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PERFORMANCE SPECIFICATION
MANUALS, TECHNICAL: OPERATION AND ASSOCIATED CHECKLIST
(INTERCONTINENTAL BALLISTIC MISSILE)
PREPARATION OF

This specification is approved for use by the Space and Missile Systems Center, Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers requirements for the preparation of operation manuals and associated checklists for Intercontinental Ballistic Missiles (ICBMs).

1.2 Types of manuals. Two types of operation manuals and associated checklists are covered by this specification. The types of manuals and associated checklists to be prepared will be designated by the acquiring activity.

- a. Operation Manual - See 3.2.
- b. Classified Manual - See 3.3.
- c. Checklist - See 3.4.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: SMC/AXM, 160 Skynet, El Segundo, CA 90245 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

ASMC F4808

AREA TMSS

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

STANDARDS

MILITARY

MIL-STD-12	Abbreviations for Use on Drawings and in Specifications, Standards and Technical Documents
MIL-STD-17	Mechanical Symbols
MIL-STD-681	Identification Coding and Application of Hook-Up and Lead Wire
MIL-STD-1840	Automated Interchange of Technical Information
MIL-STD-38784	Manuals, Technical: General Style and Format Requirements

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

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ANSI/IEEE Y32.2-1975 Graphic Symbols for Electrical and Electronic Diagrams

ANSI/IEEE 200-1975 Electrical and Electronic Parts and Equipment Reference Designators

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated specifications or specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 General manner of preparation. Unless otherwise specified, the general manner of preparation of the technical manuals shall be in accordance with MIL-STD-38784. They shall be prepared in the form specified in the contract. All details of MIL-STD-38784 relative to flight manuals which reference "aircraft" flight manuals shall apply to missile operation manuals. Statements to be included in missile operation manuals shall be reworded accordingly.

3.1.1 Illustrations.

3.1.1.1 Operation manual illustrations. The operation manual shall contain the following illustrations:

- a. A general arrangement illustration depicting a typical launch, flight sequence.
- b. Sufficient illustrations to clearly show a typical launch facility.
- c. Sufficient other illustrations and diagrams to show the major panels, cabinets, consoles, and related equipment with which missile combat crew personnel have contact.
- d. Sufficient diagrams, charts, and schematics to depict the function, control, and interrelationship of significant weapon system equipment operation, countdown functions, and system or subsystem operation.
- e. Abbreviations, symbols, reference designations and color coding reference used in the manual shall be in accordance with MIL-STD-12, ANSI/IEEE Y32.2-1975, ANSI/IEEE 200-1975, MIL-STD-17 or MIL-STD-681 unless otherwise specified in this specification. For digitized technical data, MIL-STD-1840A will be used.

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3.1.1.2 Types of illustrations. Determination of the type of illustration to be used shall be in accordance with MIL-STD-38784 and as directed by the acquiring activity.

3.1.2 Text.

3.1.2.1 Style of presentation. Wherever practical, text shall be simplified and decreased in quantity by the use of complementary art work. All technical matter shall be reduced to language understandable by the personnel who are expected to use the manual. The target reading grade level for ICBM operations manuals shall be “9” as computed in MIL-STD-38784.

3.1.2.2 Paragraph headings. The heading of the first or introductory paragraph of each chapter should be general in nature to facilitate the inclusion of information concerning the main subject. The subordinate paragraph headings should be definitive and identify the principal item to be covered. The heading “General” shall not be used.

3.1.3 Tables of contents. A main table of contents shall be as prepared in accordance with MIL-STD-38784. A chapter table of contents shall be included at the beginning of each chapter. The chapter table of contents shall include the page on which each section primary paragraph, or major subject headings within that chapter, are located. When a classified manual is involved, the same principles established for the treatment of the main table of contents shall be followed. The main table of contents shall contain numbers and titles of chapters with their initial page numbers, but shall not contain any classified information.

3.1.4 Security classification. Operations manuals are normally unclassified. If the weapon system classification guide identifies subjects that are required to be operated by Missile Combat Crew Members (MCCMs) as classified, a separate classified manual or a classified supplement to the basic manual will be developed for those classified subjects.

3.2 Operation manual.

3.2.1 Function of the manual. The functions of the operation manual shall provide a general description of the missile weapon system, the operations plan, normal and emergency procedural instructions directly associated with and required for alert monitoring, peacetime and tactical launch countdown, in flight and post launch operations. The information shall be in sufficient detail to enable a missile combat crew member to perform his alert duties effectively and safely.

