NOTE: The cover page of this standard has been changed for administrative reasons. There are no other changes to this document.

NOT MEASUREMENT SENSITIVE

MIL-STD-1662C(OS)
2 March 1992
SUPERSEDING
MIL-STD-1662C(OS)
25 AUGUST 1986

DEPARTMENT OF DEFENSE
STANDARD PRACTICE

ORDNANCE ALTERATION (ORDALT) INSTRUCTIONS, PREPARATION OF

AMSC NO. D6722

AREA CMAN

FOREWORD

1. This military standard is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: Commander, Indian Head Division, Naval Surface Warfare Center, (Code 3730), Indian Head, MD 20640-5035 by using the Standardization Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

3. ORDALT Instructions provide naval activities with all of the information necessary to effect the alteration of naval ordnance weapons, weapon systems, computer programs, and equipment (expendable or non-expendable) that are either in service (shipboard or shore activities) in store, or awaiting installation. These alterations include: additions, deletions, rework or replacement of parts/assemblies/equipment, changes in material, and changes in the manner of assembly.

4. ORDALT Instructions direct (or describe) configuration changes to equipment after delivery from production. ORDALT Instruction numbers are also assigned to production-line changes to systems or equipment to identify differences from an established product baseline. Configuration status accounting of ORDALT applicability and accomplishment is based on accurate ORDALT instruction number identification and the revision, change, or issuance of a new ORDALT instruction in accordance with the provisions of this standard. ORDALT Instruction numbers are assigned only to Class I Engineering Change Proposals (ECPs) that have been approved by proper authority. Once issued, ORDALT instructions are subject to formal change control procedures and may not, under any circumstances, be revised or changed without the appropriate Configuration Control Board (CCB) authority.

5. ORDALT Instructions are issued as Naval Sea Systems Command (NAVSEA) technical documentation. However, the preparer of the ORDALT instruction may be a NAVSEA Code, a NAVSEA supporting field activity, another service-managed activity so directed, or a contractor.

6. The figures appearing at the back of this standard are only examples. If there is any conflict between the text and the figures, the text applies.

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

1. SCOPE

1.1 Scope. This standard establishes the format, content and procedures for the preparation of ORDALT instructions. ORDALT instructions are prepared in either "short format" or "long format" (formerly, referred to as "short form" or "long form") (see 3.7.1 and 3.7.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 these 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).

SPECIFICATIONS

MILITARY

MIL-P-15024/10	Nameplates, ORDALT Plates and Information Plates
MIL-N-18307	*Nomenclature and Identification for Aeronautical Systems, Including* Joint Electronics Type Designated Systems and Associated Support Systems
MIL-P-24534	*Planned Maintenance System: Development of Maintenance* Requirement Cards, Maintenance Index Pages, and Associated Documentation
MIL-M-38784	*Manuals, Technical: General Style and Format*

STANDARDS

MILITARY

MIL-STD-12	Abbreviations for Use on Drawings, and in Specifications, Standards and Technical Documents
MIL-STD-130	Identification Marking of US Military Property
MIL-STD-196	Joint Electronics Type Designation System
MIL-STD-480	Configuration Control-Engineering Changes, Deviations, and Waivers
MIL-STD-481	*Configuration Control-Engineering Changes, (Short Form),* Deviations and Waivers
MIL-STD 970	Standards and Specifications, Order of Preference for the Selection of
MIL-STD-1661	MARK and MOD Nomenclature System

DOD-STD-1686	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices
MIL-STD-1806	Marking Technical Data Prepared by or for the Department of Defense
MIL-STD-2039	Field Changes and Field Change Kits, Preparation of
DOD-STD-2101	Classification of Characteristics
DOD-STD-2167	Defense System Software Development

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

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

FEDERAL

Public Law 91-596	Occupational Safety and Health Act (OSHA)
Executive Order 12191	Occupational Safety and Health Act for Federal Employees

DEPARTMENT OF DEFENSE

DOD 5220.22-M	Industrial Security Manual for Safeguarding Classified Information

US GOVERNMENT PRINTING OFFICE (GPO)

Library of Congress Catalog No. Z253-U58

United States Government Office Printing Office Style Manual

(Copies of Public Law 91-596, Executive Order 12191, DOD 5220.22-M and the GPO Style Manual are available from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402-0001.)

DEFENSE LOGISTICS AGENCY

Cataloging Handbook H4/H8	Commercial and Government Entity (CAGE)

(Cataloging Handbook H4/H8 is available in two forms: microfiche and magnetic tape. Microfiche copies are available from the Superintendent of Documents, US Government Printing Office, Washington, DC, 20402-0001, and the Commander, Defense Logistics Service Center, Attn: DISC-WP, Federal Center, Battle Creek, MI 49017-3084. Magnetic tape copies are available from the Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.)

DEPARTMENT OF THE NAVY

OPNAVINST C3501.2	Naval Warfare Mission Areas and Required Operational Capability/Projected Operational Environment (ROE/POE) Statements (U)
OPNAVINST 4700.33	Ship Alteration Priority Policy
OPNAVINST 4790.4	Issue of Ships' Maintenance and Material Management (3M) Manual
OPNAVINST 5510.1	Department of the Navy Information and Personnel Security Program Regulation
OPNAVINST 5513.1	Department of the Navy Security Classification Guides
OPNAV P09B2-105	Standard Navy Distribution List (SNDL) (Part 2)
OPNAV P09B2-107	Standard Navy Distribution List (SNDL) (Part 1)

(Copies of the Office of the Chief of Naval Operations (OPNAV) instructions and publications are available from the Naval Aviation Supply Office, Physical Distribution Division, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. The application for the OPNAV publications should specify National Stock Number (NSN) 0420-LP-100-0088 for OPNAV P09B2-105 and NSN 0420-LP-200-2068 for OPNAV P09B2-107.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, 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).

INSTITUTE FOR INTERCONNECTING AND PACKAGING ELECTRONIC CIRCUITS (IPC)

IPC T 50	Terms and Definitions for Interconnecting and Packaging Electronic Circuits (DOD adopted)

(Application for copies should be addressed to The Institute for Interconnecting and Packaging of Electronic Circuits, 3451 Church Street, Evanston, IL 60203.)

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

IEEE 315	Standard Symbols for Electrical and Electronics Diagrams (Including Reference Designation Class Designation Letters) (Same as ANSI Y32.2) (DOD adopted)
IEEE 200	Standard Reference Designations for Electrical and Electronics Parts and Equipment (Same as ANSI Y32.16) (DOD adopted)

(Applications for copies should be addressed to The Institute of Electrical and Electronic Engineers, Inc., Standards Operations, 345 East 47th Street, New York, NY 10017.)

(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.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specified exemption has been obtained.

3. DEFINITIONS

3.1 Combat system. A combat system is a functional grouping of all shipboard equipment and systems that are designed to detect, track, identify, communicate, process, evaluate and control the engagement of enemy forces, either actively or passively. The combat system includes: command and control, missiles, guns, fire control, launchers, torpedoes, rockets, sensors, electronic warfare, communications, navigation, associated computer programs and related offboard assets, for example, Light Airborne Multipurpose System (LAMPS). The combat system is the totality of the warfighting capability of a surface ship.

3.2 Computer program (Ordnance). A compilation or group of logic instructions given to and used by a computer to perform specific operations in resolving digital and analog input signals into values or orders necessary to employ or deploy weapons. Programs are normally contained on or provided via a transportable medium such as punched or magnetic tape, fixed or movable disks, diskettes, disk pack or punched cards, and are assigned nomenclature for identification as a part of a higher level configuration item.

3.3 Field Change (FC). Any modification or alteration made to electronic equipments after delivery to the Government and documented in accordance with MIL-STD-2039.

3.4 Latent defect. A defect that existed at the time of Government acceptance but could not be detected with existing inspection/test procedures.

3.5 Maintenance Assistance Module (MAM). A replaceable assembly (module) required to execute an approved maintenance plan. A MAM is used to isolate a fault to an assembly (or subassembly) having a unique application in a particular equipment. MAMs are not considered spare or repair parts except under specified emergency conditions.

3.6 Ordnance alteration (ORDALT). An ORDALT is a change to naval ordnance equipment or ordnance associated computer programs. Equipment alterations include the addition, deletion, rework or replacement of parts, assemblies or equipment; or changes in assembly procedures. Ordnance associated computer program alterations include the incorporation of different computer program versions, approved modification or corrections to both operational test and maintenance programs. An ORDALT is the result of an approved Class I Engineering Change Proposal (ECP) prepared and processed in accordance with MIL-STD-480 or MIL-STD-481.

3.7 ORDALT Instruction. An ORDALT instruction is a technical document that contains the detailed instructions, test procedures, provisioning information, support documentation, and other related information required to perform and support an ORDALT.

3.7.1 Short format ORDALT instruction. A "short format" ORDALT instruction is an instruction that covers an alteration that satisfies the following criteria:

a. The alteration does not affect the spare parts allowance of the equipment involved,

b. The alteration does not affect the weight and moment of the ship in which installed,

c. The alteration does not require the accomplishment of an associated SHIPALT, and

d. The alteration does not require the furnishing of an ORDALT kit of material for accomplishment.

3.7.2 Long format ORDALT instruction. A "long format" ORDALT instruction is an instruction that covers an alteration that satisfies one or more of the following criteria:

a. The alteration may affect the spare parts allowance of the equipment involved,

b. The alteration may affect the weight and moment of the ship in which installed,

c. The alteration may require the accomplishment of an associated SHIPALT, or

d. The alteration may require the furnishing of an ORDALT kit of material for accomplishment.

3.8 ORDALT Kit. An ORDALT kit is an assemblage of materials and documentation required to perform an alteration and to supply initial repair parts to provide on-board support. The kit for a computer program ORDALT consists of program tapes, discs and ancillary materials required to perform a computer program modification or correction.

3.9 Ship alteration (SHIPALT). Any change in the hull, machinery, equipment, or fittings that involves change in design, materials, number, location, or relationship of the component parts of an assembly.

3.10 Spares.

3.10.1 Installation and checkout spares. Installation and checkout spares are parts used by the installing agent in accomplishment and checkout of an alteration.

3.10.2 Initial spares. Initial spares are onboard repair parts acquired as part of the ORDALT kit that are used prior to full Navy Supply support.

3.10.3 Interim spares. Interim spares are repair parts, provided and controlled by the technical manager, to be used to augment initial spares prior to full Navy Supply support.

3.10.4 Coordinated Shipboard Allowance List (COSAL) spares. Spares provided through the Navy Supply System to support COSAL.

3.11 Survivability ORDALT. Any ORDALT that provides a system or equipment with the ability to sustain damage incurred by attack, shock, or other types of influence from outside activities and remain operable, for example, alterations providing improved or new shock mounts, armor protection, protected cable ways, and solid state components or upgraded material whose requirement was identified specifically by a shock test or similar event apply.

3.12 Abbreviations and acronyms used in this document. The abbreviations and acronyms used in this document are defined as follows:

ACN	Advance Change Notice
ADP	Automatic Data Processing
AEL	Allowance Equipage List
AIT	Alteration Installation Team
AMSDL	Acquisition Management System and Data Requirements Control List
AMT	Amalgamated Military/Technical Improvement Plan
ANSI	American National Standards Institute
APL	Allowance Parts List
BRF	Best Replacement Factors
CAGE	Commercial and Government Entity (Formerly FSCM and CODE IDENT)
CC	Classification of Characteristic
CCB	Configuration Control Board
CDRL	Contract Data Requirement List
CI	Configuration Item
CODE IDENT	Code Identification (replaced by CAGE)
COSAL	Coordinated Shipboard Allowance List
CSTOM	Combat System Technical Operations Manual
DID	Data Item Description
DOD or DoD	Department of Defense
DODISS	Department of Defense Index of Specifications and Standards
DOP	Designated Overhaul Point
EC	Engineering Change
ECP	Engineering Change Proposal
EIC	Equipment Identification Code
EMP	Electro Magnetic Pulse
ESD	Electrostatic Discharge
ESDS	ESD Sensitive
FAR	Federal Acquisition Regulation
FC	Field Change
FCS	Fire Control System
FMP	Fleet Modernization Program
FSCM	Federal Supply Code for Manufacturers (replaced by CAGE)
GPETE	General Purpose Electronic Test Equipment
GPO	Government Printing Office
HCP	Hardness Critical Process
ICP	Inventory Control Point
IEEE	Institute of Electrical and Electronic Engineers
ILS	Integrated Logistic Support
IMA	Intermediate Maintenance Activity
IPC	Institute for Interconnecting and Packaging Electronic Circuits

ISEA	In-Service Engineering Agent
I&C	Installation and Checkout
JETDS	Joint Electronics Type Designation System (Formerly known as the Joint Army-Navy Nomenclature System (AN System))
LAMPS	Light Airborne Multipurpose System
MAM	Maintenance Assistance Module
MARK	A NAVSEA type designation (not an acronym)
MDCS	Maintenance Data Collection System
MEC	Military Essentiality Code
MIP	Maintenance Index Page
MK	Abbreviation for MARK
MOD	Modification
MRC	Maintenance Requirement Card
NA	Not Applicable
NAVSEACEN	Naval Sea Support Center
NAVSEA/NAVSEASYSCOM	Naval Sea Systems Command
NAVSEACENLANT	NAVSEACEN, Atlantic Detachment
NAVSEACENPAC	NAVSEACEN, Pacific Detachment
NCN	Navy Control Number
NPFC	Naval Publications and Forms Center
NSN	National Stock Number
OADR	Originating Agency Determination Required
OBRP	On-board Repair Part
OD	Ordnance Data
OPNAV	Office of the Chief of Naval Operations
OPNAVINST	OPNAV Instruction
ORDALT	Ordnance Alteration
OSHA	Occupational Safety and Health Act
PL	Parts List
PMS	Planned Maintenance System
ROC/POE	Required Operational Capability/Projected Operational Environment
SCAT	Subcategory Code
SCN	Shipbuilding and Conversion, Navy
SHIPALT	Ship Alteration
SIMA	Shore Intermediate Maintenance Activity
SM&R	Source, Maintenance and Recoverability
SNAP	Shipboard Non-tactical ADP Program
SNDL	Standard Navy Distribution List
SPETE	Special Purpose Electronic Test Equipment
SPETERL	Ships Portable Electric/Electronic Test Equipment Requirements List
SPM	Ship's Program Manager
SSR	Ships Selected Records
TM	Technical Manual
TM&DE	Test, Measurement and Diagnostic Equipment

TREE	Transient Radiation Effect on Electronics
TRF	Technical Replacement Factor
TRS	Technical Repair Standard
UMRC	Unscheduled Maintenance Requirement Card
WD	Weapon Data

4. GENERAL REQUIREMENTS

4.1 General. The ORDALT instruction(s) shall be prepared in accordance with the requirements specified herein. ORDALT instructions shall be prepared in either the short format or long format (see 3.7.1, 3.7.2, and 5.2), as specified in the contract or order (see 6.3). The ORDALT instruction shall clearly and accurately describe all essential kit contents, material, parts, support equipment, test equipment, installation instructions, test procedures, quality assurance provisions, personnel and facilities qualifications, provisioning information, support documentation (including MIPs and MRCs prepared in accordance with MIL-P-24534 or system computer program documentation (version description documents, program listings, and other data) prepared in accordance with DOD-STD-2167) and other information required to perform and support the alteration, (for examples, see figures 1 through 15).

4.2 Minor shipboard work. Minor shipboard work associated with the ORDALT shall be documented as specified in 5.2.13.2. The minor shipboard work incorporated in the ORDALT instruction must be approved by the Naval Sea Systems Command Ship's Program Manager (SPM) and shall be limited to the following:

a. The work consists of picking up spare wires in existing cables or installing cables in existing wireways between two ordnance equipment cabinets or associated junction boxes in the same space.

b. The work has no effect or only negligible effect on weight (less than 50 pounds) and moment.

c. The work does not exceed existing electrical power, coolant, or air conditioning levels available in the work compartment.

d. The work area is accessible without creating a special access.

e. The work is within the accomplishment level of the Intermediate Maintenance Activity (IMA) and can be accomplished within 20 percent of total hours on the job.

f. The work requires a minimum of support from additional work centers (welding, fabrication, insulation, painting, and other work processes).

4.3 Security classification. ORDALT instructions shall be unclassified whenever possible. If classified, the lowest security classification compatible with contents shall be assigned. The security classification of the ORDALT instruction shall be assigned by authority of the appropriate security classification guide source document, multiple sources, or a designated original classification authority. The security classification of ORDALT instructions shall be in accordance with the requirements of OPNAVINST 5513.1. When the ORDALT instruction is prepared by a Navy activity, the classification markings will be in accordance with OPNAVINST 5510.1. For ORDALT instructions prepared by contractors, the classification markings shall be in accordance with DOD 5220.22-M.

4.3.1 Overall classification. The overall classification assigned to the ORDALT instruction shall be placed at the top and bottom of the title page (see 5.1.1). When this results in the title page being marked with a higher classification than that assigned to the contents of that page, an explanation of the higher classification shall be made beneath the bottom classification marking; for example:

CONFIDENTIAL
(This page is UNCLASSIFIED)

or

SECRET
(This page is CONFIDENTIAL)

The classification authority and declassification schedule shall be shown at the bottom center of the title page above the classification marking (see figure 1).

4.3.2 Classification of titles. The title of the ORDALT instruction shall be identified in accordance with OPNAVINST 5510.1 or DOD 5220.22-M, as applicable (see figure 1).

