TECHNICAL MANUAL

METHODS & PROCEDURES
AF TECHNICAL ORDER NUMBERING SYSTEM

(ATUS)

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CHAPTER 1
INTRODUCTION

1.1 PURPOSE AND SCOPE.

1.1.1 This technical order (TO) describes the procedures and techniques employed to assign TO numbers to technical data used to operate, install, maintain, inspect, perform procedural functions on, and modify Air Force weapons systems and equipment. Numbering techniques are not included in this TO for TO numbering assignments made according to waivers or deviations from established procedures.

1.1.2 Chapter 42 of this TO provides an alphabetical listing of equipment names cross-referenced to appropriate TO number groups as they appear in the Air Force TO Catalog. Basic names of equipment systems and components are in all caps. Variations or breakdowns of the equipment follow in small print. This listing does not indicate the status of individual publications. The only authorized sources for determining the status and availability of individual publications are the Enhanced Technical Information Management System (ETIMS) and the Air Force catalog which is available through the AF Portal.

1.1.3 Recommendations or suggestions concerning this document should be submitted by Air Force Technical Order (AFTO) Form 22, Technical Manual (TM) Change Recommendation and Reply, AFLCMC/LZPT-Tinker, 7851 Arnold St, Ste 201, Tinker AFB, OK 73145-9147, e-mail: AFLCMC/EZGTP.TO@us.af.mil.

1.2 REFERENCES.

Referenced publications, forms, acronyms and definitions are located in Appendix A. The directives identified in Appendix A provide policy, guidance and references used to make TO number assignments to approved TO data.

1.3 RESPONSIBILITIES.

1.3.1 TOs are published under the authority of the Secretary of the Air Force according to AFPD 63-1/20-1, Acquisition and Sustainment Life Cycle Management, and AFI 63-101, same title.

1.3.2 The Air Force Materiel Command (AFMC) is responsible to Headquarters, U.S. Air Force (HQ USAF)/A4LX, for staff surveillance over TO System operations and development of system policies and procedures.

1.3.2.1 The HQ AFMC Directorate of Logistics (A4) is responsible for developing and coordinating Air Force TO System policy, and for implementing AFMC TO policies.

1.3.2.2 The Life Cycle Management Division, Sustainment Engineering Branch, HQ AFMC/A4FI, Technical Order Policy & Procedures Section is responsible for developing and coordinating AF and AFMC TO System practices and procedures.

1.3.2.3 Policies and procedures for requesting TO numbers are contained in AFI 63-101, Technical Orders, and in TO 00-5-3, AF Technical Order Life Cycle Management.

1.3.3 The Air Force Life Cycle Management Center-Tinker, USAF Technical Order Systems Section, AFLCMC/LZPT-Tinker is responsible for developing TO numbering procedures and assigning most TO numbers (TO 00-5-3 and AFMCI 21-301). AFLCMC/LZPTP-Tinker will be the only office allowed to approve waivers allowing number specialist roles to be assigned to other ETIMS users. A description of special catalogues for specified TO categories is provided in paragraph 1.4.7 and paragraph 1.4.8.

1.3.4 Requests for deviations from established TO numbering procedures, including proposals for new TO numbering patterns, must be coordinated through AFLCMC/LZPT-Tinker. When opinions differ between TO managers and the TO numbering specialists regarding the application of numbering principles, the numbering specialists will determine the TO number assignment. If a TO number assignment by AFLCMC/LZPT-Tinker is not acceptable to the TO Manager and agreement cannot be reached through further exchange of technical information, the TO Manager will refer the problem to AFMC/A4FI for review and resolution.

1.4 GENERAL.

1.4.1 TOs are procured from contractors or prepared in-house by Air Force activities. The Program Manager (PM) responsible for a weapon system or commodity is also responsible for TOs to support that system or item. PMs will assign TO Managers to carry out this responsibility. Only the responsible TO Manager is authorized to request TO number
assignment. Only AFLCMC/LZPT-Tinker is authorized to approve and assign TO numbers for most TOs. Exceptions include nuclear weapons (NW) TOs (assigned by the Naval Surface Warfare Center Indian Head EOD Technology Division [NSWC IHEODTD]), Explosive Ordnance Disposal (EOD) TOs (assigned by Naval EOD Technology Division [NAVEODTECHDIV]); and category 33K Calibration TOs (assigned by DoD Joining Technical Coordination Group for Calibration and Measurement Technology [JTCG-CMT], Air Force Metrology and Calibration [AFMETCAL]). Publications not authorized by TO 00-5-1, *AF Technical Order System*, will not be numbered in the TO system without prior approval by AFMC/A4FI, after coordination with AFLCMC/LZPTP-Tinker.

1.4.2 TO Managers complete the Request TO Number screen in ETIMS for each formal or preliminary TO (PTO), and submit them to AFLCMC/LZPT-Tinker for TO number approval. Contractors and TO Managers not on-line with ETIMS may continue to use the AFTO Forms 203, *TO Numbering, Indexing and Control Record*.

**NOTE**

When a new TO number is requested, the TO Manager or Equipment Specialist (ES)/Technical Content Manager (TCM) must submit a HDRC ticket to add the Federal Stock Class (FSC), part number(s) and Commercial and Government Entity (CAGE) code of the equipment listed in the TO title into ETIMS. For TOs against components or support equipment peculiar to a weapon system, also enter the weapon system Mission/Design/Series (MDS).

1.4.3 Most TOs are prepared according to military standards and performance or detail specifications which prescribe the contents of each TO type. This standardized approach facilitates the uniform assignment of descriptive TO numbers. However, there is increased emphasis on purchasing Commercial Off-The-Shelf (COTS) manuals. The lack of a standard format between COTS manuals complicates the grouping of like data into established TO numbering patterns. To maintain stability in the numbering system, AFLCMC/LZPT-Tinker and AFMC/A4FI provide guidance for TO Managers and develop, coordinate and implement new numbering patterns as required.

1.4.4 Numbers are assigned to group TOs according to the systems and equipment they cover (paragraph 1.6.2), to provide sequences for filing and indexing, and furnish a means for users to identify and establish requirements for distribution of TOs. The structure of the TO number identifies a category of Air Force systems or commodities, a design or series of equipment within a system or commodity category, an equipment sub-series within an equipment series, the type of data included in the TO, and the medium on which the TO is distributed.

1.4.5 Numbers are assigned on a system or end item MDS basis whenever possible. TOs containing instructions or procedures applicable to more than one major group are numbered in a general series for the particular category. If multiple TOs are included on a single distribution medium (e.g., Compact Disc-Read Only Memory [CD-ROM] or Digital Versatile Disk), a single unique number will be assigned to the medium (paragraph 1.26).

1.4.6 TO categories are not numbered in a consecutive sequence. Currently, 42 categories are identified between Category 0 and Category 60 (paragraph 1.6.2). Category 0 is assigned to the TO catalog and cross-reference table TOs. Category 00 is assigned to Methods and Procedures TOs (MPTOs). Categories 1 through 22 are assigned to airborne systems for aircraft, missiles, aerospace vehicles, and related airborne equipment and component assemblies. Exceptions are the photographic equipment in category 10 and the armament equipment in category 11. Categories 31 through 51 are assigned to Air Force ground systems and related equipment. Category 60 is assigned to EOD TOs.

1.4.7 The number 71 is reserved for indexes applicable to the Security Assistance TO Program (SATOP); e.g., TO 0-1-71 is the index listing "M" - symbol ("Rescinded for AF, Retained for SAP") and "XX" (authorized to multiple countries) Country Standard TOs (CSTOs). Other Country-specific SATOP indexes are numbered using the two-letter country symbol as a prefix.

1.4.8 The Air Force TO Catalog Application lists current TOs, changes since the last publication of the Catalog and a cross-reference to equipment numbers. It includes all active TOs in Categories 0 through 51, except for 11N (nuclear weapons). The "XX" version of the Air Force TO Catalog is provided for FMS/SAP customers at AFSAC on line.

1.4.8.1 The Nuclear Weapons Product Support Center Technical Support Flight, AFNWL/NCLS, Kirtland AFB NM, is responsible for numbering, indexing and distributing Nuclear Weapons TOs. These TOs are in indexes TO 0-1-11N and TO 01-1-11N-1-CD-1.

1.4.8.2 AFNWL/NCLS also numbers and indexes Nuclear Weapons EOD (NW-EOD) TOs. These TOs are indexed in TO 0-1-11N.

1.4.8.3 The Air Force Civil Engineer Center, EOD Joint Service Acquisition, Sustainment and Technology Division (AFCEC/CXE), is the AF EOD liaison office to the NSWC IHEODTD, Indian Head, MD. NSWC IHEODTD numbers...
Nonnuclear EOD (Category 60) TOs and are indexed as part of the Joint Service EOD Mobile Field Kit, Automatic EOD Publications System (AEDPS) software, published quarterly.

1.4.8.4 The FMS TO System Section, AFLCMC/LZPT-Tinker, Tinker AFB, OK, manages the Security Assistance TO Data System (SATODS), which provides several special Category 71 indexes that list CSTOs used only by specific FMS/SAP countries.

1.4.9 A close working relationship is needed between TO numbering specialists in AFLCMC/LZPT-Tinker and TO managers to avoid inaccurate TO number assignments. Numbering specialists must verify and approve TO numbers requested by TO managers, using information provided in ETIMS entry screens or on AFTO Forms 203. If the information is misleading, insufficient, or in error, the numbering specialists could approve an incorrect TO number. This error could have adverse effects on anyone attempting to identify and obtain TOs to support operations and maintenance. One major impact of an incorrect TO number assignment is the sizeable funds expenditure required to correct the number, especially when not only must the TO involved be renumbered, but other technical data that contains cross-references to the incorrect TO number must be changed as well.

1.4.10 In addition to correctly completing ETIMS screens and AFTO Forms 203, TO managers provide assistance to numbering specialists by suggesting TO numbers, identifying categories and equipment, and furnishing telephone and written communications that aid in categorizing specific TO data. It is important that the Equipment Specialists (ES) or Item Manager (IM) provide accurate data to the TO manager so that the TO numbering specialists has all the information necessary to assign a correct TO number. Close attention should be paid to the TO title. TO titles must be formatted according to Appendix B, Developing TO Titles.

1.5 **ENHANCED TECHNICAL INFORMATION MANAGEMENT SYSTEM (ETIMS).**

ETIMS is the Air Force TO management system of record. It is currently deployed Air Force wide. It is used by TO Distribution Office (TODO) accounts for TO ordering, account management, and digital TO distribution. It is also used by TO Managers for all TO number requests, indexing, modification of TO meta data, TO distribution and all TO related matters. Legacy paper TOs are printed and distributed by the Defense Logistics Agency (DLA) & Document Services TO Distribute & Print Service (TODPS).

1.6 **TECHNICAL ORDER NUMBERING THEORY.**

1.6.1 The basic task of TO numbering specialists is to group similar TO data into categories, systems, equipment series and equipment sub-series by means of an identifying numeric or alpha-numeric TO number. The following special characters are not allowed in the TO number when uploading eTOs for deployment:

- ^, \, `, #, $, %, *, & , +, ?, <, >, /, |, “,:"

These characters prevent the uploaded files from deploying properly to the ETIMS repository. TOs and TCTO headers with these characters will not be approved.

1.6.1.1 Existing eTOs, with no matching paper TO, currently indexed with special characters not allowed, will be renumbered, removed, and redeployed.

1.6.1.2 When there is a paper TO version of the eTO, remove the not allowed special character from the WA-1 TO number so the eTO can deploy and perform the renumbering action on the paper TO at the next change of the TO.

1.6.2 TO Categories. TOs are grouped numerically by type of equipment covered by the TO Category:

0  TO Catalog, Indexes and Cross-Reference Table
00  Methods & Procedures Technical Orders
1  Aircraft
2  Airborne Engines and Associated Equipment
3  Aircraft Propellers and Rotors
4  Aircraft Landing Gear
5  Airborne Instruments
6  Aircraft and Missile Fuel Systems
7  Airborne Engine Lubricating Systems
8  Airborne Electrical Systems
Each category of TO data has its own TO numbering pattern. Sufficient flexibility exists within the total numbering system to allow for expansion or contraction within numbering parameters, yet maintain standard application of numbering patterns within each category.

TO numbers are composed of groups separated by dashes, and each group is further divided into parts. The number of parts within any group varies according to the TO data being numbered in a specific category. Each part of a group consists of one or more numeric characters or one or more alpha characters. The numbering patterns used to identify TO data in each category are outlined in Chapters 2 through 41.

A total of seven groups may be used in the TO numbering pattern (see Table 1-1). TO data is identified, in most categories, by using only the first three or four basic groups. The remaining groups are primarily used to extend the TO number to identify specific sections of sectionalized TOs; supplemental manuals; and supplement, checklist and work-card sequence numbers.
Table 1-1. Guidelines for TO Numbering

<table>
<thead>
<tr>
<th>Group</th>
<th>Maximum Parts in this Group</th>
<th>Maximum Positions</th>
<th>Maximum Alphanumeric Characters and Program Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>9</td>
<td>NNNNAANNN or AAAANAAAAA</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>21</td>
<td>NNNNNNAANNNAAAAANA or AAAANNNNNNAAAAAAANNNAAAAAN</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>10</td>
<td>NNNNNAANNN or AAAANNNAAAAA</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>11</td>
<td>NNNNNNAANNN or AAAANNNAAAAA</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>7</td>
<td>NNNNAAN or AAAANNA</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>5</td>
<td>NNNAA or AAANN</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>2</td>
<td>AA or NN</td>
</tr>
</tbody>
</table>

1.6.6 The five major elements of information considered most essential in assigning TO numbers are discussed below:

1.6.6.1 Federal Supply Class (FSC). An FSC is assigned to Air Force stocklisted equipment by cataloging specialists. A system or equipment item that has not been assigned an FSC is non-stocklisted, and a TO number will not be assigned to the related technical data. The FSC identifies a system, sub-system, and equipment series that can be related to a TO category and equipment series. The FSC is the first four digits of the NSN. EXAMPLES:

1.6.6.1.1 FSC 5825 identifies ground radio navigation equipment and relates to TO numbering as follows:

31R4
31 Ground Electronic Equipment (Category 31)
R Radio System
4 Navigation Equipment Series

1.6.6.1.2 FSC 5826 identifies airborne radio navigation equipment and is related to TO numbering as follows:

12R5
12 Airborne Electronic Equipment (Category 12)
R Radio System
5 Navigation Equipment Series

1.6.6.2 Descriptive Nomenclature. The nomenclature provided on the ETIMS Screens or AFTO Forms 203 supplements the FSC by further defining the system or equipment series. A combination of only the FSC and the descriptive nomenclature can, in many instances, provide the numbering specialist with a complete TO number. For example, if FSC 5826, airborne radio navigation equipment, is provided in conjunction with an equipment nomenclature reading "Maintenance Manual – Radio Set, Type AN/ARN-24," the following TO number may be assigned:

12R5-2ARN24-2
12 Airborne Electronic Equipment (Category 12)
R Radio system
5 Navigation Equipment Series
2 Numeric 2 indicates the Equipment has a JETDS nomenclature (paragraph 1.22)
ARN JETDS Nomenclature that indicates: A - Airborne; R - Radio; N - Navigation
24 Radio Model 24
2 Maintenance Manual

1.6.6.3 Functional System. The functional system furnished on the ETIMS screens or AFTO Form 203 is the next higher echelon of equipment or system for the equipment covered by the subject TO. The functional system identifies an equipment series if the TO being numbered covers an equipment sub-equipment series. The functional system identifies a system if the TO being numbered covers an equipment series.
1.6.6.4 Part Number. A TO number will not normally be assigned to equipment without a part number, model number or other identifier. All part numbers, model numbers or any other identifiers will be included in the TO title. If the equipment is not already listed in ETIMS then the Equipment Specialists (ES) or Item Manager (IM) must enter it using the ETIMS Maintain Equipment Screen. Data to be entered includes the weapon system application, the equipment part number, and the manufacturer/vendor CAGE code. This data is then extracted from ETIMS for the TO-Equipment number Cross-Reference section of the TO catalog.

1.6.6.5 Joint Electronics Type Designation System (JETDS -paragraph 1.22) Nomenclature. If the JETDS (formerly "AN") nomenclature appears in the title lines of a TO, it must be reflected in the TO number. Air Force personnel request JETDS nomenclatures using a DD Form 61, Request for Nomenclature, submitted to the HQ AFMC Supply Operations Division, Asset Identification Branch (HQ AFMC/A4SI), Wright-Patterson AFB OH for approval. For further information concerning this system contact A4SI at DSN 787-0610.

1.7 TECHNICAL ORDER NUMBERING PROCEDURES.

TO Managers requesting TO number assignment submit ETIMS Request TO Number screen or AFTO form 203 according to procedures provided in TO 00-5-3. The TO numbering specialist will comply with the procedures and guidance provided in the following paragraphs when assigning TO numbers to approved technical data.

1.7.1 Compare the Federal Stock Class (FSC), and D086, Mission Workload Assignments System, to determine if the requesting LCMC or PC is responsible for the indicated FSC. Go to https://d086.wpafb.af.mil/ to view D086 information. Review the title of the FSC to help determine the appropriate TO Category.

1.7.2 Using the FSC and equipment nomenclature, determine the appropriate TO category, equipment series and sub-series. For numbering General TOs, see paragraph 1.21.

1.7.3 Once the category, series and sub-series have been determined, use the appropriate chapter of this TO for proper numbering patterns within that category.

1.7.4 Refer to Appendix B, Developing TO Titles, for guidance in developing a TO title. A TO title is key to determining the correct TO number. TO titles will determine the type and kind of TO number assigned to a TO and to prevent confusion between similar types of TOs covering similar applications. It will also be used to determine the proper category a TO will be assigned, as well as, ensuring all segments of the number are in correct order and contain the correct data. The TO numbering specialist will be unable to assign a TO number until incorrect information has been corrected, which could delay the assigning of a TO number.

1.8 IDENTIFYING TYPES OF TECHNICAL ORDERS.

1.8.1 Each of the various types of TOs: operations manuals, inspection and maintenance instructions, Illustrated Parts Breakdowns (IPBs), etc. is represented in a TO number by a designated type number (see Appendix C for a complete list of types of TOs). These designated numbers are standard within a category, but are not necessarily standard among categories. An example is a field maintenance manual, which is represented by "-6" in category 2, but is represented by "-2" in other categories. Numbering specialists should consult the listings of designated numbers for the appropriate category before assigning a number to represent a specific type of TO.

1.8.2 The type of TO is identified in the last basic group of the TO number and the first part of the TO title. Normally this is the third or fourth group; however, in some categories it is necessary to identify an equipment sub-series in the TO number. In these categories, the type of TO will be identified in the fifth group.

1.9 NUMBERING RELATED TECHNICAL ORDERS.

1.9.1 Chapters 2 through 41 include complete lists of numbers authorized to identify specific types of TOs in each TO category. The following list provides brief definitions of dedicated numbers used in all TO categories, except categories 1, 21 and 22. (Additional numbers are required in categories 1, 21, and 22 to identify distinct types of TO data.)

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-1 Operating Instructions
-2 Organizational, Intermediate, Field Maintenance, or Service Manuals, Trouble Shooting & Repair Manual
-3 Depot Maintenance, Overhaul, Schematic, or Wiring Diagram Manuals
-4 Parts List, Parts Breakdown or Illustrated Parts Breakdown Manuals
-6 Inspection Requirement Manuals
-7 Installation and Installation Test Procedure Manuals
-8 Test Procedures, User Manuals, Reference Manuals, Programmed Test Manuals, or Software-Related Instruction Manuals, Configuration Guide
-9 Alignment Instruction Manuals

NOTE

• The number -5 is used to identify a wide variety of types of TOs, depending on the applicable TO category. Refer to paragraph 1.15 for numbering abbreviated TOs and to paragraph 1.17 for numbering TCTOs.

• The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

1.9.2 TO data pertaining to the same specific equipment, but contained in more than one type of TO listed in subparagraph 1.9.1 above, is considered to be compatible and, therefore, is numbered together by using the same basic TO number configuration. An operations manual, a maintenance manual and a parts breakdown manual that are compatible will be numbered in the same TO number series, like those shown in the following examples:

36A12-13-18-4 Parts Breakdown

1.9.3 Equipment modifications cause changes in TO data; and new TOs are issued to reflect the changes. The new or modified TO data does not always replace existing TOs; therefore, it must be identified in the TO number series that is already established. This identification is accomplished by determining the specific type of TO to be numbered and adding 10 to the designator number (e.g., an operations manual, normally a "-1," would become a "-11"). This addition provides another sequence for numbering slightly different TO data, pertaining to the same equipment, in the same TO number series. Any subsequent operations manuals will be numbered -21, -31, -41, -51, etc. This 10-number sequence within a TO number series preserves the integrity of the -1 designated number that identifies operations manuals; and it also provides a method of grouping compatible TOs in the same sequence. This same sequence-numbering procedure will be applied to various other types of TOs as required.

1.9.4 Different types of TOs that relate to the same specific equipment, but contain data that is not compatible, will be numbered with the same basic TO number, but will not be numbered in the same 10-number sequence. For example, an operating instructions manual pertaining to specific equipment and a maintenance manual pertaining to a modification of the same equipment are not compatible. The operating instructions manual will receive a basic TO number ending in -1; and the maintenance manual will receive a TO number ending in -12 (in the subsequent 10-number sequence). The same basic TO number will be used (e.g., 10E5-2-14-1 and 10E5-2-14-12).

1.9.5 Two TOs of the same type will not be numbered in the same 10-number sequence of a TO number series. An intermediate maintenance manual and a service manual (each normally numbered -2) cannot be numbered in the same 10-number sequence. One of the manuals will receive a basic TO number ending in -2 and the other will receive the same basic TO number, but will end in -12 (from the following 10-number sequence). If a TO must be changed to make it applicable to a specific configuration of the end item to which it applies and there are two or more end item configurations to be covered, the original TO will retain its number unchanged and modified TOs will be identified by a dash number in another 10-number sequence.

1.9.6 If a TO is too large for efficient use, it may be sectionalized by dividing it into logical equipment segments of two or more sections. Each of the sections will receive the same 10-number sequence designator for the type of TO. A dash will be added and will be followed by a consecutive serial number to identify each section (e.g., 12P6-4-14-3-1, 12P6-4-14-3-2, 12P6-4-14-3-3, 12P6-4-14-3-4). Sectionalizing is further described in paragraph 1.14.

1.10 NUMBERING FUNCTIONALLY ORIENTED MAINTENANCE MANUALS.

Functionally oriented maintenance manuals (FOMMs) will be numbered with a -2, to designate the type of TO, as described in paragraph 1.9 and the appropriate section for the category involved. Section numbers may be assigned according to paragraph 1.14, if appropriate.
1.11 NUMBERING MAINTENANCE DEPENDENCY CHARTS.

Maintenance dependency charts will be numbered with a -2, like maintenance TOs.

1.12 NUMBERING CALIBRATION AND MEASUREMENT SUMMARIES TECHNICAL ORDERS.

Calibration and Measurement Summaries TOs will be numbered in the appropriate categories and TO series for the aerospace systems (aircraft, missile, communications-electronics) to which they apply. Calibration and Measurement Summaries TOs relating to general equipment, if no aerospace systems are identified, will be numbered in category 33K.

1.13 NUMBERING COMBINED TYPES OF TECHNICAL ORDERS.

For a TO that combines TO data relating to more than one type of TO, the designated number of the first type of TO identified in the title will be assigned. Thus, a TO bearing the title "Operations, Maintenance, and IPB" will be numbered "-1" because operations is the first type of TO identified in the title; a TO bearing the title "Overhaul and IPB" will be numbered "-3" because overhaul is the first type of TO identified in the title. This numbering procedure will be used with any combination of types of TOs and with CDs containing multiple TO types. When all system technical data is provided as an Interactive Electronic Technical Manual (IETM) in a relational database, the number will identify the system (e.g., "1F - 16C") and end in "-1" to signify that all operations and maintenance data is contained in the database. If the database is limited to maintenance data only, the number would end in "-2." Paragraph 1.25 specifies number suffixes to use if there are multiple TO versions published (e.g., the database and discrete TOs).

1.14 NUMBERING MULTIVOLUME (SECTIONALIZED) TECHNICAL ORDERS.

When TO data is sufficiently large and has natural divisions in tasks or equipment breakout which make several smaller manuals more usable and more manageable, a separate TO number is assigned for each volume. One example that meets this criterion is aircraft maintenance data, which contains many detailed tasks. The same procedures may be used for multiple CD sets. Flight manual performance data may be issued as a separate TO numbered and assigned a suffix dash (-) number as for multivolume TOs. Multivolume documents normally relate to the same system or equipment and are the same type of TO. Different types of TOs will not be produced as separate volumes with the same basic TO number. After numbering specialists have assigned the basic TO number and determined that a sectionalized manual is necessary, an additional group will be added to the basic TO number. This new group will identify the volume number of a multivolume TO as in the following examples:

- **12P3-2ALQ101-32-1**
  - 32: Maintenance Manual (Last Basic Group of TO Number)
  - 1: First volume of a multivolume Maintenance Manual

- **12P6-4-14-3-4**
  - 3: Overhaul Instructions Manual (Last Basic Group of TO Number)
  - 4: Fourth volume of a multivolume Overhaul Instructions Manual

- **12P3-2ASR5-4-2**
  - 4: Illustrated Parts Breakdown (Last Basic Group of TO Number)
  - 2: Second volume of a multivolume Illustrated Parts Breakdown Manual

1.15 NUMBERING ABBREVIATED TECHNICAL ORDERS.

Abbreviated TOs, including checklists (CL), workcards (WC), etc., are identified by adding the alpha designator to the last group of the TO number and adding a sequential number (-1, -2, -3, etc.) to identify the TO as the first, second, third, etc. in a series.

Examples:
- 1F-15A-2-10CL -1
- 31S5-2FYQ45-6WC-2
1.16 NUMBERING SUPPLEMENTAL MANUALS.

A supplemental manual does not stand alone, but must be used in conjunction with another TO. Supplemental manuals may be used to publish classified data while allowing the parent manual to remain unclassified, to publish data provided by a source other than the PM, and/or to publish data in a form other than the parent manual. Supplemental manuals differ from supplements in that they are assigned a separate TO dash number with no alpha designations. The TO identification number for supplemental manual is established by adding a serial number to the parent TO number. The first supplemental manual is -1, the second is -2, etc.

Examples: 31S5-2FYQ45-3-1 is a supplemental manual used with 31S5-2FYQ45-3.
1F-4D-34-1-1-1 is a supplemental manual used with 1F-4D-34-1-1.

1.17 NUMBERING TIME COMPLIANCE TECHNICAL ORDERS.

1.17.1 A time compliance technical order (TCTO) contains technical instructions for the modification or inspection of a specific item of Air Force equipment, or distribution of revised CPIN items. A TCTO may also cause publication of a change or supplement to technical data already established in the TO system. A TCTO is identified by a serial number beginning with the number 501 for the first TCTO issued for the item of equipment, and its basic number indicates data that has already been numbered in the TO system. Since a TCTO may affect more than one type of manual, a type-of-manual designator is not included in the TCTO number. The TCTO serial number replaces the type-of-manual designator in the basic TO number. See TO 00-5-3.

1.17.1.1 Examples: 1F-111A-1254
16G1-148-501
21M-LGM30-1030
31P5-2MPN14-534
35A2-2-76-501

1.17.1.2 When a requirement exists to reactivate a TCTO that has been rescinded, the TCTO will be reinstated with the same TCTO number, but with a current date. The number of an inactive TCTO is never reused for a different modification or inspection.

1.17.1.3 If a program was formerly operating outside of the standard Air Force TO numbering policies/procedures, they may request a waiver to continue use of the non-standard formats and avoid the cost of converting existing TOs and TCTOs.

1.17.2 A TCTO supplement is identified by adding an alpha suffix to the TCTO serial number; e.g., 16G1-149-501C.

1.17.3 A TCTO series header includes only those TO number groups necessary to identify the model, type, or part number of a specific item of equipment. Separate series headers are required for each different classification of TCTO to be issued. They usually contain two or three groups.

1.17.3.1 Examples: 1F-111A [S] (Secret TCTOs)
16G1-148
21M-LGM30 [C] (Confidential TCTOs)
31P5-2MPN14
35A2-2-76

1.17.3.2 Broadly applicable series headers, such as "35A2 - Jacks," could encompass equipment managed by different program offices, and this could possibly result in multiple TO Managers issuing TCTOs against a header established by one of them.

1.17.3.3 The following are exceptions to the length of a TCTO Series Header number.

1.17.3.3.1 For a depot level supplemental FMS TO to an Air Force TO, when the supplemental TO only includes FMS part numbers and country codes for each part. These TOs will be used by Air Force assets to maintain foreign aircraft and will not be releaseable to the foreign country. Since these TOs have a very specific TO number and will only be releaseable to Air
Force accounts, but will be used on foreign aircraft, special TCTO series headers will need to be created for each TO to include an XX at the end of the TCTO series header number, for example, 12P3-2ALE47-3-1 and 12P3-2ALE47-4-1 would be the supplemental TO numbers and will require FMS use only in the title. The TCTO series header will then be 12P3-2ALE47-XX and will cover all TOs in the FMS series of the TOs and must include the TO numbers of the FMS only supplemental TOs.

1.17.3.3.2 Due to large amounts of systems being added to the Air Force where the TO number does not include a part number, but includes the system number, for example 31S9-4-122-2-WA-1, where the 122 position is associated to a system and not a part number, TCTO series headers will be required to go beyond the second and third series of number, since these TCTOs will cover several parts that make up the entire system. This will allow the TCTO to be distributed to just the users of a particular system and prevent the distribution of TCTOs to users that have different systems that fall into a series of TOs.

1.17.4 To establish a TCTO series header, the TO Manager submits a ETIMS screen according to the DI, or AFTO Form 203 IAW TO 00-5-3. When it is expected that a TCTO covering more than one item of equipment will be forthcoming, a general TCTO series listing will be established at the appropriate level of generality.

1.17.4.1 Examples:

1F-1 Applicable to More Than One Fighter Aircraft
1F-111 Applicable to More Than One Series of F-111 Aircraft
1F-111A Applicable Only to the A Series of F-111 Aircraft

1.17.4.2 The mission-design-series (MDS) designators assigned to the B-1, H-1, and T-1 aircraft caused necessary exceptions to be made when numbering general TCTO series and general TOs for these three categories of aircraft. Since the aircraft MDS are the same as normally used for system general TCTO series listings, the number zero (0) is used in the second group of the number to designate a TCTO applying to more than one aircraft series.

1.17.4.3 Examples:

1B-0 Applicable to all bomber aircraft.
1B-1 Applicable to all models of the B-1 aircraft.
1B-1B Applicable to the B-1B aircraft.
1H-0 Applicable to all helicopter aircraft.
1H-1 Applicable to all models of the H-1 helicopter.
1H-1H Applicable to the H-1 helicopter, model H.
1T-0 Applicable to all trainer aircraft.
1T-1A Applicable to the T-1 trainer, model A.

1.17.5 TO Managers request individual TCTO numbers through ETIMS, which automatically assigns the next consecutive serial number within the header series. ETIMS will assign the correct data code.

1.18 EMERGENCY TECHNICAL ORDER NUMBERING REQUESTS.

Timely submittal of TO numbering requests will minimize the use of emergency procedures. In the event of a work stoppage or other justified emergency, the TO Managers will use procedures in TO 00-5-3.

1.19 RENUMBERING TECHNICAL ORDERS.

TO renumbering shall be held to the minimum necessary to correct serious TO numbering errors. Renumbering will not be accomplished to align TO numbers with local sequence numbers or other cross reference identifiers. TO numbers will not be cancelled and new TO numbers assigned just for the purpose of renumbering. The responsible TO Manager will renumber a TO using the ETIMS "Manage TOs, Manager TO Detail" process after coordinating the new number with AFLCMC/LZPT-Tinker. (Coordination is not required to assign a TO supplement number, or change an FMP supplement number.) When renumbering a published TO, both the new and former TO numbers will appear in the upper right corner of the title page with the former number preceded by the word "Formerly". Both numbers will remain on the title page until the next revision, at which time only the new number will appear. Only the new TO number will appear on the individual updated pages. Unchanged pages will continue to indicate the old TO number until they are changed for a reason other than simply renumbering, or until the next TO revision.
NOTE

TOMA must contact local TO Home Office, who will coordinate with AFLCMC/LZPTP-Tinker prior to renumbering a TO to ensure a proper number is being used.

1.20 ASSIGNING TECHNICAL ORDER NUMBERS TO OTHER DOD COMPONENT TECHNICAL MANUALS.

TO numbers will be assigned to other DoD component Technical Manuals (TMs) that are adopted for Air Force use according to AFJI 21-301. The Army numbering patterns for TMs are described in Department of the Army Pamphlet (DA PAM) 25-30, Consolidated Index of Army Publications and Blank Forms. To assign appropriate Air Force TO numbers to Army TMs, research DA PAM 25-30, this TO, and other appropriate source data. Navy, Marine Corps and Defense Logistics Agency TMs are given AF TO numbers in a similar fashion.

1.20.1 Table 1-2 provides a list of the most common types of technical manual designators used for Army TMs and corresponding Air Force type of TO designators. This table is provided as an aid but should not be used to make final determination of an Air Force TO number.

Table 1-2. Army TM and Air Force Type of TO Designators

<table>
<thead>
<tr>
<th>For Army TM Numbers Ending in:</th>
<th>Use Air Force Type-of-TO Designators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>-1, -11, -21, etc.</td>
</tr>
<tr>
<td>-12</td>
<td></td>
</tr>
<tr>
<td>-13</td>
<td></td>
</tr>
<tr>
<td>-14</td>
<td></td>
</tr>
<tr>
<td>-HR (Hand Receipt)</td>
<td></td>
</tr>
<tr>
<td>-20</td>
<td>-2, -12, -22, etc.</td>
</tr>
<tr>
<td>-23</td>
<td></td>
</tr>
<tr>
<td>-24</td>
<td></td>
</tr>
<tr>
<td>-25</td>
<td></td>
</tr>
<tr>
<td>-30</td>
<td></td>
</tr>
<tr>
<td>-34</td>
<td></td>
</tr>
<tr>
<td>-35</td>
<td></td>
</tr>
<tr>
<td>-40</td>
<td></td>
</tr>
<tr>
<td>-45</td>
<td></td>
</tr>
<tr>
<td>-50</td>
<td>-3, -13, -23, etc.</td>
</tr>
<tr>
<td>-L (LOAP)</td>
<td>-01</td>
</tr>
<tr>
<td>Any of the above numbers with a P suffix. (P is not the same as &amp;P, which does not affect the AF designator.)</td>
<td>-4, -14, -24, etc.</td>
</tr>
</tbody>
</table>

1.21 GENERAL TECHNICAL ORDERS.

In the numbering patterns for each category described in Chapters 2 through 41, numeric characters are used in the second or third group of a TO number to identify the specific equipment covered by the TO. The distinct pattern for a category, or a system within a category, indicates whether the second or third group is used for the specific equipment identifier. The number used as a specific equipment identifier will be greater than 1.

1.21.1 If the number 1 is used in lieu of a specific equipment identifier, the TO is a general technical order (category general, system general, or equipment-series general TO). EXCEPTION: The pattern established for numbering TCTO series for B-1, H-1, and T-1 aircraft (paragraph 1.17.4.2 & paragraph 1.17.4.3) is also used for general TOs in these systems.

1.21.1.1 Category general TOs apply to more than one type of aircraft, missile, or engine or to more than one equipment system in the category.
1.21.1.2 System general TOs apply to more than one type of aircraft, missile, or engine or to more than one equipment series within the equipment system.

1.21.1.3 Equipment-series general TOs apply to more than one sub-series of equipment within the equipment-series.

Examples:

<table>
<thead>
<tr>
<th>TO Number</th>
<th>Equipment-Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>9H1-1-102</td>
<td>Accumulators</td>
</tr>
<tr>
<td>9H2-1-102</td>
<td>Cylinders and Actuators</td>
</tr>
<tr>
<td>34C1-1-101</td>
<td>Leather Cutting Machines</td>
</tr>
<tr>
<td>34F2-1-111</td>
<td>Metal Finishing Machines</td>
</tr>
<tr>
<td>36A1-1-141</td>
<td>Ambulances</td>
</tr>
<tr>
<td>36A2-1-1</td>
<td>Commercial Fleet Vehicles</td>
</tr>
</tbody>
</table>

1.21.1.4 Equipment-sub-series general TOs apply to more than one equipment within the equipment sub-series.

Examples:

<table>
<thead>
<tr>
<th>TO Number</th>
<th>Equipment-Sub-Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>34F2-2-1-111</td>
<td>Grinders</td>
</tr>
<tr>
<td>34F2-3-1-121</td>
<td>Hones</td>
</tr>
<tr>
<td>36A2-3-1-1-3</td>
<td>Ford Vehicles</td>
</tr>
<tr>
<td>36A2-4-1-102</td>
<td>GMC Vehicles</td>
</tr>
<tr>
<td>36A2-5-1-104</td>
<td>Chrysler Motors Vehicles</td>
</tr>
</tbody>
</table>

1.22 NUMBERING JOINT ELECTRONICS TYPE DESIGNATION SYSTEM (JETDS) TECHNICAL ORDERS.

1.22.1 A large portion of the TOs in categories 12 and 31 cover equipment identified by JETDS equipment numbers. The JETDS (formerly AN nomenclature system) is described in MIL-STD-196, *Joint Electronics Type Designation System*.