3.2.2 Extent of coverage. The weapon system shall be covered to the extent specified by the using agency based upon operational system requirements.

3.2.3 Arrangement of manual. The manuals shall be arranged in the following order.

Front Matter

Title Page

List of Effective Pages

Verification Status Sheets

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Technical Order Equipment Configuration Status Record

Foreword

Table of Contents

List of Illustrations

List of Tables

Safety Summary

Chapter 1, Weapon System Description

Chapter 2, Weapon System Operating Functions

Chapter 3, Normal Operating Procedures

Chapter 4, Emergency Procedures

Chapter 5, Malfunction Procedures

Chapter 6, Operating Limitations

Chapter 7, Crew Duties and Responsibilities

Glossary

3.2.3.1 General. The specific requirements of each chapter are covered in detail in paragraph 3.2.4. The listed chapters are mandatory in each manual and additional chapters may be added in special cases with written approval of the acquiring activity. If a chapter is not applicable, the title of that chapter shall be located on the last page of the previous chapter and shall contain a notation to the effect that the chapter is not applicable, or that information shall be added when it becomes available. The chapter title of the chapter shall appear in the main table of contents with an appropriate notation.

3.2.3.1.1 Format. Format for presentation of textual material, amplified procedures, and abbreviated checklist shall be at the discretion of the acquiring activity. Format shall present crew emergency procedures in a simple, concise and understandable layout, consistent with weapon system requirements. For systems employing digitized technical data, the visual template and the text shall be formatted so the screen presentation will be identical to the printed data. If the acquiring agency does not require a printed page of the visual display, the visual display will be formatted to comply with the style and format of a printed page. Each page of the emergency chapter shall have a border of 1/4 inch black diagonal hash markings bled to all four edges of the page. Insofar as possible, amplified procedures and attendant checklist developed for a particular weapon system shall be standardized.

3.2.4 Detailed requirements.

3.2.4.1 General. Details for preparation of title page, list of effective pages ("A" page), main table of contents and safety summary shall be governed by MIL-STD-38784.

3.2.4.2 Foreword. The foreword shall discuss the various aspects of the operation manual. Such discussion shall include the scope of the manual; an indication of the technical proficiency expected of using personnel; a discussion of format and content; and, special interest items, e.g., new developments and a brief description of notes, cautions and warnings.

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3.2.4.3 Chapter 1, Weapon System Description. Chapter 1 shall describe the weapon system and supporting facilities in sufficient detail to afford the reader a single source document of general system information. A brief narrative shall describe the purpose, main features and leading particulars for the weapon system as described below. Illustrations that clarify a particular system or reduce the verbiage necessary for explanation shall be included.

3.2.4.3.1 Description of the missile. A description of the missile with reference to the number of stages, type of propulsion guidance, and range shall be included. This chapter shall contain no information which could result in the necessity to classify the manual. Subsequent paragraphs shall describe in greater detail subsystems peculiar to that weapon system. Such information shall include a general discussion of missile operation to include a description of major subsystems. The description shall be of sufficient detail to provide an understanding of the purpose and function of the subsystems, their relation to overall system operation, and such additional information as to enable the crew member to understand subsystem functions peculiar to the weapon system. This chapter shall also identify the various major components of the weapon system; i.e., Aerospace Vehicle Equipment (AVE), Operational Support Equipment (TSE) and Real Property Installed Equipment (RPIE) as it applies to the system.

- a. Guidance system. A discussion of system guidance shall include: a brief description of the purpose and type of guidance and a more detailed description of the components and their respective functions. Illustrations shall be used to simplify explanation of system interrelation and component function.
- b. Propulsion system. Information shall include a description of the rocket engine(s), type of propellant, and sufficient detail on operation and configuration of engine components to provide an understanding of system operation.
- c. Airframe. Discussion shall include the number of stages, and the dimensions and functions of each stage. Particular data concerning tank structure, skin, stringers, and frame shall be included, if necessary, to afford a better understanding of missile construction.

3.2.4.3.2 Launch facilities. A general description of the physical layout, including location and function of support systems to include security, personnel access, and power systems, shall be included. Detailed discussion should include the launcher and associated support equipment required for system monitoring, launch preparation, and launch as they support MCCM operations.