4.3.3 Classification of pages. Each page (other than the title page) shall be marked according to its highest content, and this classification marking shall be placed at top and bottom of the page, except when the classification of two pages of one sheet (the two pages being back to back) differ, the higher classification shall be placed on both pages (see figures 4 and 5). A blank page, backing up a classified page, shall show the classification of the classified page. Unclassified sheets (both pages being unclassified) shall be so marked. If the classification shown on the last page of the ORDALT instruction is not the same as that shown on the title page, then a blank sheet shall be added to the back of the instruction which shows the same classification (excluding Restricted Data notations, if applicable) as on the title page. No text shall appear on the last page of the ORDALT instruction. A blank page shall be provided as the last page. Overall classification shall be marked at the top and bottom center of the page. When any page, except a blank page, is marked with a higher classification than that assigned to its contents, an explanation shall be made on that page beneath the bottom classification marking; for example:

CONFIDENTIAL
(This page is UNCLASSIFIED)

or

SECRET
(This page is CONFIDENTIAL)

4.3.4 Downgrading/declassification. As applicable, downgrading/declassification markings shall be applied in accordance with OPNAVINST 5510.1 or DOD 5220.22-M, as applicable.

4.4 Distribution statements and export control warning notice. All classified and unclassified ORDALT instructions shall be marked in accordance with MIL-STD-1806 and as specified in 5.1.1.8 and 5.1.1.9.

4.5 ORDALT instruction identification. The ORDALT instruction identification shall be placed on each page; at the upper right corner of the title page (see 5.1.1.2) and at the upper center of each successive page. This identification shall be composed of the symbol "ORDALT" followed by an identification number (Arabic numerals). The ORDALT identification number shall be assigned as specified in the contract or order (see 6.4). Changes, revisions, and supersessions to the ORDALT instructions shall be designated as specified in 4.6.

4.6 Correction of released ORDALT instructions.

4.6.1 Changes. Additions or deletions to the text to improve clarity, make changes in applicability or corrections for typographical error, or other minor changes to an existing ORDALT instruction shall require the preparation of an ORDALT instruction change. The changed identification shall be composed of the word, "CHANGE," followed by a sequentially assigned Arabic numeral (see figure 6). The change number shall appear below the ORDALT identification. If it becomes necessary to issue more than one change to an instruction, the changes shall be numbered consecutively. Changes beyond the first shall state clearly beneath the title, whether they supersede or supplement prior changes (see figure 7). Pen and ink changes shall not be used. Changes shall be prepared on a page-by-page basis so that a changed page substitutes for the original page, which is discarded. Vertical lines shall be placed at the outer margins of the page to indicate changed portions. Each page affected by the change shall also carry the change number in the lower outer corner (see figure 8). A new title page shall be prepared in accordance with 5.1.1 (see figures 6 and 7). A cover sheet shall be prepared and attached showing the purpose of the change, listing of pages changed, and applicable security classification markings, distribution statement and export control warning notice (see figure 9).

4.6.2 Revisions. A revision shall be issued only when there are major changes to the technical portion of the text, with no change to the kit content, and when no separate report of completion is required. Revisions shall also be issued to correct any latent defects found under contract warranties. A revision shall be a complete new edition of an existing ORDALT instruction. Revisions shall be indicated by a capital Gothic letter immediately following the same identification number as the basic instruction. The first revision shall be marked with a letter "A" and the succeeding revisions shall be indicated by other letters in alphabetical sequence, except that the letters "I", "O", "Q", "S", "X" and "Z" shall not be used. A revision to an ORDALT instruction shall clearly bear the following legend beneath the title (see figure 6).

"NOT TO BE ACCOMPLISHED ON MATERIAL ON WHICH ORDALT (identify), HAS BEEN ACCOMPLISHED."

4.6.3 Supersessions. A new (superseding) ORDALT instruction shall be prepared in lieu of a revision whenever the physical material to be supplied in the new ORDALT kit is not completely interchangeable with the material supplied in the original kit, and whenever the alteration of the equipment requires the submission of a new completion report. The new (superseding) ORDALT instruction shall not be prepared until after Government approval of a new ORDALT assignment via the

engineering change process and assignment of the new ORDALT instruction number. A new (superseding) ORDALT instruction shall include a supersession legend (see 5.1.1.6) as follows:

a. If the new superseding ORDALT is required even though the original ORDALT installation has been accomplished, the new ORDALT instruction shall clearly bear the following legend beneath the title (see figure 11):

"SUPERSEDES ORDALT (identify). TO BE ACCOMPLISHED WHETHER OR NOT ORDALT (identify) HAS BEEN ACCOMPLISHED."

b. If the original superseded ORDALT has been performed and the accomplishment of the new ORDALT is not required, the new ORDALT shall clearly bear the following legend beneath the title (see figure 12):

"SUPERSEDES ORDALT (identify). NOT TO BE ACCOMPLISHED ON MATERIAL ON WHICH ORDALT (identify) HAS BEEN ACCOMPLISHED."

4.7 Proofing. The ORDALT instruction and kit and all of its content including computer programs and related documentation shall be subject to proofing as specified in the contract or order (see 6.4). Proofing will be performed to ascertain that the intended purpose of the alteration is satisfied and to identify any discrepancies. Proofing will determine whether immediate action must be initiated to correct discrepancies in the first-time alteration installation and in the alteration design package or related documentation to preclude a repeat of the same problems on subsequent installations.

4.8 ORDALT Instruction approval. The ORDALT instruction shall be subject to approval as specified in the contract or order (see 6.4). Authentication of approved ORDALT instructions will be as specified in 5.1.2.3.

5. DETAILED REQUIREMENTS

5.1 Front matter.

5.1.1 Title page. The ORDALT instruction title page shall be in accordance with the requirements specified in 5.1.1.1 through 5.1.1.12 (see figures 1, 2, 3, 6, 7, 10, 11 and 12).

5.1.1.1 Security classification. The security classification markings shall be as specified in 4.3, 4.3.1, 4.3.2, and 4.3.4

5.1.1.2 ORDALT instruction identification. The ORDALT instruction identification (including applicable revision indicator) shall be shown at the upper right corner of the title page. An upper rule (line) shall be placed across the page below the ORDALT instruction identification.

5.1.1.3 CAGE Code identification. The NAVSEASYSCOM design activity CAGE Code identification "CAGE CODE 53711" shall be shown at the top left corner of the title page and above the upper rule opposite the ORDALT instruction identification.

5.1.1.4 Change identification. The change identification (see 4.6.1) shall appear below the ORDALT instruction identification and the upper rule (see figures 6 and 7).

5.1.1.5 Heading and title. The heading "ORDALT INSTRUCTION" shall be centered above the title of the ORDALT instruction. The title shall completely identify the unit, equipment, and system (such as name and type designation, for example, MARK, MOD, JETDS, or Computer program identification) in accordance with the official nomenclature assigned to such items by NAVSEASYSCOM (for example, nomenclature established in accordance with MIL-STD-1661, MIL-STD-196 or MIL-N-18307), as specified in the contract or order (see 6.4). The title shall be shown in all capital letters.

5.1.1.6 Change, revision and supersession legends. The applicable change (see 4.6.1 and figure 7), revision (see 4.6.2 and figure 10), or supersession (see 4.6.3 and figures 11 and 12) legend shall appear immediately below the title of the ORDALT instruction.

5.1.1.7 Command code. The command code shall be that of the NAVSEASYSCOM program manager responsible for the system/equipment and shall appear below the title and applicable legends (see 6.4).

5.1.1.8 Distribution statements. ORDALT Instructions shall be marked with one of the following distribution statements, as specified in the contract or order (see 6.4):

> "DISTRIBUTION STATEMENT D: Distribution authorized to the Department of Defense and U.S. DOD contractors only; Critical Technology; (date). Other requests shall be referred to Commander, Naval Sea Systems Command (controlling office code) Washington, DC 20362-5101"

or

"DISTRIBUTION STATEMENT E: Distribution authorized to DOD components only; Critical Technology; (date). Other requests shall be referred to Commander, Naval Sea Systems Command (controlling office code) Washington, DC 20362-5101"

or

"DISTRIBUTION STATEMENT F: Further dissemination only as directed by Commander, Naval Sea Systems Command (controlling office code), Washington, DC 20362-5101 (date) or higher DOD authority."

The date applied to the distribution statement shall be the same as the effective date of the ORDALT instruction (see 5.1.1.11). The controlling office code shall be the same as specified for the command code (see 5.1.1.7).

5.1.1.9 Export control warning notice. All ORDALT instructions that are determined by the contracting activity (see 6.4) to contain export-controlled technical data shall be marked with the following notice:

"WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25."

5.1.1.10 Authority notice. The following authority notice, underlined by a lower rule placed across the page, shall be shown below the distribution statement and export control warning notice:

"PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND"

5.1.1.11 Effective date. The effective date of the ORDALT instruction shall be the same as the date of Government authentication (see 5.1.2.3). The date shall appear immediately below the right end of the lower rule and shall be specified as day, month and year (all capital letters).

5.1.1.12 Change or revision dates. The change date (see 4.6.1 and figures 6 and 7) or revision date (see 4.6.3 and figure 10) shall be shown immediately under the effective date and preceded by "CHANGED" or "REVISED" as applicable.

5.1.2 Signature page. The ORDALT instruction signature page shall be prepared in accordance with 5.1.2.1 through 5.1.2.3 (see figure 13).

5.1.2.1 Identification of preparer. The name and address of the Government activity or contractor who prepared the ORDALT instruction shall be entered under the heading "PREPARED BY." ORDALT instructions delivered under contract shall also include, under this heading, the contract number and the name of any subcontractor who generated any part of such data.

5.1.2.2 In-service engineering agent (ISEA). The name and address of the cognizant ISEA shall be entered under the heading "IN-SERVICE ENGINEERING AGENT FOR THE WEAPON SYSTEM/EQUIPMENT."

5.1.2.3 Government authentication. The approved ORDALT instruction will be authenticated by entering under the heading "APPROVED FOR NAVSEA", the signature, position, code and effective date of signature of the official to whom responsibility for such authentication has been delegated to by NAVSEASYSCOM. Authentication stamps or other substitutes for a signature should not be used.

5.1.3 Table of contents. ORDALT instructions that are complex in nature, contain a large number of illustration or figures, or are 40 pages or more in length shall contain a table of contents. The single word "CONTENTS" in capital letters shall head the contents page. Identification numbers and headings for paragraphs and subparagraphs shall be shown in the listing. The contents also shall include figures, tables, and enclosures if these are included. Page numbers shall be entered corresponding to each entry title. The table of contents shall be located after the signature page and before the text (see figure 14).

5.2 Primary paragraphs. The following primary paragraphs, numbered and titled as shown, shall be addressed in all ORDALT instructions, but shall be marked "NOT APPLICABLE" or "NONE", as appropriate, when no data is required (see figure 15). For short format ORDALT instructions, entries under primary paragraph headings 12, 15 and 16 shall always be marked "NONE" or "NOT APPLICABLE":

ORDALT INSTRUCTION PRIMARY PARAGRAPHS
(Numbers in parentheses refer to applicable requirements paragraphs in this standard)

Number	Title
1.	DISTRIBUTION (5.2.1)
2.	SUBJECT (5.2.2)
3.	PURPOSE (5.2.3)
4.	AUTHORITY (5.2.4)
5.	APPLICATION (5.2.5)
6.	ORDALT ACCOMPLISHMENT KEYPOINT CHECK (5.2.6)
7.	ORDALT INSTALLATION PRIORITY LEVELS (5.2.7)
8.	ACCOMPLISHMENT LEVELS (5.2.8)
9.	MAN-HOURS REQUIRED (5.2.9)
10.	PARTS LIST AND DRAWING REFERENCES (5.2.10)
11.	ENCLOSURES (5.2.11)
12.	SUPPLY DATA (5.2.12)
13.	DETAILED INSTRUCTIONS (5.2.13)
14.	IDENTIFICATION (5.2.14)
15.	SHIPPING WEIGHT (5.2.15)
16.	WEIGHT AND MOMENT (5.2.16)
17.	UPDATING OPERATIONAL SUPPORT DOCUMENTATION (5.2.17)
18.	REPORT OF COMPLETION/LOG ENTRY (5.2.18)

5.2.1 ORDALT Instruction Paragraph 1 - DISTRIBUTION. A distribution list specified by the contracting activity (see 6.4) shall be included as part of the instruction. The listed activities will be designated by the codes specified in OPNAV P09B2-105 or OPNAV P09B2-107, Standard Navy Distribution List (SNDL). The date and number of the SNDL used will be included. The list will also contain the SNDL codes for all shore stations designated in 5.2.5.3 and such force, type and other commands, repair ship and facilities, Government quality assurance representatives and other distribution as may be appropriate (depending on the nature of the ORDALT) or as may be directed by NAVSEASYSCOM. A footnote to the distribution list will state the repository for obtaining additional copies of the ORDALT instruction.

5.2.2 ORDALT Instruction Paragraph 2 - SUBJECT. This paragraph shall identify the component, computer program or other unit, and, as applicable, the next higher assembly and the system. Serial numbers shall be included for complete identification whenever a limited series of a particular equipment is to be altered by the specific ORDALT kit. Approved nomenclature, computer program identifiers, and system application accounting system with the configuration levels tracked by NAVSEASYSCOM shall be used. The term "all MODS" shall not be used as part of the identification or description of the equipment (see 5.2.5.2).

5.2.3 ORDALT Instruction Paragraph 3 - PURPOSE. The text shall provide a clear and concise functional description of the alteration with explanations of the reasons and advantages. If after the ORDALT instruction has been prepared a change is approved, the purpose for the change shall be a part of the cover sheet in accordance with paragraph 4.6.1 (see figure 9). When an ORDALT instruction is revised, the purpose of the revision shall be explained under a subheading titled "Purpose of Revision."

5.2.4 ORDALT Instruction Paragraph 4 - AUTHORITY. This paragraph shall list the NAVSEASYSCOM Configuration Control Board (CCB) Directive number and date, each Engineering Change Proposal (ECP) involved in the ORDALT instruction, the ECP number, the applicable NAVSEASYSCOM Navy Control Number (NCN), and the name of the ECP originator. A subparagraph shall be added to state authority for changes and revisions.

5.2.5 ORDALT Instruction Paragraph 5 - APPLICATION. A statement of dependence upon concurrent or prerequisite incorporation of other ORDALTs, SHIPALTs, Field Changes (FCs), and Engineering Changes (ECs) shall be entered before the listing of application information. The use of the term "concurrent" shall indicate that it is mandatory for the listed alterations to be done at the same time. The use of the term "subsequent to" shall indicate it is mandatory that the subject ORDALT be done after the accomplishment of the listed alterations. Each ORDALT shall have a separate unique text. ORDALT instructions shall always indicate whether or not a concurrent or prerequisite ORDALT, SHIPALT, FC, or EC is required, for example:

"NOTE The work required by this ORDALT Instruction shall be accomplished (concurrently with) (subsequent to) the accomplishment of ORDALT/SHIPALT/Field Change/Engineering Change (number and date)."

or

"NOTE The work required by this ORDALT Instruction may be accomplished without dependency or concurrency with any other ORDALT, SHIPALT, Field Change or Engineering Change."

5.2.5.1 Test equipment for checkout. If any test equipment to be used for checkout after completion of the alteration requires modification by another ORDALT, Field Change or Engineering Change, the test equipment requiring modification shall be listed, along with the modifying ORDALT/FC/EC numbers. If no data is required under this subheading, insert the word "None."

5.2.5.2 Identity. The specific weapon, weapon system, computer program or equipment to which the ORDALT instruction applies shall be identified by complete nomenclature and by MARK and MOD, JETDS, or other designation, as applicable. Each MOD shall be listed if more than one is covered. The phrase "ALL MODS" shall not be used. If ORDALTed equipments are not interchangeable with equipments not scheduled to receive the ORDALT, a new equipment identification shall be established for the altered equipment in accordance with MIL-STD-196 or MIL-STD-1661 as applicable. Serial numbers or ship/hull numbers shall be included; for example:

"This ORDALT Instruction is applicable to all Radar Sets AN/SPG-53F with serials 200 and lower, installed or in store. The equivalent of this ORDALT will be accomplished during production on equipments having serials higher than 200."

or

"This ORDALT Instruction is applicable to Radar Set AN/SPG-53F, serial numbers 1-300."

5.2.5.3 Location or system. Applicability for ORDALT instructions that are applicable only to equipment installed in a specific location, ship class or ship configuration should be stated for example:

"This ORDALT Instruction is applicable to the forwardmost MK (number) MOD (number) gun mount or destroyers with hull numbers (list)."

or

"This ORDALT Instruction is applicable only to Computer MK 57 used with GFCS MK 68 MOD 4."

or

"This ORDALT Instruction is applicable to Radar Set AN/SPG-53F on the following ships only:

CG-27 CG-28 CG-29"

5.2.6 ORDALT Instruction Paragraph 6 - ORDALT ACCOMPLISHMENT KEYPOINT CHECK. This paragraph shall include a complete ORDALT verification list that identifies physical and functional features of the equipment in sufficient detail to enable operating personnel to determine with

certainty the accomplishment status of the ORDALT. Stamping of the ORDALT number on an ORDALT plate does not constitute an adequate keypoint check.

5.2.7 ORDALT Instruction Paragraph 7 - ORDALT INSTALLATION PRIORITY LEVELS. This paragraph shall contain a statement specifying the installation priority level(s) assigned to the ORDALT. The installation priority level(s) assigned shall be as specified in the contract or order (see 6.4).