1.22.1.1 A typical JETDS equipment number is AN/APN-167. The alphas AN indicate JETDS equipment. The A (first alpha character following the diagonal) designates the installation as piloted aircraft. The P (second alpha character following the diagonal) designates the type of equipment as radar. The N (third alpha character following the diagonal) designates the purpose of the equipment as navigational aids. The number following the dash designates a specific set of equipment. Table 1-3 provides a complete list of equipment indicators.

1.22.1.2 A typical JETDS component number is RT-771/APN-167. The RT, in accordance with MIL-STD-196 indicates a receiver and transmitter. The 771 identifies a specific equipment component. The APN-167 (following the diagonal) indicates the component is applicable to the AN/APN-167 equipment set described above.

1.22.1.3 Identifying numbers for TOs covering JETDS equipment and components use a portion of the JETDS number in the second group of the TO number. (See examples of TO numbers in Chapter 15 and Chapter 22.)

1.22.1.4 If a single TO is applicable to more than one JETDS equipment set or component at any level of breakdown, a JETDS general TO may be established at that level.

1.22.2 JETDS system-general TOs apply to equipment sets in more than one kind of JETDS installation. These TOs are identified by the numeric 2 in the second group of the TO number. Examples:

- 31P5-2-137 is applicable to both fixed ground installation (indicated by the F following the diagonal in AN/FSA-4A which is identified in the title) and general ground-use (indicated by the G following the diagonal in AN/GRC-30 which is identified in the title).
- 31W4-2-121 is applicable to both general utility installation (indicated by the U following the diagonal in SB-1203/UG which is identified in the title) and water installation (indicated by the S following the diagonal in TT-23/SG which is identified in the title).

1.22.3 JETDS installation-general TOs apply to equipment sets in more than one JETDS type of equipment within one installation kind. The second group of the TO number will contain a 2 followed by an alpha character that designates the installation kind. Examples:

- 31W4-2G-101 is applicable to a general, general-ground-use component C-7185/G.
- 31W4-2T-102 is applicable to a general-use, ground transportable component CU-1819/T.
1.22.4 JETDS equipment-type general TOs apply to more than one equipment purpose within one type of equipment. The second group of the TO number will contain a 2 followed by an alpha character that designates the equipment installation kind and a second alpha character that designates the type of equipment. Examples:

- 31W4-2GG-162 is applicable to a general-use component CV-2696/GG. The first G after the diagonal indicates general ground-use installation. The second alpha indicates telegraph or teletype type of equipment.
- 31W4-2TG-144 is applicable to a general-use component TH-5/TG. The T following the diagonal indicates a ground transportable installation. The G indicates the type of equipment is telegraph or teletype.

1.22.5 JETDS purpose general TOs apply to more than one specific equipment set within one equipment purpose. The second group of the TO number will contain a 2 followed by three alpha characters that designate the installation, type of equipment, and purpose, respectively. Examples:

- 31W4-2GGC-142 is applicable to components OU-60/GGC-30 and OU-61/GGC-31.
- 31W4-2TGC-122 is applicable to equipment sets AN/TGC-27 and AN/TGC-28.

Table 1-3. Table of JETDS Equipment Indicators

<table>
<thead>
<tr>
<th>Installation (1st letter)</th>
<th>Type of Equipment (2nd letter)</th>
<th>Purpose (3rd letter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - Piloted aircraft</td>
<td>A - Invisible light, heat radiation</td>
<td>A - Auxiliary assembly</td>
</tr>
<tr>
<td>B - Underwater mobile submarine</td>
<td>C - Carrier</td>
<td>B - Bombing</td>
</tr>
<tr>
<td>D - Pilotless carrier</td>
<td>D - Radiac</td>
<td>C - Communications (receiving and transmitting)</td>
</tr>
<tr>
<td>F - Fixed Ground</td>
<td>E - Laser</td>
<td>D - Direction finder reconnaissance and/or surveillance</td>
</tr>
<tr>
<td>G - General Ground Use</td>
<td>G - Telegraph or Teletype</td>
<td>E - Ejection and/or release</td>
</tr>
<tr>
<td>K - Amphibious</td>
<td>I - Interphone and public address</td>
<td>G - Fire control, or searchlight directing</td>
</tr>
<tr>
<td>M - Ground, mobile</td>
<td>J - Electromechanical or inertial wire covered</td>
<td>H - Recording and/or reproducing (graphic meteorological and sound)</td>
</tr>
<tr>
<td>P - Portable</td>
<td>K - Telemetering</td>
<td>K - Computing</td>
</tr>
<tr>
<td>S - Water</td>
<td>L - Countermeasures</td>
<td>M - Maintenance and/or test assemblies (including tool)</td>
</tr>
<tr>
<td>T - Ground, transportable</td>
<td>M - Meteorological</td>
<td>N - Navigational aids (including altimeters, beacons, compasses, racons, depth sounding, approach and landing)</td>
</tr>
<tr>
<td>U - General Utility</td>
<td>N - Sound in air</td>
<td>Q - Special, or combination of purposes</td>
</tr>
<tr>
<td>V - Ground, vehicular</td>
<td>P - Radar</td>
<td>R - Receiving, passive detecting</td>
</tr>
<tr>
<td>W - Water surface and underwater combination</td>
<td>Q - Sonar and underwater sound</td>
<td>S - Detecting and/or range and bearing, search</td>
</tr>
<tr>
<td>Z - Piloted and pilotless airborne vehicle combination</td>
<td>R - Radio</td>
<td>T - Transmitting</td>
</tr>
<tr>
<td></td>
<td>S - Special types, magnetic, etc or combination of types</td>
<td>W - Automatic flight or remote control</td>
</tr>
<tr>
<td></td>
<td>T - Telephone</td>
<td>X - Identification and recognition</td>
</tr>
<tr>
<td></td>
<td>V - Visual and visible light</td>
<td>Y - Surveillance (search, detect, and multiple target tracking) and control (both fire and air control)</td>
</tr>
<tr>
<td></td>
<td>W - Armament (peculiar to armament, not otherwise covered)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X - Facsimile or Television</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y - Data Processing</td>
<td></td>
</tr>
</tbody>
</table>

1-13
Table 1-3. Table of JETDS Equipment Indicators ¹ - Continued

<table>
<thead>
<tr>
<th>Installation (1st letter)</th>
<th>Type of Equipment (2nd letter)</th>
<th>Purpose (3rd letter)</th>
</tr>
</thead>
</table>

**NOTES:**

1 - The following indicator letters, removed from Table 1-3, are not to be used for new type designation assignments:
   - Installation: C - Air Transportable.
   - Type of Equipment: B - Pigeon; E - Nupac; F - Photographic purpose; L - Searchlight control; P - Reproducing.

2 - For Department Control Point Use. Not for use by contractors unless directed by procuring activity.

### 1.23 COUNTRY STANDARD TECHNICAL ORDER NUMBERS.

1.23.1 Country Standard TO (CSTO) numbers are assigned to readily identify TOs that support equipment acquired by foreign countries through the Foreign Military Sales Program. These TOs are not used by the United States Air Force (USAF), but are centrally managed by AFLCMC/LZPTC-Tinker, Tinker AFB OK, in the Security Assistance Technical Order Distribution System (SATODS) for support of the foreign customers. A CSTO may be a complete standalone publication or it may be a supplemental manual containing difference data used in conjunction with a baseline TO.

1.23.2 CSTO numbers are distinguished from USAF TO numbers by using "CSTO" in place of "TO" and with a two-position alpha prefix (country designator) that identifies the country involved. The balance of the CSTO number is established in the same manner described in this document for USAF TOs. Country designators will be compatible with country codes listed in AFMAN 23-110, Vol 9, Security Assistance Program Procedures and DOD Manual 5105.38-M, Security Assistance Management Manual (Samm), Appendix 4.

1.23.3 If the CSTO is a standalone publication used in lieu of a USAF TO, the CSTO will be identified by a country designator plus the same number as the related USAF TO. Only the acronym "CSTO" and country designator prefix in the CSTO number will distinguish between them.

**NOTE**

Supplemental manuals will have a title page statement reading "This TO (or CSTO) is incomplete without TO (or CSTO) (number)."

1.23.4 When the CSTO is supplemental to a USAF TO or to a standalone CSTO, it will be identified by a country designator prefix plus a -1 or other appropriate designation added to the TO number according to the concept described in paragraph 1.16.

1.23.5 In some instances a standalone CSTO will be for component equipment of a major design departure from any USAF equipment; therefore, it will not be related to any USAF TO.

1.23.6 Examples of CSTOs are as follows:

- **Standalone CSTO - Job guide manual used by Saudi Arabia for F-15 aircraft:**
  
  SR1F-15C-2-32JG-30-3
  
  **SR** Designates Saudi Arabia
  
  **1** Category 1
  
  **F** Basic Mission Fighter Aircraft
  
  **15** Aircraft Production Model
  
  **C** Aircraft Production Series
  
  **2** Number Reserved for Maintenance Instructions
  
  **32** Landing Gear System (MIL-STD-1808, System Subsystem Sub-Subsystem Numbering, Chapter 32)
  
  **JG** Job Guide Manual
  
  **30** Subsystem and Sub-Subsystem
  
  **3** Third in a Series of Manuals
1.24 OPERATION AND MAINTENANCE INSTRUCTIONS IN WORK PACKAGE FORMAT.

1.24.1 Operation and maintenance instructions in work package format and subordinate work package format are prepared according to MIL-PRF-87929. The complete TO, which consists of a set of work packages, is numbered according to numbering procedures for the specific equipment category.

1.24.2 Individual work packages will be numbered by the TO Manager using the following criteria:

1.24.2.1 The number will consist of five numeric characters and an alpha prefix of WP or SWP to identify a Work Package or a Subordinate Work Package as defined in MIL-PRF-87929.

1.24.2.2 A work package will be identified in the first three numeric positions; the last two numeric positions will be zeros (e.g., WP 116 00).

1.24.2.3 A subordinate work package will be identified by using the first three positions to specify the work package and the last two positions to specify the subordinate work package (e.g., SWP 126 19).

1.24.2.4 The alphabetical index work package (as defined in MIL-M-87929) will always be the first work package in the TO (i.e., WP 001 00).

1.24.2.5 The introduction work package (as defined in MIL-PRF-87929) will always be the second work package in the TO (i.e., WP 002 00).

1.24.2.6 Other work packages will be numbered WP 003 00, WP 004 00, and so on as required.
1.25 TECHNICAL ORDER DISTRIBUTION MEDIA SUFFIX CODES.

NOTE

Detailed instructions on the use of Distribution Media Codes are listed in TO 00-5-3.

1.25.1 To meet customer requirements TO Managers may offer the same technical data on two or more types of distribution media, such as paper, CD-ROM, or DVD; as well as through direct electronic access.

1.25.2 Distribution media suffix codes (see below) are used in index listings to identify any TO versions available in any media other than paper, and will allow users to order TO copies distributed on that medium. Index listings for non-paper versions of the TO will include the applicable distribution media suffixes followed by an index number. Media-type suffixes will not be used for paper copies. TO media-type suffix codes are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD</td>
<td>CD-ROM</td>
</tr>
<tr>
<td>WA</td>
<td>Electronic Access (Web Access (digital))</td>
</tr>
<tr>
<td>DV</td>
<td>Digital Versatile Disk (DVD)</td>
</tr>
</tbody>
</table>

NOTE

Distribution media suffixes appear only in the TO Index for ordering purposes. They are not placed on the TOs themselves unless they are part of the digital distribution medium’s number.

1.25.3 The media-type suffix code will allow sight recognition of TOs available on other-than-paper media. All media-type suffixes will carry the index number “-1,” except as described below. The index number following the suffix will be used for several purposes:

1.25.3.1 If a TO or set of TOs (paragraph 1.26) requires more than one disk or tape, the index number will indicate individual disks/tapes in the set (i.e., disk one of three is -1, disk two of three is -2, and disk three of three is -3).

1.25.3.2 If a set of TOs contains manuals with different classifications or distribution limitations, these TOs may be segregated by disk with different index numbers assigned to the different levels of protection required.

1.25.4 Examples:

• TO 1B-52G-4-1 is a paper IPB for the B52G aircraft. A DVD containing this TO would be indexed as 1B-52G-4-1-DV-1.

• TO 12P2-2APQ120-2 is an intermediate maintenance manual for a radar indicator. A CD-ROM containing the same TO would be indexed 12P2-2APQ120-2-CD-1.

• TO 33K-1-100-CD-1 (calibration procedures) is only available on CD-ROM.

• The database for the F-22 fighter Interactive Electronic Technical Manual (IETM) will be available on-line through a WAN, and would be indexed as 1F-22A-1-WA-1, with a Catalog note on how to access it. Note that the basic TO number ends in “-1” because ALL procedures, operations and maintenance, are contained in the one database (see paragraph 1.13).

1.26 CD-ROMS/DVDS.

If a single TO or multiple TOs will be distributed on a CD-ROM or DVD, the TOMA must establish a specific TO Number for the CD ROM or DVD distributed. These actions will ensure that users will be able to subscribe to the CD-ROM/DVD TO or collection of TOs. EXAMPLES:

• TO 1B-52H-2-CD-1 through 1B-52H-2-CD-5 would contain the Organizational Maintenance Manual Set for the B-52H, provided on a set of 5 CD-ROMs;

• TO 33D2-17-2-CD-1 would contain unclassified TOs on an Aircraft Field Test Stand provided on CD-ROM, while 33D2-17-2-CD-2 (C) would contain confidential TOs for the same equipment; and

• TO 35D-1-DV-1 would be unclassified, Distribution Statement A TOs for Miscellaneous Aircraft Loading and Servicing Equipment provided on DVD.
1.27 TECHNICAL ORDER NUMBERING FOR ASD/AIA S1000D®, INTERNATIONAL SPECIFICATION FOR TECHNICAL PUBLICATIONS UTILIZING A COMMON SOURCE DATABASE.

1.27.1 ASD/AIA S1000D® (http://www.s1000d.org) contains three primary constructs that relate directly to the TO Numbering process. These constructs are the Data Module (DM), the Common Source Data Base (CSDB), and the Publication Module (PM).

1.27.1.1 The DM is a self-contained unit of data for the description, operation, identification of parts or maintenance of the product and its support equipment. The DM consists of an identification and status section and contents section, and is produced in such a form that it can be input into, and be retrieved from, a database using a defined identifier.

1.27.1.2 The CSDB is a “store” of DMs required to produce technical publications.

1.27.1.3 The PM defines the content and the structure of a publication.

1.27.2 TO numbers shall be assigned to the CSDB and each PM when acquiring ASD/AIA S1000D-compliant TOs. TO numbers for CSDBs shall comply with the TO numbering for databases as described in this TO (paragraph 1.13). TO numbers for PMs shall also comply with this TO, but will use the Publication Module Code as specified in ASD/AIA S1000D as part of the TO number. DMs shall not receive a TO number, but will be numbered and controlled by ASD/AIA S1000D Data Module Code.
CHAPTER 2
CATEGORY 0 - TO CATALOG AND INDEXES

2.1 GENERAL.

2.1.1 ETIMS is the official Air Force TO Catalog and provides an Equipment and TO number cross reference. The Air Force catalog is available through the ETIMS program to any user who can gain access to ETIMS via the Air Force Portal. Access can be gained by using either a CAC or External Certificate of Authentication (ECA). A sanitized (“XX”) version of the Catalog is made available to FMS/SAP customers. The nuclear weapon and CSTO indexes are also numbered in Category 0.

NOTE

Nonnuclear EOD TOs (Category 60), are indexed as part of the Joint Service EOD Mobile Field Kit, Automated EOD Publications System (AEODPS) software.

2.1.2 The Air Force catalog is available through the ETIMS program to any user who can gain access to ETIMS via the Air Force Portal. Access can be gained by using either a CAC or External Certificate of Authentication (ECA).

2.1.3 Catalog provides six main functions, Tech Order List, TO Details, New TOs, New Increments, TO History, and TO/Equipment XREF. Other functions provide information and tips to help users of the catalog.

2.2 NUMBERING PATTERNS.

The catalogues are numbered in TO Category "0," with the numerical catalog and indexes in subgroup "-1."

2.3 CATEGORY 0 NUMBERS.

The only active TO numbers in the Catalog Category are:

- 0-1-11N  Numerical Indexes to Joint Nuclear Weapons Publications
- 0-1-11N-1-CD-1  Numerical Indexes to Joint Nuclear Weapons Publications - AF Supplement
- 0-1-71  Consolidated Security Assistance Technical Order Index

T.O. 00-5-18
3.1 GENERAL.

3.1.1 AFMC/A4FI establishes responsibilities for preparing Category 00 Methods and Procedures TOs (MPTOs). When a TO Manager requests a new Category 00 TO number, AFLCMC/LZPTP-Tinker determines if A4UE coordination and approval have been obtained before assigning a TO number.

3.1.2 Category 00 TOs contain management data or data which is related to multiple equipment categories; or data which cannot be identified with any other established category.

3.1.3 The TO numbering pattern in Category 00 uses three basic groups. A fourth group is sometimes added to further separate MPTOs or to sectionalize by equipment subdivisions as described in the introduction. The numbering pattern is explained in paragraph 3.2.

3.2 NUMBERING PATTERNS.

3.2.1 GROUP ONE. This group contains one part. The designator 00 identifies the TO as being an MPTO.

3.2.2 GROUP TWO. This group contains two parts.

3.2.2.1 Part one is made up of one or more numeric characters that identify the subject matter series. The numbering series are listed in paragraph 3.4.

3.2.2.2 Part two, when used, consists of one or more alpha characters that further breakdown the subject matter into sub-series.

3.2.3 GROUP THREE.

3.2.3.1 This group has one or more numeric characters that identify the specific type of TO.

NOTE

MPTOs, except for support equipment general "-06" Work Unit Code manuals, do not have "types."

3.2.3.2 In some instances the numeric characters in group three are followed by one or more alpha characters that indicate a series of checklists or supplements. The following alpha characters are authorized for use in Category 00.

<table>
<thead>
<tr>
<th>CL</th>
<th>Checklists</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Operational Supplements</td>
</tr>
<tr>
<td>SS</td>
<td>Safety Supplements</td>
</tr>
</tbody>
</table>

3.2.3.3 In addition to the three basic groups, another group may result by volumnizing, according to paragraph 1.14, or by using an aircraft or engine type-model-series designator to identify the section.

3.3 EXAMPLES OF TECHNICAL ORDER NUMBERING PATTERNS IN CATEGORY 00.

3.3.1 A MPTO covering the use of tape for packaging:

00-85-35
00       MPTO Category
85       Protective Packaging and Preservation Packaging
35       Selection and Use of Tape for Packaging
3.3.2 A MPTO covering disposal of critical alloys for C135 aircraft:

00-25-113-C135
00 MPTO Category
25 Miscellaneous TOs
113 TO on Conservation, Segregation, and Disposal of Critical Alloys and Precious Metals
C135 Volume for C135 Aircraft

3.3.3 A MPTO on installation and operation of part number (PN) 6650 series electrical systems:

00-105A-12
00 MPTO Category
105 Air Installation TOs
A Electrical Facilities Installation
12 Designator for Specific Manual for PN 6650 Series Equipment

3.4 LISTING OF CATEGORY 00 NUMBERING SERIES.

00-5 Technical Publications Systems
00-20 Maintenance Management System
00-20D Railroad Equipment
00-20F Office Equipment
00-25 Miscellaneous TOs
00-33 Communications and Information TOs
00-33A Network/Cyberspace Support/Communications
00-33B Secured Availability
00-33C Computing Infrastructure
00-33D Data and Services
00-35 Administrative Publications
00-35A Supply
00-35D Blank Forms, Deficiency Reporting
00-75 Air Evacuation
00-80 Special TOs
00-80A Aircraft Overseas Shipping
00-80C Aircraft Battlefield Recovery Procedures
00-80F Mortuary Equipment
00-80G Public Display Procedures
00-85 Protective Packing and Preservation Packaging, General
00-85A Specific Equipment TOs
00-85B Transportation Packaging Orders
00-105 Air Installation TOs, General
00-105A Electrical Facilities
00-105E Fire Protection and Rescue
00-110 Special Weapons, Defense, and Nuclear Disposal and Decontamination
00-110A Atomic and Radiological Warfare
CHAPTER 4
CATEGORY 1 - AIRCRAFT

4.1 GENERAL.

4.1.1 TO data numbered in the aircraft category includes flight and operations manuals; organizational (flight line) maintenance and overhaul instructions; inspection requirements and specified procedures performed on the various types of aircraft. TO numbers incorporate the aircraft basic Mission/Design/Series (MDS) designators specified in DOD 4120.15-L, Model Designation of Military Aerospace Vehicles, to group types of aircraft data together according to mission.

4.1.2 TO data pertaining to more than one type of aircraft or more than one model within a specific type of aircraft is numbered as a General TO as described in paragraph 1.21.

4.1.3 TO data pertaining to more than one production series of a specific aircraft model is numbered as the earliest production series. A volumized structural repair manual applicable to the F-111 aircraft production series D, E and F is numbered in the D series.

4.2 NUMBERING PATTERNS.

This paragraph describes complete numbering patterns for all Category 1 TOs, except those maintenance manuals prepared following Specification MIL-PRF-83495, Technical Manuals - On-Equipment Maintenance Manual Set. Numbering patterns for MIL-PRF-83495 organizational maintenance manuals are covered in paragraph 4.4 and paragraph 4.5.

4.2.1 GROUP ONE. In Category 1, this group has only two parts identifying the category and aircraft mission.

4.2.1.1 Part one is always the numeric 1 to identify Category 1.

4.2.1.2 Part two is an alpha character identifying the aircraft basic mission or non-standard aircraft type as outlined in AFI 16-401(I), Designating and Naming Defense Military Aerospace Vehicles. The following is a list of the basic mission alpha identifiers:

| A  | Attack     |
| B  | Bomber     |
| C  | Cargo/Transport |
| D  | Unmanned Aircraft (UA) Control Segment |
| E  | Special Electronic Installation |
| F  | Fighter     |
| G  | Glider      |
| H  | Helicopter  |
| L  | Observation |
| P  | Patrol      |
| Q  | Unmanned Air Vehicles (UAV) |
| R  | Reconnaissance |
| T  | Trainer     |
| U  | Utility     |
| V  | VTOL/STOL   |
| X  | Research    |

Table 4-1. Basic Aircraft Mission and Non-Standard Vehicle Designators
T.O. 00-5-18

NOTE

TOs for Observation aircraft are identified by the basic mission symbol L instead of the alpha O as identified in AFI 16-401(I). To avoid confusion with numerals, the TO system does not use alpha characters I and O. These codes for Laser, Anti-submarine, Spaceplane and Lighter-Than-Air are not used in the Air Force TO system.

4.2.2 GROUP TWO. Group two contains two or three parts that incorporate the aircraft model number; the modified aircraft mission (in parentheses) if applicable; and aircraft production series if required.

4.2.2.1 Part one contains one or more numeric characters identifying the aircraft model.

4.2.2.2 If part two is an alpha character in parentheses, it identifies a modified aircraft mission. If the modified mission is not applicable, the aircraft production series identifier described in part three follows the aircraft model number. The following is a listing of modified aircraft mission identifiers outlined in AFI 16-401:

<table>
<thead>
<tr>
<th>Mission Identifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Attack</td>
</tr>
<tr>
<td>H</td>
<td>Search/Rescue/MedEvac</td>
</tr>
<tr>
<td>Q</td>
<td>Drone</td>
</tr>
<tr>
<td>V</td>
<td>Staff</td>
</tr>
<tr>
<td>C</td>
<td>Cargo/Transport</td>
</tr>
<tr>
<td>K</td>
<td>Tanker</td>
</tr>
<tr>
<td>R</td>
<td>Reconnaissance</td>
</tr>
<tr>
<td>W</td>
<td>Weather</td>
</tr>
<tr>
<td>D</td>
<td>Director</td>
</tr>
<tr>
<td>L</td>
<td>Observation*</td>
</tr>
<tr>
<td>T</td>
<td>Trainer</td>
</tr>
<tr>
<td>X</td>
<td>Experimental</td>
</tr>
<tr>
<td>E</td>
<td>Special Electronic Installation</td>
</tr>
<tr>
<td>M</td>
<td>Multi-Mission</td>
</tr>
<tr>
<td>U</td>
<td>Utility</td>
</tr>
<tr>
<td>Y</td>
<td>Prototype</td>
</tr>
<tr>
<td>F</td>
<td>Fighter</td>
</tr>
<tr>
<td>P</td>
<td>Patrol</td>
</tr>
</tbody>
</table>

* L used in TO System to prevent confusion of O and 0.

4.2.2.3 Part three is an alpha character indicating the aircraft production series. The first series manufactured is identified with the alpha A, the second series with the alpha B, continuing through the alphabet.

4.2.2.4 If the number is for a general aircraft TO (paragraph 1.21), groups one and two are established using the following designators:

<table>
<thead>
<tr>
<th>Designator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>General Aircraft</td>
</tr>
<tr>
<td>1-1A</td>
<td>General Engineering Manuals</td>
</tr>
<tr>
<td>1-1B</td>
<td>Weight and Balance</td>
</tr>
<tr>
<td>1-1C</td>
<td>Air Refueling</td>
</tr>
<tr>
<td>1-1H</td>
<td>Aircraft Battle Damage Repair</td>
</tr>
<tr>
<td>1-1M</td>
<td>Non-Nuclear Munitions Delivery</td>
</tr>
</tbody>
</table>

4.2.3 GROUP THREE. In Category 1, group three primarily identifies the type of TO, instruction or procedure. This can be accomplished by using either one or two parts.

4.2.3.1 Part one consists of one or more numeric characters reserved to indicate a specific type of TO. The following is a list of numbers reserved to identify the TOs in Category 1:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Flight Manuals
-2 Maintenance Instructions
-3 Structural Repair, Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>Basic Weight Checklist and Loading Data</td>
</tr>
<tr>
<td>-5-1</td>
<td>Sample Checklist Basic Weight</td>
</tr>
<tr>
<td>-5-2</td>
<td>Loading Data</td>
</tr>
<tr>
<td>-6</td>
<td>Inspection Requirements</td>
</tr>
<tr>
<td>-7</td>
<td>Winterization Instructions</td>
</tr>
<tr>
<td>-8</td>
<td>Test Procedures, or Checkout Manuals</td>
</tr>
<tr>
<td>-9</td>
<td>Cargo Loading</td>
</tr>
<tr>
<td>-10</td>
<td>Power Package Buildup Instructions</td>
</tr>
<tr>
<td>-11</td>
<td>Auxiliary Power Package Buildup Instructions</td>
</tr>
<tr>
<td>-12</td>
<td>Maintenance Materiel Management Manuals</td>
</tr>
<tr>
<td>-13</td>
<td>Weapons Loading Manuals</td>
</tr>
<tr>
<td>-14</td>
<td>Atomic Loading and In-Flight</td>
</tr>
<tr>
<td>-15</td>
<td>Assembly, Test, and Storage Procedures</td>
</tr>
</tbody>
</table>

**NOTE**

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

**NOTE**

AFNWL/NCLS has responsibility for assigning Category 1 TO numbers when the group three, part one is -16 or -25 through -31.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-16</td>
<td>Atomic Loading and In-Flight (Reserved for Nuclear Weapons)</td>
</tr>
<tr>
<td>-17</td>
<td>Storage of Aircraft</td>
</tr>
<tr>
<td>-18</td>
<td>Maintenance of Airborne Equipment</td>
</tr>
<tr>
<td>-19</td>
<td>Conversion Instructions</td>
</tr>
<tr>
<td>-20</td>
<td>Standard Practices</td>
</tr>
<tr>
<td>-21</td>
<td>Aircraft Inventory Record Master Guides</td>
</tr>
<tr>
<td>-22</td>
<td>Reserved</td>
</tr>
<tr>
<td>-23</td>
<td>Corrosion Control</td>
</tr>
<tr>
<td>-24</td>
<td>Reserved</td>
</tr>
<tr>
<td>-25 thru 31</td>
<td>Air Crew Weapon Delivery Manuals (Reserved for Nuclear Weapons)</td>
</tr>
<tr>
<td>-32</td>
<td>In-Flight Maintenance Manuals</td>
</tr>
<tr>
<td>-33</td>
<td>Non-Nuclear Munitions Loading</td>
</tr>
<tr>
<td>-33-1</td>
<td>Non-Nuclear Munitions Loading - Tactical Missions</td>
</tr>
<tr>
<td>-33-2</td>
<td>Non-Nuclear Munitions Loading - Strategic Missions</td>
</tr>
<tr>
<td>-33-3</td>
<td>Non-Nuclear Munitions Loading - Defense Missions</td>
</tr>
<tr>
<td>-33-4</td>
<td>Non-Nuclear Munitions Loading - Transport Missions</td>
</tr>
<tr>
<td>-34</td>
<td>Non-Nuclear Munitions Delivery Manuals</td>
</tr>
<tr>
<td>-34-1</td>
<td>Non-Nuclear Munitions Delivery - Tactical Missions</td>
</tr>
<tr>
<td>-34-2</td>
<td>Non-Nuclear Munitions Delivery - Strategic Missions</td>
</tr>
<tr>
<td>-34-3</td>
<td>Non-Nuclear Munitions Delivery - Defense Missions</td>
</tr>
<tr>
<td>-34-4</td>
<td>Non-Nuclear Munitions Delivery - Transport Missions</td>
</tr>
<tr>
<td>-35</td>
<td>Non-Munitions Accessories</td>
</tr>
</tbody>
</table>
4.2.3.2 Part two. In some instances some of the reserved numbers listed in part one above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements, and other functions. Alpha characters authorized for use in Category 1 are listed as follows (also see paragraph 4.4.1.2):

CF - Acceptance or Functional Check Flight Procedures
CL - Checklists
FP - Film Packs
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
WS - Worksheets

4.2.4 GROUP FOUR. This group consists of either one or two parts that identify a supplemental manual, identify sections of a sectionalized TO or indicate the sequence number of specific TO data in a series of inspections, supplements, or functions.

4.2.4.1 Part one contains one or more numeric characters identifying a supplemental manual, indicating the sequence number of data in a series or identifying the section number of a sectionalized TO.

NOTE

When used immediately following the number "-6WC" in Category 1, the number "-101" designates Contingency (Quick Look) Workcards.

4.2.4.2 Part two may be used, as in paragraph 4.2.3.2, to add one or more of the alpha characters indicating a series of checklists, workcards, supplements, and other functions.

4.2.5 GROUP FIVE. If TO numbers have been extended by sectionalizing or establishing supplemental numbers, the use of group five may be necessary to complete the TO number. Group five may consist of one to two parts (used in the same manner as described in paragraph 4.2.4) and identifies a supplemental manual or sections of a sectionalized TO or indicates the sequence number of specific TO data in a series of inspections, supplements, or functions.

4.2.6 GROUP SIX. In some instances sectionalizing Category 1 TOs will extend the number to require using group six to complete the TO number. Group six will consist of one part made up of one or more numeric characters. Group six identifies a supplemental manual; identifies sections of a sectionalized TO; or indicates the sequence number of specific TO data in a series of inspections, supplements or functions in the same manner described in paragraph 4.2.4.1.

4.3 EXAMPLES OF NUMBERING PATTERNS.

The following are examples of common numbering patterns for Category 1 TOs (numbering patterns for Specification MIL-PRF-83495 maintenance manuals are described in paragraphs 4.4 and 4.5).

4.3.1 Flight manual:

1B-52D-1
1 Category 1
B  Basic Mission Bomber
52  Aircraft Model Number
D  Aircraft Production Series
1  Number Reserved for Flight Manuals

4.3.2 IPB:

1C-135(K)A-4
1  Category 1
C  Basic Mission Cargo/Transport
135  Aircraft Model Number
(K)  Modified Aircraft Mission Tanker
A  Aircraft Production Series
4  Number Reserved for IPBs

4.3.3 Inspection workcard:

1C-131A-6WC-7
1  Category 1
C  Basic Mission Cargo/Transport
131  Aircraft Model Number
A  Aircraft Production Series
6  Number Reserved for Inspection Requirements
WC  Indicates Workcard Media
7  Sequence Number of the Workcard

4.3.4 Volumized TO:

1C-130A-2-3
1  Category 1
C  Basic Mission Cargo/Transport
130  Aircraft Model Number
A  Aircraft Production Series
2  Number Reserved for Maintenance Instructions
3  Identifies a Section Covering Hydraulic Systems.

4.3.5 Supplemental manual:

1F-5E-1-1
1  Category 1
F  Basic Mission Fighter
5  Aircraft Model Number
E  Aircraft Production Series
1  Number Reserved for Flight Manuals
1  Identifies the First Supplemental Manual

4.3.6 Supplemental manual to a sectionalized maintenance instruction:

1F-4C-2-14-1
1  Category 1
T.O. 00-5-18

F  Basic Mission Fighter
4  Aircraft Model Number
C  Aircraft Production Series
2  Number Reserved for Maintenance Instructions
14 Identifies a Section for Integrated Electronic Central Radar Altimeter, Radar Beacon System, Speech Security System, ILS/VOL System
1  Identifies the First Supplemental Manual

4.3.7 Safety supplement to a volumized TO:

1B-52D-33-2-2SS-1
1  Category 1
B  Basic Mission Bomber
52  Aircraft Model Number
D  Aircraft Production Series
33  Number Reserved for Non-Nuclear Munitions Loading Procedures
2  Number Reserved for Strategic Missions
2  Identifies a Volume Covering External Stores Munitions
SS  Indicates a Safety Supplement
1  Sequence Number of the Safety Supplement

4.4 MILITARY SPECIFICATION MIL-PRF-83495 MAINTENANCE MANUALS.

Organizational maintenance manuals that conform to Specification MIL-PRF-83495 use a special numbering pattern. TO numbers assigned for these manuals shall agree with the System/Subsystem/Sub-subsystem categories listed in MIL-STD-1808. Groups one, two and three of the TO number are formed in the same manner described in paragraph 4.2. However, groups four, five, six and seven are formed in a different manner as described below.

4.4.1 GROUP FOUR. For MIL-PRF-83495 maintenance manuals, this group consists of two parts.

NOTE

MIL-PRF-83496 states the specifications for special numbering patterns. MIL-STD-1808 is the location of the listings and definitions of each of the special numbering System/Subsystem/Sub-subsystems.