3.2.4.3.3 Communications. A description of the communications systems will include, but not be limited to, Higher Authority, Command and Control, Emergency War Order, Secure Voice, Secure Data, Intrawing, Intersite, Intercom and Administrative Communications Systems. Any MCCM activity regarding normal emergency or malfunction operations will be addressed in the applicable chapter. Some highly complex ICBM communications systems may require a stand-alone Communication Command and Control Operations manual.

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3.2.4.3.4 Electrical power systems. A discussion of the electrical power systems shall include normal, standby, emergency, Uninterruptible Power Supply (UPS) and interruptible power sources, with a description of distribution components, switch gear and power generating equipment.

3.2.4.3.5 Environmental control systems. A description of the environmental control system for both the launch control center and the launch emplacement area shall be included. The description shall also include a general description of heating and ventilating equipment and associated maintenance support equipment including a description of equipment interface with launch, alarm and detector equipment. If MCCM Operations require use of RPIE, it, too, will be included in these paragraphs.

3.2.4.3.6 Auxiliary equipment. General principles of operation shall be provided for equipment that requires operator knowledge such as fire detection, vapor sensing, security detection, and radiation monitoring.

3.2.4.4 Chapter 2, Weapon System Operating Functions. This chapter will emphasize the process required to bring the system to alert, status monitoring, alarm response, preparation for launch, and post launch activity. This chapter shall contain a functional explanation of the normal, emergency, and malfunction procedures contained in other chapters of the manual. Flow diagrams shall be presented to support text when it is determined necessary by the contractor. The functional description shall include the following, as applicable.

- a. When the procedure will be accomplished; for example, when directed by maintenance control.
- b. Where the procedure will be accomplished; for example, rack, console, or other location.
- c. The time usually required for the system to complete a function.
- d. What is accomplished by the procedure.
- e. Procedure peculiarities, if any.
- f. When it is possible to accomplish the procedure (peacetime and tactical conditions).
- g. Identification of the crew interface and actions required to operate the function.

3.2.4.5 Chapter 3, Normal Operating Procedures. This chapter shall contain detailed information required by the missile combat crew in the performance of normal operational duties during alert, countdown, and launch, and return to alert. It shall include briefings and procedures to be conducted during normal alert, tactical launch, training operations, peacetime launches, launch verification and such other operations as may be applicable or specifically required by the acquiring activity. The procedures shall identify requirements from the point of crew arrival on-

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site during daily or recurring tasks, and until crew departure following completion of the alert tour. Operational procedures shall define individual and crew responsibilities and provide amplified procedures sufficient to ensure complete, accurate, and timely accomplishment of these functions. Simple procedures, such as complex entry and exit, shall be contained in this chapter. Complex or lengthy procedures shall be explained in this chapter in amplified procedures format. The contents of this chapter shall include those crew briefings and procedures required to determine system status, maintain alert, execute emergency war orders, conduct post-launch operations and ensure secure peacetime operations. Refer to paragraph 3.4 for types of operating checklists. Operational briefings and procedures shall include, but are not restricted to, the following as appropriate for the specific weapon system:

- a. Operating Practices.
- b. Complex or Launch Control Facilities Entry and Exit Procedures.
- c. Changeover Procedures.
- d. Status and Fault Monitoring.
- e. Activity Coordination Procedures.
- f. Safety Procedures.
- g. Complex Status Verification/Launch Control Facility Inspections and System Test Procedures.
- h. Communications Equipment Procedures.
- i. Alert Monitoring.
- j. Retargeting, Preparatory Launch and Launch Procedures.
- k. Post-Launch Shutdown Procedures.

3.2.4.5.1 Crew Procedures. Insofar as possible, crew procedures common to all weapon systems; i.e., complex entry and exit, crew changeover briefings, activity coordination briefing, etc., should be identified by common titles. Amplified procedures should tell who, what, where, why and how. Most procedures in this chapter and in the next chapter will be in the demand response format (reference paragraph 3.4.2.5).

3.2.4.5.2 Complex/Launch control facility entry and exit procedures. Amplified procedures shall include functions accomplished by the on-coming and duty crew necessary for personnel identification, entry/exit, weather observation (if applicable) and check of warning devices and specified equipment, as applicable to the weapon system.