5.2.7.1 Non-expendable ordnance equipment (including computer programs). For non-expendable ordnance equipment (including computer programs), the ORDALT instruction shall specify the ORDALT installation priority as it applies to each applicable ship class in accordance with the Fleet Modernization Program (FMP) Amalgamated Military/Technical Improvement Plan (AMT) or state that the ORDALT is a survivability ORDALT. Survivability ORDALTs (see 3.11) shall have an installation precedence over AMT Priority Levels 2 through 6. Installation priority levels will be assigned to ORDALTs applicable to installed equipment on operating ships, not to ORDALTs planned only to be installed under Shipbuilding and Conversion, Navy (SCN) funding.

5.2.7.1.1 ORDALT Installation priority levels. The ORDALT installation priority levels assigned to the ORDALT for an AMT Class will be consistent with the Naval Warfare Mission Area as reflected in the Required Operational Capability/Projected Operational Environment (ROC/POE) of OPNAV C3501.2. The ORDALT AMT priority levels are identified in OPNAVINST 4700.33 as follows:

1. Mandatory and Safety
2. Reliability and Maintainability (Primary Mission Area)
3. Primary Mission System Modernization
4. Reliability and Maintainability (Secondary Mission Area)
5. Secondary Mission Area Modernization
6. Mission Support

The ORDALT installation priority level(s) shall be stated in the following manner:

or

"This ORDALT shall be accomplished in accordance with the Fleet Modernization Program (FMP) Amalgamated Military/Technical Improvement Plan (AMT) as follows: CVN-68 Priority Level #2, Reliability and Maintainability (Primary Mission Area) and LCC-19, Priority Level #4, Reliability and Maintainability (Secondary Mission Area)."

5.2.7.1.2 Survivability ORDALT. The survivability ORDALT shall be stated in the following manner:

"This ORDALT shall be accomplished as a Survivability ORDALT."

5.2.7.2 Expendable ordnance equipment and associated portable test equipment. For expendable ordnance equipment and associated portable test equipment, the ORDALT instruction shall

specify the ORDALT installation priorities as EMERGENCY, URGENT or ROUTINE. EMERGENCY priority ORDALT instructions shall specify that the work is to be accomplished without delay under the highest locally available work priority. URGENT priority ORDALT instructions shall specify that the work is to be accomplished as soon as practicable (but not to interfere with EMERGENCY priority ORDALTs for the same system or equipment). ROUTINE priority ORDALT instructions shall specify that the work is to be accomplished as soon as practicable without interference with work of a higher priority.

5.2.8 ORDALT Instruction Paragraph 8 - ACCOMPLISHMENT LEVELS. Accomplishment levels assignments shall be as specified in the contract or order (see 6.4). The levels will be assigned based on the skills required to accomplish the ORDALT. Level assignments will be made at the lowest level that can accomplish the installation. The following note (modified as appropriate) shall be included at the end of paragraph 8 after the accomplishment level(s) assignment:

"NOTE For the convenience of the Government, this ORDALT may be accomplished by a higher accomplishment level activity than assigned by this ORDALT instruction. The higher accomplishment level activities are deemed to have the skills and equipment necessary to accomplish the change without the assistance or supervision from lower accomplishment level activities. In general, this ORDALT shall not be accomplished by a lower accomplishment level activity than assigned in this ORDALT instruction."

5.2.8.1 Accomplishment Level 1 (Organization). Accomplishment level 1 shall be assigned to those ORDALTs approved for accomplishment by custodial (ship or shore activity) organizations. This level will normally be assigned to ORDALTs that service, adjust or replace parts or minor assemblies or sub-assemblies and require less than 10 manhours of work to accomplish.

5.2.8.2 Accomplishment Level 2 (Intermediate). Accomplishment level 2 shall be assigned to those ORDALTs approved for accomplishment by Intermediate Maintenance Activities (IMAs) (for example, Tenders, Repair Ships and Shore Intermediate Maintenance Activities (SIMAs)). This level shall also apply to ORDALTs installed by Naval Sea Support Center personnel and other Alteration Installation Teams (AITs) qualified to perform the installation.

5.2.8.3 Accomplishment Level 3 (Industrial). Accomplishment level 3 shall be assigned to those ORDALTs approved for accomplishment by shipyard (Navy or private) personnel. ORDALTs accomplished at this level require skills and specialized equipment beyond the capabilities or organizational or intermediate maintenance activities.

5.2.8.4 Accomplishment Level 4 (Depot). Accomplishment level 4 shall be assigned to those ORDALTs approved for accomplishment at Navy shore based depots or commercial activities (Designated Overhaul Points (DOPs)) or to those ORDALTs planned for installation at the waterfront or during a ship's availability that require skills of depot personnel. This level will be assigned to ORDALTs that require specialized tools and personnel skills (including manufacture of parts) not normally available at organizational and intermediate maintenance activities or at shipyards.

5.2.9 ORDALT Instruction Paragraph 9 - MAN-HOURS REQUIRED. This paragraph shall provide total man-hours required for removal, alteration, re-installation and testing of the equipment

affected by the alteration. Actual man-hours determined from experience or from trial installation shall be furnished whenever possible. Final texts shall reflect man-hour adjustments based on accomplishment of shipboard proof-in.

5.2.9.1 ORDALT Installation milestone chart. When specified in the contract or order (see 6.4) an ORDALT installation milestone chart shall be included in the ORDALT instruction. The requirement will be based on the following criteria: (1) the complexity of the alteration, (2) the number of trades involved in its accomplishment, and (3) the number of man-hours required to accomplish the alteration. The milestone chart will be proved-in concurrently with all other ORDALT documentation to show real-time ratio between milestones involved in the ORDALT installation. A milestone shall consist of one action or a group of actions required to comprise a single function. Consideration shall be given to all supporting evolutions and not just installation time (see enclosure 11.1 of figure 15).

5.2.10 ORDALT Instruction Paragraph 10 - PARTS LIST AND DRAWING REFERENCES. The parts list (PL) applicable to the ORDALT kit shall be listed first followed by a tabulation by number of all drawings applicable to instructions specified in paragraph 13 of the ORDALT instruction. These documents shall be listed by NAVSEA or DOD identification numbers and the latest revision letters. Contractor's numbers may be used when no NAVSEA or DOD numbers are available. All drawing numbers shall be preceded by the applicable CAGE Code (see 5.2.12) in parentheses. All drawings and associated lists, or sheets thereof, that are deleted by the ORDALT from the set of drawings applicable to the specific equipment to which the ORDALT applies, shall be listed. Instructions for disposal, if necessary, shall be included. Information shall note whether the drawings are still applicable to other equipment in system or in related shipboard systems. In addition, all drawings that were revised in the set applicable to the specific equipment and any new drawings and lists that were generated to support the ORDALT shall be listed. Other documentation required for installation and checkout of the alteration shall be listed.

5.2.10.1 Procedures. The following procedures shall be used to list drawing references. Each subheading shall be addressed. If no data is to be listed, the word "NONE" shall be inserted under the appropriate subheading (see figure 15 for example):

> **"10. PARTS LIST AND DRAWING REFERENCES."**
>
> **"10.1 Microfilm Aperture Cards.** Microfilm aperture card files shall be maintained by removing cards for superseded and deleted drawings and inserting cards for new and revised drawings. Microfilm aperture cards shall be ordered from (source) (location)."
>
> **"10.2 Required Drawings."** (Those identifying every part removed or altered by the ORDALT instruction. Those identifying all new equipment or detail parts needed for installation of the ORDALT or for assembly of the ORDALT kit. In the case of computer programs, such items are tapes, discs, file clips, and other items. All others, such as assembly drawings or wiring and schematic diagrams needed to accomplish installation and testing required by the ORDALT instruction.)

"**10.3 New/Revised Drawings.**" (New and revised drawings required after accomplishment of the ORDALT, with complete identification of latest revision to revised drawings. This list shall state the source for obtaining.)

"**10.4 Deleted Drawings.**" (Obsolete drawings deleted by accomplishment of the ORDALT. This list shall state disposition for deleted drawings.)

"**10.5 Drawings and References for Information Only.**"

"**10.5.1 Drawings.**"

"**10.5.2 References.**"

5.2.11 ORDALT Instruction Paragraph 11 - ENCLOSURES. This paragraph shall list any data supplied as enclosures to the ORDALT instruction. All enclosures shall be numbered consecutively in the order of their reference in or application to the text of the ORDALT instruction. The first enclosure shall be numbered 11.1 and the succeeding enclosures shall be numbered 11.2, 11.3, 11.4, and extended sequentially as necessary. The ORDALT instruction shall include the following enclosures in the order listed, as applicable:

a. Enclosure 11.1: ORDALT Installation Milestone Chart (see 5.2.9.1).

b. Enclosure 11.2: Copies of drawings, ODs, version description documents, computer program listings, test specifications, service bulletins, and other data (see enclosure 11.2 of figure 15).

c. Enclosure 11.3: A removable copy of paragraph 12.8 of the ORDALT instruction, allowance changes. This section of the text will be provided to the ship's Supply Officer to be attached to the ship's COSAL to provide interim Allowance Parts Lists (APL) and Allowance Equipage List (AEL) support (see 5.2.12.8).

d. Enclosure 11.4: A removable copy of the ORDALT Installation Problem Reporting Statement (see 5.2.13.1).

5.2.12 ORDALT Instruction Paragraph 12 - SUPPLY DATA. For ORDALTs requiring supply items, this paragraph shall include the subheadings and information required by 5.2.12.1 through 5.2.12.8. When a part that is listed does not have a Government assigned/controlled drawing number, the manufacturer's part numbers shall be listed. All part numbers shall be preceded with a CAGE Code number in accordance with Cataloging Handbook H4/H8; for example (06848) 13026-3 or (53711)543210 or identified under separate column headings (see 5.2.12.2). If no information is required pertinent to any of the subheadings, the nonapplicable subheading(s) shall be shown followed by the word "None". For ORDALTs not requiring supply items, the word "NONE" shall be entered after the primary paragraph heading and the subheadings shall be omitted.

5.2.12.1 Ordering Data. Ordering data shall include the issuing authority, (for example, the ISEA for those ORDALTs applicable to non-expendable ordnance) from whom the ORDALT kit must

be ordered, the NSN if applicable and PL number for the kit, and the number of packages. The ordering data shall also define the kit to unit relationship whenever (a) one kit will contain sufficient material to modify more than a single configuration unit, or (b) more than one kit must be ordered to modify a single configuration unit. The disposition of Installation and Checkout (I & C) spares (see 5.2.12.2.1) shall be specified as part of the ordering data; for example:

> "Those I&C spares not used during installation shall be provided to the ship's supply department for retention by the ship."
>
> *or*
>
> "Those I&C spares not used during installation shall be returned to the rotatable pool at NAVSEACENLANT/NAVSEACENPAC."

5.2.12.2 Kit Content. All material in the kit, (for example, special tools, special test equipment, Maintenance Assistance Modules (MAMs), test documentation for verification, Coordinated Shipboard Allowance List (COSAL) repair parts and two copies of the ORDALT text) shall be listed. Technical manual changes, in preliminary or final form, shall be provided in the kit or as a separate numbered package to the kit. Classified changes shall not be in the kit. Each item in the kit shall be labeled to identify its item number, nomenclature and part number. The item numbers shall correspond with the item numbers listed in paragraph 12.2 of the ORDALT instruction. The kit shall include special tools required to complete the ORDALT installation and to repair and maintain the equipment after completion of the ORDALT. It shall be mandatory that the kit contain initial spares allowance for modified, substituted or unique repair parts being added to the Allowance Parts List (APL). These initial allowance items shall be designated by use of a double asterisk in both paragraph 12.2 and 12.8 of the ORDALT instruction. The Military Essentiality Code (MEC) and SM&R code shall be supplied for all applicable items included in the kit. Complete supply nomenclature and full instruction for establishing permanent COSAL allowance quantities shall also be included. Best replacement factors (BRFs) or technical replacement factors (TRFs) (such as, failure rates based upon the number of expected failures per initial allowance items) shall be listed. Actual or estimated unit cost of the initial allowance item shall also be included. Information shall be supplied in tabular form using the following column headings:

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	BRF/ TRF	UNIT COST	ORDALT KIT QTY

5.2.12.2.1 Installation and Checkout (I & C) Spares. All I & C spares provided in the kit shall be listed in a subparagraph under 12.2. The I & C spares are consumable items to be used during installation of the alteration. At no time shall on-board repair parts (OBRP's) be used as I & C spares (see 5.2.12.1). Information shall be supplied in tabular form using the following column headings:

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	BRF/ TRF	UNIT COST	ORDALT KIT QTY

5.2.12.3 Special Materials, Tools, or Test Equipment Required for Accomplishment But Not Supplied in Kit. A tabular listing of all special materials, tools, or test equipment required for accomplishment, but which are not supplied in the kit, shall be provided using the headings shown below. Common tools carried in the tool box need not be mentioned. Tabular listing shall be as follows:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART/ MODEL NO.	SM&R CODE	QUANTITY REQUIRED	STOCKING ACTIVITY/ SOURCE	REMARKS

All parts or materials that are required to comply with the instruction but are not practical to include in the kit due to packaging, storing, shipping, or processing difficulties (for example, paint, abrasive paper, cement, oil, explosive rivets, soldering or welding material) shall be listed. When listing parts or materials such as sheet stock, overall dimensions (not the area) shall be indicated in the "QUANTITY REQUIRED" column. If material is to be used to alter more than one item, it shall be so stated. When an exact amount cannot be given, an estimate of volume per weapon or equipment shall be provided; for example: "approximately 1 pint." The term "as required" shall be avoided. The "STOCKING ACTIVITY/SOURCE" column shall indicate where non-supplied items can be obtained. If parts from ship's stock are to be used, the "REMARKS" column shall indicate the number of those parts that should be ordered for replenishment (including spares).

5.2.12.4 Special Tools/Support Equipment/Test Equipment Required After Installation. The special tools, support equipment, and test equipment required for equipment operation or maintenance after ORDALT installation shall be listed in tabular form using the headings shown below. The Test, Measurement, and Diagnostic Equipment (TM&DE), including Special Purpose Electronic Test Equipment (SPETE) and General Purpose Electronic Test Equipment (GPETE), MAMs, applicable Subcategory (SCAT) code, and related ancillary equipment and accessories shall be included. An advice or instructions regarding changes in the Ship's Portable Electrical/Electronic Test Equipment Requirement List (SPETERL) shall be entered in the "REMARKS" column to reflect the additional or changed TM&DE and any special conditions or application. Specific instructions for adjustment of ship's COSAL shall also be included under "REMARKS" to reflect such additional special tools, test equipment, MAMs, or support equipment. Tabular headings shall be as follows:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART/ MODEL NO.	SCAT CODE	QUANTITY REQUIRED	STOCKING ACTIVITY/ SOURCE	REMARKS

5.2.12.5 Disposition of Removed Materials/Parts/Units. All parts or materials that are removed from installed or spare equipment and are not reinstalled during or after the modification shall be listed. Quantity, part number, nomenclature, NSN, and disposition code shall be indicated. Parts removed for rework and subsequent reinstallation or for use as spares, regardless of where the rework is to be performed, shall also be included. Any unusual conditions associated with the removal of parts or materials shall be explained. Removed parts and materials shall be listed under columnar headings as follows:

NOMENCLATURE/ DESCRIPTION	*NATIONAL STOCK NO.	CAGE CODE	PART NO.	QUANTITY REMOVED	DISPOSITION CODE

(*Non-stock numbered items removed and designated for "scrap" shall not be stock-numbered.) If no parts are removed by the alteration, the word "None" shall be entered after the subhead title and the columnar headings omitted. The following standard disposition code numbers and their explanations shall be used (include only those applicable in numerical sequence):

Code	Explanation
1.	Disposition of replaced material is at discretion of Commanding Officer
2.	Scrap
3.	Rework in accordance with detailed instructions
4.	Return to stock if repairable or serviceable
5.	Use until stock is exhausted
6.	Return item to contractor
7.	(Use additional explanations as necessary)

5.2.12.6 Alteration of Spare Assemblies/Equipment.

5.2.12.6.1 Assemblies/Equipment in Stock. The spare assemblies, equipment, or MAMs (ship, tender, or Navy supply system) to which the ORDALT will be applicable shall be furnished under columnar headings as follows:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART/ *MODEL NO.	*CONTROL NUMBER	*SERIAL NUMBER	LOCATION OF SPARES

(*Omit these columns if not necessary.)

On-board spares shall be returned, as directed, to stock or to the manufacturer to be modified or reworked. If no modification of spares is required, the word "None" shall be entered after the subheading title and the columnar headings omitted.

5.2.12.6.2 Parts/Materials Required to Modify Spares. The parts or materials required to accomplish the ORDALT in spare assemblies/equipment/MAMs shall be specified using the same column headings and arrangement as specified in 5.2.12.2. Introductory statements preceding these listings may be modified as necessary. When the parts or material required to modify spares are the same as those listed in 5.2.12.2 or 5.2.12.3, a statement so indicating may be used instead of repeating the listing. If neither parts nor materials are required, the word "None" shall be entered after the subheading title.

5.2.12.7 New/Modified/Additional Spare Parts. If on-board spare assemblies are not to be altered concurrent with the system/equipment, new or modified spare assemblies shall be supplied with the ORDALT kit. The spare assemblies that are to be supplied shall be identified in tabular form as follows:

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NUMBER	QUANTITY

If no new or modified spare assemblies are required in support of the altered equipment, the word "None" shall be entered after the subheading and the columnar headings omitted.