4.4.1.1 Part one contains two numeric characters that identify the chapter number in MIL-STD-1808 and the equipment system or subject matter that the TO covers. Systems designators used in group four, part one are as follows:

GENERAL

00  -  Aircraft-General
01 through  -  Unassigned
04
05  -  Aircraft-General
06  -  Dimensions and Areas
07  -  Lifting, Jacking and Shoring
08  -  Leveling and Weighing
09  -  Towing and Taxiing
10  -  Parking and Mooring
11  -  Placards and Markings
12  -  Servicing
13  -  Time Limits, Inspections, and Maintenance Checks
14  -  Corrosion
15 - Non-Destructive Inspection
16 - Siting Installation (Ground Equipment Only)
17 - Preparation for Use and Shipment
18 - Weapons Instrumentation
19 - Unassigned

AIRFRAME SYSTEMS
20 - Unassigned
21 - Temperature Control
22 - Auto Flight
23 - Communications
24 - Electrical Power
25 - Equipment/Furnishings
26 - Fire Protection
27 - Spoilers, Drag Devices, and Variable Aerodynamic Fairings
28 - Fuel
29 - Hydraulic Power
30 - Ice and Rain Protection
31 - Indicating/Recording Systems
32 - Landing Gear
33 - Lights
34 - Navigation
35 - Oxygen
36 - Pneumatic
37 - Vacuum
38 - Water/Waste
39 - Electrical/Electronic Components and Multifunction Units
40 - Standard Practices: Integrated Avionics
41 - Water Ballast
42 - Integrated Avionics Architecture
43 - Communications: Staff
44 - In-Flight Refueling: Tanker
45 - Central Maintenance System (CMS)
46 - System Integration and Display
47 - Liquid/Gaseous Nitrogen
48 - Communications/Navigation/Identification (CNI)
49 - Airborne Auxiliary Power

STRUCTURE
50 - Unassigned
51 - Standard Practices: Structures
52 - Doors
53 - Fuselage
54 - Nacelles/Pylons
55 - Stabilizers
56 - Windows and Canopies
57 - Wings
58 - Unassigned
59 - Unassigned
### PROPELLER/ROTOR

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>Standard Practices: Propeller</td>
</tr>
<tr>
<td>61</td>
<td>Propellers/Propulsors</td>
</tr>
<tr>
<td>62</td>
<td>Rotors</td>
</tr>
<tr>
<td>63</td>
<td>Rotor Drives</td>
</tr>
<tr>
<td>64</td>
<td>Tail Rotor</td>
</tr>
<tr>
<td>65</td>
<td>Tail Rotor Drives</td>
</tr>
<tr>
<td>66</td>
<td>Folding Blades/Pylon</td>
</tr>
<tr>
<td>67</td>
<td>Rotors Flight Controls</td>
</tr>
<tr>
<td>68</td>
<td>Unassigned</td>
</tr>
<tr>
<td>69</td>
<td>Unassigned</td>
</tr>
</tbody>
</table>

### POWER PLANT

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>Standard Practices: Engine</td>
</tr>
<tr>
<td>71</td>
<td>Power Plant</td>
</tr>
<tr>
<td>72</td>
<td>Engine</td>
</tr>
<tr>
<td>72(1)</td>
<td>Engine: Turbine/Turboprop</td>
</tr>
<tr>
<td>72(2)</td>
<td>Engine: Reciprocating</td>
</tr>
<tr>
<td>73</td>
<td>Engine Fuel and Control</td>
</tr>
<tr>
<td>74</td>
<td>Engine Ignition</td>
</tr>
<tr>
<td>75</td>
<td>Engine Air</td>
</tr>
<tr>
<td>76</td>
<td>Engine Controls</td>
</tr>
<tr>
<td>77</td>
<td>Engine Indicating</td>
</tr>
<tr>
<td>78</td>
<td>Engine Exhaust</td>
</tr>
<tr>
<td>79</td>
<td>Engine Oil</td>
</tr>
<tr>
<td>80</td>
<td>Engine Starting</td>
</tr>
<tr>
<td>81</td>
<td>Turbines</td>
</tr>
<tr>
<td>82</td>
<td>Water Injection</td>
</tr>
<tr>
<td>83</td>
<td>Accessory Gearboxes</td>
</tr>
<tr>
<td>84</td>
<td>Propulsion Augmentation</td>
</tr>
<tr>
<td>85</td>
<td>Reserved</td>
</tr>
<tr>
<td>86</td>
<td>Lift System</td>
</tr>
<tr>
<td>87 thru 89</td>
<td>Unassigned</td>
</tr>
</tbody>
</table>

### MILITARY SYSTEMS

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Roll-On Roll-Off Specialized Mission Equipment</td>
</tr>
<tr>
<td>91</td>
<td>Charts/Diagrams</td>
</tr>
<tr>
<td>92</td>
<td>Electrical Power Multiplexing</td>
</tr>
<tr>
<td>93</td>
<td>Surveillance</td>
</tr>
<tr>
<td>94</td>
<td>Weapons</td>
</tr>
<tr>
<td>95</td>
<td>Crew Escape and Safety</td>
</tr>
<tr>
<td>96</td>
<td>Missiles, Drones and Telemetry</td>
</tr>
<tr>
<td>97</td>
<td>Image Recording</td>
</tr>
<tr>
<td>98</td>
<td>Meteorological and Atmospheric Research</td>
</tr>
<tr>
<td>99</td>
<td>Electronic Warfare</td>
</tr>
</tbody>
</table>

4.4.1.2 Part two consists of two alpha characters that identify the function of maintenance manuals and are used in conjunction with the chapter numbers listed in MIL-STD-1808. The following is a list of authorized alpha designators to be used with these functions:
4.4.1.3 Other previously authorized alpha designators remaining in use on some current TOs include the following:

- **GA**: General Aircraft Manual
- **MS**: Maintenance Support Manual
- **TS**: Troubleshooting Manual

4.4.2 **GROUP FIVE.** This group has one part consisting of two numeric characters. The first digit denotes the subsystem, as defined under the appropriate system in MIL-STD-1808. The second digit is assigned by the manufacturer and denotes the sub-subsystem if further breakout is required for a complex subsystem. A zero in either, or both, positions indicates there is no equipment breakout at that level.

4.4.3 **GROUP SIX.** This group has only one part, consisting of one or more numeric characters, that identify the TO series number of the subsystem indicated in group five.

4.4.4 **GROUP SEVEN.** In the rare instances when it is used, this group has one part and consists of one or more numeric characters identifying a volume of a volumized TO or identifying a supplemental manual (paragraph 4.5.).

4.4.5 **Illustrated Parts Breakdown.** When maintenance manuals are written to conform to MIL-PRF-83495, the related IPB will be numbered to indicate the system involved. Groups one, two, and three of the TO number are formed in the same manner described in paragraph 4.2. Groups four and five are described below.

4.4.5.1 **GROUP FOUR.** This group consists of one part, which is the chapter number from MIL-STD-1808, indicating the system for the equipment covered.

4.4.5.2 **GROUP FIVE.** This group consists of one part. One or more numeric characters identify the manual series number of the system indicated in group four.

4.5 **EXAMPLES OF NUMBERING PATTERNS FOR MIL-PRF-83495 MANUALS.**

4.5.1 Supplemental manual applicable to F16A aircraft:

1F-16A-2-93JG-00-1-

1

1 Category 1

F Basic Mission Fighter

16 Aircraft Production Model

A Aircraft Production Series

2 Number Reserved for Maintenance Instructions

93 Surveillance System (MIL-STD-1808, Chapter 93)


00 General (No Specific Subsystem Identified)

1 First in a Series of Manuals

1 Identifies the First Supplemental Manual

4.5.2 General fault reporting manual for F16B aircraft:
4.5.3 Job guide manual for air-conditioning system applicable to F15A aircraft:

1F-15A-2-21JG-61-2

1 Category 1
F Basic Mission Fighter
15 Aircraft Production Model
A Aircraft Production Series
2 Number Reserved for Maintenance Instructions
21 Air-Conditioning (MIL-STD-1808, Chapter 21)
61 6 Indicates Temperature Control Subsystem (MIL-M-83495);
    1 Indicates the First Subsystem Identified by the Manufacturer
2 Second in Series of Manuals

4.5.4 Job guide manual for landing gear system applicable to F16B aircraft:

1F-16B-2-32JG-30-3

1 Category 1
F Basic Mission Fighter
16 Aircraft Production Model
B Aircraft Production Series
2 Number Reserved for Maintenance Instructions
32 Landing Gear System (MIL-STD-1808, Chapter 32)
30 Extension and Retraction Subsystem
3 Third in a Series of Manuals

4.5.5 Illustrated parts breakdown for air-conditioning system of F16A aircraft:

1F-16A-4-21-1

1 Category 1
F Basic Mission Fighter
16 Aircraft Production Model
A Aircraft Production Series
4 Number Reserved for IPBs
21 Air-Conditioning System (MIL-STD-1808, Chapter 21)
1 First in a Series of Manuals
CHAPTER 5
CATEGORY 2 - AIRBORNE ENGINES AND ASSOCIATED EQUIPMENT

5.1 GENERAL.

5.1.1 Category 2 contains TOs pertaining to four basic types of airborne engines. Numbering patterns are established primarily to identify these engine types that are: auxiliary gas turbine engines, jet engines, rocket engines and reciprocating engines. TO numbers for airborne engine associated equipment use both three and four basic groups. Other TO numbers for airborne engines use only three basic groups.

5.1.2 TO data pertaining to more than one type of engine is numbered in the category general series.

5.1.3 Data pertaining to more than one engine model within an engine type is numbered in the engine type general series.

5.2 NUMBERING PATTERNS.

5.2.1 GROUP ONE. This group basically has three parts that identify the category, type of engine and any associated equipment identifiers.

5.2.1.1 Part one is always the numeric 2 identifying Category 2.

5.2.1.2 Part two is an alpha character that identifies one of four types of engines, i.e., G - auxiliary gas turbine engine; J - jet engine; K - booster and rocket engine; and R - reciprocating engine. When the TO number is for associated equipment, the alpha A is added immediately following the engine type designator, i.e., GA, JA, KA, and RA.

5.2.1.3 Part three contains one or more numeric characters that identify the associated equipment series. The associated equipment series numbers are outlined in paragraph 5.4.

5.2.2 GROUP TWO. In group two, each engine type is further defined according to the method of propulsion. Numbering patterns used with each method of propulsion are outlined in the following examples:

5.2.2.1 Jet Engines.

5.2.2.1.1 Part one consists of one or two alpha characters that identify the type of propulsion for jet engines as follows: J - turbojet, RJ - ramjet, T - turboshaft and turboprop; and for turbofan two designators have been used: TF and F. The TF designator was used for turbofan prior to November 1972 and F has been used since MIL-STD-879A was published on 14 November 1972.

5.2.2.1.2 The second part of group two has one or more numeric characters identifying the engine model number, i.e.:

\[\begin{array}{c}
2J-F100 \\
2 & \text{Category 2}
\end{array}\]

\[\begin{array}{c}
J & \text{Jet Engines}
\end{array}\]

\[\begin{array}{c}
F & \text{Turbofan Subtype}
\end{array}\]

\[\begin{array}{c}
100 & \text{Engine Model Number}
\end{array}\]

5.2.2.2 Booster and Rocket Engines.

5.2.2.2.1 Part one of group two pertaining to this type engine identifies the fuel as either LR - liquid fuel or SR - solid fuel.

5.2.2.2.2 The second part of group two identifies the rocket engine model number, i.e.:

\[\begin{array}{c}
2K-SR97 \\
2 & \text{Category 2}
\end{array}\]

\[\begin{array}{c}
K & \text{Booster or Rocket Engine}
\end{array}\]
5.2.2.3 Reciprocating Engines.

5.2.2.3.1 Part one of group two pertaining to this type engine identifies the engine sub-type as L - in line; O - opposed; and R - radial.

5.2.2.3.2 The second part of group two identifies the reciprocating engine model number, i.e.:

2R-R1830

2 Category 2
R Reciprocating Engine
R Radial Subtype
1830 Engine Model Number

5.2.2.4 Auxiliary Gas Turbine Engines. These engines are auxiliary types including gas turbine engines; gas turbine generators; gas turbine power units; etc. Group two is composed of alpha and numeric characters identifying the equipment model number, i.e.:

2G-GTCP165

2 Category 2
G Auxiliary Gas Turbine Engines
GTCP Alpha Prefix for Model Number
165 Model Number

5.2.2.5 Associated Equipment.

5.2.2.5.1 When the TO number has only three groups, group two contains one or more numeric characters representing the model, type, or PN assigned to specific equipment.

5.2.2.5.2 When the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two and the model, type or PN is identified in group three.

5.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

5.2.3.1 When a TO number has only three basic groups, the third group of the TO number identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 2:

-01 List of Applicable Publications (LOAP)
-1 Operating Instructions
-2 Service or Maintenance Instructions
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-5 Overhaul Changes or Calibration and Measurement Summary
-6 Field Maintenance
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals or Programmed Tests
Non-Destructive Inspection Manuals
5.2.3.2 In some instances the reserved numbers in the third group are followed by an alpha character or characters indicating a series of checklists, workcards and supplements. The following alpha characters are authorized for use in Category 2:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

5.2.3.3 When the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

5.2.4 GROUP FOUR. When the TO number has four basic groups, the fourth group identifies specific types of TOs as described in paragraph 5.2.3.1, above.

5.3 CATEGORY 2 NUMBERING PATTERNS.

5.3.1 Operation manual for a gas turbine generator, model GTG 331:

2G-GTG331-1
2 Category 2
G Gas Turbine Engines
GTG331 Engine Model Number
1 Number Reserved for Operating Instructions

5.3.2 Maintenance workcard for J-75 turbo-jet engine:

2J-J75-6WC-1
2 Category 2
J Jet Engines
J Turbojet
75 Engine Model Number
6 Number Reserved for Field Maintenance
WC Identifies Workcards
1 First in a Series of Workcards

5.3.3 Overhaul instructions for liquid fuel rocket engine, model LR-89:

2K-LR89-3
2 Category 2
K Rocket Engines
LR Liquid Fuel
89 Rocket Engine Model Number
3 Number Reserved for Overhaul Instructions

5.3.4 Overhaul instructions with illustrated parts breakdown for lube oil pump assembly, PN 7453 on C124 aircraft:

2JA6-2-2-3
2 Category 2
J Jet Engines
A Associated Equipment
6 Power Plant Equipment Series
2 Pump Equipment Subseries
T.O. 00-5-18

2 Identifies PN 7453
3 Number Reserved for Overhaul Instructions

5.3.5 Overhaul instructions with illustrated parts breakdown for push-pull assembly PN 12375, F106 aircraft:

2JA8-12-3
2 Category 2
J Jet Engines
A Associated Equipment
8 Throttle Control Series
12 Identifies PN 12375
3 Number Reserved for Overhaul Instructions

5.4 CATEGORY 2 NUMBERING INDICATORS.

2 AIRBORNE ENGINES AND ASSOCIATED EQUIPMENT
2G AUXILIARY GAS TURBINE ENGINES
2GA ASSOCIATED EQUIPMENT
2GA1 CONTROL ASSEMBLIES
2J JET ENGINES
2J-F Turbofan
2J-J Turbojet
2J-RJ Ramjet
2J-T Turboprop
2J-TF Turbofan (Use 2J-F)
2JA ASSOCIATED EQUIPMENT
2JA1 AFTERBURNER CONTROL SYSTEMS
2JA2 AIR INLETS
2JA3 TURBINE STARTERS AND PROPULSION STARTING DEVICES
2JA4 JET ENGINE BRAKING DEVICES
2JA5 GAS TURBINE AUXILIARY POWER PLANTS
2JA6 POWER PLANT ASSOCIATED EQUIPMENT
2JA6-2 Pumps
2JA6-3 Control and Governor Assemblies
2JA6-4 Gas Turbine Compressors
2JA6-5 Generators
2JA7 CAP ASSEMBLIES
2JA8 THROTTLE CONTROLS
2JA9 GRIP ASSEMBLIES
2JA10 VALVES
2JA10-2 Control
2JA11 HARNESS ASSEMBLIES
2JA12 ENGINE CONTROLS
2JA13 CONTAINERS (use 35E20)
2JA14 ENGINE DRAIN SYSTEMS
2JA15 STARTER GENERATORS
2JA16 GEARS
2JA17 Do not use
<table>
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<th>Description</th>
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<td>2JA18</td>
<td>POWER PACKAGE QEC</td>
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<tr>
<td>2K</td>
<td>BOOSTER AND ROCKET ENGINES</td>
</tr>
<tr>
<td>2K-LR</td>
<td>Liquid-Type Rocket Motors</td>
</tr>
<tr>
<td>2K-SR</td>
<td>Solid-Type Rocket Motors</td>
</tr>
<tr>
<td>2K-SRM</td>
<td>Solid-Type Propellant Missiles</td>
</tr>
<tr>
<td>2KA</td>
<td>ASSOCIATED EQUIPMENT</td>
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<tr>
<td>2KA1</td>
<td>POWER PLANT ASSOCIATED EQUIPMENT</td>
</tr>
<tr>
<td>2KA1-2</td>
<td>Control and Governor Assemblies</td>
</tr>
<tr>
<td>2KA1-3</td>
<td>Propulsion Valves</td>
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<tr>
<td>2KA1-4</td>
<td>Vent Adapters (Propulsion)</td>
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<tr>
<td>2KA1-5</td>
<td>Ejectors (Propulsion)</td>
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<td>2KA1-6</td>
<td>Turbine Pumps</td>
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<td>2KA1-7</td>
<td>Pack Assemblies</td>
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<tr>
<td>2KA1-8</td>
<td>Consoles</td>
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<tr>
<td>2KA1-9</td>
<td>Panel Assemblies (Propulsion)</td>
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<td>Nozzles</td>
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<td>RECIPROCATING ENGINES</td>
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<td>2R-R</td>
<td>Radial</td>
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<td>ENGINE CONTROL SYSTEMS</td>
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<td>2RA1-2</td>
<td>Automatic</td>
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<td>2RA1-3</td>
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<td>2RA2</td>
<td>ENGINE COOLING EQUIPMENT</td>
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<td>2RA2-2</td>
<td>Engine Cooling and Anti-Icing Fans</td>
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<td>2RA3</td>
<td>ENGINE MOUNTING SYSTEMS</td>
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<td>2RA3-2</td>
<td>Engine Mounts</td>
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<td>2RA3-3</td>
<td>Vibration Isolators</td>
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<td>2RA4</td>
<td>TURBO AND ENGINE DRIVEN SUPERCHARGERS</td>
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<tr>
<td>2RA5</td>
<td>SUPERCHARGER CONTROL SYSTEMS</td>
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<td>2RA5-2</td>
<td>Control Systems</td>
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<td>Actuators</td>
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<td>Regulators</td>
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<td>Governors</td>
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<td>Junction Boxes</td>
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<td>2RA5-7</td>
<td>Amplifiers</td>
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<td>Motors, Waste-Gate</td>
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<td>Pressuretrols</td>
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<td>Boost Selectors</td>
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<td>2RA5-11</td>
<td>Control Valves</td>
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<td>2RA5-12</td>
<td>Valves, Barometric Anti-Leak</td>
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<td>2RA5-13</td>
<td>Adapter Units, Turbo-Regulators</td>
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<td>2RA5-14</td>
<td>Switches, Air-Pressure</td>
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<tr>
<td>2RA6</td>
<td>SUPERCHARGER RELATED EQUIPMENT</td>
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<td>2RA6-2</td>
<td>Intercoolers</td>
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<td>2RA6-3</td>
<td>Motor Assemblies</td>
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2RA6-4 Solenoids
2RA6-5 Link Assemblies
2RA7 AUXILIARY POWER PLANTS
2RA8 ENGINE PREHEATERS (Airborne only)
2RA9 EXHAUST ASSEMBLIES
2RA10 STARTERS (Use 2JA3)
CHAPTER 6
CATEGORY 3 - AIRCRAFT PROPELLERS AND ROTORS

6.1 GENERAL.

6.1.1 Category 3 has four major divisions: one for each of the three types of propellers and one for rotor assemblies. TO numbers for propellers use three basic groups. TO numbers for propellers associated equipment use both three and four basic groups.

6.1.2 TO data pertaining to more than one type of propeller assembly control is numbered in the category general series.

6.1.3 Information pertaining to more than one propeller assembly, within one type of propeller control motivation, is numbered in the propeller control general series.

6.2 NUMBERING PATTERNS.

6.2.1 GROUP ONE. This group has three parts identifying the category, type of propeller control and equipment series.

6.2.1.1 Part one is always the numeric 3 that identifies Category 3.

6.2.1.2 Part two identifies the type of aircraft propeller control by using alpha designators, i.e., E - electrical control; H - hydraulic control; and M - mechanical control. Rotor assemblies and equipment are designated by an R identifier in part two. Aircraft propeller associated equipment is identified by adding the alpha character A after the propeller control identifier, i.e., EA, HA, and MA. Rotor assemblies do not have associated equipment identified in the TO system.

6.2.1.3 Part three of this group identifies an equipment series representing further breakout of each type of propeller, its associated equipment and rotor assemblies. A listing of the series numbers is included in paragraph 6.4.

6.2.2 GROUP TWO. TO numbering patterns in Category 3 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both groups:

6.2.2.1 If only three basic groups are used in the numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

6.2.2.2 If the TO number contains four basic groups, the equipment series has been further divided into equipment subseries. In this case the subseries is identified with one or more numeric characters in group two and the model, type or PN is identified in group three.

6.2.3 GROUP THREE.

6.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 3:

- 1 Operating Instructions
- 2 Service or Maintenance Instructions
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

6.2.3.2 In some instances the reserved numbers in the third group are followed by one or more alpha characters indicating a series of checklists, workcards, and supplements. The following alpha characters are authorized for use in Category 3:

    CL - Checklists
    S - Operational Supplements
    SS - Safety Supplements
    WC - Workcards
6.2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type, or PN assigned to specific equipment.

6.2.4 GROUP FOUR. In those cases where the TO number has four basic groups, the fourth group identifies specific types of TOs as described in paragraph 6.2.3.1 above.

6.3 EXAMPLES OF CATEGORY 3 NUMBERING PATTERNS.

6.3.1 A general manual entitled List of Props and Governors for Service Aircraft:

3-1-1
3 Category 3
1 Identifies General Instructions
1 First In a Series of General Instructions

6.3.2 Operating instructions for a turboprop, model A6441FN-606, for the VC-131 aircraft:

3E3-5-1
3 Category 3
E Electrically Controlled Prop
3 Turbo-Electric Series
5 Number Assigned to Model A6441FN-606
1 Number Reserved for Operating Instructions

6.3.3 An overhaul instruction for a tail rotor blade, PN 212-010-750-11, for UH-1N helicopter:

3R1-3-6-3
3 Category 3
R Rotors
1 Rotor Assembly Group Series
3 Tail Blade Subseries
6 Number Assigned to PN 212-010-750-11
3 Number Reserved for Overhaul Instructions

6.4 CATEGORY 3 TECHNICAL ORDER NUMBERING SERIES.

3 AIRCRAFT PROPELLERS AND ROTORS
3E PROPELLERS, ELECTRICALLY-CONTROLLED
3E3 TURBO-ELECTRIC
3EA ASSOCIATED EQUIPMENT
3EA1 ALTERNATORS
3EA2 BLADES, CUFFS, PLASTIC FAIRINGS
3EA3 CONTROL SYSTEMS
3EA3-2 Electric Propellers
3EA3-3 Turbo-Electric Propellers
3EA4 DEICING SYSTEMS
3EA5 GOVERNORS
3EA6 HUBS, SPINNERS, POWER UNIT ASSEMBLIES
3EA7 PROPELLER ATTACHMENT ASSEMBLIES
3EA8 SPEED REDUCERS
3EA9 RELAYS
3EA10  SYNCHRONIZERS
3EA11  TIMERS
3EA12  SPEED SETTING ASSEMBLIES
3EA13  COORDINATORS
3EA14  PANEL ASSEMBLIES
3EA15  CHANNEL ASSEMBLIES
3H  PROPELLERS, HYDRAULICALLY-CONTROLLED
  3H1  HYDROMATIC
  3H3  CONSTANT SPEED (Use 3H1)
3HA  ASSOCIATED EQUIPMENT
  3HA1  BLADES AND CUFFS
  3HA2  CONTROLS
  3HA3  DEICING ASSEMBLIES
  3HA3-2  Drum
  3HA4  GOVERNORS
  3HA4-2  Counterweight Oil
  3HA4-3  Hydromatic
  3HA4-4  Electronic
  3HA4-5  Manual
  3HA5  PUMPS
  3HA5-2  Anti-Icing
  3HA5-3  Feathering
  3HA5-4  Integral Oil Control
  3HA6  SPINNERS
  3HA7  SYNCHRONIZERS
  3HA8  TIMERS
  3HA9  SWITCH ASSEMBLIES
  3HA10  FILTER BOX ASSEMBLIES
  3HA11  ALTERNATORS
  3HA12  PANEL ASSEMBLIES
3M  PROPELLERS, MECHANICALLY-CONTROLLED
  3M1  CONTROLLABLE PITCH
  3M2  AUTOMATIC, VARIABLE-PITCH
  3M3  FIXED PITCH
  3MA  ASSOCIATED EQUIPMENT
  3MA1  CONTROL ASSEMBLIES
3R  ROTOR ASSEMBLIES AND EQUIPMENT
  3R1  ROTOR ASSEMBLY GROUP
  3R1-2  Main Blade
  3R1-3  Tail Blade
  3R1-4  Rotor Head
  3R1-5  Tail Rotor
  3R1-6  Main Hub Rotor
  3R1-7  Forward Hub Rotor
  3R1-8  Aft (Tail) Hub Rotor
  3R2  CONTROLS
  3R2-2  Damper
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<td>Tail</td>
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<td>Degreasers, Pumps</td>
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<td>3R5</td>
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<td>Main Rotor</td>
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<td>3R8</td>
<td>CLUTCH AND FAN ASSEMBLIES</td>
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<td>3R9</td>
<td>GENERATORS AND DRIVE ASSEMBLIES</td>
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<td>3R10</td>
<td>BRAKE AND DRUM ASSEMBLIES</td>
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<td>STATOR ASSEMBLIES</td>
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<td>3R12</td>
<td>SHAFT AND HOUSING ASSEMBLIES</td>
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<tr>
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<td>CYLINDERS</td>
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<tr>
<td>3R14</td>
<td>STRUT ASSEMBLIES</td>
</tr>
<tr>
<td>3R15</td>
<td>FREEWHEEL UNITS</td>
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<td>3R16</td>
<td>COUPLING ASSEMBLIES</td>
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<td>3R17</td>
<td>BLOWERS AND DUCTS</td>
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<td>3R18</td>
<td>RADIATORS</td>
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<td>3R19</td>
<td>MAST ASSEMBLIES</td>
</tr>
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<td>3R20</td>
<td>SCISSORS</td>
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<tr>
<td>3R21</td>
<td>HANGARS</td>
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CHAPTER 7
CATEGORY 4 - AIRCRAFT LANDING GEAR

7.1 GENERAL.

7.1.1 Category 4 has five primary landing gear systems. These systems are divided into equipment series and some of the systems are further divided into equipment subseries within each series. The TO numbering pattern for Category 4 uses three basic groups for data identification.

7.1.2 Technical data pertaining to more than one system is numbered in the category general series.

7.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

7.2 NUMBERING PATTERNS.

7.2.1 GROUP ONE. This group has three parts identifying the category, system, and equipment series within the system.

7.2.1.1 Part one is always the numeric 4 identifying Category 4.

7.2.1.2 Part two is an alpha character identifying the landing gear system, i.e., A - landing gear; B - brakes; S - struts; T - tires and tubes; and W - wheels. Associated Equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA, BA, and SA. Associated Equipment is not appropriate for tires, tubes and wheels systems.

7.2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series is outlined in paragraph 7.4.

7.2.2 GROUP TWO. Although all TO numbers in Category 4 use three basic groups, the identifiers in group two are not constant. The two distinct numbering patterns in use are described below:

7.2.2.1 For certain systems one or more numeric characters in group two represent the model, type or PN assigned to specific components. Systems for which this pattern is used are:

- 4A Landing Gear
- 4AA Landing Gear Associated Equipment
- 4BA Brake System Associated Equipment
- 4S Struts, Shock-Absorbing
- 4SA Struts Associated Equipment

7.2.2.2 For other systems, group two indicates the equipment series, identified in part three of group one, has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters, and the model, type or PN is identified in group three. Systems for which this pattern is used are:

- 4B Brake System
- 4T Tires and Tubes, Aircraft
- 4W Wheels, Aircraft-Landing-Gear

7.2.3 GROUP THREE.

7.2.3.1 The third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 4:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

7.2.3.2 In some instances the reserved numbers in the third basic group are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 4:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

7.2.3.3 When group two identifies the equipment subseries, as described in paragraph 7.2.2.2, group three will indicate the type of TO (reference paragraph 7.2.3.1), and must also represent the model, type or PN assigned to specific components.

7.3 EXAMPLES OF CATEGORY 4 TECHNICAL ORDER NUMBERING PATTERNS.

7.3.1 A Maintenance manual pertaining to main wheels, brakes, and tires for C-12A aircraft (general series):

4-1-102
4 Category 4
1 General Series
102 Maintenance Manual General Series Number

7.3.2 Overhaul instructions with illustrated parts breakdown for a multiple disc brake, PN 2-1179-2, on a C-5A aircraft:

4B1-2-1063
4 Category 4
B Brakes
1 Brake Series
2 Disc-Type Subseries
1063 Overhaul Instruction Series and Number Assigned to PN 2-1179-2

7.3.3 Overhaul instructions with illustrated parts breakdown for master brake cylinder PN 12550 on H-43B aircraft:

4BA1-9-13
4 Category 4
B Brakes
A Associated Equipment
1 Cylinder Series
9 Number Assigned to PN 12550
13 Number Reserved for Overhaul Instructions

7.3.4 Overhaul instructions for a nose gear drag brace assembly, PN 65-1390-1 on a KC-135A aircraft:

4SA6-5-3
4 Category 4
7.3.5 Overhaul instructions with illustrated parts breakdown for main wheel assembly, PN 151522-1, used on F-101B aircraft:

4W1-7-473
4 Category 4
W Wheels, Landing-Gear
1 Main Wheel Series
7 Type VII (Extra High Pressure) Subseries
473 Overhaul Instruction Series and Number Assigned to PN 151522-1

7.4 CATEGORY 4 TO NUMBERING SERIES.

4 AIRCRAFT LANDING GEAR
4A LANDING GEARS
4A1 FLOAT
4A2 SKI
4A3 TRACK
4A4 WHEEL
4A5 FLOTATION
4A6 POSITIONER
4AA ASSOCIATED EQUIPMENT
4AA1 SKI
4B BRAKE SYSTEMS
4B1 BRAKES
4B1-2 Disc
4B1-3 Expander Tube
4B1-4 Segmented Rotor
4B1-5 Shoe
4B1-6 Solid Rotor
4BA ASSOCIATED EQUIPMENT
4BA1 CYLINDERS
4BA2 SKID DETECTORS
4BA3 RESERVOIRS, HYDRAULIC-BRAKE
4BA4 VALVES, HYDRAULIC-BRAKE-CONTROL
4BA5 VALVES, AIR-BRAKE
4BA6 VALVES, BRAKE-DEBOOST
4BA7 LINE ASSEMBLIES
4BA8 CONTROLS
4BA9 CONTROL SHIELDS
4BA10 EXPANSION CHAMBERS
4BA11 TRANSDUCER ASSEMBLIES
4S STRUTS, SHOCK-ABSORBING
| 4S1 | MAIN LANDING GEAR          |
| 4S2 | NOSE LANDING GEAR          |
| 4S3 | TAIL LANDING GEAR          |
| 4S4 | OUTRIGGER LANDING GEAR     |
| 4S5 | TAIL SKID LANDING GEAR     |
| 4S6 | TIP PROTECTION GEAR        |
| 4SA | ASSOCIATED EQUIPMENT       |
| 4SA1| DAMPERS, SHIMMY            |
| 4SA2| STEERING UNITS AND STEERING DAMPERS |
| 4SA3| VALVES, HYDRAULIC, NOSE-WHEEL-STEERING |
| 4SA4| BRAKE LINE INSTALLATIONS   |
| 4SA5| CONDUIT INSTALLATIONS      |
| 4SA6| BRACE ASSEMBLIES           |
| 4SA7| VALVES, PNEUMATIC          |
| 4SA8| SPRINGS                    |
| 4SA9| GENERATORS                 |
| 4SA10| CARTRIDGES                |
| 4T  | TIRES AND TUBES, AIRCRAFT  |
| 4T1 | TIRES                      |
| 4T2 | TUBES                      |
| 4W  | WHEELS                     |
| 4W1 | MAIN                       |
| 4W1-2| Type I (Smooth Contour)    |
| 4W1-3| Type II (High Pressure)    |
| 4W1-4| Type III (Low Pressure)    |
| 4W1-5| Type IV (Extra Low Pressure) |
| 4W1-6| Type VI (Low Profile)      |
| 4W1-7| Type VII (Extra High Pressure) |
| 4W1-8| Type VIII (Extra High Pressure) |
| 4W2 | TAIL                       |
| 4W2-2| Type I (Smooth Contour)    |
| 4W2-3| Type II (High Pressure)    |
| 4W2-4| Type III (Low Pressure)    |
| 4W2-5| Type IV (Low Pressure)     |
| 4W2-6| Type VI (Low Profile)      |
| 4W2-7| Type VII (Extra High Pressure) |
| 4W3 | NOSE                       |
| 4W3-2| Type I (Smooth Contour)    |
| 4W3-3| Type II (High Pressure)    |
| 4W3-4| Type III (Low Pressure)    |
| 4W3-5| Type IV (Extra Low Pressure) |
| 4W3-6| Type VI (Low Profile)      |
| 4W3-7| Type VII (Extra High Pressure) |
| 4W3-8| Type VIII (Extra High Pressure) |
| 4W4 | OUTRIGGER                  |
| 4W4-2| Type VII (Extra High Pressure) |
| 4W5 | HELICOPTER                 |
CHAPTER 8
CATEGORY 5 - AIRBORNE INSTRUMENTS

8.1 GENERAL.

8.1.1 Category 5 contains seven aircraft and missile instrument systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 5 use both three and four basic groups for data identification. Numbering patterns for both groups are identified in paragraph 8.2.

8.1.2 TO data pertaining to more than one system is numbered in the category general series.

8.1.3 Information pertaining to more than one series within a system is numbered in the system general series.

8.2 NUMBERING PATTERNS.

8.2.1 GROUP ONE. This group has three parts identifying the category, system, and equipment series within the system.

8.2.1.1 Part one is always the numeric 5 identifying Category 5.

8.2.1.2 Part two is an alpha character identifying the instrument system, i.e., A - automatic flight control; E - engine instruments; F - flight instruments; L - liquid measuring instruments; M - electric circuit instruments; N - navigation instruments; and P - position and pressure instruments. Flight instruments is the only system that has associated equipment; it is identified by the system identifier FA.

8.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 8.4.

8.2.2 GROUP TWO. TO numbering patterns in Category 5 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

8.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

8.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN identified in group three.

8.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

8.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 5.

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests
8.2.3.2 In some instances the reserved numbers in the third group are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 5.

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

8.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PNs assigned to specific component assemblies.

8.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 8.2.3.1 above.