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3.2.4.5.3 Changeover procedures. Crew changeover procedures and briefings shall be included to facilitate the assumption of alert duties by the on-coming crew. These procedures shall include briefings and procedures that will enable both the duty crew and the relief crew to review, examine, and determine system status during the course of changeover. Procedures and briefings that would materially assist in accomplishing an effective crew changeover shall be included.

3.2.4.5.4 Status and fault monitoring. Weapon system status received at the launch control center may be presented by indications, printouts and alarms. When abnormal indications occur, the operator will be given instructions on the best method of prioritizing crew actions and reacting to the indications. Instructions must provide clear direction for the MCCM to understand and react to these stimuli and to be able to perform normal, emergency and malfunction procedures, to isolate the condition and maintain maximum weapon system capability.

3.2.4.5.5 Activity coordination procedures. These procedures shall include information required by missile combat crew members (MCCMs) to accomplish their alert duty assignments. Information shall advise MCCMs of scheduled activities, operational and maintenance support task, emergency procedures, and administrative matters. An activity coordination briefing shall be conducted prior to any operation of system equipment or the accomplishing of any on-site maintenance or servicing task. The purpose of activity coordination briefings is to assure safe and correct procedures are followed during the performance of any function involving on-site equipment. It is the responsibility of the briefing officer to ensure personnel are thoroughly briefed on all aspects of the activity to be conducted. This briefing shall include, but not be restricted to, communications, normal, malfunction, emergency and contingency procedures in progress or anticipated.

3.2.4.5.6 Safety procedures. Procedures for an on-site safety briefing for visiting personnel shall be included. The procedures shall include information sufficient in scope to advise visiting personnel of existing site hazards, alert procedures, hazardous operations scheduled or in progress, and danger area. The procedures shall include the escort-visitor relationship, location of safety equipment, reaction to announced emergency conditions and communications procedures.

3.2.4.5.7 Complex status verification/launch control facility inspections and system test procedures. This procedure shall provide the missile combat crew, during alert, with a verification of launch capability and system status. The extent and complexity of these procedures shall depend on the particular weapon system. However, in each case, the amplified procedures in this chapter and applicable corresponding abbreviated checklist shall contain complete verification procedures for determining launch capability and system status. System test procedures are designed to augment the verification of system status and enhance the ability of the MCCM to problem isolate and restore the weapon system to full alert posture. These procedures shall be placed in abbreviated checklist if deemed necessary by the acquiring agency.

- a. Verification/inspection procedures performed by other than missile combat crew members shall not be included in the operation manual.

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- b. Equipment status verified by crew personnel during the verification/inspection shall include essential items of AVE, OSE, MSE and RPIE. Equipment requiring status verification less frequently shall be contained in other weapon system technical orders.

3.2.4.5.8 Alert monitoring procedures. Procedures for alert monitoring shall consist of those crew functions conducted during alert to maintain normal alert posture. They shall include repetition or portions of the daily verification/inspection performed at specified times or at the discretion of the Crew Commander. Inclusion of these procedures in this chapter and the requirement for an abbreviated checklist shall be determined by the acquiring activity.

3.2.4.5.9 Communications equipment procedures. MCCM activities required to inspect, start-up, initialize and to perform diagnostic test will be provided. Manual operating procedures for isolating communications equipment from weapon system equipment may be required. The acquiring agency may request a stand-alone operations manuals for complex or highly integrated communications equipment.

3.2.4.5.10 Retargeting, preparatory launch and launch procedures. These procedures shall include the necessary actions to be accomplished by the missile combat crew to perform retargeting, preparatory actions and to launch successfully all or any portion of assigned sorties. Amplified procedures and applicable corresponding abbreviated checklists shall contain sufficient detail to ensure a coordinated crew procedure culminating in a tactical launch within countdown time parameters.

3.2.4.5.11 Post-Launch shutdown procedures. These procedures shall contain post-launch requirements to be accomplished by missile combat crew personnel. Procedures shall be in sufficient detail to direct missile crew personnel in accomplishing shutdown procedures (if applicable to the weapon system).

3.2.4.6 Chapter 4, Emergency Procedures. This chapter shall describe the procedures to be followed in meeting emergencies that might reasonably occur during the course of an alert tour. It shall include specific crew reactions required to correct or contain emergency conditions or prohibit crew actions in accordance with established directives. Safety hazards, emergency operational procedures and emergency situations shall be clearly defined to ensure crew recognition of an emergency condition occurring during any phase of the alert or launch operation. The contents of this chapter shall be limited to those emergency conditions, personnel actions and safety factors which if implemented could reasonably reduce the possibility of personnel injury, equipment damage, weapon system degradation, or violation of weapon system safety rules. If appropriate, procedures shall include information prohibiting certain crew actions which, if accomplished, would violate established weapon system safety directives.

