5		attached	
6			
7			
8			
9			
10			

9. PRINT

COLOR INK	FACE ONLY	HEAD TO HEAD	HEAD TO FOOT	HEAD TO SIDE
B		X		

10. PUNCHING

NR HOLES	DIAMETER	C TO C	KIND	POSITION

11. MATERIAL DISPOSITION

	HOLD	DESTROY	RETURN TO
NEGATIVES			
ORIGINALS			USAARL

12. CLASSIFICATION
Unclassified

13. ADDITIONAL INSTRUCTIONS. DUMMY ATTACHED [ ] YES [ ] NO (Perforations, scoring, prenumbering, etc.)
Paste-up for front cover attached.

14. DISTRIBUTION INSTRUCTIONS (If desired, also indicate person to be notified when job is completed)
250 copies--Mrs. Greer, Editor, 5107

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THAT THE USE OF MORE THAN ONE COLOR IS IN ACCORDANCE WITH DEPARTMENTAL REGULATIONS.
THAT THE ILLUSTRATIONS USED IN THIS PUBLICATION ARE NECESSARY AND RELATE ENTIRELY TO THE PUBLIC SERVICE.
THAT THIS WORK IS AUTHORIZED BY REGULATIONS AND IS NECESSARY TO THE CONDUCT OF OFFICIAL BUSINESS.

16. ORIGINATOR (Typed Name, Signature and Date)
RAYMOND T. BURDEN, JR., CPT, MSC, ADJ

17. ACTION BY PRINTING CONTROL AUTHORITY
[ ] APPROVED [ ] DISAPPROVED

TYPED NAME, SIGNATURE AND DATE

FOR PLANT USE ONLY

18. DATE RECEIVED

19. PRIORITY

20. DATE PROMISED

21. DATE COMPLETED

22. DATE DELIVERED

23. PRESS SIZE	HOURS IN USE	NUMBER OF MASTERS	PRESS IMPRESSIONS	PRODUCTION UNITS
X				
X				
X				
X				
X				

RECEIPT OF COMPLETED JOB

24. RECEIVED BY

25. ORGANIZATION SYMBOL

26. DATE

DD FORM 1 JUL 68 843

☆ U.S. GOVERNMENT PRINTING OFFICE: 1973-540-840/8402 3-1

APPENDIX G

BIBLIOGRAPHY

American Medical Association. Scientific Publications Division. 1976. *Stylebook/editorial manual*. 6th ed. Acton, MA: Publishing Sciences Group, Inc. 161 p.

Written for authors preparing copy for the *Journal of the American Medical Association*, this manual is often helpful to those working on medical copy.

American National Standards Institute. 1977. *American National Standards for bibliographic references*. New York: American National Standards Institute. ANSI Z39.29-1977. 92 p.

This standard provides rules and guidelines for preparation of bibliographic references to both print and nonprint works. Use of the guidance furnished will ensure that bibliographic references are (1) consistently formatted and (2) structured to provide enough information for, as a minimum, the unique identification of the work. This standard encompasses many of the concepts being developed at the international level. The system of "grouping" bibliographic elements allows flexibility within a framework of general principles.

Council of Biology Editors. Committee on Form and Style. 1972. *CBE style manual*. 3d ed. Washington, DC: American Institute of Biological Sciences. 297 p.

Contains much information for use in writing for highly specialized fields.

Department of the Army. 1966. *Research and development standards for technical reporting*. Washington, DC: Dept. of the Army. AR 70-31, C1, 3.

This regulation is the Army's implementing regulation for *Military Standard 847-A: Format requirements for scientific and technical reports*. The regulation prescribes policy, responsibility, procedures, and standards governing the preparation, review, production and distribution of Department of the Army technical reports. This regulation is due for revision, but until that revision occurs, it is the regulation that must be followed.

Department of the Army. 1966. *Standards of Statistical Presentation.* Washington, DC: Dept. of the Army. DA PAM 325-10.