5.2.12.8 Allowance Changes. Items that will be added to or deleted from the COSAL as a result of the equipment alteration shall be listed (note that parts population can change without affecting the allowance quantity). These lists also shall be included as an enclosure to the ORDALT instruction so they can be removed and attached to the affected Allowance Parts List (APL) or Allowance Equipage List (AEL) as the ORDALT APL/AEL (see 5.2.1 and enclosure 11.3 of figure 15). Repair parts or spares furnished with the ORDALT kit as initial allowance items shall be designated by a double asterisk (**) (see 5.2.12.2) and so explained in a footnote. Reference symbols and designators for electrical and electronic parts and assemblies shall be as marked on the equipment in accordance with IEEE 200. They shall be as specified in the APL listing to identify non-interchangeable items that are part of the repair parts list. Reference designators are assigned to items under the following conditions:

1. Item is critical to configuration item (CI) operation.
2. Serialization is required.
3. Individual identity and accountability are required.
4. Item is of unique or original design.
5. Item is repairable.

Lists shall be prepared in reference designation order/sequence and those items without reference designations shall be in part number sequence. This subparagraph (12.8) shall include the subheadings and information required by 5.2.12.8.1 through 5.2.12.8.4. If no information is required pertinent to any of the subheadings, the nonapplicable subheading(s) shall be shown followed by the work "None" and the column headings omitted. One of the following notes, as indicated, shall be included under the subparagraph heading for 12.8.

a. If the ORDALT does not affect the allowances, the following note shall apply:

"NOTE: ORDALT APL (identify) is assigned for configuration management purposes only."

b. If the ORDALT does affect the allowances, the following note (modified as appropriate) shall apply:

"NOTE: The item(s) listed in paragraph 12.8.1 and 12.8.2 will appear on ORDALT APL (identify) and ORDALT AEL (identify) as add item(s). The item(s) listed in paragraphs 12.8.3 and 12.8.4 will appear on the ORDALT APL (identify) and ORDALT AEL (identify) as delete item(s). After the ORDALT is accomplished on all applicable equipment, the item(s) in paragraph 12.8.1 will be added to the equipment parent APL (identify), and the item(s) in paragraph 12.8.3 will be deleted from the equipment parent APL. The item(s) in paragraph 12.8.2 will be added to the equipment parent AEL (identify), the item(s) in paragraph 12.8.4 will be deleted from the equipment parent AEL."

5.2.12.8.1 Allowance Parts List Parts Addition/Allowance Increase. The items/quantities to be added to the present Allowance Parts List (APL) after equipment is altered shall be identified in tabular form as follows:

APL (identify)

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE

5.2.12.8.2 Allowance Equipage List Parts Addition/Allowance Increase. The items/quantities to be added to the present Allowance Equipage List (AEL) after the equipment is altered shall be identified in tabular form as follows:

AEL (identify)

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	ALLOWANCE QUANTITY INCREASE

5.2.12.8.3 Allowance Parts List Deletion/Allowance Decrease. The items/quantities to be deleted from the present Allowance Parts List (APL) after the equipment is altered shall be identified in tabular form as follows:

APL (identify)

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	PARTS POPULATION DELETED	ALLOWANCE QUANTITY DECREASE

5.2.12.8.4 Allowance Equipage List Parts Deletion/Allowance Decrease. The items/quantities to be deleted from the present Allowance Equipage List (AEL) after the equipment is altered shall be identified in tabular form as follows:

AEL (identify)

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	PARTS POPULATION DELETED	ALLOWANCE QUANTITY DECREASE

5.2.13 ORDALT Instruction Paragraph 13 - DETAILED INSTRUCTIONS. This paragraph shall cover in detail, as necessary, the disassembly, alterations, reassembly, tests, quality assurance provisions, precautions and markings required for accomplishing the ORDALT. The instructions shall provide chronological step-by-step procedures for accomplishing the alterations of the equipment, weapon, weapon system, or system computer program and the necessary alterations to spares and replacement units. Detailed instructions shall be supported by illustrations, as necessary, to supplement engineering drawings. Alterations, accomplishment of major operations in proper sequence, and installation tools in use shall be shown in the illustrations (see 5.3.2). Special precautions shall be specified as required herein (see 5.3.6.6 through 5.3.6.6.4).

5.2.13.1 ORDALT Installation Problem Reporting Statement. An ORDALT Installation Problem Reporting Statement format as provided by the contracting activity (see 6.4), shall be included as an enclosure in the ORDALT instruction (see 5.2.11 and enclosure 11.4 of figure 15). The problem reporting statement will be preaddressed and preposted by the contracting activity for the convenience of the ORDALT installation activity. The following note shall be entered under the paragraph 13 heading and preceding the detailed instructions:

"NOTE: When problems are encountered in accomplishing this ORDALT, the preaddressed ORDALT Installation Problem Reporting Statement, (identify enclosure), shall be completed and mailed."

5.2.13.2 Minor Shipboard Work. When applicable (see 4.2), instructions for accomplishing minor shipboard work in support of the ORDALT shall be incorporated in subparagraph 13.1 under the subheading "Minor Shipboard Work". Instructions for reporting completion of minor shipboard work shall be included in the ORDALT instruction as specified in 5.2.18.3 of this standard.

5.2.13.3 Markings and plates. Detailed instructions shall be specified for the placing of identification markings, nameplates, information plates and ORDALT plates on the equipment in accordance with MIL-STD-130 and MIL-P-15024/10. This shall be in addition to the reidentification required by 5.2.14. Mounting and location of plates shall be as specified in 5.2.13.3.1.

5.2.13.3.1 Mounting and location of plates. Nameplates and information plates shall be mounted in a conspicuous place generally on the front of the item. ORDALT plates shall be located as near as possible to the nameplates. A system or set nameplate shall be mounted on the principal or most prominent item of the major assembly. Plates shall be located in easily accessible places during operation. The mounting and location of the plates shall be shown on the assembly drawing of the item. Plates shall not be positioned so as to interfere with controls or obscure other required information. The mounting and location of plates shall not have an adverse effect on the strength of the item on which the plate is mounted. Plates shall not be mounted by means of rivets, self-tapping screws or welds. Nameplates, information plates and ORDALT plates shall be attached by removable-type screws made of appropriate material.

5.2.13.4 Local stock and sources. The use of local stock or the requirement for local manufacture of parts shall be specified only when such procedure is considered practicable to expedite incorporation of the ORDALT, and when prior approval has been obtained from the contracting activity for the ORDALT kit.

5.2.13.5 Required tests. As necessary, tests shall be specified to verify installation and operation of the affected parts and systems. If practicable, pre-installation tests shall be specified as applicable to determine the operational status of the equipment prior to ORDALT installation. The ORDALT instruction shall require the necessary maintenance/repair to restore the equipment to its proper operational status prior to ORDALT installation if the pre-installation tests reveal deficiencies correctable by the established maintenance/repair procedures. When the ORDALT changes systems or circuits, the changes shall be explained. New procedures for system or circuit operation and tests shall be outlined. When ORDALTed equipment has multi-system application, and different test procedures apply to each system, the test requirements shall be grouped and properly categorized by system

application. If the test portion of the text is voluminous or classified, it may be prepared as a separate enclosure to the ORDALT instruction.

5.2.13.6 Quality assurance provisions.

5.2.13.6.1 In-process and final inspections. The ORDALT work procedures shall identify the specific inspections which must be performed and the recommended process points for their performance. Changes to the sequence and locations of the inspections is allowable provided that all the inspections are performed and no safety provisions are violated.

5.2.13.6.2 Classification of characteristics (CCs). ORDALT installation procedures shall be classified in accordance with DOD-STD-2101. Inspection and verification of compliance with the procedures shall be in accordance with defined classification of characteristics established in accordance with DOD-STD-2101. All defective characteristics shall be rejected. The use of sampling inspection requirements for verifying quality characteristics shall be as specified in the contract or order (see 6.4).

5.2.14 ORDALT Instruction Paragraph 14 - IDENTIFICATION. The method of marking or re-identifying equipment, including stamping the ORDALT number on the ORDALT plate, shall be indicated (see 5.2.13.3 for method of marking). The ORDALT number and the original basic serial number shall be stamped on the ORDALT plate to be affixed to each equipment having a nameplate and requiring re-identification as a result of the ORDALT accomplishment. When the model or part number is affected, the information shall be shown under columnar headings as follows:

PREVIOUS IDENTITY	NOUN NAME	NEW IDENTITY

When a new equipment MARK or MOD or AN designation is assigned following ORDALT accomplishment, a new configuration baseline shall be established for that equipment. All ORDALTs applicable to the previous MARK/MOD/AN designation shall be made prerequisite of or concurrent to the re-identification ORDALT, or must be carried over and made applicable to the new equipment designation. Prerequisite and concurrent ORDALTs shall be deleted from the ORDALT plates. Carryover ORDALTs shall be retained on the plates if previously accomplished, or stamped on the plate at time of accomplishment. The re-identification/marking procedure shall be clearly outlined to ensure correct identification of the new equipment baseline.

5.2.15 ORDALT Instruction Paragraph 15 - SHIPPING WEIGHT. The number of packages, shipping weight per package and the total shipping weight and volume of the ORDALT kit shall be provided and expressed in pounds or kilograms and cubic feet or meters.

5.2.16 ORDALT Instruction Paragraph 16 - WEIGHT AND MOMENT. An estimate of the final increase or decrease in the weight and shift in center of gravity of the altered equipment shall be included using one of the following statements:

> "No significant weight and moment change results from ORDALT and compensation is not required."

or

"The resultant weight increase (decrease) has been recorded in the Naval Sea Systems Command weight records and no specific compensation is required for accomplishment of this ORDALT."

or

"Compensation is mandatory and is being covered by separate Naval Sea Systems Command action (SHIPALT)."

or

If not shipboard equipment, enter "Not Applicable."

For the short format ORDALT instruction, use either the first or last statement above as appropriate.

5.2.17 ORDALT Instruction Paragraph 17 - UPDATING OPERATIONAL SUPPORT DOCUMENTATION. All publications and fleet support documentation affected by the ORDALT, including existing technical documentation, maintenance requirement cards, allowance parts lists and other data shall be identified. Technical manuals shall be listed with their associated stock numbers. The list shall be in the following sequence (see figure 15);

a. Technical Manuals (TMs), including equipment/weapon system TMs and Combat System Technical Operations Manuals (CSTOMs).

b. Maintenance Index Pages (MIPs).

c. Maintenance Requirement Cards (MRCs).

d. Unscheduled Maintenance Requirement Cards (UMRCs).

e. Allowance Parts Lists (APLs) and Allowance Equipage Lists (AELs).

f. Equipment Identification Codes (EICs) NOTE: For system computer program ORDALTs, use EIC for parent hardware.

g. ORDALT, Field Change, Engineering Change, or SHIPALT instructions.

h. Technical Repair Standards (TRSs).

i. Other data (NAVSEA ODs, WDs).

j. Version Description Document, and other computer program data.

5.2.17.1 Documentation identification. Technical manuals (TMs) that will support the equipment as altered shall be identified by publication number, volume, title, and revision/change status. The change status may include Advance Change Notice (ACNs) prepared and issued in response to emergency needs prior to permanent changes and revisions, MIPs and MRCs shall be identified by

control number and title. APLs shall include the ORDALT APL number and all applicable parent APL numbers.

5.2.17.2 Procedure. If no documents are affected, the word "None" shall be entered after the feature heading. If any of the publication subheadings (such as technical manuals, MRCs or others) are not affected by the ORDALT, the word "None" shall be inserted after the appropriate subheading.

5.2.17.3 Documentation changes source. The following statement shall be used as paragraph 17.2 of all instructions:

> **"17.2 Documentation changes source.**
>
> **17.2.1** Technical manual changes or revision (final or preliminary) are provided in or along with the ORDALT kit. Classified changes shall not to be shipped in the kit but shall be handled in accordance with DOD 5220.22-M. Additional copies of changes may be obtained from the Naval Publications and Forms Center (NPFC), Philadelphia, PA 19120-5099. MIPs and MRCs will be provided by the Naval Sea Support Center when the ORDALT is installed. Automatic distribution of other maintenance documentation such as APLs/AELs, COSAL, SPETERLs, will be accomplished by submission of OPNAV 4790/CK as set forth in paragraph 18. Material shall not be inserted into the manual or card deck until the ORDALT is accomplished."

5.2.18 ORDALT Instruction Paragraph 18 - REPORT OF COMPLETION/LOG ENTRY. Each ORDALT instruction shall include a statement delineating the report of completion or log entry requirements.

5.2.18.1 Non-expendable ordnance equipment (including computer programs). Text shall direct that accomplishment of an ORDALT shall be reported by the ORDALT installer to the appropriate In-Service Engineering Agent (ISEA) and by submission of the Ship's Configuration Change Form OPNAV 4790/CK to the Maintenance Data Collection System (MDCS) in accordance with OPNAVINST 4790.4. Accomplishment shall be reported by entry into the configuration change screen display if the activity is using a Shipboard Non-tactical ADP Program (SNAP) computer. All EIC numbers, that will be used for ORDALT accomplishment shall be listed. This cross reference is required to highlight the use of the parent system Equipment Identification Code (EIC) when reporting computer program alterations.

5.2.18.2 Expendable ordnance equipment. Text shall direct that accomplishment of an ORDALT shall be recorded in the prescribed log or record book, such as, Torpedo Record Book or Guided Missile Record Book. The activities (including the In-Service Engineering Agent (ISEA), and the Inventory Control Point (ICP) to whom a report of accomplishment will be submitted shall be indicated. Specific details to be reported shall be included.

5.2.18.3 Minor shipboard work in support of an ORDALT. The text shall direct that completion data, such as marked-up drawings, or modified wiring diagram for updating Ship's Selected Records (SSRs) shall be forwarded by letter to the appropriate planning yard with a copy to the NAVSEA Ship's Program Manager (SPM).

5.3 Copy preparation requirements. The ORDALT instruction shall be prepared as specified in the following requirements.

5.3.1 Copy preparation methods. Unless otherwise specified in the contract or order (see 6.4), the methods of preparation shall be as specified herein. Equipment used for preparing the instructions and marginal copy shall be adequate for the purpose intended and shall provide clearly legible, easily usable publications at the most economical cost, considering both initial preparation and follow-on costs such as reproduction, handling, filing, storing and shipping. Office word processors, composing machines, computers, punched cards or tapes may be used for preparing the text. The page elements not imprinted on the page, including corrections, shall be fastened to the page in a manner that will permit repeated handling of the copy over a period of years without the possibility of losing stripped-in portions. Minimum acceptable material shall have the following features:

a. Single spacing.
b. Unjustified right margins.
c. Margins of not less than 1 inch (sides, top and bottom).
d. Page size of 8 1/2 by 11 inches.
e. Headings prepared on the same composing equipment as the text.

5.3.2 Illustrations. Illustrations shall be either in the form of line drawings, (orthographic or perspective) continuous-tone original art, or glossy photographic prints (unscreened) intended for half-tone reproduction in accordance with MIL-M-38784. Color illustrations and cartoons shall not be used. Line drawings prepared for assembly into oversized sheets shall be reduced to reproduction size without loss of detail and without closing up. Reproduction size line drawings shall be mounted in position.

5.3.2.1 Location. Illustrations and tables shall be located as close to the related text as possible or as enclosures to the ORDALT text, whichever is deemed most advantageous for clarity. Illustrations less than page size may be grouped and presented on a single page, with a figure number and title assigned to each illustration. Group illustrations, with one figure number and title and separate subtitles, are particularly suitable for illustrating sequential operations.

5.3.2.2 Figure numbers and titles. Illustrations shall be identified by a figure number and title. Figure numbers shall be assigned consecutive Arabic numerals. Figure numbers and titles shall be typed as part of the text, not a part of the illustration. Illustrations requiring more than one page shall be identified in the following manner:

Figure _____. Installation Drawing (Sheet 1 of 2)
Figure _____. Installation Drawing (Sheet 2 of 2)

5.3.2.3 Nomenclature in illustrations. Significant features or components of illustrations shall be identified by index numbers or brief nomenclature. When an exploded-view drawing involves relatively few parts, the nomenclature for each part shall be used. When many parts are involved, the parts shall be numbered, preferably clockwise, starting at the upper left, and a key list added to show the nomenclature of each numbered part. Nomenclature of parts on illustrations shall be consistent with that in the text.

5.3.2.4 Diagrams. Component parts of wiring and schematic diagrams shall be symbolized in accordance with IEEE 315 and IPC T 50. Reference designations shall be in accordance with IEEE 200. Wiring and Schematic diagrams shall be planned and arranged for page-size presentation, whenever possible. Foldout pages should be limited to two-page foldouts. In no case shall they exceed an overall length of 45 inches from the binding edge, with a maximum printing area of 43 1/2 inches long by 10 inches high.

5.3.2.5 Size considerations. When an illustration is of such size that it cannot be legibly reproduced within the maximum single-page printing area, it may be arranged for reproduction as a foldout. Illustrations requiring more than one foldout shall be adequately identified at the breaking points to assist the reader in making the crossover.

5.3.3 Page numbering. The first or title page shall not be numbered. The signature page shall be lower case Roman numeral (ii). The contents pages shall be lower case Roman numerals starting with "iii". The text pages following the signature page and content pages shall be numbered with consecutive Arabic numerals commencing with page "1". Page numbers shall be placed at the bottom center of each page.

5.3.4 Paragraph headings and numbering. Primary paragraph headings and numbers shall be as shown in 5.2. The primary headings shall stand alone (not in with text) and shall appear in capital letters. Subparagraph headings shall be in accordance with the applicable content and as specifically indicated in 5.2 through 5.2.18.3. Except for prepositions, conjunctions, and articles, the first letter of each word in the subheading shall be capitalized. Subheadings shall be either underlined, italicized, or bold type. Each subparagraph shall be numbered consecutively within each primary paragraph of the ORDALT instruction, using a period to separate the number representing each breakdown. Itemization within a subparagraph may be identified by lower-case letters followed by a period to avoid confusion with paragraph numbers (see figure 15).