8.3 EXAMPLES OF CATEGORY 5 NUMBERING PATTERNS.

8.3.1 An overhaul manual for a flight computer, model 562A-5M for VC-137 aircraft:

5A7-3-34-3
5 Category 5
A Automatic Flight Control System
7 Computer Series
3 Flight Control Computer Subseries
34 Identifies Model 562A-5M
3 Number Reserved for Overhaul Instructions

8.3.2 A maintenance manual, overhaul instructions and illustrated parts breakdown for an acceleration sensor assembly, type TR-272/ASW for F-15 aircraft:

5F25-4-2
5 Category 5
F Flight Instruments
25 Sensor Unit Series
4 Identifies Type TR-272/ASW
2 Number Reserved for Maintenance Instructions

8.3.3 Overhaul manual with parts breakdown for a liquid quantity transmitter assembly, PN EA 772-GDB, for F-105 aircraft:

5L13-3-18-3
5 Category 5
L Liquid Measuring Instruments
13 Transmitters
3 Fuel Quantity Transmitter
18 Identifies PN EA 772-GDB
3 Number Reserved for Overhaul Instructions

8.4 CATEGORY 5 NUMBERING SERIES.

5 AIRBORNE INSTRUMENTS
5A AUTOMATIC FLIGHT CONTROL SYSTEMS
5A1 SYSTEM PUBLICATIONS
5A1-2 Autopilot
5A1-3 Remote Flight
5A1-4 Stabilization
5A1-5 Yaw Damper
5A1-6 Inlet Control
5A1-7 Pitch Control
5A1-8 All Weather Landing
5A1-9 Attitude Reference
5A2 ADAPTERS
5A2-2 Amplifier
5A2-3 Rate Gyroscope
5A2-4 Attitude Trim
5A2-5 Phase Adapter
5A2-6 Autopilot
5A2-7 Compass
5A2-8 Flight Director
5A3 AMPLIFIERS
5A4 BOXES
5A4-2 Relay
5A4-3 Junction
5A4-4 Control
5A5 CALIBRATORS
5A6 COMPENSATORS
5A6-2 Airspeed
5A6-3 Altitude
5A6-4 Air Data Scheduler
5A6-5 Mach Trim
5A7 COMPUTERS
5A7-2 Calibration
5A7-3 Flight Control
5A7-4 Amplifier
5A7-5 Flight Director
5A7-6 Angle
5A7-7 Mach
5A8 CONTROLS
5A8-2 Amplifier
5A8-3 Angular Path
5A8-4 Differential Pressure
5A8-5 Directional Gyroscope
5A8-6 Follow up
5A8-7 Formation Stick
5A8-8 Rate Gyroscope
5A8-9 Roll and Pitch
5A8-10 Servo
5A8-11 Three-Axis Gyroscope
5A8-12 Turbo (Remote Flight)
5A8-13 Vertical Gyroscope
5A8-14 Yaw Damper
5A8-15  Altitude
5A8-16  Computer
5A8-17  Mach Hold
5A8-18  Air Data
5A8-19  Signal
5A8-20  Stability Augmenter
5A8-21  Adapter
5A8-22  Inlet Spike Positioner
5A8-23  Variable Inlet
5A8-24  Monitor
5A8-25  Attitude Reference
5A9  CONTROLLERS
5A9-2  Flight
5A9-3  Remote Pitch
5A9-4  Turn
5A9-5  Turn and Pitch
5A9-6  Altitude
5A9-7  Power
5A9-8  Selector
5A9-9  Engaging
5A10  FILTERS
5A10-2  Oil
5A10-3  Gyroscope
5A11  GYROSCOPES
5A11-2  Rate
5A11-3  Vertical
5A11-4  Directional
5A11-5  Attitude
5A11-6  Integrating
5A11-7  Displacement
5A12  INDICATORS
5A12-2  Direction
5A12-3  Trim
5A12-4  Attitude
5A12-5  Flight
5A12-6  Distance
5A12-7  Attitude (Use 5A12-4)
5A13  PANELS AND FRAMES
5A13-2  Directional
5A13-3  Function Selector
5A13-4  Servo Cutout Switch
5A13-5  Control
5A13-6  Relay
5A13-7  Adjustment
5A13-8  Damper
5A13-9  Engage
5A14  SERVOS
| 5A14-2 | Electromechanical |
| 5A14-3 | Hydraulic |
| 5A14-4 | Transmitter |
| 5A14-5 | Central Gyroscope Reference System |
| 5A15 | SERVO MECHANISMS |
| 5A15-2 | Drum and Bracket Assembly |
| 5A15-3 | Motor and Drive Assembly |
| 5A15-4 | Disconnect Clutch Assembly |
| 5A15-5 | Throttle |
| 5A15-6 | Disconnect |
| 5A15-7 | Friction Release Hub Assembly |
| 5A15-8 | Altitude |
| 5A15-9 | Flight Control |
| 5A15-10 | Course Repeater |
| 5A15-11 | Positioner |
| 5A16 | STABILIZERS |
| 5A16-2 | Directional |
| 5A17 | SWITCHES |
| 5A17-2 | Differential Pressure |
| 5A17-3 | Engaging (Automatic Approach) |
| 5A17-4 | Limit |
| 5A17-5 | Selector |
| 5A17-6 | Transfer |
| 5A17-7 | Clutch |
| 5A17-8 | Interrupter |
| 5A17-9 | Solenoid |
| 5A17-10 | Scheduling |
| 5A17-11 | Force |
| 5A18 | TRANSMITTERS |
| 5A19 | VIBRATORS |
| 5A20 | MOUNTS AND RACKS |
| 5A21 | POWER SUPPLIES |
| 5A22 | SENSORS |
| 5A22-2 | Vertical |
| 5A22-3 | Angle of Attack |
| 5A22-4 | Wing Sweep |
| 5A22-5 | Airspeed |
| 5A23 | TRANSDUCERS |
| 5A23-2 | Pressure |
| 5A23-3 | Altitude |
| 5A23-4 | Pitch |
| 5A24 | ACCELEROMETERS |
| 5A24-2 | Linear and Lateral |
| 5A24-3 | Limiting |
| 5A25 | CIRCUITROLS |
| 5A25-2 | Differential |
| 5A26 | VALVES |
5A26-2 Shutoff
5A26-3 Purge
5A26-4 Transfer
5A26-5 Check
5A26-6 Control
5A26-7 Selector (Do not use)
5A27 DEMODULATORS AND MODULATORS
5A28 COUPLERS
5A29 COMPARATORS (See 5A3)
5A30 POTENTIOMETERS
5A31 STOP ASSEMBLIES
5A32 UNITS
5A32-2 Gyroscope and Accelerometer
5A32-3 Reference
5A32-4 Parameter
5A32-5 Self-Test and Monitor
5A32-6 Interface
5A33 LINKAGE ASSEMBLIES
5A33-2 Power Control
5A34 DRIVE UNITS
5A35 GENERATORS (Use Category 8)
5A36 MEMORY ASSEMBLIES (Do not use)
5A37 RELAYS (Use 8R)
5A38 SYNCHRONIZERS
5A39 CYLINDERS
5A40 DETECTORS
5A41 CONVERTERS
5A42 PLATFORMS
5A43 CLUTCH PACKS
5A44 ACTUATORS
5A45 TRANSFORMERS
5A46 PROCESSORS
5A46-2 Signal Data
5A46-3 Air Data
5A47 DISTANCE MEASURING EQUIPMENT
5A48 DESENSITIZERS
5E ENGINE AND TEMPERATURE INSTRUMENTS
5E1 SYSTEMS PUBLICATIONS
5E1-2 Engine Analyzer
5E2 ADAPTERS
5E3 AMPLIFIERS
5E4 GAUGES
5E5 GENERATORS
5E5-2 Propeller Synchronizer
5E5-3 Tachometer
5E6 INDICATORS
5E6-2 Tachometer
5E6-3  Temperature
5E6-4  Pressure (See 5P3-4)
5E6-5  Thrust
5E6-6  Torque
5E6-7  Jet Nozzle
5E6-8  Discharge (Carbon Dioxide)
5E6-9  Gas Generator
5E6-10 Cruise Guide
5E6-11 Dual
5E7  SHAFTS
5E8  SYNCHROSCOPES
5E9  COUNTERS
5E10 THERMOCOUPLES
5E11 RECORDERS
5E12 TRANSMITTERS
5E13 THERMOSTATS
5E14 THROTTLES
5E15 REGULATORS
5E15-2 Pressure
5E16 POWER UNITS
5E17 CONVERTERS
5E18 PROCESSORS
5E19 DISPLAY UNITS
5E19-2 Umbilical
5E19-3 Multi-Integrated
5F  FLIGHT INSTRUMENTS
5F1 SYSTEMS
5F1-2 Flight Computer
5F1-3 Gyroscope
5F1-4 Flight Control
5F1-5 Flight Directional
5F1-6 Navigation (Use 5N)
5F1-7 Data Recording
5F2 ACCELEROMETERS
5F3 ALTIMETERS
5F3-2 Density
5F3-3 Pressure
5F3-4 Sensitive
5F4 AMPLIFIERS
5F5 COMPUTERS
5F5-2 Angle of Attack
5F5-3 True Airspeed
5F5-4 Air Data
5F5-5 Steering
5F5-6 Gyroscope Rate
5F5-7 Quadratic Arc
5F5-8 Flight Director
T.O. 00-5-18

5F5-9  Lift
5F5-10 Stall Prevention
5F5-11 Maximum Hover Weight
5F5-12 Landing Gear
5F5-13 Flight Control
5F6  CONTROLS
5F6-2 Flight Computer
5F6-3 Vertical Gyroscope
5F6-4 Rate Gyroscope
5F6-5 Stability
5F6-6 Box Assembly
5F6-7 Inertial Navigator
5F6-8 Position
5F7  FILTERS
5F7-2 Air
5F8  INDICATORS
5F8-2 Airspeed
5F8-3 Attitude Gyroscope
5F8-4 Bank and Turn (Turn and Slip)
5F8-5 Directional Gyroscope
5F8-6 Flight Computer
5F8-7 Gyroscope Horizon
5F8-8 Machmeter
5F8-9 Rate of Climb
5F8-10 Vertical Gyroscope
5F8-11 Pilot Directional
5F8-12 Dive and Roll
5F8-13 Horizon Approach
5F8-14 Course
5F8-15 Ground Speed
5F8-16 Horizontal Situation
5F8-17 Position
5F8-18 Tachometer
5F8-19 Angle of Attack
5F8-20 Cabin Altitude
5F8-21 Warning
5F8-22 Vertical Situation
5F9  SWITCHES
5F9-2 Selector
5F10  TRANSMITTERS
5F10-2 True Airspeed
5F10-3 Altitude
5F10-4 Angle of Attack and Rate Gyroscope
5F10-5 Accelerometer
5F10-6 Synchronizer
5F10-7 Asymmetry
5F10-8 Position
5F11 TUBES
5F11-2 Pitot Static
5F11-3 Power Venturi
5F12 TRANSDUCERS
5F12-2 Wind Direction
5F12-3 Mach Number
5F12-4 Angle of Attack
5F12-5 Lift
5F12-6 Altitude
5F12-7 Augmentor
5F12-8 Flap Position
5F13 PROBES
5F13-2 Temperature
5F13-3 Local Mach
5F14 CONVERTERS
5F14-2 Air Data
5F15 SETS
5F15-2 Accessory
5F16 TRACK KEEPERS
5F17 INSTRUMENT GUIDANCE (Do not use)
5F18 COMPENSATORS
5F18-2 Central Air Data
5F19 SHAKE ASSEMBLIES
5F20 DETECTORS
5F21 MONITORS
5F22 UNITS AND ASSEMBLIES
5F23 RECORDERS AND TAPE UNITS
5F23-2 Tape Unit
5F23-3 Recorder
5F24 INDEXERS
5F25 SENSORS
5F26 COUNTERS
5F27 MULTIPLEXERS
5F28 CONTROLLERS
5F29 MODULES
5F30 PRINTERS
5F31 DISPLAY UNITS
5FA ASSOCIATED EQUIPMENT
5FA1 COUPLERS
5FA2 CHASSIS ASSEMBLIES
5FA3 POWER SUPPLIES
5FA4 LOGIC CARDS
5L LIQUID-LEVEL, QUANTITY, AND FLOW MEASURING INSTRUMENTS
5L1 SYSTEMS
5L1-2 Fuel Level
5L1-3 Fuel Quantity
5L2 AMPLIFIERS
5L2-2 Fuel Flowmeter
5L2-3 Fuel Quantity
5L3 BOXES
5L3-2 Control
5L3-3 Fuel Quantity
5L4 CALIBRATORS
5L4-2 Bridge
5L5 COMPENSATORS
5L5-2 Voltage
5L6 INDICATORS
5L6-2 Fuel Flow
5L6-3 Fuel Quantity
5L6-4 Liquid Level
5L7 PANELS
5L7-2 Stroke Adjustment
5L7-3 Control
5L8 MOUNTS AND RACKS
5L8-2 Bridge Calibrator
5L8-3 Power Unit
5L9 RELAYS
5L9-2 Transfer Tank Unit
5L10 SIMULATORS
5L11 SUMMATORS
5L12 SWITCHES
5L12-2 Densitometer
5L12-3 Float Operated
5L12-4 Relay and Transfer
5L12-5 Potentiometer
5L13 TRANSMITTERS
5L13-2 Fuel Flow
5L13-3 Fuel Quantity
5L13-4 Liquid Level
5L14 UNITS
5L14-2 Power
5L14-3 Tank
5L14-4 Totalizer Bridge
5L14-5 Totalizer Assembly
5L14-6 Control
5L14-7 Sensing
5L14-8 Ratio
5L15 NETWORKS
5L15-2 Time Delay
5L16 CONTROLS
5L17 GAUGES
5L18 COMPUTERS
5L19 REGULATORS
5L20 METERS
5L21  COUNTERS
5L22  DETECTORS
5L23  CONDENSORS (CAPACITORS)
5M   ELECTRICAL CIRCUIT INSTRUMENTS
5M1  METERS
  5M1-2 Ammeter
  5M1-3 Frequency
  5M1-4 Voltmeter
  5M1-5 Wattmeter
  5M1-6 Steering
  5M1-7 Time
  5M1-8 Multimeter
  5M1-9 Arbitrary Scale
  5M1-10 Audio Level
  5M1-11 Antenna
  5M1-12 Phase (Time)
  5M1-13 Velocity
  5M1-14 Factor
  5M1-15 Fuel Pressure
  5M1-16 Galvanometer
5M2  INDICATORS
  5M2-2 Control Panel
5M3  GENERATORS
  5M3-2 Impulse
5N   NAVIGATION INSTRUMENTS
  5N1  SYSTEMS
    5N1-2 Compass
    5N1-3 Computer
    5N1-4 Navigator Unit
    5N1-5 Display
  5N2  AMPLIFIERS
    5N2-2 Compass
    5N2-3 Electronic Control
    5N2-4 Power Supply
    5N2-5 Navigational Computer
  5N3  COMPASSES
    5N3-2 Astro
    5N3-3 Magnetic (Direct Reading)
  5N4  COMPENSATORS
    5N4-2 Quadrantal Error
    5N4-3 Synchronizer
    5N4-4 Magnetic
    5N4-5 Thin
    5N4-6 Detector
  5N5  COMPUTERS
    5N5-2 Altitude Correction
    5N5-3 Course and Distance
5N5-4  Dead Reckoning
5N5-5  Time and Distance
5N5-6  True Airspeed
5N5-7  Programmer
5N5-8  Latitude and Longitude
5N5-9  Wind Drift
5N5-10 Radiation
5N5-11 Tracking
5N5-12 Meteorological
5N5-13 Navigation
5N5-14 Performance
5N5-15 Ballistic
5N5-16 Flare
5N5-17 Rotation
5N5-18 Position
5N5-19 Digital
5N6  CONTROLS
5N6-2  Directional Gyroscope
5N6-3  Slaving
5N6-4  Computer
5N6-5  Stability
5N6-6  Indicator
5N6-7  Alignment
5N6-8  Compass, Control Unit
5N6-9  Navigational
5N6-10 Designator
5N7  DRIFTMETERS
5N7-2  Gyroscope Stabilized
5N7-3  Nonstabilized
5N8  INDICATORS
5N8-2  Director
5N8-3  Compass (Master Direction)
5N8-4  Compass (Repeater)
5N8-5  Course (See 12R5)
5N8-6  Radio Converter (See 12R5)
5N8-7  Radio (See 12R5)
5N8-8  Latitude and Longitude
5N8-9  Wind Direction
5N8-10 Horizontal Display
5N8-11 Vertical, Velocity
5N8-12 Analog Display
5N8-13 Digital Data
5N8-14 Drift
5N8-15 Temperature
5N8-16 Navigation Control
5N9  ACCELEROMETERS
5N10  SEXTANTS AND MOUNTS
5N10-2  Hand Held  
5N10-3  Periscopic  
5N10-4  Horizon  
5N10-5  Mount, Periscopic  
5N10-6  Mount, Horizon  
5N10-7  Celestial  
5N11  TIME PIECES  
5N11-2  Clock  
5N11-3  Watch  
5N11-4  Chronometer  
5N12  TRANSMITTERS  
5N12-2  Compass  
5N12-3  Wind Direction  
5N12-4  Temperature  
5N13  STABILIZERS  
5N13-2  Binocular  
5N14  PANELS  
5N14-2  Display  
5N14-3  Control  
5N14-4  Manual Set  
5N15  TRACKERS  
5N15-2  Astro  
5N16  UNITS  
5N16-2  Power Supply  
5N16-3  Inertial Measuring  
5N16-4  Distribution  
5N17  BOXES  
5N17-2  Junction  
5N17-3  Distribution  
5N18  GYROSCOPES  
5N19  ADAPTERS  
5N20  COUPLERS  
5N21  ISOLATORS  
5N22  COUNTERS  
5N23  DETECTORS  
5N24  PLATFORMS  
5N25  SELECTORS  
5N26  INVERTERS  
5N27  ENCODERS  
5N28  MODULES  
5N29  DISPLAY SETS  
5N30  CONVERTERS  
5N31  PROCESSORS  
5N32  SIGHTS  
5N33  DEHYDRATORS  
5N34  MONITORS  
5N35  GIMBAL ASSEMBLIES
5P POSITION AND PRESSURE INSTRUMENTS
5P1 AMPLIFIERS
5P1-2 Audio
5P1-3 Servo
5P1-4 Engine
5P1-5 Computer
5P2 GAUGES
5P2-2 Pressure
5P2-3 Suction
5P3 INDICATORS
5P3-2 Air Flow, Cabin Pressure
5P3-3 Position
5P3-4 Pressure
5P4 TRANSDUCERS
5P4-2 Pressure
5P5 TRANSMITTERS
5P5-2 Position
5P5-3 Pressure
5P6 PRESSURE RATIO SYSTEMS
5P7 CONTROLS
5P7-2 Pressure
5P7-3 Position
5P8 COMPENSATORS
5P8-2 Static Pressure and Angle of Attack
5P9 SELECTORS
5P9-2 Pressure
5P10 SENSORS
5P10-2 Flow
5P10-3 Pressure
CHAPTER 9
CATEGORY 6 - AIRCRAFT AND MISSILE FUEL SYSTEMS

9.1 GENERAL.

9.1.1 Category 6 has six primary aircraft and missile fuel systems. These systems are divided into equipment series and further divided into equipment subseries within each equipment series. TO numbers in Category 6 will use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 9.2.

9.1.2 TO data pertaining to more than one system is numbered in the category general series.

9.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

9.2 NUMBERING PATTERNS.

9.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

9.2.1.1 Part one is always the numeric 6 identifying Category 6.

9.2.1.2 Part two is an alpha character which identifies the fuel system, i.e., A - air refueling; J - aircraft and missile jet engine fuel systems; K - Depot Maintenance or Overhaul Instructions; P - purging system; R - reciprocating engine fuel systems; and S - offensive systems. There is no associated equipment identified in this category.

9.2.1.3 Part three contains one or more numeric characters that identify an equipment series within a system. The TO numbering series is outlined in paragraph 9.4.

9.2.2 GROUP TWO. TO numbering patterns in Category 6 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

9.2.2.1 If the TO number uses only three groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

9.2.2.2 If the TO number contains four groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

9.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

9.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 6:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests

9.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 6:
9.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific component assemblies.

9.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 9.2.3.1 above.

9.3 EXAMPLES OF CATEGORY 6 NUMBERING PATTERNS.

9.3.1 Overhaul instructions with parts breakdown for a fuel filter assembly, PN 52-2145-002, for H-43B helicopter:

6R2-19-3
6 Category 6
R Reciprocating Engine Fuel System
2 Filter and Strainer Series
19 Identifies PN 52-2145-002
3 Number Reserved for Overhaul Instructions

9.3.2 Overhaul instructions for a motor operated gate valve, PN AV16V1830D for KC-135A aircraft:

6A9-2-12-3
6 Category 6
A Air Refueling System
9 Valve Series
2 Control Valve Subseries
12 Identifies PN AV16V1830D
3 Number Reserved for Overhaul Instructions

9.3.3 Section one of two sections of overhaul instructions for main fuel control, Bendix PN 440955, on F-100 engine:

6J3-4-97-3-1
6 Category 6
J Jet and Turbojet Engine and Aircraft
3 Fuel Control Series
4 Main Fuel Control Subseries
97 Identifies Bendix PN 440955
3 Number Reserved for Overhaul Instructions
1 Identifies Section One

9.4 CATEGORY 6 NUMBERING SERIES.

6 AIRCRAFT AND MISSILE FUEL SYSTEMS
6A AIR REFUEILING SYSTEMS
6A1 ACTUATORS
6A1-2 Hydraulic
6A2 AMPLIFIERS (Use 8D or 8A)
6A3 BOOM ASSEMBLIES
6A4 INDICATORS
<table>
<thead>
<tr>
<th>6A5</th>
<th>NOZZLE ASSEMBLIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A6</td>
<td>RECEPTACLE ASSEMBLIES</td>
</tr>
<tr>
<td>6A7</td>
<td>STATIC DISCONNECTOR ASSEMBLIES</td>
</tr>
<tr>
<td>6A8</td>
<td>HOSE REEL ASSEMBLIES</td>
</tr>
<tr>
<td>6A9</td>
<td>VALVES</td>
</tr>
<tr>
<td>6A9-2</td>
<td>Control</td>
</tr>
<tr>
<td>6A9-3</td>
<td>Relief</td>
</tr>
<tr>
<td>6A9-4</td>
<td>Float</td>
</tr>
<tr>
<td>6A9-5</td>
<td>Selector</td>
</tr>
<tr>
<td>6A9-6</td>
<td>Check</td>
</tr>
<tr>
<td>6A9-7</td>
<td>Regulator</td>
</tr>
<tr>
<td>6A9-8</td>
<td>Shutoff</td>
</tr>
<tr>
<td>6A9-9</td>
<td>Adapter</td>
</tr>
<tr>
<td>6A9-10</td>
<td>Response</td>
</tr>
<tr>
<td>6A10</td>
<td>PUMPS</td>
</tr>
<tr>
<td>6A10-2</td>
<td>Fuel Transfer</td>
</tr>
<tr>
<td>6A11</td>
<td>TRANSMITTERS</td>
</tr>
<tr>
<td>6A12</td>
<td>RECOIL ASSEMBLIES</td>
</tr>
<tr>
<td>6A13</td>
<td>DRIVE UNITS</td>
</tr>
<tr>
<td>6A14</td>
<td>SUPPRESSOR ASSEMBLIES</td>
</tr>
<tr>
<td>6A15</td>
<td>COUPLINGS</td>
</tr>
<tr>
<td>6A16</td>
<td>BUNGEE ASSEMBLIES</td>
</tr>
<tr>
<td>6A17</td>
<td>ADAPTERS</td>
</tr>
<tr>
<td>6A18</td>
<td>PROBES</td>
</tr>
<tr>
<td>6A19</td>
<td>SELECTORS</td>
</tr>
<tr>
<td>6A20</td>
<td>CYLINDERS</td>
</tr>
<tr>
<td>6A21</td>
<td>DROGUES</td>
</tr>
<tr>
<td>6A22</td>
<td>THERMISTORS</td>
</tr>
<tr>
<td>6J</td>
<td>AIRCRAFT AND MISSILE ENGINE FUEL SYSTEMS - TURBOJET AND TURBOPROP</td>
</tr>
<tr>
<td>6J1</td>
<td>AMPLIFIERS</td>
</tr>
<tr>
<td>6J1-2</td>
<td>Main System</td>
</tr>
<tr>
<td>6J1-3</td>
<td>Afterburner System</td>
</tr>
<tr>
<td>6J2</td>
<td>BAROMETRIC ASSEMBLIES</td>
</tr>
<tr>
<td>6J3</td>
<td>FUEL CONTROLS</td>
</tr>
<tr>
<td>6J3-2</td>
<td>Afterburner</td>
</tr>
<tr>
<td>6J3-3</td>
<td>Emergency</td>
</tr>
<tr>
<td>6J3-4</td>
<td>Main</td>
</tr>
<tr>
<td>6J3-5</td>
<td>Starting</td>
</tr>
<tr>
<td>6J3-6</td>
<td>Speed Limiter</td>
</tr>
<tr>
<td>6J3-7</td>
<td>Valve</td>
</tr>
<tr>
<td>6J3-8</td>
<td>Nozzle and Actuator</td>
</tr>
<tr>
<td>6J4</td>
<td>QUICK DISCONNECT COUPLINGS</td>
</tr>
<tr>
<td>6J5</td>
<td>FILTERS AND STRAINERS</td>
</tr>
<tr>
<td>6J6</td>
<td>(Not Used)</td>
</tr>
<tr>
<td>6J7</td>
<td>GOVERNORS</td>
</tr>
<tr>
<td>6J8</td>
<td>NOZZLES</td>
</tr>
<tr>
<td>6J9</td>
<td>PRIMER AND IGNITER ASSEMBLIES</td>
</tr>
</tbody>
</table>
6J10  PUMPS, FUEL AND WATER
6J10-2  Air Driven Turbine
6J10-3  Electric Motor Driven
6J10-4  Engine Driven
6J10-5  Hydraulic Motor Operated
6J11  REGULATORS, FUEL AND WATER
6J12  SERVICING UNITS AND ADAPTERS
6J13  SWITCHES (Do Not Use)
6J14  TANKS
6J14-2  Jettisonable Type
6J14-3  Pylon
6J14-4  Fixed
6J14-5  Auxiliary
6J14-6  Ethylene Oxide (Missile)
6J14-7  Internal
6J15  VALVES, FUEL AND WATER
6J15-2  Check (See 6R9-2 also)
6J15-3  Control (See 6R9-3 also)
6J15-4  Drain (See 6R9-4 also)
6J15-5  Float (See 6R9-5 also)
6J15-6  Metering
6J15-7  Pressure Regulator (See 6R9-7)
6J15-8  Relief and Vent (See 6R9-8 also)
6J15-9  Selector (See 6R9-9 also)
6J15-10  Shutoff (See 6R9-10 also)
6J15-11  Stopcock
6J15-12  Flow Divider
6J15-13  Fuel Flow Equalizer
6J15-14  Pressurizing
6J15-15  By-Pass
6J15-16  Breakaway
6J15-17  Slide
6J15-18  Fuel Flow Interconnect
6J15-19  Screen
6J15-20  Bleed
6J15-21  Transfer
6J16  TRANSMITTERS, FUEL AND WATER
6J16-2  Pressure
6J17  COOLERS
6J17-2  Clycol, Radiator, (See 7J1-17)
6J18  CAPS, FUEL AND WATER
6J18-2  Fuel Tank
6J19  EJECTORS
6J19-2  Gun
6J19-3  Fuel
6J20  FUEL CELLS
6J20-2  Internal
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6J21</td>
<td>LIMITERS</td>
</tr>
<tr>
<td>6J21-2</td>
<td>Acceleration</td>
</tr>
<tr>
<td>6J22</td>
<td>COOLERS (Heat Exchangers)</td>
</tr>
<tr>
<td>6J23</td>
<td>MISSILE PLUMBING, FUEL</td>
</tr>
<tr>
<td>6J23-2</td>
<td>Restrictor</td>
</tr>
<tr>
<td>6J24</td>
<td>HEATERS</td>
</tr>
<tr>
<td>6J25</td>
<td>ACCUMULATORS</td>
</tr>
<tr>
<td>6J26</td>
<td>DETECTORS</td>
</tr>
<tr>
<td>6J27</td>
<td>CYLINDERS</td>
</tr>
<tr>
<td>6J28</td>
<td>MANIFOLDS</td>
</tr>
<tr>
<td>6J29</td>
<td>ACTUATOR ASSEMBLIES</td>
</tr>
<tr>
<td>6K</td>
<td>ROCKET ENGINE FUEL SYSTEMS</td>
</tr>
<tr>
<td>6K1</td>
<td>VALVES</td>
</tr>
<tr>
<td>6K1-2</td>
<td>Control</td>
</tr>
<tr>
<td>6K1-3</td>
<td>Drain</td>
</tr>
<tr>
<td>6K1-4</td>
<td>Shutoff</td>
</tr>
<tr>
<td>6K1-5</td>
<td>Relief, Vent</td>
</tr>
<tr>
<td>6K1-6</td>
<td>Disconnect</td>
</tr>
<tr>
<td>6K2</td>
<td>GENERATOR ASSEMBLIES</td>
</tr>
<tr>
<td>6K2-2</td>
<td>Gas</td>
</tr>
<tr>
<td>6K3</td>
<td>GIMBAL AND MOUNT ASSEMBLIES</td>
</tr>
<tr>
<td>6K3-2</td>
<td>Thrust Chamber</td>
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<tr>
<td>6K4</td>
<td>SWIVEL ASSEMBLIES</td>
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<tr>
<td>6K4-2</td>
<td>Mechanical</td>
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<tr>
<td>6K5</td>
<td>THRUST CHAMBER ASSEMBLIES</td>
</tr>
<tr>
<td>6K5-2</td>
<td>Boost Rocket</td>
</tr>
<tr>
<td>6K6</td>
<td>REGULATORS</td>
</tr>
<tr>
<td>6K6-2</td>
<td>Pressure</td>
</tr>
<tr>
<td>6K7</td>
<td>COUPLINGS AND DISCONNECTS</td>
</tr>
<tr>
<td>6K7-2</td>
<td>Couplings</td>
</tr>
<tr>
<td>6K8</td>
<td>PUMP ASSEMBLIES</td>
</tr>
<tr>
<td>6K8-2</td>
<td>Turbo</td>
</tr>
<tr>
<td>6K9</td>
<td>INITIATORS</td>
</tr>
<tr>
<td>6K10</td>
<td>NOZZLE ASSEMBLIES</td>
</tr>
<tr>
<td>6K11</td>
<td>ADAPTERS</td>
</tr>
<tr>
<td>6K12</td>
<td>ACTUATOR ASSEMBLIES</td>
</tr>
<tr>
<td>6K13</td>
<td>PROBE ASSEMBLIES</td>
</tr>
<tr>
<td>6P</td>
<td>PURGING SYSTEMS</td>
</tr>
<tr>
<td>6P1</td>
<td>NITROGEN VALVES</td>
</tr>
<tr>
<td>6P1-2</td>
<td>Check Nitrogen</td>
</tr>
<tr>
<td>6P1-3</td>
<td>Pressure Regulating</td>
</tr>
<tr>
<td>6P1-4</td>
<td>Relief Nitrogen</td>
</tr>
<tr>
<td>6P1-5</td>
<td>Control</td>
</tr>
<tr>
<td>6P1-6</td>
<td>Shutoff</td>
</tr>
<tr>
<td>6P2</td>
<td>GENERATOR PACKAGES</td>
</tr>
<tr>
<td>6P2-2</td>
<td>Purge Gas</td>
</tr>
<tr>
<td>6P3</td>
<td>CONTROLLERS</td>
</tr>
</tbody>
</table>
T.O. 00-5-18

6P3-2 Fuel Air Ratio
6P4 PUMPS
6R AIRCRAFT RECIPROCATING ENGINE FUEL SYSTEMS
6R1 CARBURETORS
6R1-2 Float
6R1-3 Injection
6R1-4 Variable Venturi
6R2 FILTERS AND STRAINERS
6R3 INJECTION SYSTEMS
6R4 FUEL INJECTION
6R5 PUMPS, FUEL- AND WATER-
6R5-2 Electric Motor Driven
6R5-3 Engine Driven
6R5-4 Injection
6R5-5 Hand Operated
6R5-6 Hydraulic Motor Operated
6R6 REGULATORS
6R6-2 Fuel
6R6-3 Water
6R7 SWITCHES (See Category 8)
6R8 TANKS
6R8-2 Jettisonable
6R9 VALVES
6R9-2 Check
6R9-3 Control
6R9-4 Drain
6R9-5 Float
6R9-6 Metering
6R9-7 Pressure Regulating
6R9-8 Vent, Relief
6R9-9 Selector
6R9-10 Shutoff
6R9-11 Coupling, Quick-Disconnect
6R9-12 Slide
6R9-13 Swivel
6R9-14 Dump
6R9-15 Flow Divider
6R9-16 Gate
6R10 PRIMER AND IGNITER ASSEMBLIES
6R11 AMPLIFIERS
6S OFFENSIVE SYSTEMS
6S1 SYSTEMS
6S2 VALVES
6S3 CYLINDERS
6S4 CHAMBERS

9-6
CHAPTER 10
CATEGORY 7 - AIRBORNE ENGINE LUBRICATING SYSTEMS

10.1 GENERAL.

10.1.1 Category 7 has only two systems relating to airborne engine lubrication. These two systems are divided into equipment series and then further divided into equipment subseries within each equipment series. TO numbers in Category 7 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 10.2.

10.1.2 TO data pertaining to more than one system is numbered in the category general series.

10.1.3 Information involving more than one equipment series within a system is numbered in the system general series.

10.2 NUMBERING PATTERN.

10.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

10.2.1.1 Part one is always the numeric 7 identifying Category 7.

10.2.1.2 Part two is an alpha character that identifies the lubrication system. These alpha characters are: J - jet engine lubricating systems, or R - reciprocating engine lubricating systems. There is no associated equipment identified in this category.

10.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 10.4.

10.2.2 GROUP TWO. TO numbering patterns in Category 7 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

10.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

10.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

10.2.3 GROUP THREE.

10.2.3.1 If the TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 7.

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

10.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 7:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
10.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific component assemblies.

10.2.4 Group Four. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 10.2.3.1, above.

**10.3 EXAMPLES OF CATEGORY 7 NUMBERING PATTERNS.**

10.3.1 Depot maintenance instructions with illustrated parts breakdown for a transmission fluid cooler, PN 215-55302-1 for A7D aircraft jet engine:

7J1-65-3
7 Category 7
J Jet Engine Lubrication System
1 Cooler Series
65 Identifies PN 215-55302-1
3 Number Reserved for Depot Maintenance Instructions

10.3.2 Checkout and service instructions for a temperature control valve, PN 154605-1-1, for C-141 aircraft jet engine:

7J6-10-10-2
7 Category 7
J Jet Engine Lubrication Systems
6 Valve Series
10 Relief Valve Subseries
10 Identifies PN 154605-1-1
2 Number Reserved for Service Instructions

10.3.3 Overhaul instructions with illustrated parts breakdown for oil separator assembly, PN 1545-4-E for C-121C aircraft reciprocating engine:

7R6-2-13
7 Category 7
R Reciprocating Engine Lubrication System
6 Separator Series
2 Identifies PN 1545-4-E
13 Number Reserved for Overhaul Instructions

**10.4 CATEGORY 7 NUMBERING SERIES.**

7 AIRBORNE ENGINE LUBRICATING SYSTEMS
7J JET ENGINE LUBRICATING SYSTEMS
7J1 COOLERS
7J2 FILTERS
7J3 HEATERS
7J4 PUMPS
7J4-2 Lube, Scavenge
7J4-3 Transfer
7J4-4 Lubricator
7J5 REGULATORS
7J5-2 Oil Temperature
7J5-3 Pressure
7J6 VALVES
7J6-2 Check (See 7J6-8)
7J6-3 Diverter
7J6-4 Flow Divider
7J6-5 Shutoff
7J6-6 Control
7J6-7 Pressurizing
7J6-8 Check
7J6-9 Drain
7J6-10 Relief
7J6-11 Selector
7J7 THERMOSTATS
7J8 SOCKET ASSEMBLIES
7J9 AMPLIFIERS
7J10 TANKS
7J11 INDICATORS
7J12 NIPPLE ASSEMBLIES
7J12-2 Oil
7J13 TRANSDUCERS
7J14 SENSORS
7J15 FAN ASSEMBLIES
7R RECIROCATING ENGINE LUBRICATING SYSTEMS
7R1 COOLERS
7R1-3 Oil Coolers
7R2 FILTERS
7R3 HEATERS
7R4 PUMPS, RECIROCATING-ENGINES
7R4-2 Hydraulic Gear
7R4-3 Transfer
7R5 REGULATORS
7R6 SEPARATORS
7R7 THERMOSTATS
7R8 VALVES
7R8-3 Control
7R8-5 Drain
7R8-7 Selector
7R8-8 Sequence
7R8-9 Shutoff
7R6-10 Diverter Segregator
7R8-12 By-Pass
7R9 SOCKET ASSEMBLIES
7R10 FANS

10-3/(10-4 blank)
CHAPTER 11
CATEGORY 8 - AIRBORNE ELECTRICAL SYSTEMS

11.1 GENERAL.

11.1.1 Category 8 contains six airborne electrical systems. These systems are divided into equipment subseries within each equipment series. Therefore TO numbers in Category 8 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 11.2.

11.1.2 TO data pertaining to more than one system is numbered in the category general series.

11.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

11.2 NUMBERING PATTERNS.

11.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

11.2.1.1 Part one is always the numeric 8 identifying Category 8.

11.2.1.2 Part two is an alpha character identifying the electrical system, i.e., A - alternating current electrical equipment; C - combination of both alternating and direct current electrical equipment; D - direct current electrical equipment; E - ignition systems; R - relays; and S - switches.

11.2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series is outlined in paragraph 11.4.

11.2.2 GROUP TWO. Since TO numbering patterns in Category 8 use both three and four basic groups, the identifiers in group two are not constant. The following explains the numbering patterns for both groups:

11.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

11.2.2.2 If the TO number contains four basic groups, the equipment series identified in group one, part three, has been divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

11.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

11.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 8:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests

11.2.3.2 In some instances, the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 8:
If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment and the specific types of TOs are then identified in group four.

GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 11.2.3.1.

EXAMPLES OF CATEGORY 8 NUMBERING PATTERNS.

Operating and maintenance instructions with illustrated parts breakdown for an alternating current electric motor, PN 6818-1, applicable to a pump installation on C-119 aircraft:

8A1-15-35-1
8 Category 8
A Alternating Current
1 Actuator and Motor Series
15 Pump Subseries
35 Identifies PN 6818-1
1 Number Reserved for Operating Instructions

A field maintenance instruction for a combination alternating/direct current inverter, PN F15-2M, for H-19A helicopter:

8C7-2-5-2
8 Category 8
C Alternating/Direct Current
7 Motor Generator (Inverter) Series
2 1-250 Volt Ampere Subseries
5 Identifies PN F15-2M
2 Number Reserved for Field Maintenance

Overhaul instruction with parts breakdown for a fuel float switch assembly, PN F-7860 for a B-52 aircraft:

8S1-2-24-3
8 Category 8
S Switches
1 Float Switch Series
2 Fuel Float Switch Subseries
24 Identifies PN F-7860
3 Number Reserved for Overhaul Manuals

CATEGORY 8 NUMBERING SERIES.