This pamphlet establishes standards and provides guidance for the presentation of statistical material in the Department of the Army.

Department of Defense. 1973. *Military standard format requirements for scientific and technical reports.* Washington, DC: Dept. of Defense. MIL-STD-847A.

This standard implements for the Department of Defense the "Guidelines to Format Standards for Scientific and Technical Reports Prepared by or for the Federal Government" developed by the Federal Council for Science and Technology, Committee on Scientific and Technical Information (COSATI), Panel on Operational Techniques and Systems. Its provisions are mandatory for in-house, contractor or grantee reports.

Gray, Dwight E. 1970. *So you have to write a technical report: Elements of technical report writing.* Washington, DC: Information Resources Press. 117 p.

Easy reading for an overview of what should be in a technical report.

Hays, R. 1965. *Principles of technical writing.* Reading, MA: Addison-Wesley Publishing Co. 342 p.

An interesting and readable textbook on technical writing. More useful to writers of business oriented reports than scientific research reports. Appendix B, "A Glossory of Frequently Misused Words," is recommended reading.

Herman, William. 1978. *The portable English handbook: An index to grammar, usage, and the research paper.* 5th ed. New York: Holt, Rinehart and Winston.

The list of contents and index make this book very easy to use. The many examples amply explain the stated rules.

Hodges, John C., and Whitten, Mary E. 1977. *Harbrace college handbook.* 8th ed. New York: Harcourt, Brace and World, Inc. 502 p.

A standard English handbook. Just one of many available.

Jordan, S., ed. 1971. *Handbook of technical writing practices.* New York: Wiley-Interscience. 2v.

This work covers many technological disciplines. It is a "handbook" only in the sense that one can find answers to technical writing questions--with a good deal of reading. As a study to learn of different types of technical writing, it is excellent.

Skillin, M. E. [and others]. 1964. *Words into type.* Rev. ed. New York: Appleton-Century-Crofts. 596 p.

Deals with preparation of manuscripts, preparation of copy, correction of proof, grammar and use of words.

Strunk, W., Jr., and White, E. B. 1959. *The elements of style.* New York: Macmillan, Co. 71 p.

Very readable book with practical advice on achieving a clear writing style.

University of Chicago Press. 1969. *A manual of style.* 12th ed., rev. Chicago: University of Chicago Press. 546 p.

Among the best known of all style manuals. Provides clear, easily understood guidelines for preparing and editing copy with attention to the technicalities of preparing such copy for scientific publications.

United States Government Printing Office. 1973. *Style manual.* Rev. ed. Washington, DC: U.S. Government Printing Office. 548 p.

A comprehensive guide for documents put out by government agencies. The coverage of writing compound words, numbers, and capitalization is quite detailed.

Watkins, Floyd C., Dillingham, William B., and Martin, Edwin T. 1978. *Practical English handbook.* Boston: Houghton Mifflin Co.

Available in paperback. This book is used by many colleges and is widely available.

Jordan, S., ed. 1971. *Handbook of technical writing practices.* New York: Wiley-Interscience. 2v.

This work covers many technological disciplines. It is a "handbook" only in the sense that one can find answers to technical writing questions--with a good deal of reading. As a study to learn of different types of technical writing, it is excellent.

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Strunk, W., Jr., and White, E. B. 1959. *The elements of style.* New York: Macmillan, Co. 71 p.

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University of Chicago Press. 1969. *A manual of style.* 12th ed., rev. Chicago: University of Chicago Press. 546 p.

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United States Government Printing Office. 1973. *Style manual.* Rev. ed. Washington, DC: U.S. Government Printing Office. 548 p.

A comprehensive guide for documents put out by government agencies. The coverage of writing compound words, numbers, and capitalization is quite detailed.

Watkins, Floyd C., Dillingham, William B., and Martin, Edwin T. 1978. *Practical English handbook.* Boston: Houghton Mifflin Co.

Available in paperback. This book is used by many colleges and is widely available.

APPENDIX H

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