3.2.4.6.1 Content. This chapter shall include procedures designed for (1) crew identification of emergency conditions, (2) corrective action, and (3) emergency peacetime/tactical procedures. Additional safety information may be included, but shall be restricted to, items of personnel safety; i.e., high voltages, high pressures, and environmental hazards, but shall not include items of a purely first-aid nature.

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3.2.4.6.1.1 Alert. Textual material, amplified procedures and attendant checklist for emergencies that the crew normally may be expected to encounter during periods of alert or maintenance activity shall be included. The amplified procedures shall include sufficient textual material to define the immediate affect the emergency condition will have on system alert capability and such actions within crew capability to restore sortie effectiveness. This chapter shall include procedures, as applicable to the weapon system, for use during a fire or overheat situation, hazard situation, security system violations, weapon system safety rule violations, etc.

3.2.4.7 Chapter 5, Malfunction Procedures. Missile combat crew maintenance procedures shall be located in this chapter. This chapter shall contain information for identification, isolation, and correction of system malfunctions that occur. On those systems which have redundant or backup equipment, the required procedures to maintain the alert or launch shall be provided. The information shall be of sufficient scope to include corrective procedures for peacetime and tactical conditions, and shall be in sufficient detail to enable crew personnel to accomplish appropriate procedures using authorized technical data or under the direction of competent technical authority; i.e., job control, command post, etc. Malfunction identification procedures shall be developed to afford ready reference to a particular malfunctioning system and the malfunction indication within that system. For easy reference, malfunctions shall be listed by subsystem and in order of countdown sequence and further identified as applicable to the alert or countdown phase. For ease of reference, malfunctions shall be listed by subsystem and in order of impact on launch countdown or sustaining strategic alert for the weapon system. The procedures shall be as direct and simple as possible consistent with the action necessary to remedy the malfunction. The information shall indicate the effect of the malfunction on the system, probable cause, and corrective action. Presentation of malfunction analysis procedures shall be standardized within a weapon system insofar as possible. At the direction of the acquiring activity, remedial actions shall be given in this chapter.

3.2.4.8 Chapter 6, Operating Limitations. This chapter shall contain those limitations which impose a launch restriction, affect guidance accuracy or otherwise adversely affect system operation or alert capable launch capability. Operating limitations, resulting from equipment or system malfunctions shall be contained in Chapters 4 and 5. This chapter shall contain operating limitations imposed as a result of system configuration, operational consideration and environmental restrictions as applicable. It shall include a description of each specific limitation and its application to the weapon system. In discussing limitations, applicable tables and graphs shall be included. Operational limitations of a classified nature shall be included in a classified supplement to the operation manual (see 3.3). Detailed information on peacetime/tactical launch restrictions peculiar to the weapon system shall be included. The following are examples of specific limitations.

3.2.4.8.1 Limitation on missile battery life. Information on the period of time the missile battery may be safely operated under a tactical load/no load condition shall be included.

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3.2.4.8.2 Limitation on start of countdown or launch. Limitations on the start of a peacetime/tactical countdown shall be included. Depending on operational criteria, this may include status of vapor monitoring equipment or other safety monitoring devices.

3.2.4.8.3 Countdown hold limitations. Operational hold limitations imposed by system design (e.g., calibration mode) shall be included.

3.2.4.8.4 Environmental restrictions. Environmental conditions; i.e., thunderstorms, hail, lightning, and wind, slope and physical conditions that would impose a limitation on weapon system operation shall be included. For mobile systems, these environmental restrictions must also include launch site peculiarities. When the information is classified, reference to the classified supplement shall be made.

3.2.4.9 Chapter 7, Crew Duties And Responsibilities. The title, duties and responsibilities of individual crew positions required to safely and effectively monitor the weapon system during alert and to conduct countdown operations shall be included. Titles of crew positions shall be standardized within each weapon system and, if at all possible, standard titles shall be extended throughout the missile force. This chapter shall be composed entirely of information furnished by the operating organization and shall contain no information for which engineering responsibility could become an issue.