8 AIRBORNE ELECTRICAL SYSTEMS
8A ALTERNATING-CURRENT
8A1 ACTUATORS AND MOTORS
8A1-2 Bomb Bay Door
8A1-3 Camera Door
<table>
<thead>
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<th>8A1-4</th>
<th>Magnetron</th>
</tr>
</thead>
<tbody>
<tr>
<td>8A1-5</td>
<td>Cowl Flap and Air Plug</td>
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8D13 STARTER GENERATORS
8D13-2 1-100 amps
8D13-3 101-200 amps
8D13-4 201-300 amps
8D13-5 301-400 amps
8D13-6 401-500 amps
8D13-7 1000 amps
8D14 TRANSFORMER RECTIFIERS
8D14-2 0-25 amps
8D14-3 26-50 amps
8D14-4 51-100 amps
8D14-5 101-150 amps
8D15 WARNING DEVICES
8D15-2 Horn
8D15-3 Bell
8D15-4 Carbon Monoxide Signal
8D15-5 Automatic
8D15-6 Signal Amplifier
8D15-7 Stall Warning - Safe Flight
8D15-8  Flasher
8D15-9  Panel
8D15-10 Audible Signal
8D15-11 Trip Signal
8D15-12 Detector
8D15-13 Visual Signal
8D16  VOLTAGE REGULATORS
8D17  SOLENOIDS
8D18  FANS AND BLOWERS
8D18-2 Flying Suits
8D19  AMPLIFIERS
8D19-2 Fuel Signal
8D20  DISCONNECTS (ELECTRICAL)
8D21  SENSORS
8D22  HARNESS ASSEMBLIES
8D23  CABLE ASSEMBLIES
8D24  PANELS
8D25  JUNCTION BOX ASSEMBLIES
8D26  UNITS AND ASSEMBLIES
8D27  ELECTRICAL MODULES
8E  IGNITION SYSTEMS AND COMPONENTS
8E1  TURBOJET AND TURBOPROP
8E1-2 Ignition System
8E1-3 Spark Plug Igniter
8E1-4 Ignition Timer
8E1-5 Coil
8E1-6 Cable
8E1-7 Lead, Cable Assembly
8E1-8 Exciter
8E1-9 Harness
8E1-10 Stator
8E1-11 Generator Assembly
8E1-12 Thermocouple
8E2  RECIPROCATING ENGINES
8E2-2 System
8E2-3 Coil
8E2-4 Ignition Harness
8E2-5 Magneto
8E2-5-2 4-, 5-, and 6- Cylinder
8E2-5-3 7- and 9- Cylinder
8E2-5-4 12- Cylinder
8E2-5-5 14- Cylinder
8E2-5-6 18- Cylinder
8E2-5-7 2- Cylinder
8E2-6 Spark Plug
8E2-7 Switch
8E2-8 Vibrator
8E2-9 Tachometer
8E3 AUXILIARY POWER UNITS
8E3-2 Exciter
8E3-3 Panel Assemblies
8R RELAYS - INCLUDING SOLENOIDS AND CONTACTORS
8R1 GENERATOR RELAYS
8R1-2 Alternating-Current
8R1-3 Direct-Current
8R2 MOTOR GENERATORS (INVERTER)
8R3 MULTIPLE APPLICATION
8R4 STARTER RELAYS
8R5 CABIN PRESSURE CONTROL SYSTEMS
8R6 FIRE CONTROL SYSTEMS
8R7 RADAR RELAYS
8R7-2 Switch
8R8 ROTARY AND SELECTOR RELAYS
8R8-2 Ignition System Rotary
8R8-3 Switch Selector
8R8-4 Function Selector
8R9 TRANSFER RELAYS
8R9-2 Fuel Quantity
8R10 METER RELAYS
8R11 CAPACITORS
8RA ASSOCIATED EQUIPMENT
8RA1 PANEL
8S SWITCHES
8S1 FLOAT
8S1-2 Fuel Float
8S1-3 Oil Level
8S2 PRESSURE
8S2-2 Fuel
8S2-3 Hydraulic, Pneumatic, Vacuum
8S2-4 Miniature
8S2-5 Oil
8S2-6 Signal
8S2-7 Wave Guide
8S2-8 Manifold
8S2-9 Airspeed
8S2-10 Thrust
8S2-11 Barometric
8S2-12 Brake
8S2-13 Depressurized
8S3 ROTARY AND SELECTOR
8S3-2 Auxiliary
8S3-3 Wing Flap System
8S4 CIRCUIT BREAKER
8S4-2 Three Phase, Four Wire Circuit
T.O. 00-5-18

8S5      PUSH BUTTON
8S5-2    Micro
8S5-3    Manual
8S6      THERMOSTAT
8S6-2    Anticipator
8S6-3    Detector
8S6-4    Temperature Control
8S6-5    Landing Gear Control
8S6-6    Altitude Control
8S6-7    Flight Control
8S7      LIMIT
8S8      LEVER
8S9      RADAR
8S9-2    Electromagnetic
8S9-3    Pressure
8S9-4    Coaxial
8S10     TIMER
8S11     INERTIA (ACCELERATION)
8S12     DECELERATION
8S13     PUSH/PULL
CHAPTER 12
CATEGORY 9 - AIRCRAFT AND MISSILE HYDRAULIC, PNEUMATIC AND VACUUM SYSTEMS

12.1 GENERAL.

12.1.1 Category 9 contains airborne hydraulic, pneumatic, and vacuum systems. These systems are divided into equipment series and further divided into equipment subseries within each equipment series. TO numbers in Category 9 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 12.2.

12.1.2 TO data pertaining to more than one system is numbered in the category general series.

12.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

12.2 NUMBERING PATTERNS.

12.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

12.2.1.1 Part one is always the numeric 9 that identifies Category 9.

12.2.1.2 Part two is an alpha character indicating the system, i.e., H - hydraulic systems; P - pneumatic systems; and V - vacuum systems.

12.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. These TO numbering series are outlined in paragraph 12.4.

12.2.2 GROUP TWO. Since TO numbering patterns in Category 9 use both three and four basic groups, the identifiers in group two are not constant. The following explains both numbering patterns:

12.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

12.2.2.2 If the TO number contains four basic groups, the equipment series identified in group one, part three, has been divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

12.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

12.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 9:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-8 Test Procedures, Checkout Manuals, or Programmed Tests

12.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 9:
12.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

12.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 12.2.3.1, above.

12.3 EXAMPLES OF CATEGORY 9 NUMBERING PATTERNS.

12.3.1 Overhaul instructions for a hydraulic filter for the C-135A aircraft, type G187M-68:

9H3-3-55-3
9 Category 9
H Hydraulic System
3 Filter and Restrictor Series
3 Line Type Filter Subseries
55 Represents Type G187M-68
3 Number Reserved for Overhaul Instructions

12.3.2 An illustrated parts breakdown for a pressure pump, type MA-2, for C-141A aircraft:

9P4-2-16-24
9 Category 9
P Pneumatic Systems
4 Pump and Compressor Series
2 Pump Subseries
16 Represents Type MA-2
24 Number Reserved for Illustrated Parts Breakdown

12.3.3 Illustrated parts breakdown for a vacuum shut-off valve, PN 2V-750 to be used on multiple aircraft:

9V1-3-7-4
9 Category 9
V Vacuum Systems
1 Valve Series
3 Shutoff Valve Subseries
7 Represents PN 2V-750
4 Number Reserved for Illustrated Parts Breakdown

12.4 CATEGORY 9 NUMBERING SERIES.

9 AIRCRAFT AND MISSILE HYDRAULIC, PNEUMATIC, AND VACUUM SYSTEMS
9H HYDRAULIC SYSTEMS AND EQUIPMENT
9H1 ACCUMULATORS
9H1-2 Cylindrical
9H1-3 Spherical
9H1-4 Sustainer
9H1-5  Booster
9H2   CYLINDERS AND ACTUATORS
9H2-2  Main Landing Gear
9H2-3  Nose Landing Gear
9H2-4  Flight Surface Control
9H2-5  Auxiliary Control
9H2-6  Air Refueling
9H2-7  Engine Control
9H2-8  Missile Guidance
9H3   FILTERS AND RESTRICTORS
9H3-2  Reservoir
9H3-3  Line
9H3-4  Vent
9H3-5  Magnetic
9H4   PUMPS
9H4-2  Engine Driven
9H4-3  Electric Motor Driven
9H4-4  Hand Driven
9H4-5  Air Driven
9H4-6  Engine Oil Driven
9H5   RESERVOIRS
9H5-2  Non-Pressurized
9H5-3  Pressurized
9H6   TRANSMISSIONS
9H6-2  Reciprocating Engine Driven
9H6-3  Jet Engine Driven
9H6-4  Turbine Driven
9H6-5  Transmission Drive
9H7   POWER PACKS
9H7-2  Electric Driven
9H7-3  Turbine Driven
9H8   VALVES
9H8-2  Relief
9H8-3  Regulator
9H8-4  Shutoff
9H8-5  Shuttle
9H8-6  Check
9H8-7  Flow Equalizer
9H8-8  Restrictor
9H8-9  Sequence
9H8-10 Self-Sealing Coupling
9H8-11 By-Pass
9H8-12 Pressure Switch
9H8-13 Drain
9H8-14 Selector
9H8-15 Pressure Reducing
9H8-16 Flow Regulator
9H8-17 Isodraulic
9H8-18 Swivel
9H8-19 Pressure Damper
9H8-20 Up-Latch
9H8-21 Auto-Lock Wing Flap
9H8-22 Snubber
9H8-23 Limit
9H8-24 Constant Flow
9H8-25 Gland
9H8-26 Priority
9H8-27 Manifold Distribution
9H8-28 Metering
9H8-29 Slide
9H8-30 Control
9H8-31 Purge
9H8-32 Override
9H8-33 Transfer
9H8-34 Dump
9H8-35 Pilot
9H8-36 Fill
9H8-37 Diverter
9H9 WINDSHIELD WIPERS
9H9-2 Single
9H9-3 Dual
9H10 MOTORS
9H10-2 1000 PSI
9H10-3 3000 PSI
9H10-4 2000 PSI
9H10-5 1600 PSI
9H10-6 4000 PSI
9H11 COUPLINGS
9H12 MODULATOR ASSEMBLIES
9H13 DAMPERS
9H14 COOLERS AND RADIATORS
9H15 STOP ASSEMBLIES
9H16 RESTRICTORS (Use 9H3)
9H17 REGULATORS
9H17-2 Pressure
9H17-3 Control
9H17-4 Power Steering
9H18 MANIFOLD ASSEMBLIES
9H19 COMPENSATOR ASSEMBLIES
9H20 SEPARATORS
9H21 STARTERS
9H22 REELING MACHINES
9H23 GENERATORS
9H24 TRANSFORMERS
9H25       EXTENSIONS
9H26       INTERCONNECTING ASSEMBLIES
9H27       CHANNEL ASSEMBLIES
9H28       DRIVES AND MECHANISMS, DIFFERENTIAL ASSEMBLIES
9H29       DISCONNECTS
9P         PNEUMATIC SYSTEMS
9P1        ACCUMULATORS AND BOTTLES
  9P1-2 Bottle
  9P1-3 Accumulator
9P2        CYLINDERS AND ACTUATORS
  9P2-2 Landing Gear
  9P2-3 Auxiliary
  9P2-4 Escape Hatch
9P3        DEHYDRATORS AND CHEMICAL DRYERS
  9P3-2 Dehydrator
  9P3-3 Chemical Dryer
  9P3-4 Mechanical Moisture Separator
9P4        PUMPS AND COMPRESSORS
  9P4-2 Pump
  9P4-3 Compressor
9P5        VALVES
  9P5-2 Relief
  9P5-3 Regulator
  9P5-4 Quick Disconnect
  9P5-5 Shutoff
  9P5-6 Filler
  9P5-7 Priority
  9P5-8 Pressure Reducing and Fuse
  9P5-9 Selector
  9P5-10 Shuttle
  9P5-11 Warning Switch
  9P5-12 Check
  9P5-13 Restrictor
  9P5-14 Control
  9P5-15 By-Pass
  9P5-16 Metering
  9P5-17 Bleed
  9P5-18 Starter
  9P5-19 Gun Gas Purging
  9P5-20 Pressure Operated
  9P5-21 Dump
  9P5-22 Sequence
  9P5-23 Butterfly
  9P5-24 Flow Divider
9P6        FILTERS
  9P6-2 Liquid
  9P6-3 Nitrogen Gas
T.O. 00-5-18

9P7  DRIVES
9P8  COUPLINGS
9P9  HEAT EXCHANGERS
9P10 REGULATORS
9P10-2 Elevator Control Feel
9P10-3 Pneudraulic
9P10-4 Pressure
9P11 CONTROLS
9P12 MOTORS
9P13 RELAYS
9P14 RESERVOIRS
9P15 VENTILATION UNITS
9V  VACUUM SYSTEMS
9V1 VALVES
9V1-2 Relief
9V1-3 Shutoff
9V1-4 Selector
9V1-5 Regulator
9V2 PUMPS
9V2-2 Engine Driven
9V2-3 Electric Motor Driven
9V3 DECOYS
9V4 FILTERS
9V4-2 Vent
CHAPTER 13
CATEGORY 10 - PHOTOGRAPHIC EQUIPMENT

13.1 GENERAL.

13.1.1 Category 10 contains twelve primary photographic systems. These systems are divided into equipment series and in some instances further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 10 use both three and four groups for data identification. Numbering patterns for both groups are discussed in paragraph 13.2.

13.1.2 TO data pertaining to more than one system is numbered in the category general series.

13.1.3 Information pertaining to more than one equipment series within a system is numbered in the system general series.

13.2 NUMBERING PATTERNS.

13.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within each system.

13.2.1.1 Part one is always the numeric 10 identifying Category 10.

13.2.1.2 Part two is an alpha character that indicates the photographic equipment system, i.e., A - airborne cameras; B - ground cameras; C - motion picture cameras; D - projection equipment; E - processing equipment; F - microfilm equipment; G - photographic kits; H - interpretation and photogrammetric equipment; J - sensitized materials; K - radar assessing equipment; L - photographic instrumentation equipment; and M - mobile photographic laboratories.

13.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. These TO numbering series are outlined in paragraph 13.4.

13.2.2 GROUP TWO. Since TO numbering patterns in Category 10 use both three and four basic groups, the identifiers in group two are not constant. The following explains both numbering patterns:

13.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

13.2.2.2 If the TO number contains four basic groups, the equipment series identified in group one, part three, has been divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN identified in group three.

13.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

13.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 10:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests
-9 Corrosion Control

13.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 10:

<table>
<thead>
<tr>
<th>CL</th>
<th>Checklists</th>
</tr>
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<tbody>
<tr>
<td>S</td>
<td>Operational Supplements</td>
</tr>
<tr>
<td>SS</td>
<td>Safety Supplements</td>
</tr>
<tr>
<td>WC</td>
<td>Workcards</td>
</tr>
</tbody>
</table>

13.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

13.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 13.2.3.1.

13.3 EXAMPLES OF CATEGORY 10 NUMBERING PATTERNS.

13.3.1 A service manual for a still picture camera, type KB-18A, for use on RF-4C aircraft:

10A1-6-6-2
-10 Category 10
-1 Aircraft Camera Series
-6 Strike Camera Subseries
-6 Represents Type KB-18A
-2 Number Reserved for Service Manuals

13.3.2 Operating and service instructions for a Mark II contact printer:

10E8-2-19-1
-10 Category 10
-1 Processing Equipment
-8 Printer Series
-2 Contact Printer Subseries
-19 Represents Type Mark II
-1 Number Reserved for Operating Instructions

13.3.3 Operating and maintenance instructions with illustrated parts breakdown for a mobile photo laboratory, type ES-64A:

10M1-7-3-1
-10 Category 10
-M Photographic Laboratories
-7 Mobile Laboratory Series
-3 Photo Interpretation Subseries
-3 Represents Type ES-64A
-1 Number Reserved for Operating Instructions
### 13.4 CATEGORY 10 NUMBERING SERIES.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>10</td>
<td>PHOTOGRAPHIC EQUIPMENT</td>
</tr>
<tr>
<td>10A</td>
<td>AIRBORNE CAMERAS AND EQUIPMENT</td>
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<tr>
<td>10A1</td>
<td>AIRCRAFT CAMERAS</td>
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<tr>
<td>10A1-2</td>
<td>Gun</td>
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<tr>
<td>10A1-3</td>
<td>Mapping</td>
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<tr>
<td>10A1-4</td>
<td>Radar Recording</td>
</tr>
<tr>
<td>10A1-5</td>
<td>Reconnaissance</td>
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<td>10A1-6</td>
<td>Strike</td>
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<td>10A1-7</td>
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<td>Pair</td>
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<td>10A1-9</td>
<td>Motion Picture</td>
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<td>10A2</td>
<td>BODIES, LENS, CONES, REELS, ETC.</td>
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<td>Reel</td>
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<td>Magnetic Clutch and Brake Assembly</td>
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<td>MOUNTS AND GYROSCOPES</td>
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<td>10A4</td>
<td>VIEWFINDERS</td>
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<td>Reconnaissance Camera</td>
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<td>10A5-8</td>
<td>Strip Camera</td>
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<td>CAMERA CONTROL SYSTEMS, UNIVERSAL</td>
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<td>Amplifier Unit</td>
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<td>10A6-3</td>
<td>Amplifier</td>
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<td>Synchronizer Marker Unit</td>
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<td>Pulse Shaper</td>
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<td>Converter</td>
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<td>10A7</td>
<td>NIGHT PHOTO EQUIPMENT</td>
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<td>Lamp Assembly</td>
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<td>Photoflash Cartridge Ejector</td>
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<td>PHOTO NAVIGATION EQUIPMENT</td>
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<td>Heading Error Compensator</td>
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<td>LIGHT BOXES</td>
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10C1-2 8 MM
10C1-3 16 MM
10C1-4 35 MM
10C1-5 Missile
10C1-6 70 MM
10C2 CLEANERS
10C3 EDITORS AND VIEWERS
10C4 MACHINE MEASURING EQUIPMENT
10C5 REWIND EQUIPMENT
10C6 SOUND RECORDING EQUIPMENT
10C7 SPLICERS
10C8 TRIPODS AND HEADS
10C9 FILM TITLERS
10C10 SCORING ASSEMBLIES
10C11 BODIES AND MAGAZINES
10C12 COATERS
10C13 HAND HELD CAMERAS
10C14 VIDEO SYSTEMS
10D PROJECTION EQUIPMENT
10D1 PROJECTORS
10D1-2 Motion Picture
10D1-3 Still Picture
10D1-4 Continuous Stereoscopic
10D2 POINTERS (Optical)
10D3 SCREENS
10D4 VIEWERS
10D4-2 Still Picture
10D4-3 Motion Picture
10D4-4 Stereoscopic
10D5 COMPARATORS
10D5-2 Photographic
10E PROCESSING EQUIPMENT
10E1 DEHUMIDIFIERS
10E2 DEVELOPERS AND PROCESSORS
10E3 DRYERS
10E3-2 Film
10E3-3 Print
10E4 HEATERS AND CHILLERS (WATER)
10E5 PROCESSING, EXPOSURE, TEST, AND STAMPING MACHINES
10E5-2 Continuous Processing
10E5-3 Exposure Test
10E5-4 Stamping
10E6 DRY MOUNTING PRESSES
10E7 PHOTOCOPY EQUIPMENT
10E8 PRINTERS
10E8-2  Contact (Manual)
10E8-3  Continuous
10E8-4  Projection
10E9    SINKS
10E10   STRAIGHTENERS
10E11   MIXERS
10E12   TIMERS
10E12-2 Electrical
10E13   WASHERS
10E14   WRINGERS
10E15   MIXER-DISTRIBUTORS
10E16   CHOPPERS
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10E21   CODERS
10E22   SIMULATORS
10E23   REPRODUCERS
10E24   ANALYZERS
10E25   TRANSLATORS
10E26   EJECTOR SETS
10E27   METERS
10E27-2 Sensitometer
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10E28   RECTIFIERS
10E29   FOCATRONS
10E30   LIGHT TABLES
10E31   SILVER RECOVERY UNITS
10E32   FILM FINISHING
10E33   PRESSURE REDUCING VALVES
10E34   DUPLICATORS
10E35   VALVES
10F    MICROFILM EQUIPMENT
10F1   CAMERAS
10F2   ENLARGERS MARKING
10F3   READERS
10F4   CUTTERS
10G    KITS, PHOTOGRAPHIC-EQUIPMENT
10G1   DARKROOM
10G2   DEHUMIDIFYING
10G3   DEVELOPING
10G4   DRYING
10G5   LABORATORY
10G6   LIGHTING
10G7   MIXER
10G8   NEGATIVE MARKING

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10G9 COPYING AND ENLARGING
10G10 PRINTING
10G11 SINK
10G12 TEMPERATURE CONTROL
10G13 WATER SUPPLY
10G14 VECTOGRAPH
10G15 OPTIC
10G16 CARRYING AND STORAGE CASES
10G17 ADAPTER KITS
10H INTERPRETATION AND PHOTOGRAMMETRY EQUIPMENT
10H1 HEIGHT FINDERS
10H2 PHOTO INTERPRETERS
10H3 PLOTTERS
10H4 FILM PLOTTING TABLES
10H5 SKETCHMASTERS
10H6 TEMPLET SETS, SLOTTED
10H7 RECTIFIERS
10H8 PROJECTORS
10H9 INTERPRETATION EQUIPMENT
10H10 REEL BRACKETS
10H11 ANALYTICAL SYSTEMS
10J SENSITIZED MATERIALS AND SUPPLIES
10K RADAR ASSESSING EQUIPMENT
10K1 GENERAL
10K2 PLOTTING BOARDS
10L PHOTO INSTRUMENTATION EQUIPMENT
10L1 CAMERAS
10L2 MAGAZINES
10M PHOTO LABORATORIES
10M1 MOBILE
10M1-2 Processing (Shelter)
10M1-3 Printing
10M1-4 Reproduction
10M1-5 Maintenance Shop
10M1-6 Edit, Inspection
10M1-7 Interpretation
10M1-8 Storage Facility
10M1-9 Chemical Mixing, Distribution
10M1-10 Film Titling, Cleaning
10M1-11 Film Handling Facility
10M1-12 Administration
10M1-13 Accessing-Briefing
10M1-14 Water Conditioner
10M1-15 Electronic Optical Tracking

13-7/(13-8 blank)
CHAPTER 14
CATEGORY 11 - ARMAMENT EQUIPMENT

14.1 GENERAL.

14.1.1 Category 11 contains thirteen armament systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 11 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 14.2.

NOTE

Nuclear Weapons TO Numbers (subcategory 11N) are not described here. AFNWL/NCLS is the only organization authorized to assign 11N series TO numbers.

14.1.2 TO data pertaining to more than one system is numbered in the category general series.

14.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

14.2 NUMBERING PATTERNS.

14.2.1 GROUP ONE. This group has three parts that identify the category, system and equipment series within the system.

14.2.1.1 Part one is always the numeric 11 identifying Category 11.

14.2.1.2 Part two is an alpha character identifying the armament system, i.e., A - ammunition; B - bombing systems and equipment; C - chemical warfare agents, explosives, gases and weapons; D - decontamination, impregnating and protective equipment; E - biological warfare agents; F - fire control systems and equipment; G - guidance and control systems and equipment; H - hazard detecting equipment; K - guided glide weapons; L - launchers and equipment; P - egress systems, explosive devices and equipment; R - missile re entry vehicles and equipment; and W - weapons and equipment. Only two of the 13 systems in Category 11 have associated equipment identified. These two systems are: launchers and equipment, and weapons and equipment. The associated equipment is identified by adding the alpha A immediately following the armament system identifier, i.e., LA and WA.

14.2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series are outlined in paragraph 14.4.

14.2.2 GROUP TWO. TO numbering patterns in Category 11 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

14.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

14.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

14.2.2.3 Bombing systems and fire control systems with JETDS (Joint Electronics Type Designator System) numbers or Air Force type numbers are numbered in the 11B1 and 11F1 series respectively. The type designator, in this instance, is used to form group two of the TO number. (See examples in paragraph 4.3.4 and paragraph 4.3.5.)
14.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

14.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 11:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Storage, Installation and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests

14.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 11:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

14.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific component assemblies.

14.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 14.2.3.1.

14.3 EXAMPLES OF CATEGORY 11 NUMBERING PATTERNS.

14.3.1 Storage procedures for cluster munitions, type CBU-30/A:

11A9-14-7
11 Category 11
A Ammunition
9 Cluster Munition Series
14 Identifies Type CBU-30/A
7 Number Reserved for Storage Instructions

14.3.2 Operating and maintenance instructions for a smoke tank, PN 2105220:

11C15-2-7-1
11 Category 11
C Chemical Warfare Agents, Explosives, Gases and Weapons
15 Tank Series
2 Smoke Tank Subseries
14.3.3 Overhaul instructions for a target position computer, PN 737511:

11F12-13-2-3
11 Category 11
F Fire Control Systems
12 Computer Series
13 Target Position Type Subseries
2 Identifies PN 737511
3 Number Reserved for Overhaul Instructions

14.3.4 Field maintenance instructions for bombing navigation system, optical and radar, type AN/ASB-15A,B:

11B1-ASB15-2-3
11 Category 11
B Bombing Systems and Equipment
1 Bombing System Series
ASB15 Identifies Type AN/ASB-15
2 Number Reserved for Maintenance Instructions
3 Identifies the Third Section

14.3.5 Field maintenance instructions for fire control system, type MA-8, PN 521E747G8, G9 used on F-105 aircraft.

11F1-MA8-12
11 Category 11
F Fire Control Systems and Equipment
1 Fire Control System Series
MA8 Identifies Type MA-8
12 Number Reserved for Maintenance Instructions

14.4 CATEGORY 11 NUMBERING SERIES.

11 ARMAMENT EQUIPMENT
11A MUNITIONS
11A1 BOMBS, EXPLOSIVE
11A2 BOMBS, INCENDIARY
11A3 BOMBS, PRACTICE AND LEAFLET
11A4 BOOSTERS AND BURSTERS
11A5 AERIAL MINES, NON-CLUSTERED
11A6 FINS, BOMB
11A7 FUSES, BOMB
11A8 MISCELLANEOUS GROUND MUNITIONS
11A9 CLUSTER MUNITIONS
11A10 FLARES, MARKERS, SIGNALS, AND SIMULATORS
11A11 ROCKETS AND ROCKET COMPONENTS
11A12 ADAPTERS, CLUSTER-BOMB
11A13 GUN AMMUNITION
11A14 RIOT CONTROL AND SMOKE MUNITIONS
11A15 MISSILE EXPLOSIVE COMPONENTS
11A16 COUNTERMEASURES
11A17 CARGO, PARACHUTE, AND WEAPONS RETARDATION SYSTEMS
11A18 AIRCRAFT STORES JETTISONING, AIRCRAFT STARTING, AND RELATED EXPLOSIVE DEVICES
11A19 RIOT CONTROL AIDS
11A20 DEMOLITION MATERIAL AND DESTRUCTIVE DEVICES
11A21 DISPENSERS, FLARE
11A22 EXPLOSIVE DEVICES, TARGET DRONE, AND SPECIAL PURPOSE AIRCRAFT
11A23 IGNITERS
11A24 CARTRIDGES
11B BOMBING SYSTEMS AND EQUIPMENT
11B1 BOMBING SYSTEMS
11B1-A Type A
11B1-K Type K
11B1-M Type M
11B2 AMPLIFIERS
11B2-2 AN Type
11B2-3 V Type
11B2-4 Computer
11B2-5 Sealed
11B2-6 Servo
11B2-7 Stabilization
11B2-8 Audio Frequency
11B2-9 Electronic Control
11B2-10 Video
11B2-11 Radar Indicator Sweep
11B2-12 Intermediate Frequency
11B2-13 Current Deflection
11B2-14 Power Supply
11B2-15 Displacement
11B3 ANTENNAS
11B3-2 Radar
11B3-3 Radio
11B4 BANKS
11B4-2 Relay
11B5 BOXES
11B5-2 Control
11B5-3 Junction
11B5-4 Potentiometer
11B5-5 Relay
11B5-6 Fuse
11B6 BRACES
11B6-2 Sway
11B7 COMPARATORS
11B7-2 Type CM
11B7-3 Type GS
11B7-4 Type MA-2
11B7-5 Type AN
11B7-6 Groundspeed and Track
11B8 COMPENSATORS
11B8-2 Transmission Error
11B8-3 Compass
11B9 COMPRESSORS
11B9-2 Air
11B10 COMPUTERS
11B10-2 Type A Bombing, Navigation
11B10-3 Azimuth
11B10-4 Ballistic
11B10-5 Bomb Release
11B10-6 BT Type (Toss Bomb)
(Use 11B10-9)
11B10-7 Electronic
11B10-8 Type K Position
11B10-9 Toss Bomb
11B10-10 Altitude
11B10-11 Missile Release Navigational
11B10-12 Range
11B10-13 Tracking
11B10-14 Air Navigation
11B10-15 Type MA-2
11B10-16 Velocity
11B10-17 Dive Angle
11B10-18 Simulator
11B10-19 Roll Error
11B10-20 Panels and Racks
11B10-21 Terrain Clearance
11B10-22 Time
11B10-23 Flight Directional
11B10-24 Programmers
11B10-25 Data Subsystems
11B11 CONTAINERS
11B11-2 Aero
11B12 CONTROLS
11B12-2 Arming
11B12-3 Ballistics
11B12-4 Bomb Release Interval
11B12-5 Line of Sight
11B12-6 Navigation
11B12-7 Primary
11B12-8 Tracking
11B12-9 Guidance
11B12-10 Computer
11B12-11 Tuning
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11B12-12  Range
11B12-13  Indicator
11B12-14  Optics
11B12-15  Radar Set Gain
11B12-16  Test
11B12-17  Remote Module
11B12-18  Intervalometer
11B12-19  Emergency Bombing
11B12-20  Type MA-2 and ASB-4
11B12-21  Doppler Radar
11B12-22  Time
11B12-23  Heading Reference
11B12-24  Bomb Mark
11B12-25  Terrain Radar
11B12-26  Selector
11B12-27  Calibration
11B12-28  Frequency
11B12-29  Radar Set
11B12-30  Power Supply
11B13  CONVERTERS
11B13-2  Coordinate
11B13-3  Polar
11B13-4  Signal Data
11B13-5  Speed
11B13-6  Temperature
11B13-7  Telemetering
11B13-8  Type MA-2 and ASB-4
11B14  CORRECTORS
11B14-2  Bombsight
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11B15-2  Non-directional
11B15-3  Directional
11B16  COVERS
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11B17  DESICCATORS
11B17-2  Type B
11B17-3  Type MA
11B18  DOPPLER DRIFT GROUP
11B18-2  AN Type
11B19  GENERATORS
11B19-2  Azimuth Mark
11B19-3  Azimuth Sweep
11B19-4  Pedestal
11B19-5  Pulse
11B19-6  Range Mark
11B19-7  Sweep
11B19-8  Sine Wave
11B19-9  Stabilization Data
11B19-10 Antenna
11B19-11 Motor (Do not use)
11B19-12 Type MA-2 and ASB-4
11B19-13 Frequency
11B19-14 Noise
11B20  GYROSCOPES
11B20-2 Cageable
11B20-3 Non-cageable
11B21  INDICATORS
11B21-2 Cathode Ray
11B21-3 Group
11B21-4 Meter
11B21-5 Multiple
11B21-6 Position
11B21-7 Dive and Roll
11B21-8 Sight Angle
11B21-9 Checkout
11B21-10 Topographical Comparator
11B21-11 Pilot Ground Track
11B21-12 Clearance
11B21-13 Radar Flight
11B22  INTERCONNECTING GROUP
11B23  SETS
11B23-2 Maintenance Rack
11B23-3 Radar Pressurization
11B24  MODULATORS
11B25  MOUNTINGS
11B25-2 JETDS Nomenclatured
11B26  MOUNTS
11B26-2 Sight
11B28  POWER SUPPLIES
11B28-2 Low Voltage
11B28-3 High Voltage
11B28-4 Analyzer
11B28-5 Auxiliary
11B29  RACKS
11B29-2 Amplifier
11B29-3 Bomb
11B30  RADAR ASSEMBLIES
11B30-2 JETDS Nomenclatured
11B31  RADAR SETS
11B31-2 Type AN/APS
11B31-3 Data Presentation
11B31-4 Type AN/ASB
11B31-5 Type AN/ASQ
11B32  RADIO SETS
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<td>Y Type</td>
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<td>MA-2 and ASB-4</td>
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11B45   TRANSFORMERS
11B46   TRANSMITTERS
11B46-2  Altitude Variation, Airspeed
11B46-3  True Heading
11B46-4  Remote Compass
11B46-5  Radio
11B46-6  Antenna
11B46-7  Radar
11B47   UNITS
11B47-2  Antenna Drive
11B47-3  Filter
11B47-4  Offset
11B47-5  Phase Shift
11B47-6  Magnetron Drive
11B47-7  Stores
11B47-8  Delay
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11B47-11  Monitor
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11B47-13  Distribution
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11B48   VISORS
11B49   ATTACHMENTS
11B49-2  Camera
11B50   PROTECTORS
11B50-2  Electrical
11B51   NETWORKS
11B51-2  Network Assemblies
11B52   BLOWERS AND FANS
11B52-2  Radar
11B52-3  Electrical
11B53   CALIBRATORS
11B54   RELAY ASSEMBLIES
11B55   BLANKERS
11B56   MULTIMETERS
11B57   TELESCOPES
11B58   MIRROR ASSEMBLIES
11B59   EJECTORS
11B60   ELECTRONIC GATES
11B61   PANELS
11B61-2  Control
11B62   PERISCOPIES
11B63   ACCELEROMETERS
11B64   TRANSDUCER ASSEMBLIES
11B65   TRANSFORMER-RECTIFIER ASSEMBLIES
11B66   PLATFORMS
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<td>ANALYZERS</td>
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<td>11B68-2</td>
<td>Polar Converter</td>
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11L1-3 Rocket
11L1-4 Dispensing
11L1-5 Flare
11L1-6 Multi-Purpose
11L2 GROUND LAUNCHERS
11L2-2 Grenade
11L2-3 Missile
11L2-4 Rocket
11L2-5 Rotary
11L3 CONTROLS
11L3-2 Projector Release
11L3-3 Missile Launcher
11L4 MOUNTS
11LA ASSOCIATED EQUIPMENT
11LA1 TABLES
11LA1-2 Firing
11LA2 CYLINDERS
11LA3 HOISTS
11LA4 GENERATORS
11LA5 EJECTORS
11LA6    ROCKET RACKS
11LA7    POWER SUPPLIES
11LA8    ADAPTERS
11LA9    STATIONS
11LA10   CABLES
11LA11   CHASSIS ASSEMBLIES
11LA12   RELAY ASSEMBLIES
11LA13   SWITCHING UNITS
11LA14   LAUNCHER ROTATION TOOLS
11LA15   MISCELLANEOUS SUPPORT EQUIPMENT
11P      EGRESS SYSTEMS, EXPLOSIVE DEVICES, AND EQUIPMENT
11P1     CATAPULTS
11P2     EJECTORS
11P3     INITIATORS AND TIMERS
11P3-2   Delay
11P3-3   Instant
11P4     REMOVERS (CANOPY)
11P5     SQUIBS AND BLASTING CAPS
11P6     THRUSTERS
11P7     CARTRIDGES
11P8     FIRING MECHANISMS
11P9     GENERATORS, MOTORS, ACTUATORS
11P10    RETRACTORS
11P11    BOOMS
11P12    CUTTERS AND BOLTS
11P13    TRANSMITTERS
11P14    INERTIAL REELS
11P15    DEPLOYMENT GUNS (DROGUE GUN)
11P16    FUSES
11P17    LEAD ASSEMBLIES
11P18    MANIFOLDS
11P19    EXPLOSIVE KITS
11P20    SINGLE POINT HARNESS RELEASES
11P21    SEVERANCE SYSTEMS
11P22    SEQUENCE SELECTORS
11R      MISSILE RE-ENTRY VEHICLES AND EQUIPMENT (Do not use)
11W      WEAPONS AND EQUIPMENT
11W1     AIRBORNE WEAPONS AND EQUIPMENT
11W1-2   Adapter
11W1-3   Booster
11W1-4   Charger
11W1-5   Chute
11W1-6   Container
11W1-7   Feeder
11W1-8   Gauge
11W1-9   Generator
11W1-10  Grip
11W1-11  Heater
11W1-12  Heavy Caliber Gun
11W1-13  Light Caliber Gun
11W1-14  Machine
11W1-15  Mount
11W1-16  Pyrotechnic
11W1-17  Solenoid
11W1-18  Switch
11W1-19  Synchronizer
11W1-20  Tool (Breech Block Unlocking)
11W1-21  Valve
11W1-22  Winder-Feeder
11W1-23  Recoil
11W1-24  Charger
11W1-25  Rack
11W1-26  Tool (Ammo Reel Loading)
11W1-27  Control
11W1-28  Gun Drive
11W1-29  Assembly
11W1-30  Counter
11W1-31  Armament Pod
11W1-32  Armament Module
11W1-33  Armament System
11W1-34  Armament Kit
11W1-35  Drum Drive
11W1-36  Lubricator
11W1-37  Expended Case Bin
11W2  GROUND WEAPONS AND EQUIPMENT
11W2-2  Activator
11W2-3  Bayonet and Knife
11W2-4  Clinometer
11W2-5  Heavy Caliber Gun
11W2-6  Light Caliber Gun
11W2-7  Machines, Repositioning- and Linking-
11W2-8  Mount
11W2-9  Pyrotechnic
11W2-10  Quadrant
11W2-11  Self-Propelled
11W2-12  Rack
11W2-13  Sight
11W2-14  Slide Rule
11W2-15  Sniperscope
11W2-16  Solenoid
11W2-17  Adapter
11W2-18  Director
11W3  SMALL ARMS
11W3-2  Carbine
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CHAPTER 15
CATEGORY 12 - AIRBORNE ELECTRONIC EQUIPMENT

15.1 GENERAL.

15.1.1 Much of the equipment covered by TOs in this category is identified under the Joint Electronics Type Designation System (JETDS). The JETDS, formerly known as the AN nomenclature system, is described in MIL-STD-196.