5.3.5 References.

5.3.5.1 Nomenclature and part numbers. Reference to items (at all levels of breakdown) shall be by both nomenclature and part number, for example, "*sleeve retainer 5509550.*" Dash numbers from part drawings shall be used for specificity when referring to parts in text. Complete nomenclature of equipment, computer program, or material shall be used for identification.

5.3.5.2 ORDALT Kit item references. When referring to components of the ORDALT kit, the item number (see 5.2.12.2) shall be used as a parenthetical suffix to the part number reference, for example, "5509550 (Kit item 2)."

5.3.5.3 Control references. When referring to a control, the nameplate portion of the control's description shall be capitalized, for example, "POWER ON/OFF switch" or "DAMPER CONTROL".

5.3.5.4 Specification references. When Government specification numbers are referenced, the basic number shall be listed without the revision letter suffix, unless absolutely essential to include the suffix because of major differences in the revised specification. Reference to specifications shall be made in the following manner: "MIL-C-5020", "WW-B-626".

5.3.5.5 Material references. Materials necessary to accomplish the ORDALT (for example, lubricants, sealing materials or abrasives) shall be identified by reference to applicable specifications and standards. The applicable type, grade, class or condition shall be indicated. Where identical materials are identified by more than one document, the material shall be referenced in the order of precedence specified by MIL-STD-970. When materials are required that cannot be identified adequately by references as indicated above, additional information for complete identification shall be provided and shall include the following:

a. Trade name(s) or commercial designations.

b. Name and address of the producer of materials or the producer's CAGE Code.

c. Chemical composition (where applicable).

d. Physical and mechanical properties in sufficient detail to disclose strength and safety characteristics when required by design.

e. Dielectric properties for electrical insulating materials.

5.3.5.6 Text cross-references. When referring to text matter placed elsewhere in the instruction, reference shall be only to the paragraph number and not to the page number. The word "paragraph" shall not appear, for example, "listed in 17.1.4".

5.3.5.7 Figure references. References shall be to figure numbers, not page numbers. Reference to indexed items shall include both index and figure number; for example, "The ON-OFF switch (34, figure 3)...." Reference in the same paragraph to several items in the same figure (as in instructions detailing work procedures) shall include the figure number once in that paragraph; for example:

"(a) Disassemble Air Valve (see figure 6). Unscrew safety-disc retainer (2) from valve body (1) and remove safety-disc (3) and safety-disc washer (4)".

or

"(a) Unscrew safety-disc retainer (2, figure 6) from valve body and remove safety-disc (3) and safety-disc washer (4)".

5.3.5.8 Number references. Numbers less than 10 shall be spelled out; 10 and over shall be Arabic numerals. Double statement of numbers (a number spelled out followed by a numeral in parentheses) shall not be used. Decimal numbers less than a unit shall begin with a zero before the decimal point.

5.3.6 Style of writing.

5.3.6.1 Text. Clarity and completeness are essential in the writing of ORDALT instructions. Extraneous information shall be excluded. Repetition of words, phrases, numbers, and other descriptive terms shall be avoided except when required for clarity. When repetitions are necessary, they shall be

consistent; for example, if the test concerns a missile cradle, all succeeding references shall describe it as "cradle" and not "mount", "dolly", or "stand." Part nomenclature from part drawing title blocks shall be used.

5.3.6.2 Grammar and style. Except where Department of Defense requirements differ, the United States Government Printing Office Style Manual shall be used as a guide for capitalization, spelling, punctuation, syllabification, compounding words, tabular work, and other elements of grammar and style.

5.3.6.3 Grammatical person and mode. The second person imperative shall be used for operational procedure; for example, "Break casing bead loose from wheel flange." The third person shall be used for description and discussion; for example: "The torsion link assembly transmits torsional loads from the axle to the shock strut."

5.3.6.4 Use of "shall", "will", "should" and "may". The word "shall", the emphatic form of the verb, shall be used to express a mandatory or binding provision. "Will: may be used to express declaration of purpose. It may be necessary to use "will" in cases where simple futurity is required, such as: "Power to the junction box will be supplied by the ship". Use "should" and "may" whenever it is necessary to express nonmandatory provisions, or an acceptable or preferred means of accomplishment.

5.3.6.5 Abbreviations. Abbreviations shall be in accordance with MIL-STD-12 and the Government Printing Office (GPO) Style Manual.

5.3.6.6 Warnings, cautions, and notes. Warnings, cautions, and notes shall be used as defined herein. The individual words "WARNING", "CAUTION", and "NOTES" shall appear in bold capital letters above or preceding the descriptive precautionary condition. Warnings and cautions shall precede the instructions for the procedure or practice involved. Notes may precede or follow the applicable text. Warnings, cautions and notes shall not receive a paragraph number. Warnings, cautions and notes shall be used in accordance with the following criteria:

a. **WARNING.** To highlight an installation procedure, practice, condition, statement or other instruction that if not strictly observed, could result in injury, death, or long term health hazard to personnel.

b. **CAUTION.** To highlight an installation procedure, practice, condition or statement that if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

c. **NOTE.** To highlight an essential installation procedure, condition or statement, that requires special attention.

5.3.6.6.1 Health hazards. Procedures prescribed for the alteration of equipment shall be consistent with the safety standards established by the Occupational Safety and Health Act (OSHA) Public Law 91-596 and Executive Order 12191. Warnings and cautions shall also be used when

hazardous chemicals or adverse health factors in the environment for alteration of the equipment cannot be eliminated. A list of personnel protective devices shall be included.

5.3.6.6.2 Nuclear hardness. If equipment to be ORDALTed has nuclear survivability requirements, such as Overpressure and Burst, Thermal Radiation, Electro Magnetic Pulses (EMP) and Transient Radiation Effects on Electronics (TREE), applicable cautions shall be incorporated into the ORDALT instructions to ensure that hardness of equipment is not degraded during the modification. Care shall be taken not to include classified information in an unclassified ORDALT instruction.

5.3.6.6.2.1 Symbol. All hardness critical processes/steps shall be marked with the symbol /HCP/ as follows:

a. When an entire paragraph, including all subparagraphs, is considered hardness critical, only the major paragraph shall be marked. The symbol /HCP/ shall be placed between paragraph number and title.

b. When only certain processes/steps within a paragraph are hardness critical, only the applicable process/step shall be marked. The symbol /HCP/ shall be placed between the step number and text.

5.3.6.6.2.2 Explanation. The instructions shall include a listing and explanation of the symbol /HCP/ and other pertinent information as necessary to emphasize the specialness of hardness features. This shall include an explanation that the symbol establishes the requirement that all paragraphs and processes/steps identified by the symbol must be followed as written to ensure nuclear hardness is not degraded. This explanation shall be preceded by a CAUTION heading.

5.3.6.6.3 Electrostatic discharge sensitive (ESDS) parts. If equipment to be handled, modified or installed contains ESDS parts, components or circuits, applicable cautions and symbols shall be incorporated into the ORDALT instruction to ensure ESDS parts are not damaged or degraded during such handling/modification/installation.

5.3.6.6.3.1 Symbol. All paragraphs which address handling, modification or installation that could damage ESDS parts shall be identified by the ESDS symbol ESDS. The symbol shall not be included in the paragraph title in the table of contents. Use of the symbol shall be as follows:

a. When the entire procedure and all subordinate paragraphs/steps describe handling/ modification/installation that could damage ESDS parts, the ESDS symbol shall be inserted immediately following the paragraph number (for example, "13.3 ESDS Installation of Test Switch").

b. When all subordinate paragraph and steps are not related to handling/modification/ installation that could damage ESDS parts, only those related shall be annotated.

c. ORDALT actions that could damage ESDS parts, but which are not directly related to handling/modification/installation of ESDS parts, shall not be annotated with the ESDS symbol, but shall be preceded by a caution.

d. Illustrations, drawings and schematic shall be marked with the ESDS symbol in accordance with DOD-STD-1686.

5.3.6.6.3.2 Explanation. The ORDALT instruction shall include a listing and explanation of the ESDS symbol used therein. Other pertinent information shall be included as necessary to emphasize the uniqueness of ESDS parts. This shall include an explanation that the ESDS symbol requires that all ESDS parts be handled according to ESDS device handling procedures in DOD-STD-1686. This explanation shall be preceded by a CAUTION heading.

5.3.6.6.4 Environmental protection. All ORDALTs that require the use, transportation, handling, storage or disposal of fuels, toxic and hazardous substances, chemicals, ordnance/munitions or other hazardous materials shall meet the requirements of the Federal Environmental Protection Standards.

5.4 Packaging. Packaging of copy and related artwork for shipment shall be in accordance with MIL-M-38784.

6. NOTES

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

6.1 Intended use. This standard is intended for use in preparing all ORDALT instructions issued by the Naval Sea Systems Command.

6.2 Issue of DODISS. When this standard is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation (see 2.1.1 and 2.2).

6.3 Data requirements. The following Data Item Description (DID) must be listed as applicable on the Contract Data Requirement List (CDRL) (DD Form 1423) when this standard is applied on a contract, in order to obtain data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4.1	DI-CMAN-80225	Ordnance Alteration (ORDALT) Instructions	Short Format Long Format

The above DID was cleared as of the date of this standard. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DIDs are cited on the DD Form 1423.

6.4 Tailoring guidance. To ensure proper application of this standard, invitations for bid, requests for proposals, and contractual statements of work should tailor the requirements in sections 4 and 5 of this standard to exclude any unnecessary requirements. The acquisition documents should also specify the following details:

a. ORDALT identification number(s) assignment (see 4.5).
b. Organization(s) responsible for planning and for accomplishing the proofing of the ORDALT kit hardware and affected documentation (see 4.7).
c. Organization responsible for approval and authentication of the ORDALT instruction (see 4.8 and 5.1.2.3).
d. Nomenclature assignment (see 5.1.1.5).
e. Command code/controlling office code for the ORDALT instruction (see 5.1.1.7 and 5.1.1.8).
f. Distribution statement (see 5.1.1.8).
g. When export control warning notice is applicable (see 5.1.1.9).
h. Distribution list (see 5.2.1).
i. ORDALT Installation Priority Levels assigned (see 5.2.7, 5.2.7.1, 5.2.7.1.1, and 5.2.7.2).
j. Accomplishment Levels assigned (see 5.2.8).
k. When a milestone chart is required (see 5.2.9.1).
l. ORDALT Installation Problem Reporting Statement format (see 5.2.13.1).

m. Sampling inspection requirements for verification purposes (see 5.2.13.6.2).
n. Alternate methods of preparing copy (see 5.3.1).

6.4.1 ORDALT instruction policy and procedural guidance. For policy and procedural guidance pertaining to the preparation/acquisition of ORDALT instructions, see NAVSEAINST 4130.6 (Series); Subj: Ordnance Alteration (ORDALT) Instruction Control Procedure. For policy and guidance pertaining to configuration changes/ORDALTs installed or planned for accomplishment during and outside of depot level availabilities, see NAVSEAINST 4720.16 (Series); Subj: Logistics Management Procedures for Configuration Changes Installed Outside of Depot Level Activities; and NAVSEA SL720-AA-MAN-010, Volume 1, The Fleet Modernization Program (FMP) Management and Operations Manual.

6.5 Subject term (key word) listing.

Accomplishment levels
Allowance changes
Changes
Classification of characteristics
Configuration
Design changes
Engineering changes
Environmental protection
Health hazards
Identification and marking
Installation
Kit
Modification
Naval ordnance equipment
Nuclear hardness
Priority levels
Quality assurance provisions
Retrofit
Rework
Shipboard work, minor
Supply data
Weight and Moment

6.6 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.

CONFIDENTIAL

CAGE CODE 53711 ORDALT XXXX1

ORDALT INSTRUCTION

REMOTE CONTROL PANEL MARK 324 MODS 0 & 1 (U)
DATA CONTROL DISTRIBUTION BOXES MARK 11 MODS 0 & 1 (U)
ROCKET LAUNCHING SYSTEM MARK 28 MODS 1 & 5 (U)

SEA-62Y1

DISTRIBUTION STATEMENT F. Further dissemination only as directed by Commander, Naval Sea Systems Command (SEA-62Y1), Washington, DC 20362-5101, 1 July 1990, or higher DOD authority.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Adminis-tration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
1 JULY 1990

CLASSIFIED BY: (AUTHORITY)
DECLASSIFIED ON: (OADR)

CONFIDENTIAL
(This page is Unclassified)

FIGURE 1. Example of classified ORDALT title page - (Distribution Statement F).

CAGE CODE 53711 ORDALT XXXX2

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

SEA-06U2

DISTRIBUTION STATEMENT E. Distribution authorized to DOD components only; Critical Technology; 5 July 1989. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2) Washington, DC 20362-5101.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
5 JULY 1989

FIGURE 2. Example of unclassified ORDALT title page - (Distribution Statement E).

CAGE CODE 53711 ORDALT XXXX3

ORDALT INSTRUCTION

TRANSFER TRAY ASSEMBLY
5" SLIDE ASSEMBLY MK 25 MODS 2 AND 3

5"/54 CALIBER GUN MOUNT
MK 50 MODS 9 AND 10

SEA-62Y1

DISTRIBUTION STATEMENT D. Distribution authorized to the Department of Defense and U.S. DOD contractors only; Critical Technology; 16 March 1992. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-62Y1), Washington, DC 20362-5101.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
16 MARCH 1992

FIGURE 3. Example of unclassified ORDALT title page - (Distribution Statement D).

CONFIDENTIAL
ORDALT XXXX1

5.2 (U) In addition to the in-service systems of paragraph 5.1, there are seven Remote Control Panels (serial numbers 7, 14, 16, 17, 18, 31 and 34) and seven Data Control Distribution Boxes (serial numbers 1, 7, 14, 16, 17, 18, and 34) in storage or awaiting overhaul. These units are stored at Naval Weapons Supply Center/Crane and Naval Ordnance Station/Louisville. This ORDALT will be accomplished on these units on an as required basis.

6. (C) ORDALT ACCOMPLISHMENT KEYPOINT CHECK

6.1 (C) Should verification of ORDALT accomplishment be required the following keypoint check will be made:

6.1.1 (C) When the drawer assembly of the Remote Control Panel is in the extended position, verify that filters 2FL14, 2FL15, 2FL26 and 2FL17 have been added to the Remote Control Panel Assembly 2875616 or 2875906.

6.1.2 (C) At the Data Control Distribution Box Mk 11 Mod 0 and 1, Drawing 2875617 or 2875904:

(1) Disconnect cable W4 from connector receptacle 1A3J7.
(2) Extend the Logic Drawer Assembly to the service position and remove circuit board T10A.
(3) Using a multimeter, verify continuity between 1A3J7-B and XT10A-A.

7. (U) ORDALT INSTALLATION PRIORITY LEVELS

7.1 (U) This ORDALT shall be accomplished in accordance with the Fleet Modernization Program (FMP) Amalgamated Military/Technical Improvement Plan (AMT) as follows: CVN-68, Priority Level #2, Reliability and Maintainability (Primary Mission Area) and LCC-19, Priority Level #4, Reliability and Maintainability (Secondary Mission Area).

8. (U) ACCOMPLISHMENT LEVEL

8.1 (U) This is an accomplishment level 2 (Intermediate) ORDALT and shall be accomplished during tender/shore based availability by Naval Sea Support Center personnel or by tender/shore base personnel under the direction or supervision of Naval Sea Support Center personnel.

4

CONFIDENTIAL

FIGURE 4. Example of classified page of a classified ORDALT.

CONFIDENTIAL
ORDALT XXXX4

3. (U) PURPOSE

3.1 This ORDALT eliminates potential Launcher Train Drive casualties due to excessive impact on the Launcher Stationary (5207055) and rotating (5206051) stop assemblies and provided ready access to Launcher Train Drive interlock switches S204 and S205.

3.2 This ORDALT requires removal of existing stationary (5206034 and rotating (6206051) stop assemblies and replacement with redesigned stationary stop and cam bracket assemblies that will be attached by new stationary base/foundation mounting bolts. Existing interlock switches S204 and S205 will be removed from inside the training gear base and relocated to a switch assembly (5760590) mounted externally on the rotating base. The externally mounted sector clear switch, S206 will be relocated to the switch assembly (5760590) and new actuating cams and mounting hardware is provided for each of the three switches.

4. (U) AUTHORITY

4.1 Preparation of this ORDALT was authorized by NAVSEA letter SEA 62Y1: BAS XXXX Ser XXXXXX dated 21 February 1992 and Configuration Control Board Directive No. 90-U-XXX assigned by NAVSEA to Naval Undersea Warfare Center Division, Newport, RI Engineering Change Proposal (ECP) XX-XXXX, NCN YXXXXXX.

5. (U) APPLICATION

5.1 The work required by this ORDALT shall be accomplished subsequent to ORDALT Number XXXXX.

5.2 This ORDALT is applicable to all Surface Vessel Torpedo Tubes Mk 22 Mod 15 with training gear Mk 10 Mod 2. Applicable ships and station are:

DD-965 through DD-998
DDG-992 through DDG-995
NAVUNSEAWARCENDIV, Newport, RI
DD-999
CG-46 through CG-50

2

CONFIDENTIAL
(This page is Unclassified)

FIGURE 5. Example of unclassified page of a classified ORDALT.