3.2.4.10 Glossary. Inclusion of a glossary in the operation manual shall be mandatory. The contents shall be arranged in alphabetical sequence and shall include technical terms, definitions, and abbreviations peculiar to the weapon system.

3.3 Classified material.

3.3.1 Format and content requirements. The format and contents of the classified manual shall be identical to the unclassified manual which it supports. Arrangement and presentation of data shall be in accordance with the applicable requirements established for the corresponding unclassified manual, plus such additional requirements as determined by the acquiring activity. A foreword shall be included covering the scope and content of the classified manual. A classified manual shall be published only when determined absolutely necessary.

3.3.2 Reference between the classified manual and the basic manual. Both manuals shall completely cross reference one another. The method of referencing shall be identical in that the title pages and table of contents will reference one another.

3.4 Operations checklist. Where separate attendant checklists are specified by the acquiring activity, this paragraph shall apply. The abbreviated operation checklist for use with intercontinental ballistic missiles shall be prepared jointly by the contractor and using command or by the logistics command under the supervision of the acquiring activity. Verification of checklist procedures shall be accomplished prior to final publication. Unless authorized, preliminary procedures shall not be published to support operational requirements of the using agency. Checklist shall contain only that information necessary to safely and effectively accomplish the

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required task. The checklist shall tell only what to do and when to do it, not how to do the work. An abbreviated operational checklist shall be prepared when one or more of the following conditions exist:

- a. Communication between individuals is necessary to control or monitor task progression.
- b. Potential damage or degradation to equipment which would reduce operational readiness or adversely affect launch capability.
- c. Potential injury to personnel unless prescribed procedures are followed.

3.4.1 Types of checklists. Checklists shall be Type I (Non-Integrated) and Type II (Integrated). Publication of classified checklists of Types I and II shall be held to a minimum and shall be accomplished only with the approval of the acquiring activity.

3.4.1.1 Non-Integrated checklist. This checklist shall contain procedures where the actions are functionally independent of any other action or procedures. Examples of a non-integrated operational checklist include activity coordination briefing and safety briefing.

3.4.1.2 Integrated checklist. Integrated checklist shall contain procedures where the actions are functionally integrated between two or more crew members. Examples of integrated checklists include launch procedures, LCF Test procedures, and Inhibit/Anti-jam procedures.

3.4.2 Contents. Checklist data shall include instructions that duplicate, in abbreviated form, corresponding actions contained in the amplified procedures. The data shall be presented in demand-response format and shall be limited to material necessary to accomplish the action. The data shall be in double column format, with demands listed in the left hand column and response in the right hand column. Placard information and response shall be printed in upper case letters or figures; e.g., STRATEGIC ALERT indicator..OUT. Demand-response presentation need not consist of complete sentences. Leaders, i.e., LAUNCH CONTROL CONSOLE, shall be inserted between the columns on the left side of the page. When more than one crew member is required to perform a required action on a page, the appropriate crew position; i.e., MCCC, DMCCC, may be entered in the action column on the left hand side and in line with the action to be accomplished.

3.4.2.1 Cross references. Reference to applicable operation or maintenance manual(s) chapter and paragraph required to correct a malfunction or continue a countdown shall be listed immediately following the task. Inclusion of such additional data shall be limited to information essential to accomplishing the tasks and shall be included only when absolutely necessary.

3.4.2.2 Blank pages. Reverse side of checklist pages intentionally left blank shall not contain a statement to that effect. Numbers of the blank pages shall appear on the preceding page immediately following that page number and separated therefrom by a slash(/). For example: 3-17/3-18, 3-18 being the blank page.

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3.4.2.3 Page changes. When numbering continuity is broken by deletion of pages by change, the page deletions shall be referenced in the list of effective pages. A statement indicating the deletions shall be placed in the bottom margin of the preceding page or the top margin of the following page to show reason for the break in page number continuity. The statement shall be in the following form: "All data on Page _____, Figures _____, deleted." When changes to a function within the emergency procedures checklist result in addition or deletion of steps within the function, the entire function shall be reissued to avoid any break in sequential page or step numbering and to prevent any pages or major portions of any page within the function from being blank.

3.4.2.4 Warnings, cautions and notes. Inclusion of warnings, cautions and notes shall be in compliance with the provisions of MIL-STD-38784. Using agencies shall ensure that inclusion of special notices be held to an absolute minimum consistent with procedural requirements. When included, warnings, cautions and notes shall precede the action to which they refer.