15.1.2 Category 12 contains seven primary airborne electronic equipment systems. These systems are divided into equipment series and further divided into equipment subsseries within each equipment series. TO numbers in Category 12 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 15.2.

15.1.3 TO data pertaining to more than one system is numbered in the category general series.

15.1.4 Information relating to more than one equipment series is numbered in the system general series.

15.1.5 General TOs for JETDS equipment are described in paragraph 1.22.

15.2 NUMBERING PATTERNS.

15.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

15.2.1.1 Part one is always the numeric 12 identifying Category 12.

15.2.1.2 Part two is an alpha character identifying the electronic system, i.e., A - synchros and resolvers; C - crystal units; M - meteorological equipment; P - radar equipment; R - radio equipment; and S - special electronic equipment.

15.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 15.4.

15.2.2 GROUP TWO. TO numbering patterns in Category 12 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following explains both numbering patterns:

15.2.2.1 If the equipment types are JETDS nomenclatured, only three basic groups are used in the TO number. The numeric 2 followed immediately by an alphameric JETDS nomenclature comprises group two.

15.2.2.2 If the equipment types are Signal Corps nomenclatured, three basic groups are used in the TO number. The numeric 3 followed immediately by an alphameric Signal Corps nomenclature comprises group two.

15.2.2.3 If the equipment types are Air Force nomenclatured, three basic groups are used in the TO number. The numeric 5 followed immediately by an alphameric AF nomenclature comprises group two.

15.2.2.4 Where the equipment types are commercially nomenclatured, four basic groups are used in the TO number and the numeric 4 is the only character in group two.

15.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

15.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 12:

-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
15.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 12:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

15.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

15.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 15.2.3.1, above.

15.3 EXAMPLES OF CATEGORY 12 NUMBERING PATTERNS.

15.3.1 A service instruction manual with illustrated parts breakdown for a radiosonde receiver, model RC-1074:

```
12M1-4-9-2
12 Category 12
M Meteorological Equipment
1 Auxiliary Equipment Series
4 Identifies Commercial Data
9 Represents Model RC-1074
2 Number Reserved for Service Instruction
```

15.3.2 Illustrated parts breakdown for a terrain following radar set, type AN/APQ-128:

```
12P2-2APQ128-34
12 Category 12
P Radar Equipment
2 Control Equipment Series
2 APQ128 Identifies Specific Terrain Following Radar Set
34 Number Reserved for Illustrated Parts Breakdown
```

15.3.3 Operating and maintenance instructions with illustrated parts breakdown for electronic countermeasure set, type QRC-128A(T):

```
12P3-5QRC128-1
12 Category 12
P Radar Electronic Equipment
3 Electronic Countermeasure Series
5 JETDS Nomenclature Equipment
```
QRC128  Identifies Specific Electronic Countermeasure Set
1  Number Reserved for Operating Instructions

15.3.4 Operating and maintenance instructions and illustrated parts breakdown for an airborne radio set, type AN/ARC-59:

12R2-2ARC59-1

12  Category 12
R  Radio Equipment
2  Communication Series
2  JETDS Nomenclature Equipment
ARC59  Identifies a Specific Radio Set
1  Number Reserved for Operating Instructions

15.4  CATEGORY 12 NUMBERING SERIES.

12  AIRBORNE-ELECTRONIC EQUIPMENT
12A  SYNCHRONIZERS AND RESOLVERS
12A1  SYNCHRONIZERS
12A2  RESOLVERS
12C  CRYSTAL UNITS
12M  METEOROLOGICAL-ELECTRONIC EQUIPMENT, AIRBORNE
12M1  AUXILIARY EQUIPMENT
12M1-2  JETDS Nomenclature
12M1-3  Signal Corps Nomenclature
12M1-4  Commercial Nomenclature
12M1-5  AF Nomenclature
12M2  BAROMETRIC
12M2-2  JETDS Nomenclature
12M2-3  Signal Corps Nomenclature
12M2-4  Commercial Nomenclature
12M2-5  AF Nomenclature
12M3  TEMPERATURE AND HUMIDITY
12M3-2  JETDS Nomenclature
12M3-3  Signal Corps Nomenclature
12M3-4  Commercial Nomenclature
12M3-5  AF Nomenclature
12M4  WIND DIRECTION AND VELOCITY
12M4-2  JETDS Nomenclature
12M4-3  Signal Corps Nomenclature
12M4-4  Commercial Nomenclature
12M4-5  AF Nomenclature
12M5  ATMOSPHERIC RESEARCH
12M5-2  JETDS Nomenclature
12M5-3  Signal Corps Nomenclature
12M5-4  Commercial Nomenclature
12M5-5  AF Nomenclature
12P  RADAR-ELECTRONIC EQUIPMENT
12P1  AUXILIARY EQUIPMENT
12P1-2  JETDS Nomenclature
12P1-3  Signal Corps Nomenclature
12P1-4  Commercial Nomenclature
12P1-5  AF Nomenclature
12P2  CONTROLS
12P2-2  JETDS Nomenclature
12P2-3  Signal Corps Nomenclature
12P2-4  Commercial Nomenclature
12P2-5  AF Nomenclature
12P3  ELECTRONIC COUNTERMEASURES
12P3-2  JETDS Nomenclature
12P3-3  Signal Corps Nomenclature
12P3-4  Commercial Nomenclature
12P3-5  AF Nomenclature
12P4  IFF
12P4-2  JETDS Nomenclature
12P4-3  Signal Corps Nomenclature
12P4-4  Commercial Nomenclature
12P4-5  AF Nomenclature
12P5  NAVIGATION
12P5-2  JETDS Nomenclature
12P5-3  Signal Corps Nomenclature
12P5-4  Commercial Nomenclature
12P5-5  AF Nomenclature
12P6  SEARCH AND HEIGHT FINDING
12P6-2  JETDS Nomenclature
12P6-3  Signal Corps Nomenclature
12P6-4  Commercial Nomenclature
12P6-5  AF Nomenclature
12R  RADIO-ELECTRONIC EQUIPMENT, AIRBORNE
12R1  AUXILIARY EQUIPMENT
12R1-2  JETDS Nomenclature
12R1-3  Signal Corps Nomenclature
12R1-4  Commercial Nomenclature
12R1-5  AF Nomenclature
12R2  COMMUNICATIONS
12R2-2  JETDS Nomenclature
12R2-3  Signal Corps Nomenclature
12R2-4  Commercial Nomenclature
12R2-5  AF Nomenclature
12R3  CONTROLS
12R3-2  JETDS Nomenclature
12R3-3  Signal Corps Nomenclature
12R3-4  Commercial Nomenclature
12R3-5  AF Nomenclature
12R4  ELECTRONIC COUNTERMEASURES
12R4-2  JETDS Nomenclature
12R4-3 Signal Corps Nomenclature
12R4-4 Commercial Nomenclature
12R4-5 AF Nomenclature
12R5 NAVIGATION
12R5-2 JETDS Nomenclature
12R5-3 Signal Corps Nomenclature
12R5-4 Commercial Nomenclature
12R5-5 AF Nomenclature
12R6 RELAY
12R7 DRONE MISSILE
12S SPECIAL-ELECTRONIC EQUIPMENT
12S1 AUXILIARY
12S1-2 JETDS Nomenclature
12S1-3 Signal Corps Nomenclature
12S1-4 Commercial Nomenclature
12S1-5 AF Nomenclature
12S2 DATA PROCESSING
12S2-2 JETDS Nomenclature
12S2-3 Signal Corps Nomenclature
12S2-4 Commercial Nomenclature
12S2-5 AF Nomenclature
12S3 LIGHT OR HEAT
12S4 MAGNETIC
12S5 RECORDING
12S5-2 JETDS Nomenclature
12S5-3 Signal Corps Nomenclature
12S5-4 Commercial Nomenclature
12S5-5 AF Nomenclature
12S6 TELEVISION
12S6-2 JETDS Nomenclature
12S6-3 Signal Corps Nomenclature
12S6-4 Commercial Nomenclature
12S6-5 AF Nomenclature
12S7 TELEMETERING
12S7-2 JETDS Nomenclature
12S7-3 Signal Corps Nomenclature
12S7-4 Commercial Nomenclature
12S7-5 AF Nomenclature
12S8 TAPEWRITERS
12S9 MISSILE OFFENSIVE SYSTEMS
12S10 NIGHT VISION
12S10-2 JETDS Nomenclature
12S10-3 Signal Corps Nomenclature
12S10-4 Commercial Nomenclature
12S10-5 AF Nomenclature
12S11 HELMET MOUNTED CUEING SYSTEM
12S11-2 JETDS
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CHAPTER 16
CATEGORY 13 - AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING EQUIPMENT, CARGO LOADING, AERIAL DELIVERY AND RECOVERY EQUIPMENT, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT

16.1 GENERAL.

16.1.1 Category 13 contains five primary systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 13 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 16.2.

16.1.2 TO data pertaining to more than one system is numbered in the category general series.

16.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

16.2 NUMBERING PATTERNS.

16.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

16.2.1.1 Part one is always the numeric 13 identifying Category 13.

16.2.1.2 Part two is an alpha character identifying the system, i.e., A - aircraft furnishings; B - in-flight feeding equipment; C - cargo loading, tiedown and aerial delivery equipment; D - recovery equipment; and F - aircraft fire detection and extinguishing equipment.

16.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 16.4.

16.2.2 GROUP TWO. TO numbering patterns in Category 13 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

16.2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific components.

16.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

16.2.3 GROUP THREE.

16.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 13:

-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions
16.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 13:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

16.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

16.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 16.2.3.1, above.

16.3 EXAMPLES OF CATEGORY 13 NUMBERING PATTERNS.

16.3.1 An operation and service instruction manual for a food warming oven, model 200:

13B1-8-1
13 Category 13
B In-Flight Feeding Equipment
1 Food Warming Ovens
8 Represents Model 200
1 Number Reserved for Operating Instructions

16.3.2 An operating and maintenance manual for a cargo restraint barrier, type HBU-8/A:

13C2-5-1
13 Category 13
C Cargo Loading Equipment
2 Cargo Tiedown Devices
5 Represents Type HBU-8/A
1 Number Reserved for Operating Instructions

16.3.3 Overhaul instructions with illustrated parts breakdown for an aircraft fire extinguisher, PN 7720082-101:

13F3-4-13
13 Category 13
F Aircraft Fire Detecting and Extinguishing Equipment
3 Fixed Extinguishing System Series
4 Represents PN 7720082-101
13 Number Reserved for Overhaul Instructions

16.4 CATEGORY 13 NUMBERING SERIES.

13 AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING EQUIPMENT, CARGO LOADING, AERIAL DELIVERY AND RECOVERY EQUIPMENT, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT
13A AIRCRAFT FURNISHINGS
13A1 BELTS, SAFETY AND SHOULDER HARNESSSES
13A2 PERSONNEL RELIEF FACILITIES
13A3 KITS, FIRST-AID
13A4 REELS, LOCKING, AIRCRAFT SEAT
| 13A5 | EJECTION SEATS |
| 13A6 | ADJUSTABLE SEATS |
| 13A7 | TAIL GUNNER SEATS |
| 13A8 | EJECTION SEAT GUIDE RAILS AND TRACK ASSEMBLIES |
| 13A9 | COVERS |
| 13A9-2 | Canopy |
| 13A9-3 | Nose cap |
| 13A9-4 | Blade |
| 13A9-5 | Pod |
| 13A9-6 | Engine Shield |
| 13A10 | GUARDS AND SEALS |
| 13A10-2 | Engine |
| 13A10-3 | Escape Capsule System |
| 13A11 | ASTRODOMES |
| 13A12 | DISCONNECT ASSEMBLIES |
| 13A13 | VALVES |
| 13A14 | DEVICES |
| 13A15 | CONTAINERS |
| 13A16 | HEADREST ASSEMBLIES |
| 13A17 | STABILIZERS |
| 13A18 | STRAP ASSEMBLIES |
| 13A19 | SLIDE ASSEMBLIES |
| 13A20 | PLUMBING FIXTURES |
| 13A21 | SENSORS |
| 13A22 | COMPACTORS |
| 13A23 | TABLES |
| 13B | IN-FLIGHT FEEDING EQUIPMENT |
| 13B1 | FOOD WARMING OVENS |
| 13B2 | FOOD STORAGE UNITS |
| 13B3 | TEMPERATURE CONTROL REGULATORS |
| 13B4 | BUFFETS |
| 13B5 | REFRIGERATORS |
| 13B6 | BEVERAGE UNITS |
| 13B7 | WATER COOLERS |
| 13B8 | MOTORS AND PUMPS |
| 13C | CARGO LOADING, TIEDOWN, AND AERIAL DELIVERY EQUIPMENT |
| 13C1 | HOISTS AND CRANES |
| 13C2 | CARGO TIEDOWN DEVICES |
| 13C3 | AERIAL DELIVERY SYSTEMS |
| 13C3-2 | Monorail |
| 13C3-3 | Center Guide Rail |
| 13C3-4 | Dual Rail |
| 13C4 | CONTAINERS, AERIAL-DELIVERY |
| 13C5 | PARACHUTES, AERIAL-DELIVERY |
| 13C6 | PARACHUTES AND CARGO DISCHARGERS |
| 13C7 | AERIAL DELIVERY KITS |
| 13C7-1 | Rigging |
| 13C7-2 | Truck       |
| 13C7-3 | Trailer     |
| 13C7-4 | Motor       |
| 13C7-5 | Welding Set |
| 13C7-6 | Tractor     |
| 13C7-7 | Water Purification Equipment |
| 13C7-8 | Electric Tool Set |
| 13C7-9 | Shelter     |
| 13C7-10 | Infantry Weapon |
| 13C7-11 | Bridge      |
| 13C7-12 | Rocket System |
| 13C7-13 | Reeling Machine |
| 13C7-14 | Radio Set   |
| 13C7-15 | Air Compressor |
| 13C7-16 | Weapon Carrier |
| 13C7-17 | Water Tank  |
| 13C7-18 | Ammunition |
| 13C7-19 | Rations, Petroleum, Oil and Lubricant |
| 13C7-20 | Spat Gun    |
| 13C7-21 | Rotary Tiller |
| 13C7-22 | Missile, Rocket |
| 13C7-23 | Beacon Light |
| 13C7-24 | Crane       |
| 13C7-25 | Ambulance   |
| 13C7-26 | Road Roller |
| 13C7-27 | Scraper, Grader |
| 13C7-28 | Boat        |
| 13C7-29 | Wrecker     |
| 13C7-30 | Army Aircraft (Use 13C7-51) |
| 13C7-31 | Bucket Loader |
| 13C7-32 | Rocket Launcher, Platform |
| 13C7-33 | Mixer       |
| 13C7-34 | Medical Supply |
| 13C7-35 | Warhead     |
| 13C7-36 | Instrument  |
| 13C7-37 | Container   |
| 13C7-38 | Transporter |
| 13C7-39 | Bulk Materiel |
| 13C7-40 | Generator Set |
| 13C7-41 | Bath Unit   |
| 13C7-42 | Anti-Tank Weapon |
| 13C7-43 | Test Set    |
| 13C7-44 | Amp Kit     |
| 13C7-45 | M-55 Rocket (Use 13C7-22) |
| 13C7-46 | M-66 Rocket (Use 13C7-22) |
| 13C7-47 | Atomic Weapon |
| 13C7-48 | Radar Set   |
13C7-49  Miscellaneous Air Drop
13C7-50  Airfield Repair Kit
13C7-51  Army Aircraft
13C7-52  Platform
13C7-53  Teletypewriter
13C7-54  Forklift
13C7-55  Motorcycle
13C8    AERIAL PICK UP SYSTEMS
13C9    CARGO HOOKS
13C10   UNLOADING KITS
13C11   REELS
13C12   WEIGHT AND BALANCE EQUIPMENT
13C13   ACTUATORS
13D    RECOVERY EQUIPMENT
13D1   SPACE VEHICLES
13D2   AIR-TO-AIR RECOVERY EQUIPMENT
13D3   GROUND-TO-AIR RECOVERY EQUIPMENT
13F    AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT
13F1   FIRE DETECTOR SYSTEMS
13F1-2  Fusible Alloy Detector
13F1-3  Photoelectric
13F1-4  Thermocouple
13F1-5  Probe Detector
13F1-6  Dual Loop Thermistor
13F2   SMOKE DETECTORS
13F3   FIXED EXTINGUISHERS
13F3-2  Carbon Dioxide
13F3-3  Methyl Bromide
13F3-4  Bromochloromethane
13F3-5  Carbon Tetrachloride
13F3-6  Water
13F3-7  Bromotrifluoromethane (Halon 1301)
13F4   PORTABLE EXTINGUISHERS
13F4-2  Carbon Dioxide
13F4-3  Methyl Bromide
13F4-4  Bromochloromethane
13F4-5  Carbon Tetrachloride
13F4-6  Water
13F5   CONTROL UNITS
13F6   CONTAINERS, FIRE EXTINGUISHER BOTTLES
13F7   VALVES
13F8   RECEPTACLES
13F9   PANELS
13F10  DISCS
13F11  SOLENOIDS
13F12  REGULATORS
13F13  PROBE ASSEMBLIES
CHAPTER 17
CATEGORY 14 - DECELERATION DEVICES, PERSONAL AND SURVIVAL EQUIPMENT

17.1 GENERAL.

17.1.1 Category 14 contains three systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 14 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 17.2.

17.1.2 TO data pertaining to more than one system is numbered in the category general series.

17.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

17.2 NUMBERING PATTERNS.

17.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

17.2.1.1 Part one is always the numeric 14 identifying Category 14.

17.2.1.2 Part two is an alpha character identifying one of the three systems, i.e., D - deceleration devices; P - personal equipment; and S - survival equipment.

17.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 17.4.

17.2.2 GROUP TWO. TO numbering patterns in Category 14 use both three and four groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

17.2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific components.

17.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the specific equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

17.2.3 GROUP THREE.

17.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 14:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions

17.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 14:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
17.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

17.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 17.2.3.1, above.

17.3 EXAMPLES OF CATEGORY 14 NUMBERING PATTERNS.

17.3.1 Inspection, maintenance and packing instructions for USAF personnel parachute, PN 811058-401:

14D1-2-1-106
14 Category 14
D Deceleration Devices
1 Parachute Series
2 Personnel Subseries
1 Represents PN 811058-401
106 Number Reserved for Inspection Requirements

17.3.2 Operations, service and repair instructions for a high altitude helmet, type MA-2:

14P3-4-21
14 Category 14
P Personal Equipment
3 Clothing Series
4 Represents Helmet Type MA-2
21 Number Reserved for Operating Instructions

17.3.3 Maintenance manual for seven man life raft, PN D23810-103:

14S3-6-2-2
14 Category 14
S Survival Equipment
3 Life Raft Series
6 Seven Man Series
2 Represents PN D23810-103
2 Number Reserved for Maintenance Instructions

17.4 CATEGORY 14 NUMBERING SERIES.

14 DECELERATION DEVICES, PERSONAL AND SURVIVAL EQUIPMENT
14D DECELERATION DEVICES
14D1 PARACHUTES
14D1-2 Personnel
14D1-3 Drag
14D1-4 Missile Component
14D2 AUTOMATIC RELEASE PARACHUTES
14D3 RECOVERY PARACHUTES
14D4 CARGO
14P PERSONAL EQUIPMENT
14P1 BAGS
14P2 BLANKETS
14P3  CLOTHING
14P3-2  Boots
14P3-3  Gloves
14P3-4  Helmet
14P3-5  Suit, Anti-Exposure
14P3-6  Suit, Pneumatic
14P3-7  Suit and Accessories, Heated
14P3-8  Suit, Flying Nonheated
14P3-9  Sun Glasses
14P3-10  Flying Jackets
14P3-11  Protective
14P3-12  Support Pads
14P4  MASKS, GAS
14P5  RESPIRATORS
14P6  ARMOR
14S  SURVIVAL EQUIPMENT
14S1  KITS, EMERGENCY
14S2  PREServers, (LIFE JACKETS)
14S2-2  Vest, Inflated
14S2-3  Underarm
14S2-4  Infant Floating Cot
14S3  RAFTS, LIFE
14S3-2  One Man
14S3-3  Four and Six Man
14S3-4  20 Man
14S3-5  25 Man
14S3-6  Seven Man
14S3-7  46 Man
14S3-8  12 Man
14S4  REPELLANTS-OINTMENTS
14S5  BREATHING UNITS
14S6  RESCUE SEATS
14S7  CONTAINERS (FOOD)
14S8  FLOTATION ASSEMBLIES (BAG)
14S9  SKYANCHORS (HOOKS)
14S10  LIGHTS
14S11  PUMPS
CHAPTER 18
CATEGORY 15 - AIRCRAFT AND MISSILE TEMPERATURE CONTROL,
PRESSURIZING, AIR-CONDITIONING, HEATING, ICE ELIMINATING AND
OXYGEN EQUIPMENT

18.1 GENERAL.

18.1.1 Category 15 contains five systems. These systems are divided into equipment series and most of the systems are
further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 15 use both three
and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 18.2.

18.1.2 TO data pertaining to more than one system is numbered in the category general series.

18.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

18.2 NUMBERING PATTERNS.

18.2.1 GROUP ONE. This group has three parts which identify the category, system, and equipment series within a system.

18.2.1.1 Part one is always the numeric 15 identifying Category 15.

18.2.1.2 Part two is an alpha character identifying one of five systems, i.e., A - air conditioning and pressurizing equipment;
E - ice eliminating equipment; H - cabin heating equipment; M - missile temperature control equipment; and X - aircraft
oxygen systems and equipment.

18.2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO
numbering series are outlined in paragraph 18.4.

18.2.2 GROUP TWO. TO numbering patterns in Category 15 use both three and four basic groups; therefore, the identifiers
in group two are not constant. The following describes both numbering patterns:

18.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing
the model, type or PN assigned to a specific component.

18.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been
further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric
characters and the model, type or PN is identified in group three.

18.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is
used in all categories.

18.2.3.1 If the TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a
complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 15:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests
18.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 15:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

18.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to a specific component.

18.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 18.2.3.1, above.

18.3 EXAMPLES OF CATEGORY 15 NUMBERING PATTERNS.

18.3.1 Overhaul instructions for an aircraft cabin air pressure regulator, PN 102166-1:

15A1-4-13-3

15 - Category 15
A - Air-Conditioning and Pressurizing Equipment
1 - Regulator Series
4 - Air Pressure Regulator Subseries
13 - Represents PN 102166-1
3 - Number Reserved for Overhaul Instructions

18.3.2 An illustrated parts breakdown for a temperature control panel, PN A14A9718:

15E3-2-17-4

15 - Category 15
E - Ice Eliminating Equipment
3 - Control Series
2 - Electric Control Subseries
17 - Represents PN A14A9718
4 - Number Reserved for Illustrated Parts Breakdown

18.3.3 Overhaul instructions with parts breakdown for an oxygen breathing mask assembly, PN 249-350:

15X5-4-5-3

15 - Category 15
X - Aircraft Oxygen Systems and Equipment
5 - Oxygen Mask Series
4 - Pressure Demand Subseries
5 - Represents PN 249-350
3 - Number Reserved for Overhaul Instructions

18.4 CATEGORY 15 NUMBERING SERIES.

15 - AIRCRAFT AND MISSILE TEMPERATURE CONTROL, PRESSURIZING, AIR-CONDITIONING, HEATING, ICE ELIMINATING, AND OXYGEN EQUIPMENT
15A - AIR CONDITIONING AND PRESSURIZING EQUIPMENT
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15A10-2  Air-Conditioning Package Unit
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15A13   EJECTORS
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15A15   VENTURI TUBES
15A16   COMPRESSORS
15A17   ABSORBERS
15A18   DEHUMIDIFIERS
15A19   TIRE INFLATION UNITS
15A20   INDICATORS
15A21   AIR OUTLETS
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15M2 VALVES
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15M4 FANS AND BLOWERS
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15X2-3 25-Liter Capacity
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15X3  GAUGES, OXYGEN
15X3-2  Gaseous
15X3-2-2  Low Pressure
15X3-2-3  High Pressure
15X3-3  Liquid
15X4  INDICATORS
15X4-2  Gaseous Oxygen
15X4-3  Liquid Oxygen
15X4-4  Oxygen Deficiency
15X4-5  Pressure
15X5  MASKS, OXYGEN
15X5-2  Continuous Flow
15X5-3  Demand
15X5-4  Pressure Demand
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15X8-3  High Pressure
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15X8-5  Filler
15X8-6  Liquid, Buildup, Vent
15X8-7  Regulating
15X8-8  Filter
15X8-9  Check
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CHAPTER 19
CATEGORY 16 - AIRBORNE MECHANICAL EQUIPMENT

19.1  GENERAL.

19.1.1 Category 16 contains seven mechanical systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 16 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 19.2.

19.1.2 TO data pertaining to more than one system is numbered in the category general series.

19.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

19.2  NUMBERING PATTERNS.

19.2.1 GROUP ONE. This group has three parts identifying the category, system, and the equipment series within the system.

19.2.1.1 Part one is always the numeric 16 identifying Category 16.

19.2.1.2 Part two is an alpha character identifying the mechanical systems, i.e., A - actuators; C - control units; G - gear box, drive and screwjack assemblies; K - release mechanisms; L - lock and latching mechanisms; R - regulating mechanisms; and W - structural components. Associated equipment for these systems are identified by adding the alpha A immediately following the mechanical system identifier, e.g., GA.

19.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 19.4.

19.2.2 GROUP TWO. TO numbering patterns in Category 16 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

19.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

19.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

19.2.3 GROUP THREE.

19.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 16:

- 1  Operating Instructions
- 2  Service or Maintenance Manuals
- 3  Depot Maintenance or Overhaul Instructions
- 4  Illustrated Parts Breakdown
- 7  Installation Instructions

19.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 16:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards
19.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

19.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 19.2.3.1, above.

19.3 **EXAMPLES OF CATEGORY 16 NUMBERING PATTERNS.**

19.3.1 A maintenance manual for a control stick grip, PN 28000-7:

16C1-27-12-12

16   Category 16

1    Control Unit Series
27   Control Stick Subseries
12   Represents PN 28000-7
12   Number Reserved for Maintenance Instructions

19.3.2 Overhaul instructions with illustrated parts breakdown for ball nut and screw assembly, PN B-1142:

16G3-2-32-3

16   Category 16
G    Mechanical Gear Box, Drive and Screwjack Assemblies
3    Screwjack Mechanism Series
2    Screwjack Assembly Subseries
32   Represents PN B-1142
3    Number Reserved for Overhaul Instructions

19.3.3 Overhaul instructions for missile pylon package, PN 223-68327:

16W6-18-3

16   Category 16
W    Structural Components
6    Pylon Assembly Series
18   Represents PN 223-68327
3    Number Reserved for Overhaul Instructions

19.4 **CATEGORY 16 NUMBERING SERIES.**

16   AIRBORNE MECHANICAL EQUIPMENT
16A  ACTUATING MECHANISMS
16A1 ACTUATORS
16A1-2 Bomb Bay Door
16A1-3 Dive Brake
16A1-4 Hoist Traversing
16A1-5 Linear
16A1-6 Main Landing Gear
16A1-7 Nacelle Cooling Door
16A1-8 Nose Gear
16A1-9 Rocket Door
16A1-10 Rudder Control
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<td>Drag Chute Door</td>
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<td>16C</td>
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<td>16C1</td>
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<td>16C1-2</td>
<td>Tab, Aileron</td>
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<td>16C1-4</td>
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<td>Emergency Hydraulic Power</td>
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<td>16L1-10</td>
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<td>16L1-11</td>
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16R1 REGULATORS
16R1-2 Cable Tension
16R1-3 Quadrant
16R1-4 Canopy Seal
16R1-5 Control Box
16R1-6 Linkage Assembly
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16W1 WINDOW ASSEMBLIES
16W1-2 Window
16W2 CANOPY ASSEMBLIES
16W3 DOOR ASSEMBLIES
16W4 CAPSULE ASSEMBLIES
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16W6 PYLON ASSEMBLIES
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16W10 COUNTERBALANCE ASSEMBLIES
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16W12 SUPPORT ASSEMBLIES
16W13 SNUBBERS
16W14 DUCT ASSEMBLIES
16W15 RAIL ASSEMBLIES
16W16 CASE AND CARTRIDGE ASSEMBLIES
16W17 DASHPOT ASSEMBLIES
16W18 COUNTERPOISE ASSEMBLIES
16W19 ENGINE MOUNT ASSEMBLIES
16W20 FLARE BOXES
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16W22 PIN ASSEMBLIES
16W23 SEAL ASSEMBLIES
16W24 REVERSER ASSEMBLIES
16W25 BEARINGS
16W26 RACK AND MOUNT ASSEMBLIES
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16W28 EXHAUST VALVES
16W29 TUBES
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16W32 LEADING EDGE ASSEMBLIES (WING)
16W33 ARRESTING GEAR ASSEMBLIES
16W34 TANK ASSEMBLIES
16W35 ADAPTER ASSEMBLIES
16W36 LINERS
16W37 COVERS
16W38 CONTROL COLUMN ASSEMBLIES
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<td>16W40</td>
<td>NOSE ASSEMBLIES</td>
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<td>16W41</td>
<td>PODS</td>
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<td>16W42</td>
<td>GLARESHIELD ASSEMBLIES</td>
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<td>16W43</td>
<td>TAILPIPE ASSEMBLIES</td>
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CHAPTER 20
CATEGORY 21 - GUIDED MISSILES

20.1 GENERAL.

20.1.1 Technical data numbered in the missile category includes operations manuals, organization (on site) maintenance instructions, inspection requirements, overhaul instructions and specified procedures relating to missiles. TO numbers incorporate the missile type or mission, model and production series, which groups types of missile data accordingly.

20.1.2 Technical information pertaining to more than one type of missile is numbered in the category general series. Since the data pertains to more than one type of missile, TO numbers assigned in the category general series do not reflect the missile type, model or production series. A manual entitled, “Plating Procedures for the AIM-4 and the LGM-30” would be numbered as follows:

21M-1-107
21 Category 21
M Missile
1 Category General Series
107 Serialized Manual Number

20.1.3 TOs pertaining to more than one model of a specific type of missile are numbered in the general series of that missile type. An operational manual relating to the AIM-4 and the AIM-26 would be numbered as follows:

21M-AIM-101
21 Category 21
M Missile
AIM Air Launched, Intercept Aerial, Missile
101 Serialized Manual Number

20.1.4 Technical information pertaining to more than one production series of a missile model is numbered in the first production series. A field checkout instruction for the AIM-4A, AIM-4D and AIM-4G would be numbered in the “A” production series.

20.1.5 TOs for earlier guided missiles are numbered as described in paragraph 20.2 and paragraph 20.3. TOs for the M-X and later guided missile systems are numbered as described in paragraph 20.4.

20.2 NUMBERING PATTERNS.

20.2.1 GROUP ONE. In Category 21, the first group has only two parts, identifying the category, and a designator indicating missiles.

20.2.1.1 Part one is always the numeric 21 identifying Category 21.

20.2.1.2 Part two is always the alpha M identifying missiles.

20.2.2 GROUP TWO. This group can have either two or three parts. If two parts are used, the missile type and model only are identified. This normally means the TO contains general information pertaining to all production series of a specific missile type and model. In most cases, three parts are used in group three, indicating the missile type, model and production series.

20.2.2.1 Part one is composed of three alpha characters. The first alpha character identifies the missile launch environment; the second indicates the basic mission of the missile; and the third describes the missile vehicle type. The following listing outlines these alpha designators as established by AFI 16-401 Designated and Naming Defense Military Aerospace Vehicles:
LAUNCH ENVIRONMENT

A - Air  
B - Multiple  
C - Coffin  
F - Individual  
G - Runway  
H - Silo Stored  
L - Silo Launched  
M - Mobile  
P - Soft Pad  
R - Ship  
U - Underwater

BASIC MISSION

D - Decoy  
E - Special Electronic Installation  
G - Surface Attack  
I - Intercept Aerial  
Q - Drone  
T - Training  
U - Underwater Attack  
W - Weather

VEHICLE TYPE

M - Guided Missile/Drone

20.2.2.2 Part two contains one or more numeric characters identifying the missile model number.

20.2.2.3 Part three is an alpha character indicating the missile production series. The first production series of a particular missile is designated with the alpha A, the second with the alpha B and continuing through the alphabet as required.

20.2.2.4 It is possible that a fourth part may be required for group two in order to identify a missile production configuration. If this becomes a requirement, the production configuration identifier (PCI) will be an alpha character immediately following the production series identifier. The alpha A is reserved to indicate USAF missile configurations and the remainder of the alphabet will be used for those configurations produced for foreign countries. Although the alpha A is reserved to identify USAF missile configurations, no specific alpha character will be associated with or reserved for missile configurations for a particular foreign country.

20.2.3 GROUP THREE. In Category 21, the third group primarily identifies the type of inspection, instruction, or procedure. This can be accomplished by either one or two parts.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

20.2.3.1 Part one consists of one or more numeric characters reserved to indicate a specific type of TO (see Appendix C for a complete list of types of TOs). The following is a list of reserved numbers authorized for use in Category 21:

-01 List of Applicable Publications (LOAP)  
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Organizational Maintenance Manuals
-3 Structural Repair and Overhaul Manuals
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests
-10 Engine Buildup Manuals
-12 Special Maintenance Manuals
-16 Warhead Loading
-17 Storage of Missiles
-18 Field Maintenance and Materials Manuals
-21 Missile Inventory Record Master Guides
-22 Control Manuals
-23 Corrosion Control Manuals
-26 Non-Destructive Inspection Manuals
-27 Calibration and Measurement Manuals
-33 Contractor Maintenance Data

20.2.3.2 Part two. In some instances some of the reserved numbers listed in part one, above, are followed by one or more alpha characters indicating a series of checklists, workcards, supplements, and other media. The following lists the alpha characters authorized for use in Category 21:

- CL - Checklist
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards
- WS - Worksheets

20.2.4 GROUP FOUR. This group consists of one or more numeric characters identifying sections of a sectionalized manual or indicating the series number of specific TO data in a series of inspections, supplements, or functions.

20.2.5 Group Five. When required, this group contains one or more numeric characters indicating a further sectionalization or serialization of a TO.

20.3 EXAMPLES OF CATEGORY 21 NUMBERING PATTERNS.

20.3.1 A work unit code manual for the AIM-9E missile:

21M-AIM9E-06
21 Category 21
M Missiles
AIM Air Intercept Missile
9 Missile Model Number
E Production Series
06 Number Reserved for Work Unit Code Manual

20.3.2 Inspection requirements for the AGM-12C missile:
20.3.3 Structural repair manual for the LGM-30A missile:

21M-LGM30A-3
21  Category 21
M   Missiles
LGM Launched Ground Missiles
30  Missile Model Number
A   Product Series
3   Number Reserved for Structural Repair Manuals

20.4 SHORTENED NUMBERING FOR MISSILE TECHNICAL ORDER MANUALS.

20.4.1 To eliminate redundancy, TO numbers for future missiles will be shortened by eliminating the M in category designator 21M and by eliminating the M in model designators such as LGM. These codes are redundant, since only missile TOs appear in Category 21.