CAGE CODE 53711 ORDALT XXXX2

CHANGE 1

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

SEA-06U2

DISTRIBUTION STATEMENT E. Distribution authorized to DOD components only; Critical Technology; 5 July 1989. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2) Washington, DC 20362-5101.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND

5 JULY 1989

CHANGED 15 AUGUST 1990

FIGURE 6. Example of ORDALT change title page.

CAGE CODE 53711 ORDALT XXXX2

CHANGE 2

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

SUPPLEMENTS ORDALT XXXX2, CHANGE 1

SEA-06U2

DISTRIBUTION STATEMENT E. Distribution authorized to DOD components only; Critical Technology; 5 July 1989 Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2) Washington, DC 20362-5101.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. *Violation of these export laws are subject to* severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND

5 JULY 1989

CHANGED 10 NOVEMBER 1990

FIGURE 7. Example of succeeding ORDALT change title page.

ORDALT XXXX5
CHANGE 1

12.8.3 Allowance Parts List Deletion/Allowance Decrease.

12.8.3.1 The following items/quantities will be deleted from the present Allowance Parts List (APL) *after the equipment is altered:*

APL ORXXXX5001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	PARTS POPULATION DELETED	ALLOWANCE QUANTITY DECREASE
	(10001) XXX261	Scoop, Inlet, Water	1H1355-01-031-XXX6	1	0

12.8.4 Allowance Equipage List Parts Deletion/Allowance Decrease.

12.8.4.1 None.

13. DETAILED INSTRUCTIONS

NOTE: When problems are encountered in accomplishing this ORDALT, the preaddressed ORDALT Installation Problem Reporting Statement (Enclosure 11.4), shall be completed and mailed.

13.1 Preparatory Information and Procedures.

13.1.1 Verify compliance with Quality Assurance requirements when an asterisk (*) precedes a paragraph number.

13.1.2 Comply with accomplishing activity Quality Assurance requirements.

13.1.3 Retain removed items for reinstallation if disposition is not specified.

13.1.4 Use standard ship practices to modify metal components.

NOTES: (1) Prior to modification of Afterbody/Tailcone XXXXXXX, verification of accomplishment for ORDALT XXXX is required.

10

CHANGE 1

FIGURE 8. Example of ORDALT change page.

TITLE: SIGNAL DATA CONVERTER, MARK 73 MODS 1 AND 2 FIRE CONTROL SYSTEM, MARK 133 MODS 6 AND 8

CAGE CODE 53711
NAVSEA ORDALT NO. XXXX2

CHANGE 1

SUBJECT:

DATE:

Approved By: _____

Position: _____

Code: _____

After Attached Enclosures Have Been Inserted, Place This Page Immediately Following The Title Page of Basic ORDALT Instruction.

1. PURPOSE: To correct NSN in paragraph 12.8.3 and add enclosure 11.2, Supply Material Support Data.

2. All holders of ORDALT Instruction XXXX2 should incorporate this change upon receipt.

3. Except as indicated, remove the following pages and replace with new pages attached.

REMOVE	INSERT

DISTRIBUTION STATEMENT E. Distribution authorized to DOD components only, Critical Technology; 5 July 1989. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2) Washington, DC 20362-5101.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

FIGURE 9. Example of ORDALT change cover sheet.

CAGE CODE 53711 ORDALT XXXX2A

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

NOT TO BE ACCOMPLISHED ON MATERIAL ON

WHICH ORDALT XXXX2, CHANGES 1 AND 2 HAVE BEEN ACCOMPLISHED

SEA-06U2

DISTRIBUTION STATEMENT E. *Distribution authorized to DOD components only; Critical Technology; 5 July 1989.* Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2), Washington, DC 20362-5101.

WARNING - *This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties.* Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
5 JULY 1989
REVISED 12 MARCH 1991

FIGURE 10. Example of ORDALT revision title page.

CAGE CODE 53711 ORDALT XXXX6

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

SUPERSEDES ORDALT XXXX2A

TO BE ACCOMPLISHED WHETHER OR NOT ORDALT

XXXX2A HAS BEEN ACCOMPLISHED

SEA-06U2

DISTRIBUTION STATEMENT E. Distribution authorized to DOD components only; Critical Technology; 12 June 1991. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2), Washington, DC 20362-5101

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
12 JUNE 1991

FIGURE 11. Example of superseding ORDALT title page - (Noncontingent application).

CAGE CODE 53711 ORDALT XXXX7

ORDALT INSTRUCTION

SIGNAL DATA CONVERTER MARK 73 MODS 1 AND 2

FIRE CONTROL SYSTEM MARK 133 MODS 6 AND 8

SUPERSEDES ORDALT XXXX6. NOT TO BE

ACCOMPLISHED ON MATERIAL ON WHICH ORDALT

XXXX6 HAS BEEN ACCOMPLISHED

SEA-06U2

DISTRIBUTION STATEMENT E. *Distribution authorized to DOD components only;* Critical Technology; 31 July 1991. Other requests shall be referred to Commander, Naval Sea Systems Command (SEA-06U2), Washington, DC 20362-5101.

WARNING - This document contains technical date whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq. Violation of these export laws are subject to severe criminal penalties. Disseminate in accordance with the provisions of DOD Directive 5230.25.

PUBLISHED BY DIRECTION OF COMMANDER, NAVAL SEA SYSTEMS COMMAND
31 JULY 1991

FIGURE 12. Example of superseding ORDALT title page - (Contingent application).

ORDALT XXXX3

PREPARED BY:

Gun Systems Engineering Department
5"/54 Caliber Gun Mount Section, Code 20
Naval Ordnance Station, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001

IN-SERVICE ENGINEERING AGENT FOR THE WEAPON SYSTEM/EQUIPMENT

Gun Systems Engineering Department
5"/54 Caliber Gun Mount Section, Code 20
Naval Ordnance Station, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001

APPROVED FOR NAVSEA:

_____
Signature,

_____
Position,

_____
Code,

_____
Effective Date

ii

FIGURE 13. Example of ORDALT signature page.

ORDALT XXXX3

CONTENTS

FIGURE 14. Example of ORDALT table of contents.

ORDALT XXXX3

CONTENTS

FIGURE 14. Example of ORDALT table of contents - Continued.

ORDALT XXXX3

1. DISTRIBUTION

1.1 Copies of this ORDALT shall be distributed in accordance with Standard Navy Distribution List, Part I (latest edition and date) and Part 2 (latest edition and date).

SNDL CODE	ADDRESSEE(S)	NUMBER OF ADDRESSEES	NUMBER OF COPIES TO EACH	TOTAL NO. OF COPIES
21A1	CINCLANTFLT	1	1	1
21A2	CINCPACFLT	1	1	1
24D1	COMNAVSURFLANT	1	1	1
24D2	COMNAVSURFPAC	1	1	1
26S1	MOTU 2, 4, 6, 10, 12	5	1	5
26S2	MOTU 1, 5, 7, 9, 13	5	1	5
26Z1	SIMA MAYPORT	1	1	1
28J1	Service Group & Squadron LANT	4	1	4
28J2	Service Group & Squadron, & Mobile Support Unit Det, PAC	3	1	3
C84B	PERA (SURFACE)	1	1	1
C84P	NAVSURFWARCEN WHITE OAK DET, Silver Spring	1	1	1
C84C	NAVSEASUPCENTER, DET	6	1	6
FB29	NSD - YOKOSUKA	1	1	1
FB30	NAVSHIPREFAC - Guam, Subic Bay, Yokosuka	3	1	3
FB34	FLEACT - Okinawa, Yokosuka	2	1	2
FF38	USNA - Annapolis	1	1	1
FKA1G	NAVSEA - SEA 06, 062Y, NAVSEA - PMS 312, 330, 331	5	1	5
FKP4E	NAVSURFWARCENDIV, Dahlgren	1	1	1
FKM9	NSC - NORFOLK, SAN DIEGO	2	1	2
FKM13	SPCC - Codes 3463, 5651	2	1	2
FKP16	NAVSURFWARCENDIV, Port Hueneme - Codes 5B11 & 5B30	2	1	2
FKP1M	NAVSURFWARCEN, ORDSTA, Louisville - Codes 20, 705, 7025, & 801	4	1	4

1

FIGURE 15. Example of ORDALT instruction (Text).

ORDALT XXXX3

SNDL CODE	ADDRESSEE(S)	NUMBER OF ADDRESSEES	NUMBER OF COPIES TO EACH	TOTAL NO. OF COPIES
FKP1M	NAVSURFWARCENDIV - Crane	1	2	2
FKP5A	NAVSEASUPCEN, Atlantic	1	1	1
FKP5A	NAVSEASUPCEN, Pacific	1	1	1
FKP7	NAVSHIPYD - Bremerton, Charleston, Pearl Harbor Mare Island, Portsmouth	5	2	10
FKP7	NAVSHIPYD - Philadelphia Code 202.21/	1	2	2
FT-22	FLTCOMBATRACENPAC - San Diego	1	2	2
FT-24	FLTTRACEN - San Diego Code 41, (GMG1)	1	2	2
FT-24	FLTTRACEN - San Diego	1	11	
FT-30	SERVSCOLCOM - Great Lakes	1	2	2

NOTE: Additional copies of this ORDALT instruction may be obtained from Computer Aided Logistic Support (CALS) Integration and Management Division (Code 801) Naval Ordnance Station, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001

2

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

2. SUBJECT

2.1 Transfer Tray Assembly; 5" Slide Assembly Mk 25 Mods 2 and 3; 5"/54 Caliber Gun Mount Mk 50 Mods 9 and 10.

3. PURPOSE

3.1 This ORDALT replaces the existing transfer tray eccentric link pin with a concentric link pin and provides adjustable stops for the operating piston's stroke limits. This new assembly allows the transfer tray to be adjusted by setting the piston's stroke limits. Once the stroke limits are set, further adjustment is not necessary. This reduces the time required for outboarding of transfer trays for routine maintenance and reduces the danger of misalignment upon reassembly.

4. AUTHORITY

4.1 Preparation of this ORDALT was authorized by Naval Sea System Command letter SEA 62Y1/XXX:CDS 4130 dated XX March 1992 and Configuration Control Board (CCB) Directive No. G-8X-XX, assigned to Naval Ordnance Station, Crane Division, Naval Surface Warfare Center, Louisville, Engineering Change Proposal (ECP) XXX-XXX, NCN GXXXXXX.

5. APPLICATION

NOTE: The work required by this ORDALT instruction may be accomplished without dependency or concurrency with any other ORDALT, SHIPALT, Field Change, or Engineering Change.

5.1 Test Equipment for Checkout.

5.1.1 None.

5.2 Identity and Location.

5.2.1 This ORDALT is applicable to 5"/54 Caliber Mk 50 Mods 9 and 10 Gun Mounts located on/at the following ships/shore activities:

SHIPS	SHORE ACTIVITIES
DDG 2 thru DDG 24	NTC, Great Lakes, IL
DD 945	FCDSTC Dam Neck, VA
CG 26 thru CG 34	FTC San Diego, CA
CGN 35	NSWC Mount, Dahlgren, VA
DDG 37 thru DDG 46	Prototype, NAVSURFWARCEN, ORDSTA, Louisville, KY

3

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

5.3 Spares.

5.3.1 In addition to the in service systems of paragraph 5.2, there are spares to be modified in the supply system (see paragraph 12.6).

6. ORDALT ACCOMPLISHMENT KEYPOINT CHECK

6.1 Should verification of ORDALT accomplishment be required, the following keypoint check shall be made.

6.1.1 Reference Drawing XXX661, sheet 3. From gun pocket area, verify that adjustable piston retainer XXX551 (Kit Item 3) has been installed in operating piston valve block.

6.1.2 Reference Drawing XXX659, sheet 3. Verify that concentric link pin XXX556 (Kit Item 4) has been installed.

7. ORDALT INSTALLATION PRIORITY LEVELS

7.1 This ORDALT shall be accomplished in accordance with the Fleet Modernization Program (FMP) Amalgamated Military/Technical Improvement Plan (AMT) as follows:

DDG-2, Priority Level #3, Primary Mission Modernization, CG Priority Level #3, Primary Mission System Modernization.

8. ACCOMPLISHMENT LEVEL

8.1 This is a Level 2 (Intermediate) ORDALT and shall be accomplished during tender/shore base availability by Naval Sea Support Center (NAVSEACEN) personnel or by tender/shore base personnel under the direction or supervision of NAVSEACEN personnel.

NOTE: For the convenience of the Government, this ORDALT may be accomplished by a higher accomplishment level activity than assigned by this ORDALT instruction. The higher accomplishment level activities are deemed to have the skills and equipment necessary to accomplish the change without the assistance or supervision from lower accomplishment level activities. In general, this ORDALT shall not be accomplished by a lower accomplishment level activity than assigned in this ORDALT instruction.

9. MAN-HOURS REQUIRED

4

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

9.1 *It is estimated that a total of 20 man-hours by ordnance technicians will be required to accomplish the work required by this ORDALT and to perform the verification tests. Installation milestones are displayed in enclosure 11.1.*

10. PARTS LIST AND DRAWING REFERENCES

10.1 Microfilm aperture cards. Microfilm aperture card files shall be maintained by removing cards for superseded and deleted drawings and inserting cards for new and revised drawings. Microfilm aperture cards shall be ordered from Computer Aided Logistic Support (CALS) Integration and Management Division (Code 801), Naval Ordnance Station, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001.

10.2 Required Drawings.

(10001) XXX659A, Sheet 3
(10001) XXX661T, Sheets 1 and 3
(10001) XXX719E
(10001) XXX976G, Sheet 23
Figures 1 through 6

10.3 New/Revised Drawings.

(53711)	XXX840	New	Obtain as specified in 10.1
(53711)	XXX550	New	Obtain as specified in 10.1
(53711)	XXX551	New	Obtain as specified in 10.1
(53711)	XXX556	New	Obtain as specified in 10.1
(53711)	XXX996	New	Obtain as specified in 10.1
(10001)	XXX659, Sheet 3	Revised	Obtain as specified in 10.1
(10001)	XXX661, Sheet 3	Revised	Obtain as specified in 10.1
(10001)	XXX976, Sheet 23	Revised	Obtain as specified in 10.1

10.4 Deleted Drawings.

(10001)	XXX323-1	Deleted	Destroy
(10001)	XXX706	Deleted	Destroy
(10001)	XXX775	Deleted	Destroy
(10001)	XXX777	Deleted	Destroy

10.5 *Drawings and References for Information Only.*

10.5.1 Drawings.

10.5.1.1 None

5

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

10.5.2 References.

10.5.2.1 DOD-STD-2101

11. ENCLOSURES

11.1 ORDALT Installation Milestone Chart of paragraph 9.1.

11.2 Drawings and figures as listed in paragraph 10.2.

11.3 Supply/Material Support Data (removable copy of paragraph 12.8).

11.4 ORDALT Installation Problem Reporting Statement of paragraph 13.

12. SUPPLY DATA

12.1 Ordering Data.

12.1.1 A National Stock Number (NSN) will not be assigned to ORDALT kit XXXX3. The ORDALT kit shall be requisitioned from Commanding Officer, Naval Ordnance Station, Code 1143, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001 by MILSTRIP Requi-sition using Routine Identifier N11. One ORDALT kit will contain sufficient material to accomplish this ORDALT at each applicable activity.

12.1.2 The disposition of installation and checkout spares shall be as follows; those spares not used during installation and checkout shall be provided to the ship's supply for retention by the ship.