3.4.2.5 Demand-Response procedures. In lieu of separate checklists, demand-response procedures for use with intercontinental ballistic missiles shall be prepared for lengthy and/or critical procedures. The contractor and using command shall jointly determine which procedures are demand-response. Demand-response procedures shall contain only that information necessary to safely and effectively accomplish the required task. The format of the demand-response procedures shall be standardized across ICBM systems and have the following characteristics:

- a. Each demand-response procedure shall start at the top of a page.
- b. Demand-response procedures shall be identified at the top and bottom of each page.
- c. All illustrations shall be located at the rear of the chapter or section to which they apply.
- d. Narrative procedures shall be placed in the front of the appropriate chapters and the demand-response procedures will be arranged sequentially thereafter.
- e. Each step of a demand-response procedure shall be numbered. There will be no lettered sub-steps in the demand-response procedures.
- f. Procedures shall be paragraph numbered. Steps shall be followed by a blank (underlined) to allow for check marking by the operator.
- g. Responses, where used, shall be capitalized.
- h. Introductory text (lead-in paragraphs) shall not be included in demand-response procedures, but shall appear in Chapter 3.

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- i. “Lead-in” statements referring to particular items of equipment or alternative actions shall be underlined.
 - (1) Where lead-ins reference nomenclature and steps, the nomenclature shall be referenced first, followed by applicable steps; e.g., LAUNCH CONTROL PANEL, steps 9-11.
- j. Amplification of steps shall be included only when necessary.
 - (1) When required by system complexity.
 - (2) When necessary to explain how or when.
 - (a) For “if required” steps.
 - (b) For steps which indicate options.
- k. The demand portion of a demand-response procedural step shall contain capital letters as follows:
 - (1) The first letter of the first word.
 - (2) Decal equipment nomenclature.
- l. Information applying to several steps shall be presented as a NOTE or lead-in sentence as best suits the situation.
- m. The response portion of a demand-response procedural step shall be capitalized.
- n. Established crew coding criteria used for LGM30 manuals shall be used for ICBM manuals (MCCC/DMCCC).
- o. The demand-response procedural step shall contain actions to be checked, observed, or verified, and arranged in order of the performance.
- p. Applicable Warnings and Cautions pertaining to personnel injury or equipment damage shall be included in the procedures.

3.4.3 Emergency procedures checklist. A separate and distinctive checklist shall be prepared covering appropriate emergency amplified procedures and launch continuation procedures contained in Chapter 4 of the operation manual. Emergency procedures checklist shall be restricted to those crew procedures required to save the equipment, prevent injury to personnel or continue a launch countdown involving hazardous conditions or operations. Pages within the emergency procedures checklist shall be prepared to the same format as the normal procedures

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checklist except that they shall have a border of 1/4 inch blank diagonal hash markings bled to all four edges of the page.

4. VERIFICATION.

Technical Manuals shall comply with the requirements of sections 3 and 5 of this specification and shall be verified in accordance with MIL-STD-38784.

5. PACKAGING

For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Points packaging activity within the Military Department or Defense Agency, or within the Military Departments System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Intended use. Technical manuals prepared in accordance with this specification are intended to provide operating procedures for intercontinental ballistic missile combat crews.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of the specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.).
- c. Packaging requirements (see 5.)

6.3 Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been cleared and listed in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDDL) must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract.

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6.4 Subject term (key word) listing.

Checklists
Illustrations
Intercontinental Ballistic Missiles
Operation Manuals

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodian: Air Force 19

Preparing Activity: Air Force 19
(Project TMSS F612)

Review Activities: Air Force 16, 99

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. 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.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-DTL-38311

2. DOCUMENT DATE (YYMMDD)
97/12/09

3. DOCUMENT TITLE MANUALS, TECHNICAL: OPERATIONS AND ASSOCIATED CHECKLIST (SPACE SYSTEMS) PREPARATION OF

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME
SMC/AXMP

b. TELEPHONE Include Area Code)
(1) Commercial (2) AUTOVON
(310) 363-2406 883-2406

c. ADDRESS (Include Zip Code) Commander
160 SKYNET STREET, SUITE 2315
LOS ANGELES, AFB, CA 90245-4683

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
DEFENSE QUALITY AND STANDARDIZATION OFFICE
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466
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