20.4.2 Using shortened TO numbers will be effective with the LGM-118A and future missile designs. Use of the former numbering practice will continue for earlier designated missiles. Existing TOs in Category 21 will not be renumbered for the sole purpose of shortening the TO numbers.

20.4.3 The following is an example of this method applied to an organizational maintenance instruction for launch facility and launch control facility environmental control system for the LGM-118A missile:

21-LG118A-2-7-4
21  Identifies Missile Category
L   Silo Launch Environment
G   Surface Attack Mission
118 Design Number
A   Design Series
2   Maintenance Manual
7   Launch Facility and Launch Control Facility Environmental Control System
4   Designates Specific Installation
CHAPTER 21
CATEGORY 22 - AEROSPACE VEHICLES

21.1 GENERAL.

21.1.1 TO data numbered in this category identifies operational, organizational maintenance, inspection and procedures related to aerospace vehicles and systems. Aerospace vehicles are either manned or unmanned flight vehicles operating in the atmosphere or space environment. TO numbers incorporate the aerospace vehicle type and model or the aerospace system which identifies family groups according to mission or function.

21.1.2 Information pertaining to more than one aerospace vehicle is numbered in the category general series. Numbers assigned in this section do not contain the aerospace vehicle type and model in the TO number.

21.1.3 TOs pertaining to only one type of aerospace vehicle but containing information relative to more than one vehicle model within that type, will be numbered in the general series of the aerospace vehicle type.

21.1.4 TO data pertaining to more than one production series of an aerospace vehicle model will be numbered in the first series, i.e., operational data applicable to the MER-6A, MER-6B and MER-6C would be numbered as 22R-MER6A-1.

21.2 NUMBERING PATTERNS.

21.2.1 GROUP ONE. With the exception of the Category 22 general series TO numbers, the first group of the TO numbering pattern for aerospace TOs consists of a numeric 22, denoting Category 22, and an alpha character identifying one of five aerospace systems, i.e., R - rockets; G - boosters; J - spacecraft; P - probes; and S - satellites.

21.2.2 GROUP TWO. The second group of the TO number contains the aerospace vehicle type, model and production series; or an L system which is used in the aerospace program.

21.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

21.2.3.1 In this category the third group of the numbering pattern identifies the type of TOs by using a number reserved for each type (see Appendix C for a complete list of types of TOs). The following is a list of reserved numbers authorized for Category 22:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Maintenance Manuals
-3 Structural Repair Instructions
-4 Illustrated Parts Breakdown
-5 Weight and Balance Manuals
-6 Inspection Requirements
-8 Test Procedures, Checkout Manuals, or Programmed Tests
-17 Storage of Aerospace Vehicles
-18 Field Maintenance of Material

21.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 22:
21.3 **EXAMPLES OF CATEGORY 22 NUMBERING PATTERNS.**

21.3.1 An operational manual for the MER-6A aerospace rocket:

22R-MER6A-1

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<td>R</td>
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<td>MER</td>
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<tr>
<td>6</td>
<td>Rocket Model Number</td>
</tr>
<tr>
<td>A</td>
<td>Production Series A</td>
</tr>
<tr>
<td>1</td>
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21.3.2 An illustrated parts breakdown for the 494L system used in the aerospace program:

22R-494L-4

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</tr>
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<td>R</td>
<td>Rockets</td>
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<tr>
<td>494L</td>
<td>L System identification</td>
</tr>
<tr>
<td>4</td>
<td>Number Reserved for Illustrated Parts Breakdown</td>
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</table>
CHAPTER 22
CATEGORY 31 - GROUND ELECTRONIC EQUIPMENT

22.1 GENERAL.

22.1.1 Much of the equipment covered by TOs in this category is identified under the Joint Electronics Type Designation System (JETDS). The JETDS, which was formerly known as the AN Nomenclature System, is described in MIL-STD-196.

22.1.2 Category 31 contains seven primary ground electronic equipment systems. These systems are divided into equipment series; some are further divided into equipment subsersies within the equipment series. TO numbers in Category 31 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 22.2.

22.1.3 TO data pertaining to more than one system is numbered in the category general series.

22.1.4 Information relating to more than one equipment series is numbered in the system general series.

22.1.5 General TOs for JETDS equipment are described in paragraph 1.22.

22.2 NUMBERING PATTERNS.

22.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

22.2.1.1 Part one is always the numeric 31 identifying Category 31.

22.2.1.2 Part two is an alpha character identifying the electronic equipment system, i.e., M - meteorological equipment; P - radar equipment; R - radio equipment; S - special electronic equipment; W - wire fixed electronic equipment; X - missile ground operational equipment; and Z - systems and site equipment. Missile ground operational equipment is the only system in Category 31 that has associated equipment. Its associated equipment is identified by XA.

NOTE

Although numerous TOs are currently numbered in the 31X and 31XA series, these series will not be used for numbering new TOs. Future TOs for missile ground operational equipment will be numbered in appropriate functional equipment systems of Category 31.

22.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 22.4.

22.2.2 GROUP TWO. The several numbering patterns currently used in Category 31 are most conspicuous in the group two numbering configurations. Numbering patterns are as follows:

22.2.2.1 This paragraph covers numbering patterns for 31M, 31P, 31R, 31S and 31W systems. The numbering patterns use both three and four basic groups; therefore, the identifiers in group two are not constant.

22.2.2.1.1 If the equipment types are JETDS nomenclatured, three basic groups are used in the TO number. The numeric 2 followed immediately by an alphanemic JETDS nomenclature comprises group two.

22.2.2.1.2 If the equipment types are Signal Corps nomenclatured, three basic groups are used in the TO number. The numeric 3 followed immediately by an alphanemic Signal Corps nomenclature comprises group two.

22.2.2.1.3 If the equipment types are Air Force nomenclatured, three basic groups are used in the TO number. The numeric 5 followed immediately by an alphanemic AF nomenclature comprises group two.

22.2.2.1.4 If the equipment types are commercially nomenclatured (not JETDS, Signal Corps, or AF), four basic groups are used in the TO number. The numeric 4 is the only character in group two.

22.2.2.2 This paragraph covers numbering patterns for the 31X system which uses both three and four basic groups.

22.2.2.2.1 The numbering pattern for basic equipment TOs in the 31X System uses four basic groups. In this case one or more numeric characters in group two identify the equipment subsersies.
22.2.2.2 The numbering pattern for associated equipment TOs (indicator 31XA) uses only three basic groups. In this case one or more numeric characters in group two represent the model, type or PN assigned to specific equipment.

22.2.2.3 The numbering pattern for 31Z series TOs uses three basic groups. Group two, with one or more numeric characters, identifies AFCS (formerly GEEIA) Engineering-Installation Standards or a specific system, site, facility or special project. The type of TO is identified in group three as described in paragraph 22.2.3.1, below.

22.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

22.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 31:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Instructions
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-5 Command Manuals
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests
-9 Alignment Instructions

22.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 31:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

22.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment or components. When this occurs the specific type of TO is then identified in group four.

22.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 22.2.3.1.

22.3 EXAMPLES OF CATEGORY 31 NUMBERING PATTERNS.

22.3.1 Operating and maintenance instructions for timing and telephone set, type ML-110:

31M1-3ML110-1

31 Category 31
M Meteorological Equipment
1 Auxiliary Meteorological Equipment Series
3 Identifies Signal Corps Nomenclatured Items
ML110 Identifies Specific Signal Corps Nomenclatured Item
1 Number Reserved for Operating Instructions

22.3.2 Operating instructions with service instructions and illustrated parts breakdown for radio transmitter model TCS-4B:

31R2-4-153-1
31 Category 31
R Radio Equipment
2 Communication Series
4 Commercial Nomenclatured Items
153 Represents Model TCS-4B
1 Number Reserved for Operating Instructions

22.3.3 Operating and service instructions for a combat reporting center, type AN/TSQ-91:

31S1-2TSQ91-1
31 Category 31
S Special Electronic Equipment
1 Auxiliary Equipment Series
2 Identifies JETDS Nomenclatured Items
TSQ91 Identifies Specific JETDS Nomenclatured Item
1 Number Reserved for Operating Instructions

22.3.4 Illustrated parts breakdown for missile ground checkout equipment generator PN 55-11387:

31X2-9-16-4
31 Category 31
X Missile Ground Operational Equipment
2 Checkout Equipment Series
9 Generator Subseries
16 Represents PN 55-11387
4 Number Reserved for Illustrated Parts Breakdown

22.3.5 Service instructions for mobile single sideband high frequency medium power facility, communication central, type AN/TSC-40, facility 691:

31Z3-691-2
31 Category 31
Z Ground Defense Systems
3 Facility Publications Series
691 Identifies Facility 691
2 Number Reserved for Service Instructions

22.4 CATEGORY 31 NUMBERING SERIES.

31C1 CYBER
31C1-1 General
31C1-2 Fixed Based
31C1-2-2 Gateways
31C1-2-3 AFNet
31C1-2-4 Base Infrastructure
<p>| 31C1-2.5 | Voice |
| 31C1-3 | Tactical |
| 31C1-3-2 | Network Control Center-Deployed (NCC-D) |
| 31C1-3-3 | Integrated Communications Access Package (ICAP) |
| 31C1-3-4 | Satellite Communication (SATCOM) Terminals |
| 31C1-3-5 | Small Package Initial Communications Equipment (SPICE) |
| 31C1-4 | The Air Force Cyberspace Defense |
| 31C1-5 | Cyber Defense Analysis |
| 31C1-5-2 | Cisco |
| 31C1-5-3 | Fidelis |
| 31C1-5-4 | Power Edge |
| 31C1-6 | The Cyberspace Vulnerability Assessment/Hunter |
| 31C1-7 | The Cyber Command and Control Mission System |
| 31C1-8 | The Network Attack System |
| 31C1-9 | Cyberspace Security and Control System |
| 31C1-10 | Air Force Intranet Control |
| 31M | METEOROLOGICAL-ELECTRONIC EQUIPMENT |
| 31M-10 | AFCS Engineering - Installation (formerly GEEIA) Standards |
| 31M1 | AUXILIARY |
| 31M1-2 | JETDS Nomenclature |
| 31M1-3 | Signal Corps Nomenclature |
| 31M1-4 | Commercial Nomenclature |
| 31M1-5 | AF Nomenclature |
| 31M2 | BAROMETRIC |
| 31M2-2 | JETDS Nomenclature |
| 31M2-3 | Signal Corps Nomenclature |
| 31M3 | STATIONS |
| 31M3-2 | JETDS Nomenclature |
| 31M3-4 | Commercial Nomenclature |
| 31M3-5 | AF Nomenclature |
| 31M4 | TEMPERATURE AND HUMIDITY |
| 31M4-2 | JETDS Nomenclature |
| 31M4-3 | Signal Corps Nomenclature |
| 31M4-4 | Commercial Nomenclature |
| 31M5 | WIND DIRECTION AND VELOCITY |
| 31M5-2 | JETDS Nomenclature |
| 31M6 | CLOUD HEIGHT, DEPTH, AND DIRECTION |
| 31M6-2 | JETDS Nomenclature |
| 31M7 | TELEMETERING |
| 31M7-2 | JETDS Nomenclature |
| 31M7-4 | Commercial Nomenclature |
| 31N1 | NETWORKS |
| 31N1-1 | Network General |
| 31N1-2 | Network Management |
| 31N1-3 | Network Defense |
| 31N1-4 | Network Control Center |
| 31N1-5 | Wireless Networks |</p>
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31S3  RECORDING
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31S3-3  Signal Corps Nomenclature
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31W2  INSIDE PLANT
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31X MISSILE GROUND OPERATIONAL EQUIPMENT
31X1 COMMUNICATIONS
31X1-2 General
31X1-3 Public Address Set
31X1-4 Connecting Station
31X1-8 Telephone Set
31X1-10 Amplifier
31X1-11 Power Unit, Chassis, Relay
31X1-12 Headset
31X2 CHECKOUT
31X2-2 Checkout Assembly
31X2-3 Console
31X2-4 Panel
31X2-9 Generator
31X2-10 Control Unit
31X2-11 Power Supply
31X2-12 Counter
31X2-15 Selector
31X2-19 Receiver
31X2-20 Monitor
31X2-24 Simulator
31X2-26 Regulator
31X2-28 Meter, Measuring Equipment
31X2-29 Rectifier
31X2-30 Relay
31X2-32 Digital Unit
31X2-35 Switching Unit
31X2-36 Cable Unit
31X2-38 Amplifier Assembly
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31X2-56 Adapter Unit
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CHAPTER 23
CATEGORY 32 - STANDARD AND SPECIAL TOOLS

23.1 GENERAL.

23.1.1 Category 32 contains two types of tool systems. These systems are divided into equipment series and both of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 32 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 23.2.

23.1.2 TO data pertaining to more than one system is numbered in the category general series.

23.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

23.2 NUMBERING PATTERNS.

23.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

23.2.1.1 Part one is always the numeric 32, identifying Category 32.

23.2.1.2 Part two is an alpha character identifying the system, i.e., A - special tools and B - standard tools.

23.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 23.4.

23.2.2 GROUP TWO. TO numbering patterns in Category 32 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

23.2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific equipment.

23.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

23.2.3 GROUP THREE.

23.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 32:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-7 Installation Instructions

23.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 32:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

23.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.
23.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 23.2.3.1, above.

23.3 EXAMPLES OF CATEGORY 32 NUMBERING PATTERNS.

23.3.1 Operating instructions with parts breakdown for a borescope, model 120011-3:

32A2-9-1
32 Category 32
A Special Tools
2 Boresight Series
9 Represents Model 120011-3
1 Number Reserved for Operating Instructions

23.3.2 Operating and service instructions for an actuator repair tool kit, PN 7592417P1:

32A20-3-46-1
32 Category 32
A Special Tools
20 Kit Series
3 Tool Kit Subseries
46 Represents PN 7592417P1
1 Number Reserved for Operating Instructions

23.3.3 Operating instructions with illustrated parts breakdown for reversible impact wrench, model 7275:

32B14-4-18-1
32 Category 32
B Standard Tools
14 Wrench Series
4 Pneumatic Wrenches Subseries
18 Represents Model 7275
1 Number Reserved for Operating Instructions

23.4 CATEGORY 32 NUMBERING SERIES.

32 STANDARD AND SPECIAL TOOLS
32A SPECIAL TOOLS
32A1 BALANCERS
32A2 BORESIGHTS
32A3 SPLICERS
32A3-2 Cable
32A4 GUNS
32A4-2 Pressure
32A4-3 Spring Charging
32A4-4 Heat
32A5 WRENCHES
32A5-2 Torque
32A5-3 Plain
32A5-4 Extension
32A5-5 Special
32A5-6  Socket
32A5-7  Power Kit
32A6  FIXTURES
32A6-2  Heater Curing
32A6-3  Zeroing
32A6-4  Spreader
32A6-5  Initiator Simulator
32A6-6  Torque
32A6-7  Fairing Assembly
32A6-8  Adapter
32A6-9  Mold
32A6-10  Turnover
32A6-11  Rigging
32A6-12  Airseal Trimming
32A6-13  Cockpit Display
32A6-14  Power Control Linkage Assembly
32A6-15  Mounter, Demounter
32A6-16  Gluing
32A6-17  Drill
32A6-18  Clutch Run-In
32A6-19  Gauge
32A6-20  Locating, Attaching Points
32A6-21  Special Tool
32A6-22  Spoiler
32A6-23  Installer, Extractor
32A6-24  Shipping
32A7  SHARPENERS
32A7-2  Chain Saw
32A8  DIGGERS
32A8-2  Clay
32A9  TAMPERS
32A9-2  Backfill
32A9-3  Rams
32A10  BREAKERS
32A10-2  Paving
32A11  VIBRATORS
32A11-2  Concrete
32A12  LEVELING TOOLS
32A12-2  Telescopic
32A12-3  Line Level Indicator
32A12-4  Guidance System
32A12-5  Electronic
32A13  WELL DRILLERS
32A13-2  Gasoline Engine Driven
32A14  GRINDING DEVICES
32A14-2  Antenna
32A15  PROTRACTORS
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CHAPTER 24
CATEGORY 33 - TEST EQUIPMENT

24.1 GENERAL.

24.1.1 This category contains testers, test equipment and test interface equipment. Test procedures, test control and programmed test TOs are numbered with related equipment identified in the various airborne and ground component categories.

24.1.2 Category 33 contains five test equipment systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 33 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 24.2.

24.1.3 TO data pertaining to more than one system is numbered in the category general series.

24.1.4 Information relating to more than one equipment series within a system is numbered in the system general series.

24.2 NUMBERING PATTERNS.

24.2.1 GROUP ONE. This group has three parts that identify the category, system and equipment series within a system.

24.2.1.1 Part one is always the numeric 33 identifying Category 33.

24.2.1.2 Part two is an alpha character identifying one of five aerospace systems, i.e., A - general purpose test equipment; B - inspection test equipment; C - laboratory test equipment; D - special purpose test equipment; and K - calibration procedures. Only 33A and 33D systems have associated equipment TOs. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA or DA.

24.2.1.3 Part three contains one or more numeric characters that identify an equipment series within a system. The TO numbering series is outlined in paragraph 24.4.

24.2.2 GROUP TWO. TO numbering patterns in Category 33 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

24.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

24.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

24.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

24.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 33:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance Manuals
-4 Illustrated Parts Breakdown
-5 Depot Calibration
-6 Inspection Requirements
24.2.3.2 In some instances the reserved numbers are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 33:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- VS - Visual Slide
- WC - Workcards

24.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PNs assigned to specific components.

24.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 24.2.3.1, above.

24.3 EXAMPLES OF CATEGORY 33 NUMBERING PATTERNS.

24.3.1 Illustrated parts breakdown for a ballistics computer test set, PN T-101235:

33D5-78-4
33 Category 33
D Special Purpose Test Equipment
5 Armament Equipment Series
5 Computer Subseries
78 Represents PN T-101235
4 Number Reserved for Illustrated Parts Breakdown

24.3.2 Operating and maintenance instructions for a radar analyzer test set, type AN/APM-226:

33D7-23-1
33 Category 33
D Special Purpose Test Equipment
7 Electrical and Electronic Equipment Series
10 Analyzer Subseries
23 Represents Type AN/APM-226
1 Number Reserved for Operating Instructions

24.3.3 Operating instructions for associated equipment electron tube test set, type AN/USM-31:

33AA21-2-1
33 Category 33
A General Purpose Test Equipment
A Associated Equipment
21 Tube Analyzer Series
2 Represents Type AN/USM-31
1 Number Reserved for Operating Instructions
24.3.4 Illustrated parts breakdown for magnetic inspection unit, model H144-6AD-1:

33B2-11-14
33 Category 33
B Inspection Test Equipment
2 Electrical Series
11 Represents Model H144-6AD-1
14 Number Reserved for Illustrated Parts Breakdown

24.3.5 Service instructions for a dynamotor test set, type TS-414/U:

33A1-12-95-2
33 Category 33
A General Purpose Test Equipment
1 Electrical and Electronic Equipment Series
12 Voltage, Current and Resistance Measuring Equipment Subseries
95 Represents Type TS-414/U
2 Number Reserved for Service Instructions

24.4 CATEGORY 33 NUMBERING SERIES.

NOTE

Technical Orders containing calibration procedures for nonstocklisted precision measuring equipment are numbered in the 33L1 category, system and series. These TOs are not listed in TO Indexes and are not distributed through the Air Force TO system. Publication and distribution are accomplished by Aerospace Guidance and Metrology Center (MLMA), Newark AFS, OH 43057-5475.

33 TEST EQUIPMENT
33-1 AIRFRAME
33A GENERAL PURPOSE TEST EQUIPMENT
33A1 ELECTRICAL AND ELECTRONIC
33A1-2 Amplifying
33A1-3 Combination Group Test Set
33A1-4 Field Intensity Measuring
33A1-5 Frequency Measuring
33A1-6 Impedance, Standing Wave Ratio Measuring, Noise Meter
33A1-7 Power Measuring, Audio Indicating
33A1-8 Signal Generating
33A1-9 Temperature Measuring, Thermostat
33A1-10 Time Base Measuring, Counting
33A1-11 Vibration
33A1-12 Voltage, Current, Resistance Measuring, Multimeter
33A1-13 Wave Form Measuring, Recording
33A1-14 Interference Measuring
33A1-15 Electrical Circuit Check
33A1-16 Auxiliary Power Plant
33A2 HYDRAULIC
33A2-2 Test Stand
33A2-3 Gauge
33A2-4 Valve
33A2-5 Cylinder, Actuator
33A2-6 Analyzer
33A3 MECHANICAL
33A3-2 Analyzer
33A3-3 Cable Tensiometer
33A3-4 Torque Tester
33A3-5 Regulator
33A3-6 Unit
33A3-7 Actuator, Screw Jack Assembly
33A3-8 Anti-Skid
33A3-9 Test Stand
33A3-10 Tachometer Generator
33A3-11 Lock and Latch Assemblies
33A4 PNEUMATIC
33A4-2 Accumulator
33A4-3 Cabin Heater
33A4-4 Cabin Leakage
33A4-5 Regulator
33A4-6 Valve
33A4-7 Leak
33A4-8 Pressurization Kit
33A4-9 Pump
33A4-10 Pneumatic Dehydrator, Chemical Dryer
33A4-11 Air Filter
33A4-12 Components
33A5 VACUUM
33A5-2 Test Stand
33A6 LIQUIDS
33A6-2 Density
33A6-3 Flow Meter
33A6-4 Pressure
33A6-5 Temperature
33A6-6 Viscosity
33A6-7 Volume
33A6-8 Analyzer
33A7 GAS
33A7-2 Density
33A7-3 Flow Meter
33A7-4 Pressure
33A7-5 Temperature
33A7-6 Volume
33A7-7 Weight
33A7-8 Analyzer
33A7-9 Monitor
33A8 SOLIDS
33A8-2 Balancing
33A8-3  Hardness
33A8-4  Tensile Strength
33A8-5  Volume
33A8-6  Weight
33A9  TIME
33A9-2  Watch Recording Device
33A10  NON-AERONAUTICAL ENGINES
33AA  ASSOCIATED EQUIPMENT
33AA1  ADAPTERS
33AA2  PANELS
33AA3  BLOWERS
33AA4  BOXES
33AA4-2  Attenuator
33AA4-3  Jack
33AA4-4  Junction
33AA4-5  Relay
33AA4-6  Shunt
33AA5  CORDS OR CABLES
33AA6  DECADE RESISTORS
33AA7  DUMMY LOADS
33AA8  DYNAMOTORS
33AA9  AIR SUPPLIES
33AA10  CHAMBERS
33AA11  FREQUENCY CONVERTERS
33AA12  HEADSETS
33AA13  INVERTERS
33AA14  JACKS
33AA15  MICROPHONES
33AA16  PLUGS
33AA17  POWER SUPPLIES
33AA18  PROBES
33AA19  SHUNTS AND MULTIPLIERS
33AA20  TEST ANTENNAS
33AA21  TUBE ANALYZERS
33AA22  VOLTAGE DIVIDERS
33AA23  FITTINGS
33AA24  CAPSULES
33AA25  CHARGERS
33AA26  MOTORS
33AA27  METERS (Use 33A1)
33AA28  HORNS
33AA29  COMPRESSORS (TEST)
33AA30  PUMPS
33AA31  VALVES
33AA32  BLOWERS (See 33AA3)
33AA33  AMPLIFIERS (Use 33A1-2)
33AA34  SERVOSCOPY
33AA35 TIMERS
33AA36 ATTENUATORS
33AA37 ACCELERATORS
33AA38 SYNCHRONIZERS
33AA39 DIGITAL COMPONENTS
33AA40 COUPLERS
33AA41 CONVERTERS
33AA42 COMMUTATORS
33AA43 CALIBRATION UNITS
33AA44 KEYBOARDS
33AA45 INDICATORS
33AA46 TELEYTYPEWRITERS
33AA47 FREQUENCY DIVIDERS
33AA48 STORAGE DISPLAY UNITS
33AA49 TRANSLATORS
33AA50 TRANSPORT MAGNETIC TAPE
33AA51 RESISTORS
33B INSPECTION TEST EQUIPMENT
33B1 CHEMICAL
33B1-2 Penetrants
33B2 ELECTRICAL
33B3 ELECTRONIC
33B3-2 Reflectoscopes
33B3-3 X-Ray
33B4 OPTICAL
33B4-2 Inspectoscope, Borescope
33B4-3 Comparator
33B4-4 Binoculars
33B4-5 Theodolite
33B4-6 Collimator
33B4-7 Indicator
33B4-8 Calibration
33B4-9 Power Meter
33B4-10 Visual
33B4-11 Photometric
33B5 INSPECTION STANDS
33B6 X-RAY (Also see 33B3-3)
33B7 SHOP EQUIPMENT
33B8 LIGHTS AND LAMPS
33C LABORATORY TEST EQUIPMENT
33C1 ANALYTICAL AND LEAK DETECTORS
33C2 MEASUREMENT
33C3 TEMPERATURE
33C4 LABORATORY FIXTURES
33D SPECIAL PURPOSE TEST EQUIPMENT
33D1 AIRCRAFT AND MISCELLANEOUS GROUND SUPPORT EQUIPMENT
33D1-2 Bomber
33D1-3 Cargo
33D1-4 Fighter
33D1-5 Helicopter
33D1-6 Liaison
33D1-7 Trainer
33D1-8 Drone
33D2 AIRCRAFT ACCESSORIES (AIRBORNE)
33D2-2 Fire Detector System
33D2-3 Fuel System
33D2-4 Generator
33D2-5 Hydraulic System, Hydraulic Servo Actuator
33D2-6 Instrument, Crash Position Instrument
33D2-7 Landing Gear
33D2-8 Navigation System, Simulator Indexing
33D2-9 Oil System
33D2-10 Oxygen System
33D2-11 Propeller
33D2-12 Vacuum, Pneumatic System
33D2-13 Aerial Refueling
33D2-14 Cabin Heat, Vent
33D2-15 Weight and Balance System
33D2-16 De-Icing
33D2-17 Alternator
33D2-18 Air-Conditioning
33D2-19 Warning System
33D2-20 Explosion Extinguishing
33D2-21 Loader Assembly
33D2-22 Computer
33D2-23 Brake System
33D2-24 Helium Charging System
33D2-25 Recording System and Components
33D2-26 Assessment System and Components
33D2-27 Electrical System
33D2-28 Pressurization System
33D2-29 Variable Air Inlet System
33D2-30 Pod Assembly
33D2-31 Launch Gear Assembly
33D2-32 Starter
33D2-33 Augmenter System
33D2-34 Ejection System (Canopy)
33D2-35 Stabilization System
33D2-36 Hoist Assembly
33D2-37 Aerial Delivery System
33D2-38 Guidance System
33D2-39 Environmental Control System
33D2-40 Stall Prevention System
33D2-41 All Weather Landing System
33D2-42 Cargo Loading
33D2-43 Rescue and Survival
33D2-44 Radome System
33D2-45 Egress System
33D2-46 Head-Up Display Set
33D2-47 Atmospheric Research
33D3 AUTOMATIC FLIGHT CONTROL SYSTEMS (AIRBORNE)
33D3-2 Amplifier
33D3-3 Voltage, Current
33D3-4 Control Assembly, Yaw Damper
33D3-5 Electron Tube
33D3-6 Gyroscope
33D3-7 Power Supply
33D3-8 Servo
33D3-9 System, Yaw Damper
33D3-10 Table, (Rate, Speed, Variable, Rate Gyro)
33D3-11 Ejector
33D3-12 Linkage Assembly
33D3-13 Screwjack
33D3-14 Converter
33D3-15 Actuator
33D3-16 Reactor
33D3-17 Indicator
33D3-18 Spike Position
33D3-19 Autopilot (See 33D3-9 Also)
33D3-20 Valve
33D3-21 Accelerometer
33D3-22 Drive Assembly
33D3-23 Transducer
33D3-24 Computer
33D3-25 Adapter, Fixture
33D3-26 Card Assembly
33D3-27 Relay Unit
33D3-28 Regulator
33D3-29 Starter
33D3-30 Limiter
33D3-31 Leak Test
33D3-32 Shifter
33D3-33 Rack, Panel
33D3-34 Comparator
33D3-35 Coupler
33D3-36 Module
33D3-37 Electronic Plug-In
33D3-38 Transmitter
33D3-39 Altimeter
33D3-40 Switch
33D3-41 Sensor
33D4  AIRCRAFT ENGINES
33D4-2  Reciprocating
33D4-3  Rocket
33D4-4  Ramjet
33D4-5  Pulsejet
33D4-6  Turbojet
33D4-7  Turboprop
33D5  ARMAMENT
33D5-2  Amplifier
33D5-3  Cable, Circuit
33D5-4  Compass
33D5-5  Computer
33D5-6  Calibration
33D5-7  Gyroscope
33D5-8  Radar
33D5-9  Sight
33D5-10  Turret
33D5-11  Platform
33D5-12  System
33D5-13  Table
33D5-14  Voltage, Current
33D5-15  Test Bench
33D5-16  Control
33D5-17  Dehydrator
33D5-18  Timing, Sequencing
33D5-19  Cord (Do not use)
33D5-20  Simulator
33D5-21  Panel
33D5-22  Radalator, Evaluators
33D5-23  Power Supply
33D5-24  Components
33D5-25  Leak Test
33D5-26  Phototube
33D5-27  Astro Tracker
33D5-28  Spring Tester
33D5-29  Squib
33D5-30  Pylon
33D5-31  Boresight
33D5-32  Indicator
33D5-33  Sensor
33D5-34  Compensator
33D5-35  Converter
33D5-36  Switch
33D5-37  Repeater
33D5-38  Generator
33D5-39  Antenna
33D5-40  Detector
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33D9-98  Servo
33D9-99  Confidence Tester
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33D9-129  Module
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33D9-145  Receiver
33D9-146  Tuning Head
33D9-147  Ejector Rack
33D9-148  Common Missile Assembly
33D9-149  Missile Bit
33D9-150  Data Simulator
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33D11-2  Lie Detector
33D11-3  Stereoscopic
33D11-4  Test Chamber
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33D12-2  Current and Voltage
33D12-3  Recorder
33D12-4  Servo
33D12-5  System
33D12-6  Console
33D12-7  Tow Target
33D13  FLIGHT SIMULATORS
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33DA3  PANEL ASSEMBLIES
33DA4  EVALUATORS
33DA5  MONITORS
33DA6  INTERROGATORS
33DA7  ENCODERS
33DA8  GENERATORS
33DA9  CONTROLS
33DA10  RF LINK
33DA11  POWER SUPPLIES
33DA12  BOARDS, MULTI-MODULE
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33DA19  PROGRAMMERS
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33DA25  BOXES
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33DA29  AMPLIFIERS
33DA30 RECORDERS
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33DA32 DRAWERS
33DA33 CHAMBERS
33DA34 DELAY LINES
33DA35 CONSOLES
33DA36 VALVES
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33DA38 TRANSFORMERS AND TRANSmitters
33DA39 METERS AND MEASURING EQUIPMENT
33DA40 PUMPS
33DA41 ANALYZERS
33DA42 INDICATORS
33DA43 DRIVES AND GEAR ASSEMBLIES
33DA44 MEMORY UNITS
33DA45 SIMULATORS
33DA46 DETECTORS
33DA47 BLOWERS (See 35E)
33DA48 MODULATORS AND DEMODULATORS
33DA49 FILTERS
33DA50 DELAY CIRCUITS
33DA51 AIR CONDITIONING (See 35E)
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33DA55 RESOLVERS
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33DA57 SOURCE, RADIO-FREQUENCY
33DA58 CHECKERS
33DA59 BRIDGES
33DA60 PLUG-IN ASSEMBLIES
33DA61 COMPRESSORS (See 34Y1)
33DA62 CYLINDERS
33DA63 VOLTMETERS (Use 33A1-12)
33DA64 CIRCUIT BREAKERS
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33DA73 DIGITIZERS
33DA74 COMMUTATORS
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33DA76 ACCUMULATORS
33DA77 THERMOSTATS
33DA78 LEAK TRACING DEVICES (See 33D3-31 and 33D9-84)
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33DA90 RECTIFIERS
33DA91 GRAVITY TESTERS
33DA92 CALIBRATORS (See 33D7-45)
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33DA95 BRAKE ASSEMBLIES
33DA96 DOOR AND WINDOW ASSEMBLIES
33DA97 TRANSDUCERS AND FLOWSENSORS
33DA98 PROBES
33DA99 HORNS
33DA100 COUPLING ASSEMBLIES
33DA101 CLEANERS (Use 34Y2)
33DA102 COOLER UNITS
33DA103 CABLE ASSEMBLIES
33DA104 TERMINALS
33DA105 JUMPER ASSEMBLIES
33DA106 MANIFOLDS
33DA107 HOSE AND REELS
33DA108 PRINTERS
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33DA120 TELESCOPES
33DA121 CABINETS
33DA122 STANDARDS
33DA123 TEST KITS
33DA124  RIGGING KIT
33K  CALIBRATION PROCEDURES
33K1  PRECISION MEASURING EQUIPMENT (PME), VOLTAGE, CURRENT, AND POWER
33K2  PME, IMPEDANCE
33K3  PME, FREQUENCY
33K4  PME, MICROWAVE
33K5  PME, TEMPERATURE
33K6  PME, MECHANICAL
33K7  PME, RADIAC, AND SPECIAL WEAPONS
33K8  PME, ELECTRICAL
33K9  AUTOMATIC TEST SYSTEMS
CHAPTER 25
CATEGORY 34 - SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT

25.1 GENERAL.
25.1.1 Category 34 contains five shop machinery and shop support equipment systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 34 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 25.2.
25.1.2 TO data pertaining to more than one system is numbered in the category general series.
25.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

25.2 NUMBERING PATTERNS.

25.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.
25.2.1.1 Part one is always the numeric 34 identifying Category 34.
25.2.1.2 Part two is an alpha character identifying the shop machinery systems, i.e., C - cutting machines; F - finishing machines; G - forming machines; W - welding and heat treating equipment; and Y - shop support equipment.
25.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 25.4.