12.2 Kit Content.

12.2.1 Each ORDALT kit XXXX3 includes 2 copies of this ORDALT instruction, 1 copy of technical manual changes, and the following materials:

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	BRF/ TRF	UNIT COST	ORDALT KIT QTY
1.	Key, Lock	1440-LL-HDN-XXX4	53711	XXX840	1	PA5ZZ	.011		2
2.	Retainer, Sleeve	1440-LL-HDN-XXX6	53711	XXX550	1	PA5ZZ	.010		2

6

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	BRF/ TRF	UNIT COST	ORDALT KIT QTY
3.	Retainer, Piston, Adjustable	1440-LL-HDN-XXX7	53711	XXX551	1	PA5ZZ	.010		2
4.	Pin, Link, Concentric	1440-LL-HDN-XXX5	53711	XXX556	1	PA5ZZ	.011		2
6.	Seal, Wiper, Ring	1020-00-185-XXX2	10001	XXX513 -12	1	PA5ZZ	.13		4**
6.	Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	10001	XXX512 -96	1	PA5ZZ	.13		4**
7.	Packing, Preformed (O-Ring)	5330-00-576-9731	96906	MS28775 -227	1	PA5ZZ	.13		4**
8.	Packing, Preformed (O-Ring)	5330-00-641-3407	96906	MS28775 -224	1	PA5ZZ	.13		4**
9.	Capscrew #10-24X 3/8	5305-01-029-XXX6	10001	XXX207 -C059	1	PA5ZZ	.13		2
10.	Ring, Retaining, External	5365-01-017-XXX1	10001	XXX400 -0005A	1	PA5ZZ	.13		4
11.	Ring, Retaining, External	5365-01-015-XXX1	10001	XXX400 -0007A	1	PA5ZZ	.13		2
12.	Ring, Retaining, External	5365-01-020-XXX8	10001	XXX400 -0006A	1	PA5ZZ	.13		2
13.	Wrench, Spanner (Special)	5120-LL-HDN-XXX3	53711	XXX996	1	PA5ZZ			1*

** Two spares included in Kit.
* Special tool to be retained onboard after ORDALT accomplishment.

12.3 Special Materials, Tools or Test Equipment Required For Accomplishment But Not Supplied in Kit.

12.3.1 The following items will be required for ORDALT accomplishment, but will not be supplied in the ORDALT Kit:

7

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART/ MODEL NO.	SM&R CODE	QUANTITY REQUIRED	STOCKING ACTIVITY/ SOURCE	REMARKS
Pliers, Retaining Ring		10001	XXX792			Own Supply	
Allen Wrench Set						Own Supply	
Screw Driver						Own Supply	
Open End Wrench 1.25 Inch						Own Supply	
Thickness Gauges (.001 to.030 Range)				PA00Z	1	Own Supply	
Tee Wrench		10001	XXX274-4	PA00Z	1	Own Supply	
Tool, Insertion		10001	SAXXX145	PA00Z	1	Own Supply	

12.4 Special tools/support equipment/test equipment required after installation.

12.4.1 The following item is required for equipment operation and maintenance after ORDALT installation:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART/ MODEL NO.	SCAT CODE	QUANTITY REQUIRED	STOCKING ACTIVITY/ SOURCE	REMARKS
Wrench, Spanner (Special)	5130-LL -HDN-XXX3	53711	XXX996		1	Ship	Kit Item 13

12.5 Disposition of Removed Materials/Parts/Units:

12.5.1 The following items will be removed from installed or spare equipment and disposed of as indicated herein:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	QUANTITY REMOVED	DISPOSITION CODE
Packing, Preformed (O-Ring)	5330-00-194-3711	10001	AN 6230-5	2	2*
Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	10001	XXX512-96	2	2*
Rod, Wiper	1020-00-185-XXX2	10001	XXX513-17	2	2*
Pin, Link, Eccentric	1020-00-026-XXX3	10001	XXX1323-1	2	2*

8

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	QUANTITY REMOVED	DISPOSITION CODE
Sleeve, Shaft	1020-00-021-XXX8	10001	XXX706	2	2*
Ring, Retaining, External	5365-01-017-XXX1	10001	XXX400-0005A	4	2*
Ring, Retaining, External	5365-01-015-XXX1	10001	XXX400-0007A	2	2*
Ring, Retaining, External	5365-01-020-XXX8	10001	XXX400-0006A	2	2*
Retainer, Sleeve		10001	XXX775	2	2*
Locknut		10001	XXX777	2	2*

* Disposition Code 2 = Scrap

12.6 Alteration of Spare Assemblies/Equipment.

12.6.1 Assemblies/Equipment in Stock.

12.6.1.1 The following spares are affected by this ORDALT:

NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	LOCATION OF SPARES
Transfer Tray Assy, RH	1020-00-021-XX50	10001	LDXXX500	NOSL TO 2J COG
Transfer Tray Assy, LH	1020-00-021-XX61	10001	LDXXX501	NOSL TO 2J COG
Op. Cylinder, Transfer Tray & Empty Case Tray	1020-00-095-XX62	10001	LDXXX502	NOSL TO 2J COG
Op. Cylinder, Transfer Tray, LH	1020-00-021-XXX63	10001	LDXXX503	NOSL TO 2J COG

NOTE: Return spares to Commanding Officer, Naval Ordnance Station, Code 11, Crane Division, Naval Surface Warfare Center, Louisville, KY 40214-5001 for modification.

12.6.2 Parts/Materials Required to Modify Spares.

12.6.2.1 The following items are required for modification of the spares:

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	BRF/ TRF	UNIT COST	ORDALT KIT QTY
1.	Key, Lock	1440-LL-HDN-XXX4	53711	XXX840	1	PA5ZZ	.011		2

9

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

KIT ITEM NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	CAGE CODE	PART NO.	MEC	SM&R CODE	TRF/ BRF	UNIT COST	ORDALT KIT QTY
2.	Retainer, Sleeve	1440-LL-HDN-XXX6	53711	XXX550	1	PA5ZZ	.010		2
3.	Retainer, Piston, Adjustable	1440-LL-HDN-XXX7	53711	XXX551	1	PA5ZZ	.010		2
4.	Pin, Link, Concentric	1440-LL-HDN-XXX5	53711	XXX556	1	PA5ZZ	.011		2
5.	Seal, Wiper, Ring	1020-00-185-XXX2	10001	XXX513 -12	1	PA5ZZ	.13		2
6.	Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	10001	XXX512 -96	1	PA5ZZ	.13		2
7.	Packing, Preformed (O-Ring)	5330-00-576-9731	96906	MS28775 -227	1	PA5ZZ	.13		2
8.	Packing, Preformed (O-Ring)	5330-00-641-3407	96906	MS28775 -224	1	PA5ZZ	.13		2
9.	Capscrew #10-24X 3/8	5305-01-029-XXX6	10001	XXX207 -C059	1	PA5ZZ	.13		2

12.7 New/Modified/Additional Spare Parts.

12.7.1 None.

12.8 Allowance changes.

NOTE: The item(s) listed in paragraph 12.8.1 and 12.8.2 will appear on ORDALT APL ORXXXX3001 and ORDALT AEL ORXXXX3001 as add item(s). The item(s) listed in paragraphs 12.8.3 will appear on the ORDALT APL ORXXXX3001 as delete item(s). After the ORDALT is accomplished on all applicable equipment, the item(s) in paragraph 12.8.1 will be added to the equipment parent APL XXXXXX0005, and the item(s) in paragraph 12.8.3 will be deleted from the equipment parent APL. The items(s) in paragraph 12.8.2 will be added to the equipment parent AEL XXXXXX0005.

12.8.1 Allowance Parts List Parts Addition/Allowance Increase.

10

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

12.8.1.1 The following items/quantities will to be added to the present Allowance Parts List (APL) after equipment is altered:

APL ORXXXX3001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(10001) XXX207-C-059	Capscrew #10-24X 3/8	5305-01-029-XXX6	PA5ZZ	2	0
	(10001) XXX400-0005A	Ring, Retaining, External	5365-01-017-XXX1	PA5ZZ	2	0
	(10001) XXX400-0006A	Ring, Retaining, External	5365-01-020-XXX8	PA5ZZ	2	0
	(10001) XXX400-0007A	Ring, Retaining, External	5365-01-020-XXX9	PA5ZZ	2	0
	(10001) XXX512-96	Packing, Pre-formed (U-Cup Seal)	5330-00-485-XXX8	PA5ZZ	2	2**
	(10001) XXX513-12	Wiper, Ring	1020-00-185-XXX2	PA5ZZ	2	2**
	(53711) XXX550	Retainer, Sleeve	1440-LL-HDN-XXX6	PA5ZZ	2	0
	(53711) XXX551	Retainer, Piston Adjustable	1440-LL-HDN-XXX7	PA5ZZ	2	0
	(53711) XXX556	Pin, Link, Concentric	1440-LL-HDN-XXX5	PA5ZZ	2	0
	(53711) XXX840	Key, Lock	1440-LL-HDN-XXX4	PA5ZZ	2	0
	MS28775-224	Packing, Pre-formed (O-Ring)	5330-00-641-3407	PA5ZZ	2	0
	MS28775-227	Packing, Pre-formed (O-Ring)	5330-00-576-9731	PA5ZZ	2	2**

**Designates initial spares packaged in the ORDALT kit.

12.8.2 Allowance Equipage List Parts Addition/Allowance Increase.

12.8.2.1 The following items/quantities will be added to the present Allowance Equipage List (AEL) after equipment is altered:

11

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

AEL ORXXXX3001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(53711) XXX996	Wrench, Spanner (Special)	5120-LL-HDN-XXX3	PA5ZZ	1	1

12.8.3 Allowance Parts List Deletion/Allowance Decrease.

12.8.3.1 The following items/quantities will be deleted from the present Allowance Parts List (APL) after the equipment is altered:

APL ORXXXX3001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	PARTS POPULATION DELETED	ALLOWANCE QUANTITY DECREASE
	(10001) XXX323-1	Pin, Link Eccentric	1020-00-026-XXX3	2	0
	(10001) XXX706	Sleeve, Shaft	1020-00-021-XXX8	2	0
	(10001) XXX400-0005A	Ring, Retaining, External	5365-01-017-XXX1	2	0
	(10001) XXX400-0006A	Ring, Retaining, External	5365-01-020-XXX8	2	0
	(10001) XXX513-17	Rod, Wiper	1020-00-185-XXX2	2	0
	(10001) XXX512-96	Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	2	2
	(10001) XXX775	Retainer, Sleeve		2	0
	(10001) XXX777	Locknut		2	0
	AN6230-5	Packing, Preformed, (O-Ring)	5330-00-194-XXX1	2	2

12.8.4 Allowance Equipage List Parts Deletion/Allowance Decrease.

12.8.4.1 None.

13. DETAILED INSTRUCTIONS

NOTE: When problems are encountered in accomplishing this ORDALT, the preaddressed ORDALT Installation Problem Reporting Statement (Enclosure 11.4), shall be completed and mailed.

12

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

13.1 Preparatory Procedures.

13.1.1 Position gun mount components as follows:

Both transfer trays raised
Both cradles lowered
Rammer retracted

13.2 Safety Precautions.

13.2.1 Stow mount with gun at 2000 minutes elevation by securing elevation securing pin.

13.2.2 Secure power to the mount by positioning control switches as follows:

SWITCH	POSITION	LOCATION
Power Transfer Device	OFF	Adjacent to Carrier Room
SMX15	SAFE	EP1 Panel
SMX16	SAFE	EP1 Panel
SMX22	OFF	EP1 Panel
SMZ4	SAFE	EP2 Panel

WARNING: Remove and retain SMX15, SMX16, and SMZ4 switch handles and attach tag "DO NOT OPERATE" to EP1 and EP2 Panels.

13.3 Lower Empty Case Tray.

13.3.1 Lash and secure empty case tray using straps, rope, or other suitable material.

13.3.2 Working from gun pocket area, reach into the slide area and manually release the empty case tray latch.

13.3.3 Lower empty case tray under its own weight, using straps or other suitable material. Unlash empty case tray and remove straps.

13.4 *Disassemble Right Hand (RH) Transfer Tray.*

13.4.1 At shutter operating mechanism, remove external retaining ring XXX400-0006A, and headless grooved pin XXX783-501 from cam lever XXX178-7 (see Figure 1*) Remove external retaining ring XXX400-0007A and headless grooved pin XXX783-619 from cam lever XXX178-7. Retain pins and discard rings. Remove and retain cam lever XXX178-7 from transfer tray.

13

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

13.4.2 Reference Drawing XXX719. Remove external retaining ring XXX400-0005A and headless grooved pin XXX783-401 from connecting link XXX283-7 to separate tray from interlock mechanism piston (see Figure 2*). Push plunger XXX285-1 into valve block. Retain pin and discard ring.

13.4.3 Remove external retaining ring XXX400-0005A and headed grooved pin XXX390 from transfer tray. See Figure 3*. Using tee wrench XXX274-4, remove eccentric link pin XXX323-1 and shaft sleeve XXX706 to separate connecting link XXX629 from transfer tray. Retain pin and discard ring, eccentric link pin and shaft sleeve.

NOTE: Eccentric link pin and shaft sleeve are removed through the slide tailgate.

13.4.4 Lay transfer tray back against cradle guide arc.

13.4.5 Secure transfer tray to cradle guide arc support with available line. Discard eccentric link pin and shaft sleeve removed in 14.4.3. Retain other parts.

13.5 Disconnect Operating Piston XXX215-1. See Figure 4* and reference Drawing XXX661 Sheet 3.

13.5.1 Loosen star washer XXX485.

13.5.2 To disconnect the operating piston XXX215-1 from the operating link, it is necessary to turn the piston from below. Working from the gun pocket area, turn the operating piston with an appropriate size screwdriver (there is a slot in the bottom of the piston), while another worker secures jam nut 43-N-486 with an open-end wrench. Continue turning until the operating piston and operating link are disconnected.

13.6 Install Adjustable Piston Stops.

CAUTION: (M101) Check the inner bore of sleeve retainer XXX550 (Kit Item 2) for sharp edges or wire edges at the point where the internal threads meet the bore. If a sharp edge is found, smooth it with sandpaper or emery cloth, and clean the part of grit and dust before installation. Failure to smooth a sharp edge may result in O-ring damage, causing leakage.

13.6.1 Before removing existing operating piston assembly for installation of new adjustable piston stop, preassemble kit items as follows:

(* Figures are not shown in this example. See Figure 14 of this standard.)

14

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

13.6.1.1 (M102) Insert O-ring preformed packing MS28775-277 (Kit Item 7) into O-ring groove in sleeve retainer XXX550 (Kit Item 2).

13.6.1.2 (M103) Insert O-ring preformed packing MS28775-224 (Kit Item 8) into O-ring groove in adjustable piston retainer XXX551 (Kit Item 3).

13.6.1.3 (M104) Insert U-cup seal preformed packing XXX512-96 (Kit Item 6) into adjustable piston retainer XXX551 (Kit Item 3), using procedure shown on Figure 5*.

NOTE: The cup side of U-cup seal must face fluid reservoir (piston cavity).

13.6.4.1 (M105) Insert ring wiper seal XXX513-17 (Kit Item 5) into adjustable piston retainer XXX551 (Kit Item 3) (see Drawing XXX661, Sheet 3).

CAUTION: Take care that the operating piston and piston sleeve are not allowed to fall out of the valve block during disassembly.

13.6.2 Reference Drawing XXX661, Sheet 3 and Figures 4* and 6*. Work from gun pocket area.

13.6.2.1 Remove and retain capscrew XXX677-70 and nutlock (key) XXX273-7.

13.6.2.2 Remove locknut XXX777, using spanner wrench XXX996, (Kit Item 13). Discard locknut.

13.6.2.3 Remove wiper rod XXX513-17 by pushing down on the piston from above and turning from below until the rod wiper is forced out of the bottom. Discard wiper rod.

13.6.2.4 Remove sleeve retainer XXX775 from the valve block. Make sure that U-cup seal XXX512-96 and O-ring preformed packing AN6230-5 have been removed along with the sleeve retainer. If not, remove them from the valve block and discard. (Rags or a bucket may be used to catch any hydraulic fluid that leaks out during this process.) Discard sleeve retainer, U-cup seal and O-ring gasket.

13.6.2.5 (M106) Thread sleeve retainer XXX550 (Kit Item 2) into the valve block, using spanner wrench XXX996 (Kit Item 13) and tighten.

13.6.2.6 Thread adjustable piston retainer XXX551 (Kit Item 3) into sleeve retainer XXX550 (Kit Item 2). Do not tighten. Do not install locking keys.

13.7 Reconnect Operating Piston.

15

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

13.7.1 Align the operating piston link with the top of the operating piston. Working from the gun pocket, use an appropriate size screwdriver to turn the piston. Continue to turn the piston until the piston and operating piston link are reconnected and the piston bottoms out in the cylinder.

13.8 Install Concentric Link Pin.

13.8.1 Screw tee wrench XXX274-4 into the end of concentric link pin XXX556 (Kit Item 4).

13.8.2 Reference Drawing XXX659, Sheet 3. Unlash transfer tray from cradle guide arc support and rotate it inboard to a near vertical position. Insert concentric link pin XXX556 (Kit Item 4) (on end of tee wrench) through access hole in slide tailgate, and into the transfer tray and connecting link.

13.8.3 (M107) Turn concentric link pin XXX556 (Kit Item 4) until the hole for the lock pin aligns with the mating hole in transfer tray. Remove tee wrench. Insert lock pin XXX390 from inboard side and secure lock pin XXX390 by installing external retaining ring XXX400-0005A (Kit Item 10) on outboard side of pin.

13.9 Transfer Tray Fire Position Adjustment. Reference Drawing XXX976, Sheet 3.

13.9.1 Position transfer tray at FIRE position and secure it by external means (straps, or other suitable material). Operating piston should be at end of stroke.

13.9.2 (M108) Insert dummy round into transfer tray and close clamps. Manually extend fuze setter to contact the bottom of the projectile fuze ogive. At this point, there should be approximately equal clearances, inboard and outboard, between projectile fuze and fuze setter. If the round is not aligned as described, adjust by turning the operating piston from below with appropriate screwdriver. Tighten piston jam nut 43-N-486. Do not secure starwasher XXX248-5.

13.9.3 (M109) Reference Drawing XXX661, Sheet 1. Loosen latch bar guide plate XXX280-5 by removing capscrew XXX202-C-121. Loosen latch bar locknut MS19068-04 and keywasher MS19070-042. Rotate latch bar XXX272-2 to attain a clearance of .015 to .030 inches as shown in Drawing XXX976, Sheet 23. Check this clearance with thickness feeler gauges. If this measurement is within allowable limits, secure latch bar guide plate XXX280-5 with capscrew XXX207-C-121.

13.9.4 Reference Drawing XXX976, Sheet 23. If clearance cannot be obtained by rotating latch bar, then secure latch bar guide plate XXX280-5 and adjust eccentric bushing XXX170-2 to suit.

16

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

NOTE: One spline on eccentric bushing changes position approximately .007 inches.

13.9.5 (M110) Tighten latch bar locknut MS19068-042. Do not secure keywasher MS19070-042. Recheck clearance. Remove round from transfer tray.

13.10 Transfer Tray RAM Position Adjustment. Reference Drawing XXX976, Sheet 23.

13.10.1 Lower transfer tray to RAM position manually.

13.10.2 (M111) Adjust to breech guide projectile shelf. Turn adjustable piston retainer XXX551 (Kit Item 3) from below with spanner wrench XXX996 (Kit Item 13) to adjust the clearance at (V) to .005 to .062 inches as shown on reference drawing.

13.10.3 (M112) Adjust to attain a clearance of .015 to .030 inches, at latch bar as shown on reference Drawing XXX976, by adjusting the eccentric bushing. Do not rotate latch bar.

NOTE: One spline on eccentric bushing equals approximately .007 inches.

13.10.4 (M113) Recheck clearance at FIRE position by raising and latching transfer tray. Continue adjustments until clearances are within the stated limits at both FIRE and RAM positions. When these conditions are met, tighten operating piston jam nut 43-N-486, secure starwasher XXX248-5 on operating piston, tighten latch bar locknut MS19068-04 and secure keywasher MS19070-042.

13.11 (M114) Secure Sleeve Retainer and Piston Retainer. Reference Drawing XXX661, Sheet 3.

13.11.1 (M115) Secure sleeve retainer XXX550 (Kit Item 2) to valve block with locking key (nutlock) XXX273-7 and capscrew XXX677-70.

13.11.2 (M116) Secure adjustable piston retainer XXX551 (Kit Item 3) to sleeve retainer XXX550 (Kit Item 2) with lock key XXX840 (Kit Item 1) and 3/8 capscrew XXX207-C-059 (Kit Item 9).

13.12 Reconnect Interlock Mechanism and Shutter Linkage. See Figures 1* and 2* and Drawing XXX719.

13.12.1 Carefully pull up on interlock mechanism plunger XXX285-1. Align hole in connecting link XXX288-7 with hole in lug on transfer tray.

17

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

13.12.2 (M117) Insert pin XXX783-401 to join connecting link XXX288-7 to lug. Install external retaining ring XXX400-0005A (Kit Item 10) to secure pin. Use pliers XXX792. See Figure 2* and Drawing XXX719.

13.12.3 (M118) See Figure 1*. Align hole in cam lever XXX178-7 with mating hole in transfer tray and insert headless, grooved pin XXX783-619 to secure cam lever XXX178-7 to transfer tray. Install external retaining ring XXX400-0007A (Kit Item 11) on pin XXX703-619 to secure it. Install headless grooved pin XXX783-501. Install external retaining ring XXX400-0006A (Kit Item 13) on pin XXX783-501 to secure it.

13.13 Left Hand (LH) Transfer Tray.

13.13.1 Repeat procedure in paragraphs 13.4.1. to 13.12.3 for LH transfer tray.

13.14 Final Procedures.

13.14.1 (M119) Move empty case tray to appropriate position and latch it in place. Return gun to operational status. Lite off upper accumulator system and cycle transfer trays. Shut upper accumulator system off. Check area affected by this ORDALT for leaks.

13.14.2 Conduct installation and operational tests in accordance with applicable procedures.

13.14.3 Successful completion of paragraphs 13.1 through 13.14.2 and 14.1 completes the work required by this ORDALT.

13.15 Quality Assurance Provisions.

13.15.1 Proper installation of the ORDALT shall be verified in accordance with the following classification of characteristics (CCs). Characteristics which cannot be verified on the completed ORDALT shall be verified by the local Government QA representative as an in-process inspection. All defective characteristics shall be rejected. For definition of CCs, see DOD-STD-2101.

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

CLASSIFICATION OF CHARACTERISTICS (CCs)

CLASSIFICATION CODES	QUALITY CHARACTERISTICS
M101	Inner bore of sleeve retainer free of sharp edges
M102	O-ring installed in sleeve retainer
M103	O-ring installed in piston retainer
M104	U-cup seal inserted per Figure 5 procedure
M105	Wiper ring seal installed
M106	Sleeve retainer tightened
M107	Lock pin secured
M108	Equal clearance between fuze and fuze setter and piston jam nut tightened
M109	Latch bar adjusted for .015 to .030 inch clearance and latch bar guide plate secured
M110	Latch bar locknut tightened
M111	Breech guide projectile shelf adjusted for clearance of .005 to .062 inch
M112	Eccentric bushing adjusted to obtain .015 to .030 inch clearance at latch bar
M113	Clearance at both FIRE and RAM positions in limits and hardware secured
M114	Sleeve retainer and piston retainer secured
M115	Sleeve retainer secured to valve block
M116	Piston retainer secured to sleeve retainer
M117	External retaining ring XXX400-005A installed
M118	External retaining rings XXX400-007A and XXX400-006A installed
M119	Seals free of leaks
M120	ORDALT number recorded

14. IDENTIFICATION

14.1 (M120) Steel stamp ORDALT NO. XXXX3 on ORDALT Record Plate located on the right hand side of 5" Slide Assembly Mk 25 Mods 2 and 3.

15. SHIPPING WEIGHT

15.1 ORDALT Kit consists of one package with a volume of approximately one cubic foot and weight of approximately 18 pounds.

19

FIGURE 15. Example of ORDALT instruction Text - Continued.

ORDALT XXXX3

16. WEIGHT AND MOMENT

16.1 No significant weight and moment change results from this ORDALT and compensation is not required.

17. UPDATING OPERATIONAL SUPPORT DOCUMENTATION

17.1 The following publication changes are required for system/equipment support following the ORDALT accomplishment.

17.1.1 Technical Manuals.

NAVSEA OP XXXXX Volume X, First Revision, Change No. X,
NSN XXXX-LP-XXX-XXXX
NAVSEA OP XXXXX Volume X, First Revision, Change No. X,
NSN XXXX-LP-XXX-XXXX
NAVSEA OP XXXXX Volume X, First Revision, Change No. X,
NSN XXXX-LP-XXX-XXXX

17.1.2 Maintenance Index Pages (MIPs).

MIP Code:
MIP Code:
MIP Code:

17.1.3 Maintenance Requirements Cards (MRCs).

MRC Code:
MRC Code:
MRC Code:

17.1.4 Allowance Parts List (APLs).

APL
APL
APL

20

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

17.1.4.1 Interim support of this ORDALT is provided by ORDALT APL ORXXXX3001. When all installations are completed, the parent APL listed in 17.1.4 will be updated per paragraph 12.8.

17.1.5 Equipment Identification Codes (EICs).

17.1.5.1 The following EICs shall be used when reporting ORDALT accomplishment on OPNAV Form 4790/CK:

MOD 9: GF1XXXX 5" Slide Assy MK 25 MOD 2
MOD 10: GB1XXXX 5" Slide Assy MK 25 MOD 3

17.1.6 ORDALT or SHIPALT Instructions.

17.1.6.1 None.

17.1.7 Technical Repair Standards (TRSs).

17.1.7.1 None

17.1.8 Other Data.

17.1.8.1 None

17.2 Documentation Changes Source.

17.2.1 Technical manual changes or revisions (final or preliminary) are provided in or along with the ORDALT kit. Classified changes are not to be shipped in the kit but handled in accordance with DOD 5220.22-M. Additional copies of changes may be obtained from the Naval Publications and Forms Center (NPFC), Philadelphia, PA 19120. MIPs and MRCs shall be provided by the Naval Sea Support Center when the ORDALT is installed. Automatic distribution of other maintenance documentation such as APLs/AELs, COSAL, SPETERLs will be accomplished by submission of OPNAV 4790/CK as set forth in paragraph 18. Material shall not be inserted into the manual or card deck until the ORDALT is accomplished.

21

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

18. REPORT OF COMPLETION/LOG ENTRY

18.1 The EIC's listed in paragraph 17.1.5.1 shall be used when reporting ORDALT completion.

18.2 The ORDALT identification plate shall be stamped per paragraph 14.1 upon completion of this ORDALT.

18.3 ORDALT accomplishment shall be reported to the appropriate ISEA and by submission of Ship's Configuration Change Form, OPNAV Form 4790/CK as prescribed by OPNAVINST 4790.4.

18.4 Accomplishment shall be reported by entry into the configuration change screen display if the activity is using Shipboard Non-tactical ADP Program (SNAP) Computer.

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ENCLOSURE 11.1 (Sheet 1 OF 2)

SHIP/SYSTEM/EQUIPMENT TRANSFER TRAY ASSEMBLY 5" SLIDE ASSEMBLY MK 25 MODS 2 AND 3 5"/54 CALIBER GUN MOUNT MK 50 MODS 9 AND 10			ORDALT INSTALLATION MILESTONE CHART MILESTONES DAY 1 HOURS 1 2 3 4 5 6 7 8 — DAY 2 HOURS 1 2 3 4 5 6 7 8
LINE	ACTION RESPONSE	ACTION MILESTONES	
	S/L	Position gun mount components IAW para 13.1.1	
	S/L	Secure mount IAW para 13.2.1	
	S/L	Secure power IAW para 13.2.2	
	SEACEN	Verify adjustable piston has not been installed (para 6.1.1)	
	SEACEN	Verify concentric link pin has not been installed (para 6.1.2	
	SEACEN	Disassemble lower empty case tray IAW para 13.3	
	SEACEN	Disassemble right transfer tray IAW para 13.4	
	SEACEN	Disconnect operating piston IAW para 13.5	
	SEACEN	NOONTIME BREAK	
	SEACEN	Install adjustable piston stops IAW para 13.6	
	SEACEN	Reconnect operating piston IAW para 13.7	
	SEACEN	Install concentric link pin IAW para 13.8	
	SEACEN	Adjust transfer tray in FIRE position IAW para 13.9	
	SEACEN	Adjust transfer tray in RAM position IAW para 13.10	
	SEACEN	Secure sleeve retainer and piston retainer IAW para 13.11	
	SEACEN	Reconnect interlock mechanism and shutter linkage IAW 13.12	
	SEACEN	Install left transfer tray kit IAW para 13.13	
	SEACEN	Disassemble left transfer tray IAW para 13.4	
	SEACEN	Disconnect operating piston IAW para 13.5	
	SEACEN	Disconnect adjustable piston stops IAW para 13.6	
	SEACEN	NOONTIME BREAK	
	SEACEN	Install adjustable piston stops IAW para 13.6 (Continued)	
	SEACEN	Reconnect operating piston IAW para 13.7	
	SEACEN	Reconnect concentric link pin IAW para 13.8	
	SEACEN	Adjust transfer tray in FIRE position IAW para 13.9	

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ENCLOSURE 11.1 (Sheet 2 OF 2)

SHIP/SYSTEM/EQUIPMENT TRANSFER TRAY ASSEMBLY 5" SLIDE ASSEMBLY MK 25 MODS 2 AND 3 5"/54 CALIBER GUN MOUNT MK 50 MODS 9 AND 10			ORDALT INSTALLATION MILESTONE CHART MILESTONES DAY 2 (Continued) HOURS 1 2 3 4 5 6 7 8 — DAY 3 HOURS 1 2 3 4 5 6 7 8
LINE	ACTION RESPONSE	ACTION MILESTONES	
	SEACEN	Adjust transfer tray in RAM position IAW para 13.10	
	SEACEN	Secure sleeve retainer and piston retainer IAW para 13.11	
	SEACEN	Reconnect interlock mechanism and shutter linkage IAW 13.12	
	S/F	Energize system IAW para 13.14.1	
	SEACEN	Conduct installation tests IAW 13.14.2	
	S/F	Conduct operational test IAW 13.14.2	
	S/F	Submit OPNAV 4790/CK	

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3

ENCLOSURE 11.2

DRAWINGS

(AS LISTED IN PARAGRAPH 10.2)

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3
ENCLOSURE 11.3 (Sheet 1 of 3)

SUPPLY/MATERIAL SUPPORT DATA

1. Title: Transfer Tray Assembly
5" Slide Assembly MK 25 MODS 2 and 3
5"/54 Caliber Gun Mount MK 50 MODS 9 and 10

2. Purpose: This enclosure should be forwarded to the Supply Officer. It provides information especially for the Supply Department so that on-board COSAL records may be corrected and updated to reflect the new configuration of this equipment. Upon receipt of this enclosure by the Supply Department, coordination between Supply and Weapons personnel should immediately take place to support the change.

3. Supply/Material Support Data (extracted from basic text).

12.8 Allowance changes.

NOTE: The item(s) listed in paragraph 12.8.1 and 12.8.2 will appear on ORDALT APL ORXXXX30001 and ORDALT AEL ORXXXX3001 as add item(s). The item(s) listed in paragraphs 12.8.3 will appear on the ORDALT APL ORXXXX30001 as delete item(s). After the ORDALT is accomplished on all applicable equipment, the item(s) in paragraph 12.8.1 will be added to the equipment parent APL XXXXXX0005, and the item(s) in paragraph 12.8.3 will be deleted from the equipment parent APL. The item(s) in paragraph 12.8.2 will be added to the equipment parent AEL XXXXXX0005.

12.8.1 Allowance Parts List Parts Addition/Allowance Increase.

12.8.1.1 The following items/quantities will be added to the present Allowance Parts List (APL) after equipment is altered:

APL ORXXXX3001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(10001) XXX207-C-059	Capscrew #10-24X 3/8	5305-01-029-XXX6	PA5ZZ	2	0
	(10001) XXX400-0005A	Ring, Retaining, External	5365-01-017-XXX1	PA5ZZ	2	0

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3
ENCLOSURE 11.3 (Sheet 2 of 3)

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(10001) XXX400-0006A	Ring, Retaining, External	5365-01-020-XXX8	PA5ZZ	2	0
	(10001) XXX400-0007A	Ring, Retaining, External	5365-01-020-XXX9	PA5ZZ	2	0
	(10001) XXX512-96	Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	PA5ZZ	2	2**
	(10001) XXX513-12	Wiper, Ring	1020-00-185-XXX2	PA5ZZ	2	2**
	(53711) XXX550	Retainer, Sleeve	1440-LL-HDN-XXX6	PA5ZZ	2	0
	(53711) XXX551	Retainer, Piston Adjustable	1440-LL-HDN-XXX7	PA5ZZ	2	0
	(53711) XXX556	Pin, Link, Concentric	1440-LL-HDN-XXX5	PA5ZZ	2	0
	(53711) XXX840	Key, Lock	1440-LL-HDN-XXX4	PA5ZZ	2	0
	MS28775-224	Packing, Preformed (O-Ring)	5330-00-641-3407	PA5ZZ	2	0
	MS28775-227	Packing, Preformed (O-Ring)	5330-00-576-9731	PA5ZZ	2	2**

** Designates initial spares packaged in the ORDALT kit.

12.8.2 Allowance Equipage List Parts Addition/Allowance Increase.

12.8.2.1 The following items/quantities will be added to the present Allowance Equipage List (AEL) after equipment is altered:

AEL ORXXXX30001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	SM&R CODE	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(53711) XXX996	Wrench, Spanner (Special)	5120-LL-HDN-XXX3	PA5ZZ	1	1

12.8.3 Allowance Parts List Deletion/Allowance Decrease.

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3
ENCLOSURE 11.3 (Sheet 3 of 3)

12.8.3.1 The following items/quantities will be deleted from the present Allowance Parts List (APL) after the equipment is altered:

APL ORXXXX3001

REFERENCE DESIGNATION	CAGE CODE/ PART NO.	NOMENCLATURE/ DESCRIPTION	NATIONAL STOCK NO.	PARTS POPULATION ADDED	ALLOWANCE QUANTITY INCREASE
	(10001) XXX323-1	Pin, Link, Eccentric	1020-00-026-XXX3	2	0
	(10001) XXX701	Sleeve, Shaft	1020-00-021-XXX8	2	0
	(10001) XXX400-0005A	Ring, Retaining, External	5365-01-017-XXX1	2	0
	(10001) XXX400-0006A	Ring, Retaining, External	5365-01-020-XXX8	2	0
	(10001) XXX513-17	Rod, Wiper	1020-00-185-XXX2	2	0
	(10001) XXX512-96	Packing, Preformed (U-Cup Seal)	5330-00-485-XXX8	2	2
	(10001) XXX775	Retainer, Sleeve		2	0
	(10001) XXX777	Locknut		2	0
	AN6230-5	Packing, Preformed (O-Ring)	5330-00-194-XXX1	2	2

12.8.4 Allowance Equipage List Parts Deletion/Allowance Decrease.

12.8.4.1 None.

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

ORDALT XXXX3
ENCLOSURE 11.4

ORDALT INSTALLATION PROBLEM REPORTING STATEMENT

Instructions: 1. Use this form to report deficiencies in ORDALT instructions or kits.
2. After completing, fold on dotted line, staple, and mail.

ORDALT NO.	TITLE
REV/CHANGE NO.	SYSTEM

TEXT/INSTALLATION PROBLEMS/RECOMMENDED CHANGES

PAGE NO.	PARAGRAPH/ FIGURE/TABLE	ERROR/CHANGE
		(Continue on separate sheet)

KIT/PROBLEMS/RECOMMENDED CHANGES

ITEM NO.	PART NO.	PROBLEM
		(Continue on seperate sheet)

PROBLEM CONSIDERED: CRITICAL/ROUTINE — REQUIRES CHANGE YES/NO — INFORMATION ONLY YES
EXPLAIN:

(Continue on seperate sheet)

ORIGINATOR (Name)	TITLE	DATE
AGENCY/CONTRACTOR/SHIP	MAILING ADDRESS	TELEPHONE A/V COM

FIGURE 15. Example of ORDALT instruction (Text) - Continued.

CONCLUDING MATERIAL

Preparing Activity:
Navy - OS
(Project CMAN-016)

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	2. DOCUMENT DATE (YYMMDD)
	MIL-STD-1662C(OS)	920302

3. DOCUMENT TITLE
ORDNANCE ALTERATION (ORDALT) INSTRUCTIONS, 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	b. TELEPHONE (Include Area Code)	
Commander, Indian Head Division Naval Surface Warfare Center (Code 3730)	(1) Commercial (301)743-4358/4510	(2) AUTOVON 364-4510
c. ADDRESS (Include Zip Code) 101 Strauss Avenue Indian Head, MD 20640-5035	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	