25.2.2 GROUP TWO. TO numbering patterns in Category 34 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:
25.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.
25.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

25.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

25.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 34:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
-8 Test Procedures, Checkout Manuals, or Programmed Tests

25.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 34:
25.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

25.2.4 GROUP FOUR. When the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 25.2.3.1, above.

25.3 EXAMPLES OF CATEGORY 34 NUMBERING PATTERNS.

25.3.1 Operating instructions with parts breakdown for a drill press, model 1024:

34C2-3-12-1
34 Category 34
C Cutting Machines
2 Metal Cutting Machine Series
3 Drill Press Subseries
12 Represents Model 1024
1 Number Reserved for Operating Instructions

25.3.2 Installation instructions for a honing machine, model 244:

34F2-3-13-7
34 Category 34
F Finishing Machines
2 Metal Finishing Series
3 Hone Subseries
13 Represents Model 244
7 Number Reserved for Installation Instructions

25.3.3 An overhaul instruction for a low-pressure air compressor, model MS11:

34Y1-132-3
34 Category 34
Y Shop Support Equipment
1 Air Compressor Series
132 Represents Model MS11
3 Number Reserved for Overhaul Instructions

25.4 CATEGORY 34 NUMBERING SERIES.

34 SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT
34C CUTTING MACHINES
34C1 LEATHER
34C2 METAL
34C2-2 Boring
34C2-3 Drill Press
34C2-4 Lathe
34C2-5 Milling
34C2-6 Planer
34C2-7 Punch Press
34C2-8 Saw
34C2-9 Shaper
34C2-10 Shear
34C2-11 Reamer Driver
34C2-12 Threader
34C2-13 Disintegarting
34C2-14 Drum
34C2-15 Routing
34C2-16 Centering
34C2-17 Keyseater
34C3 PAPER
34C3-2 Shredder
34C3-3 Drill
34C4 WOOD
34C4-2 Jointer and Mortiser
34C4-3 Lathe (Use 34C4-8)
34C4-4 Planer
34C4-5 Router
34C4-6 Saw
34C4-7 Shaper
34C4-8 Lathe
34C4-9 Boring
34C4-10 Milling
34F FINISHING MACHINES
34F1 GLASS
34F2 METAL
34F2-2 Grinder
34F2-3 Honing
34F2-4 Sharpener
34F2-5 Lapping
34F2-6 Electroplating
34F2-7 Vibratory
34F2-8 Gear Hobbing
34F3 WOOD
34F3-2 Floor
34F3-3 Sander
34F3-4 Surfacer
34G FORMING MACHINES
34G1 METAL
34G1-2 Brakes
34G1-3 Forger
34G1-4 Header
34G1-5 Press
34G1-6 Roll
34G1-7  Shaper
34G1-8  Grooving
34G1-9  Flaring
34G1-10 Bending
34G1-11 Coiler
34G1-12 Stamping
34G1-13 Sheet Metal
34G1-14 Wire
34G2  RUBBER AND PLASTICS
34W  WELDING AND HEAT TREATING EQUIPMENT
34W1  FURNACES, INCINERATORS
34W2  OVENS AND DEHYDRATORS
34W3  SOLDERING POTS
34W4  WELDERS
34W5  EXHAUSTERS
34W6  FORGES
34W7  SOLDERING IRON
34W8  REGULATORS
34W9  CHAMBERS
34Y  SHOP SUPPORT EQUIPMENT
34Y1  AIR COMPRESSORS, PUMPS
34Y2  CLEANERS
34Y3  DEGREASERS
34Y4  PAINT SPRAY EQUIPMENT
34Y4-2 Booth
34Y4-3 Sprayer
34Y4-4 Rejuvenator
34Y4-5 Spray Gun
34Y4-6 Paint Mixer
34Y5  PUMPS
34Y5-2 Water
34Y5-3 Vacuum
34Y5-4 Air
34Y5-5 Oil
34Y5-6 Hand
34Y5-7 Liquid
34Y6  RIVETING MACHINES
34Y7  SEWING MACHINES
34Y8  TANKS
34Y8-2 Dipping
34Y9  TIRE REPAIR EQUIPMENT
34Y9-2 Tire Spreader
34Y9-3 Vulcanizer
34Y9-4 Recapping Machine
34Y9-5 Tire Press
34Y9-6 Breaker
34Y9-7 Retreading Mold
34Y9-8  Safety Inflation Guard
34Y9-9  Reel
34Y10  WIRE MARKING MACHINES
34Y11  WRAPPING AND PACKAGING EQUIPMENT
34Y11-2  Dehydrator
34Y11-3  Nail Machine
34Y11-4  Sealer
34Y11-5  Stitcher
34Y11-6  Tying Machine
34Y11-7  Sprayer, Protective Coating
34Y12  UNIVERSAL VALVING MACHINES
34Y14  GAS TRANSFER AND STORAGE
34Y14-2  Carbon Dioxide
34Y14-3  Oxygen
34Y15  STILLs
34Y15-2  Solvent
34Y15-3  Water
34Y16  VACUUM PUMPS (Use 34Y5)
34Y17  LUBRICATING EQUIPMENT
34Y17-2  Grease Gun
34Y17-3  Oil Gun
34Y17-4  Lubricator
34Y17-5  Pump
34Y17-6  Oil Purification Unit
34Y17-7  Gun Assembly (See 34Y31)
34Y18  WATER SEPARATORS (FILTERS)
34Y19  MOTORS
34Y20  VALVES
34Y20-2  Solenoid Operated
34Y20-3  Safety
34Y20-4  Control
34Y21  ADAPTERS
34Y22  DIMPLING MACHINES
34Y23  CLAMPS
34Y23-2  Flanging
34Y24  DRYERS
34Y24-2  Sand
34Y25  VANS
34Y25-2  Telescoping
34Y25-3  Cabinet
34Y25-4  Maintenance Shop
34Y26  STANDS
34Y26-2  Engine Stand
34Y26-3  Axle
34Y27  MAGNETIZERS
34Y28  MOTOR GENERATORS
34Y29  STAPLERS
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<td>34Y35-2</td>
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<td>34Y37</td>
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CHAPTER 26
CATEGORY 35 - GROUND HANDLING, SUPPORT, AIR AND MISSILE BASE OPERATING EQUIPMENT

26.1 GENERAL.

26.1.1 Category 35 contains eight ground handling, support and operating systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 35 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 26.2.

26.1.2 TO data pertaining to more than one system is numbered in the category general series.

26.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

26.2 NUMBERING PATTERNS.

26.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

26.2.1.1 Part one is always the numeric 35 identifying category 35.

26.2.1.2 Part two is an alpha character identifying the ground handling, support or operating system, i.e., A - aircraft maintenance and inspection equipment; B - aircraft handling and weighing equipment; C - electric power supplies; D - loading and servicing equipment; E - air base utility equipment; G - aircraft ground support equipment; and M - missile erection and launching equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., AA, and CA.

26.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 26.4.

26.2.2 GROUP TWO. TO numbering patterns in Category 35 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns.

26.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

26.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

26.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

26.2.3.1 When a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 35:

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
26.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 35:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

26.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

26.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group either identifies specific types of TOs described in paragraph 26.2.3.1, or it identifies a sequence number when alpha characters were used in group three as described in paragraph 26.2.3.2. Sequence numbers are described in paragraph 1.9.2 through paragraph 1.9.6.

26.3 EXAMPLES OF CATEGORY 35 TO NUMBERING PATTERNS.

26.3.1 Operating instructions for a regulated power supply, model LP-410A-FM:

35C1-2-462-1

35 Category 35
C Electric Power Supplies
1 System Series
2 Electrical Subseries
462 Represents Model LP-410A-FM
1 Number Reserved for Operating Instructions

26.3.2 Illustrated parts breakdown for runway selector switch PN 3303760:

35F14-2-4

35 Category 35
F Field Lighting and Electrical Equipment
14 Switch Series
2 Represents PN 3303760
4 Number Reserved for Illustrated Parts Breakdown

26.3.3 An overhaul instruction for compressed oxygen cylinder trailer, type AF/M32R-3:

35D3-6-27-23

35 Category 35
D Loading and Servicing Equipment
3 Truck, Dolly, and Trailer Series
6 Servicing Truck and Trailer Subseries
27 Represents Type AF/M32R-3
23 Number Reserved for Overhaul Instructions
26.4 CATEGORY 35 NUMBERING SERIES.

35 GROUND HANDLING, SUPPORT, AIR, AND MISSILE BASE OPERATING EQUIPMENT

35A AIRCRAFT AND MISSILE MAINTENANCE AND INSPECTION EQUIPMENT

35A1 DOCKS

35A2 JACKS

35A2-2 Aircraft

35A2-3 Automotive

35A2-4 General Purpose

35A2-5 Special Purpose

35A3 LADDERS AND STAIRCASES

35A4 STANDS

35A4-2 Adjustable

35A4-3 Nonadjustable

35A4-4 Missile Platform

35A4-5 Missile Stand

35A4-6 Blacklight Inspection (Do not use)

35A4-7 Storage

35A4-8 Drain

35A5 JACKPADS

35A6 RACKS

35AA ASSOCIATED EQUIPMENT

35AA2 JACK COMPONENTS

35AA2-2 Cylinder

35AA2-3 Pump

35AA2-4 Valve

35AA3 (Not used)

35AA4 STAND COMPONENTS

35AA4-2 Valve

35AA4-3 Cable Assembly

35AA4-4 Pump

35AA4-5 Coupling

35AA4-6 Adapter

35B AIRCRAFT AND MISSILE HANDLING AND WEIGHING EQUIPMENT

35B1 GROUND LOCK ASSEMBLIES

35B2 WEIGHING EQUIPMENT

35B2-2 Aircraft

35B2-3 Vehicle

35B2-4 Missile

35B3 SCALES

35B3-2 Balance

35B3-3 Counting

35B3-4 Platform

35B4 STEERING BARS

35B5 TOWBARS

35B6 TURNTABLES
35B7 MISSILE STANDS (Use 35A4)
35B8 SKIDS
35B8-2 Portable
35B9 CHOCK ASSEMBLIES
35B10 PRY BARS
35B10-2 Wheeled
35C ELECTRIC POWER SUPPLIES
35C1 SYSTEMS
35C1-2 Electrical - UPS
35C1-3 Combination
35C1-4 Converter
35C1-5 Voltage Regulator
35C1-6 Inverter
35C1-7 Transfer Panel
35C2 GENERATORS
35C2-2 Electric Motor Driven
35C2-3 Engine Driven
35C2-4 Missile Generator Sets (Use 35C2-3)
35C3 RECTIFIERS
35C3-2 Battery Charger
35C3-3 Power Supply
35C3-4 Magneto Charger
35C4 TURBOCHARGERS
35CA ASSOCIATED EQUIPMENT
35CA1 BOXES
35CA1-2 Control
35CA1-3 Junction
35CA2 CABINETS
35CA2-2 Distribution
35CA3 CABLES AND CABLE SYSTEMS
35CA4 CHARGERS
35CA4-2 Magnetic
35CA5 FAN ASSEMBLIES
35CA6 PANELS
35CA7 CONTROLS, OVER-VOLTAGE PROTECTION MODULES
35CA8 PUMPS
35CA9 CONTACTORS (Do not use)
35CA10 RELAYS
35CA11 DRIVES AND GEAR MOTORS
35CA12 VALVES
35CA13 CLUTCH ASSEMBLIES
35CA14 FILTERS
35CA15 HYDRAULIC MOTORS
35CA16 OIL COOLERS
35CA17 AXLE ASSEMBLIES
35CA18 MOUNTS
35CA19 SPEED REDUCERS
35CA20 STARTERS
35CA21 GOVERNORS
35CA22 PLUGS
35CA23 TURBOCHARGERS
35CA24 ALTERNATORS
35CA25 TRANSDUCERS
35CA26 STABILIZERS
35CA27 OSCILLATORS
35CA28 ADAPTERS
35CA29 MONITORS
35D AIRCRAFT AND MISSILE LOADING AND SERVICING EQUIPMENT
35D1 CABLEWAYS
35D2 CONVEYORS
35D3 TRUCKS, DOLLIES, AND TRAILERS
35D3-2 Bomb
35D3-3 Engine, Truck Engine Transport
35D3-4 Fuselage
35D3-5 Propeller
35D3-6 Servicing Unit
35D3-7 Aircraft
35D3-8 Landing Gear
35D3-9 Lift
35D3-10 Air-Conditioning
35D3-11 Missile, Trailer Transporter-Erector
35D3-12 Antenna
35D3-13 Turret (Trailer)
35D3-14 Bomb Sight
35D3-15 Flush and Disposal
35D3-16 Wheel Change
35D3-17 Lavatory
35D3-18 Hydraulic
35D3-19 Nitrogen (See 35D3-6 also)
35D3-20 Cowling
35D3-21 Alternator Pack
35D3-22 Tow Target
35D3-23 Radar Maintenance
35D3-24 Platform
35D3-25 Missile Fuel
35D3-26 Wing
35D3-27 Fire Control System
35D3-28 Instrument
35D3-29 Missile (See 35D3-11 also)
35D3-30 Cable
35D3-31 Oil Servicing
35D3-32 Crash Removal
35D3-33 Test Equipment
35D3-34 Pod
| 35D3-35 | Spray |
| 35D3-36 | Smoke Generator |
| 35D3-37 | Field Preflight |
| 35D3-38 | Radome |
| 35D3-39 | Chassis Assembly |
| 35D3-40 | Chaff and Decoy Rocket |
| 35D3-41 | Corrosion Control |
| 35D3-42 | Test Station Bay |
| 35D3-43 | Reel Winder |
| 35D3-44 | Infrared Unit |
| 35D3-45 | Fairlead Assembly |
| 35D3-46 | Camera |
| 35D3-47 | Seat |
| 35D4    | HOISTS |
| 35D4-2  | Electric |
| 35D4-3  | Hydraulic |
| 35D4-4  | Mechanical |
| 35D4-5  | Pneumatic |
| 35D4-6  | Engine Driven |
| 35D4-7  | Electro-Mechanical |
| 35D5    | LIFTS |
| 35D5-2  | Electric |
| 35D5-3  | Hydraulic |
| 35D5-4  | Mechanical |
| 35D5-5  | Pneumatic |
| 35D5-6  | Remote Control |
| 35D6    | SLINGS |
| 35D6-2  | Engine, Hoisting, Handling |
| 35D6-3  | Fuselage |
| 35D6-4  | Empennage |
| 35D6-5  | Bomb |
| 35D6-6  | Missile |
| 35D6-7  | Propeller |
| 35D6-8  | Canopy |
| 35D6-9  | Turret |
| 35D6-10 | Pylon |
| 35D6-11 | Wing |
| 35D6-12 | Inertial Guidance System |
| 35D6-13 | Landing Gear |
| 35D6-14 | Crash Removal |
| 35D6-15 | Door |
| 35D6-16 | Scanner |
| 35D7    | WINCHES (See 35D4 also) |
| 35D8    | CRADLES |
| 35D8-2  | Afterburner |
| 35D8-3  | Missile |
| 35D8-4  | Boom |
35D8-5 Wing Removal
35D8-6 Bomb
35D8-7 Radome
35D8-8 Antenna
35D8-9 Pod
35D8-10 Re-Entry Vehicle
35D8-11 Rocket Launcher
35D8-12 Fuselage
35D8-13 Engine Pylon
35D8-14 Ejection Seat
35D8-15 Aircraft Engine
35D8-16 Miscellaneous
35D9 LOADING DOCKS
35D10 (Not used)
35D11 BINS
35D11-2 Cargo
35D12 STARTING EQUIPMENT
35D12-2 Gas Turbine
35D12-3 Adapters
35D13 AUXILIARY LOADING AND SERVICING
35D13-2 Missile
35D14 BEAM ASSEMBLIES
35D15 TANKS
35D15-2 Liquid Oxygen
35D16 MANIFOLDS AND MANIFOLD KITS
35D16-2 Drain
35D17 DRYING UNITS
35D18 FILL UNITS
35D19 ADAPTERS (Use 35DA3-6)
35D20 CORD ASSEMBLIES
35D20-2 Remote Control
35D21 SPREADERS
35D21-2 Engine
35D22 PURGERS (Use 35E22-2)
35D23 REGULATORS (Use 35E23)
35D24 SIMULATORS
35D24-2 Missile
35D25 FIXTURE ASSEMBLIES
35D25-2 Missile Rigging
35D25-3 Breakaway Attachment
35D25-4 Elevon Installation and Removal
35D25-5 Torquing
35D25-6 Bolster Assembly
35D25-7 Puller Assembly
35D25-8 Handling
35D25-9 Landing Gear
35D25-10 Engine
35D25-11 Support
35D25-12 Capsule
35D25-13 Nozzle
35D25-14 Gearbox
35D26 KITS
35D26-2 Aligning Fixture
35D26-3 Tiedown
35D26-4 Rigging
35D26-5 Pressurizing
35D26-6 Leveling
35D26-7 Booster Pump
35D26-8 Nose Radome
35D27 RAMPS
35D27-2 Wheel Set
35D28 PRIMING ASSEMBLIES
35D28-2 Hydraulic Oil
35D29 CARTS
35D29-2 Missile Propellant
35D29-3 Hydraulic
35D29-4 Magnetron
35D29-5 Liquid
35D29-6 Lavatory Servicing
35D29-7 Refrigeration Servicing
35D29-8 Pneumatic
35D30 LOADERS
35D30-2 Missile
35D30-3 Aircraft
35D30-4 Munitions
35D31 CARRIAGES
35D31-2 Re-Entry Vehicle
35D31-3 Rocket Motor
35D32 RINGS
35D32-2 Engine Roll Over
35D33 PALLETS
35D33-2 Air Cargo
35D34 PLATFORMS
35D35 GUIDES
35D36 MAN LIFT DEVICES
35D37 PROCESSORS
35DA ASSOCIATED EQUIPMENT AND COMPONENTS
35DA1 CABLEWAYS
35DA2 CONVEYORS
35DA3 TRUCKS, DOLLIES AND TRAILERS
35DA3-2 Bomb Truck
35DA3-3 Cylinder, Pump Assembly
35DA3-4 Motor, Actuator
35DA3-5 Cylinder Assembly
35DA3-6 Adapter
35DA3-7 Thermostat
35DA3-8 Blower
35DA3-9 Power Pack
35DA3-10 Cap
35DA4 CONTROLS
35DA5 RAIL ASSEMBLIES
35DA6 ACTUATORS
35DA7 INDICATOR, MISSILE POSITION AND ALIGNMENT
35DA8 VALVES
35DA9 FILTER ASSEMBLIES
35DA10 GEAR REDUCER ASSEMBLIES
35DA11 GAUGES
35DA12 METERS
35DA13 CYLINDERS (See 35DA3-3 also)
35DA14 REGULATORS
35DA15 DRIVE ASSEMBLIES
35DA16 CHASSIS
35DA17 GUIDE ASSEMBLIES
35E AIR AND MISSILE BASE UTILITY OPERATING EQUIPMENT
35E1 FIRE FIGHTING EQUIPMENT
35E1-2 Fire Extinguisher
35E2 LANDING MATS
35E3 PREFABRICATED BUILDINGS
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35E16 ERECTORS
35E17 DECONTAMINATION EQUIPMENT, DEICERS
35E18  CONTROL EQUIPMENT
35E19  CASES (See 35E20 also)
35E20  CONTAINERS, SHIPPING AND STORAGE
35E20-2  Missile, Warhead Section
35E20-3  Engine
35E20-4  Miscellaneous
35E20-5  Helicopter Blade
35E20-6  Checkout Tape
35E20-7  Optical Equipment
35E20-8  Chemical, Biological Munitions
35E20-9  Guided Glide Weapon
35E20-10  Dispenser
35E20-11  Ammunition
35E21  COVERS
35E21-2  Missile
35E21-3  Aircraft
35E21-4  Bomb
35E21-5  Camera
35E21-6  Scanner
35E22  PURGING AND CLEANING EQUIPMENT
35E22-2  Missile
35E22-3  Aircraft
35E22-4  Engine
35E22-5  Trailer
35E23  REGULATORS
35E23-2  Missile
35E24  LEAK DETECTOR
35E25  MISSILE SHIPPING EQUIPMENT
35E26  PROTECTION EQUIPMENT
35E26-2  Engine Screen, Shield
35E26-3  Personnel Screen, Shield
35E26-4  Insulation
35E27  GAS AND UNDERGROUND PIPING SYSTEMS AND COMPONENTS
35E27-2  System
35E27-3  Valve
35E28  FILTERS AND DEHYDRATORS
35E29  CONVERTERS
35E30  WINDOWS
35E31  TANKS
35E31-2  Mixing
35E31-3  Water Storage
35E32  SWITCHES
35E33  RELOAD FACILITIES
35E34  TOWERS
35E35  SANITATION EQUIPMENT
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35F13  BATTERIES
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35M1-8  Damper, Lock System
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35M2  ERECTION EQUIPMENT
35M2-2  Mount, Erector
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35M27-3  Hydraulic
35M27-4  Ballistic
35M28  DRIVES
35M29  SWITCHES
35M30  MANIFOLD ASSEMBLIES
35M31  SPEED REDUCERS (GOVERNORS)
35M32  TRANSMISSIONS
35M33  CONNECTORS
35M34  TENSION DEVICES
35M35  ADAPTERS AND CLAMPS
35M36  TUBES
35M37  DOORS
35M38  SWIVEL AND GIMBAL ASSEMBLIES
35M39  VAPORIZERS THERMOCOUPLES
35MA  ASSOCIATED EQUIPMENT
35MA1  HYDRAULIC SYSTEMS COMPONENTS
35MA1-2  Valve
35MA2  ERECTION EQUIPMENT
35MA2-2  (Not used)
35MA2-3  Hydraulic Cylinder, Accumulator
35MA3  LAUNCHING EQUIPMENT
35MA3-2  Valve (See 35M14)
35MA3-3  Hydraulic Cylinder (See 35M17)
35MA3-4  Hydraulic Accumulator (See 35M21)
35MA3-5  Motor (See 35M18)
35MA3-6  Indicator (See 35M12)
35MA3-7  Pump (See 35M19)
35MA3-8  Coupling
35MA3-9  Control (See 35M10)
35MA3-10  Brake (See 35M23)
35MA3-11  Joint Assembly
35MA4  PROPELLANT LOADING AND PRESSURIZATION
35MA4-2  Regulator (See 35M13)
35MA4-3  Valve (See 35M14)
35MA4-4  Breaker Assembly
35MA4-5  Switch (See 35M29)
35MA4-6  Indicator (See 35M12)
35MA4-7  Pressure Unit
35MA4-8  Relay
35MA4-9  Pump (See 35M19)
35MA4-10  Starter
35MA4-11  Liquid Level
35MA4-12  Gauge (See 35M24)
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CHAPTER 27
CATEGORY 36 - VEHICLES, CONSTRUCTION AND MATERIAL-HANDLING EQUIPMENT

27.1 GENERAL.

27.1.1 Category 36 contains six systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 36 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 27.2.

27.1.2 TO data pertaining to more than one system is numbered in the category general series.

27.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

27.2 NUMBERING PATTERNS.

27.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

27.2.1.1 Part one is always the numeric 36 identifying Category 36.

27.2.1.2 Part two is an alpha character identifying one of six systems; i.e., A - vehicles; C - construction equipment; G - gas generating equipment; M - materials handling equipment; R - ordnance equipment; and Y - vehicle, construction and material-handling equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., MA.

27.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 27.4.

27.2.2 GROUP TWO. TO numbering patterns in Category 36 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns.

27.2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

27.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

27.2.3 GROUP THREE.

27.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 36:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-5 DCSC Technical Maintenance Standards
-6 Inspection Requirements
-7 Installation Instructions

27.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 36:
If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

GROUP FOUR. When the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 27.2.3.1, above.

EXAMPLES OF CATEGORY 36 NUMBERING PATTERNS.

A service manual for a low bed semi-trailer, 25 ton, type T25L-232:

36A9-2-32-2
36 Category 36
A Vehicles
9 Semi-Trailer Series
2 Cargo Type Subseries
32 Represents Type T25L-232
2 Number Reserved for Service Manuals

A field maintenance manual for a portable floor crane, model HLU-145A/E:

36C3-6-4-2
36 Category 36
C Construction Equipment
3 Crane Series
6 Portable Type Subseries
4 Represents Model HLU-145A/E
2 Number Reserved for Field Maintenance Manuals

Operating instructions for a fork lift, model FK-7-1:

36M2-2-82-1
36 Category 36
M Material Handling Equipment
2 Lift Series
2 Fork Lift Subseries
82 Represents Model FK-7-1
1 Number Reserved for Operating Instructions

CATEGORY 36 NUMBERING PATTERNS.

36 VEHICLES, CONSTRUCTION, AND MATERIAL-HANDLING EQUIPMENT
36A VEHICLES
36A1 AMBULANCES
36A2 COMMERCIAL FLEET
36A2-2 International
36A2-3 Ford
36A2-4 General Motors
36A2-5 Chrysler
36A2-6 American Motors
36A2-7 White Motors
36A2-8 Mack Truck, Inc.
36A2-9 VW
36A2-10 Kenworthy
36A2-11 Freightliner
36A3 BUSES
36A4 DOLLIES, TRAILERS
36A5 JEEPS
36A6 MOTORCYCLES
36A7 PASSENGER CARS
36A8 SCOOTERS
36A9 SEMITRAILERS
36A9-2 Cargo
36A9-3 Fuel Servicing
36A9-4 Laundry
36A9-5 Refrigerating
36A9-6 Shower
36A9-7 Stake and Platform
36A9-8 Van
36A9-9 Wrecking
36A9-10 Pilotless Aircraft Transport
36A9-11 Translauncher
36A9-12 Chemical Handling
36A9-13 Water Handling
36A9-14 Support Trailer
36A9-15 Mobile Personal Support Trailer
36A10 TRACTORS
36A10-2 Tracklaying
36A10-3 Wheeled
36A11 TRAILERS
36A11-2 Ammunition
36A11-3 Antenna Mount
36A11-4 Bomb
36A11-5 Cargo
36A11-6 Chemical Handling
36A11-7 Clothing Repair
36A11-8 Firefighting
36A11-9 (Not used)
36A11-10 Fuel Servicing
36A11-11 Gas Plant
36A11-12 Laundry
36A11-13 Lubrication
36A11-14 Shoe Repair
36A11-15 Shower
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<td>Textile Repair</td>
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<td>Van</td>
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<td>Electronic Equipment, Enclosure Trailer</td>
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36C1-2 Skid Mounted
36C1-3 Tractor Mounted
36C1-4 Trailer Mounted
36C1-5 Truck Mounted
36C2 CONVEYORS
36C2-2 Crawler Mounted
36C2-3 Self-Propelled
36C2-4 Skid Mounted
36C2-5 Wheel Mounted
36C3 CRANES
36C3-2 Crawler Mounted
36C3-3 Tractor Mounted
36C3-4 Truck Mounted
36C3-5 Wheel Mounted
36C3-6 Portable
36C3-7 Floating (Use 39B)
36C4 DERRICKS (Used on Diesel Engine)
36C5 DISTRIBUTORS
36C5-2 Bituminous Material
36C5-3 Water
36C6 DITCHERS
36C7 DRILLS
36C8 DRYERS AND DEHYDRATORS
36C9 GRADERS
36C9-2 Self-Propelled
36C9-3 Towed
36C10 HEATERS
36C11 KETTLES
36C12 LOADERS
36C12-2 Crawler Mounted
36C12-3 Wheel Mounted
36C13 CABLE LAYING EQUIPMENT
36C13-2 Lashing Machine
36C13-3 Reeling Machine
36C13-4 Cable Transporter
36C14 MIXERS
36C14-2 Bituminous Material
36C14-3 Concrete
36C14-4 Soil
36C15 PAVERS AND FINISHERS
36C15-2 Bituminous Material
36C15-3 Concrete
36C16 PIPE LAYERS
36C17 PLANTS
36C17-2 Asphalt Mixing
36C17-3 Batching
36C17-4 Concrete Mixing
36C17-5 Crushing, Screening and Washing
36C17-6 Steam Construction
36C18 PLOWS, SNOW PLOWS
36C19 PUMPS
36C20 ROLLERS
36C20-2 Self-Propelled
36C20-3 Towed
36C21 ROOTERS
36C22 SCRAPERS
36C22-2 Self-Propelled
36C22-3 Towed
36C23 SHOVELS
36C23-2 Crawler Mounted
36C23-3 Truck Mounted
36C23-4 Wheeled
36C24 SPREADERS
36C25 SWEEPERS
36C25-2 Self-Propelled
36C25-3 Towed
36C25-4 Magnetic
36C25-5 Manually Propelled
36C26 TRACTORS
36C26-2 Crawler
36C26-3 Wheeled
36C27 TRAILERS
36C28 WAGONS
36C29 WELL DRILLERS
36C30 PILE DRIVERS
36C30-2 Telescoping
36C31 MOTORIZED COMPRESSORS
36C31-2 Wheeled
36C32 CARRIERS
36C32-2 Snow Plow
36C32-3 Crane-Shovel
36C33 COLLECTORS
36C33-2 Dust
36C34 COMPACTORS AND VIBRATORS
36C34-2 Pneumatic, Gasoline Engine Driven
36C35 CLEANING MACHINES
36C36 RIPPERS AND PAVING BREAKERS, JACKHAMMERS
36C37 EXCAVATORS
36C37-2 Multipurpose
36G GAS GENERATING EQUIPMENT
36G1 GENERATING AND CHARGING PLANTS
36G1-2 Generating Plant, Oxygen or Nitrogen
36G1-3 Hydrogen Generator
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CHAPTER 28
CATEGORY 37 - FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT

28.1 GENERAL.

28.1.1 Category 37 contains three fuel-, oil-, and propellant-handling systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 37 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 28.2.

28.1.2 TO data pertaining to more than one system is numbered in the category general series.

28.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

28.2 NUMBERING PATTERNS.

28.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

28.2.1.1 Part one is always the numeric 37 identifying Category 37.

28.2.1.2 Part two is an alpha character identifying the oil-, fuel-, and propellant-handling systems, i.e., A - fuel and oil handling equipment; B - aircraft propellant systems; and C - propellant storage and handling equipment. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, e.g., CA.

28.2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 28.4.

28.2.2 GROUP TWO. TO numbering patterns in Category 37 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

28.2.2.1 If the TO number uses only three basic groups, group two uses one or more numeric characters representing the model, type or PN assigned to specific components.

28.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

28.2.3 GROUP THREE.

28.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 37:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions

28.2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 37:

CL - Checklists
S - Operational Supplements
28.2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

28.2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 28.2.3.1, above.

28.3 EXAMPLES OF CATEGORY 37 NUMBERING PATTERNS.

28.3.1 Overhaul instructions for a fuel hose four-wheel trailer type MH-1:

37A2-2-2-3
37 Category 37
A Fuel- and Oil- Handling Equipment
2 Cart Series
2 Hose Cart Subseries
2 Represents Type MH-1
3 Number Reserved for Overhaul Instructions

28.3.2 An illustrated parts breakdown for a fuel and oil servicing nozzle, PN 9035:

37A6-2-24
37 Category 37
A Fuel- and Oil- Handling Equipment
6 Nozzle Series
2 Represents PN 9035
24 Number Reserved for Illustrated Parts Breakdown

28.3.3 An illustrated parts breakdown for a fuel storage tank, model TMU-4/E:

37C2-2-2-4
37 Category 37
C Propellant Storage and Handling
2 Storage Facility Series
2 Fuel Storage Subseries
2 Represents Model TMU-4/E
4 Number Reserved for Illustrated Parts Breakdown

28.4 CATEGORY 37 NUMBERING SERIES.

37 FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT
37A FUEL- AND OIL- HANDLING EQUIPMENT
37A1 ADAPTERS
37A2 CARTS
37A2-2 Hose
37A3 CONTAINERS
37A3-2 Collapsible
37A3-3 Skid Mounted
37A4 COUPLINGS
37A5 HOSES
37A6 NOZZLES
37A6-2 Single Point
37A6-3 Automatic Shutoff
37A6-4 Over-the-Wing (Gravity)
37A7 PUMPS
37A8 SEPARATORS
37A8-2 Gasoline-Water
37A9 FUEL STORAGE, DISTRIBUTING AND DISPENSING SYSTEMS
37A9-2 Gravity Flow
37A9-3 Hydrant Fueling
37A9-4 Hydraulically Operated
37A9-5 Mechanical (Other than hydrant)
37A9-6 Fuel Dispensing Line
37A9-7 Fuel Distributing Unit
37A10 OIL STORAGE, DISTRIBUTING, AND DISPENSING SYSTEMS
37A11 REFUELING UNITS
37A12 TANKS
37A13 TRANSFER UNITS
37A14 VEHICLE FUEL AND OIL DISTRIBUTING AND DISPENSING SYSTEMS
37A15 OIL PURIFIERS
37A16 FUEL RETURN LINE ASSEMBLIES
37A17 SERVICING UNITS
37A17-2 Oil Servicing
37A17-3 Coolant Servicing
37A18 VALVES (Use 37A1)
37A18-2 Fuel Servicing
37A19 REELS
37B AIRCRAFT PROPELLANT SYSTEMS
37B1 NITRIC ACID HANDLING EQUIPMENT
37C PROPELLANT STORAGE AND HANDLING SYSTEMS
37C1 SYSTEMS
37C1-2 Acid
37C1-3 Fuel
37C2 STORAGE FACILITIES
37C2-2 Fuel
37C2-3 High Pressure Gas
37C2-4 Liquid Oxygen
37C2-5 Diesel Fuel
37C2-6 Nitrogen
37C2-7 Liquid Solvent Recovery
37C2-8 Liquid Oxygen, Nitrogen, Argon, and Air
37C3 MISSILE PROPELLANT PILE LINES
37C4 MISSILE PROPELLANT HOSE ASSEMBLIES
37C5 PUMPS
37C6 FILTERING UNITS
37C7 HEATERS
37C8 COMPRESSORS, PROPELLANT-TRANSFER
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<td>37CA1-3</td>
<td>Breather Set</td>
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CHAPTER 29  
CATEGORY 38 - NON-AERONAUTICAL ENGINES

29.1  GENERAL.

29.1.1 Category 38 contains four systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in Category 38 use both three and four basic groups in the numbering patterns discussed in paragraph 29.2.

29.1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

29.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

29.2  NUMBERING PATTERNS.

29.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

29.2.1.1 Part one is always the numeric 38 identifying Category 38.

29.2.1.2 Part two is an alpha character identifying the non-aeronautical engine, i.e., G - powered ground equipment engines; M - marine engines; V - vehicle engines; and X - non-aeronautical engine components and accessories.

29.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The equipment series numbers for this category are outlined in paragraph 29.4.

29.2.2 GROUP TWO. TO numbering patterns in Category 38 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

29.2.2.1 If the TO number uses only three basic groups, group two will contain one or more numeric characters representing the model, type or PN assigned to specific equipment.

29.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

29.2.3 GROUP THREE.

29.2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 38:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

29.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 38:

CL - Checklists
LC - Lubrication Charts
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 29.2.3.1, above.

29.3 EXAMPLES OF CATEGORY 38 NUMBERING PATTERNS.

Illustrated parts breakdown for a diesel engine, model D-318.

38G1-24-24
38 Category 38
G Powered Ground Equipment Engines
1 Diesel Series
24 Represents Model D-318
24 Number Reserved for Illustrated Parts Breakdown

Operating instructions for a Diesel marine engine, model 6DCMR-1879.

38M1-24-1
38 Category 38
M Marine Engines
1 Diesel Series
24 Represents Model 6DCMR-1879
1 Number Reserved for Operating Instructions

Overhaul manual for a fuel pump, PN 1539900 series:

38X11-2-4-3
38 Category 38
X Accessories
11 Pump Series
2 Fuel Pump Subseries
4 Represents PN 1539900 Series
3 Number Reserved for Overhaul Instructions

29.4 CATEGORY 38 NUMBERING SERIES.

38 NON-AERONAUTICAL ENGINES
38G POWERED GROUND EQUIPMENT ENGINES
38G1 DIESEL
38G2 GASOLINE
38G3 JET FUEL
38M MARINE ENGINES
38M1 DIESEL
38M2 GASOLINE
38M3 STEAM
38V VEHICLE ENGINES
38V1 DIESEL
38V2 GASOLINE
38X NON-AERONAUTICAL ENGINE COMPONENTS AND ACCESSORIES
38X1  BEARINGS
38X2  CARBURETORS
38X3  DISTRIBUTORS
38X4  FILTERS
38X4-2  Fuel
38X4-3  Oil
38X5  GEARS
38X6  GENERATORS
38X7  GOVERNORS
38X8  HOUSINGS
38X8-2  Clutch
38X9  MAGNETOS
38X10  PULLEYS
38X11  PUMPS
38X11-2  Fuel
38X11-3  Oil
38X11-4  Water
38X12  RADIATORS
38X13  SPARK PLUGS
38X14  STARTERS
38X15  THERMOSTATS
38X16  VALVES
38X17  SHIPPING CASES
38X18  SHAFTS
38X19  BUSHINGS
38X19-2  Bronze
38X20  IGNITION SYSTEMS
38X21  REGULATORS, CURRENT AND VOLTAGE
38X22  HEATERS
38X23  SWITCHES
38X24  INJECTORS
38X25  AIR EQUIPMENT
38X26  TURBOCHARGERS
38X27  FAN DRIVES
CHAPTER 30
CATEGORY 39 - WATERCRAFT EQUIPMENT

30.1 **GENERAL.**

30.1.1 Category 39 contains five watercraft systems. The TO numbers in this category use three basic groups for data identification. The numbering pattern is discussed in paragraph 30.2.

30.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

30.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

30.2 **NUMBERING PATTERNS.**

30.2.1 GROUP ONE. The five systems that identify types of watercraft use only two parts in group one to identify the category and type of watercraft.

30.2.1.1 Part one is always the numeric 39 identifying Category 39.

30.2.1.2 Part two is a single alpha character identifying the various systems of watercraft, i.e., C - cargo boats; P - personnel boats; R - range patrol boats; and V - vessels. The one exception is the tugboat system identified with the two alpha characters TG.

30.2.2 GROUP TWO. TO numbering pattern in Category 39 uses three basic groups. Group two has one or more numeric characters representing the model, type or PN assigned to specific components.

30.2.3 GROUP THREE.

30.2.3.1 The third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category.

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-5 Equipment Allowance Lists
-6 Inspection Requirements

30.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in this category.

    CL - Checklists
    S - Operational Supplements
    SS - Safety Supplements
    WC - Workcards

30.3 **EXAMPLES OF NUMBERING PATTERNS USED IN CATEGORY 39.**

30.3.1 An operating and maintenance instruction for a mechanized landing craft, type LCM 8:

39C-47-1

39 Category 39
C Cargo Boats
30.3.2 Maintenance instructions for a 21-foot aluminum tow-rescue boat, type P-21:

39P-21-2

39 Category 39
P Personnel Boats
21 Represents Type P-21
2 Number Reserved for Maintenance Instructions

30.3.3 Equipment allowance list for a 24-foot USAF rescue boat, type R-4:

39R-4-5

39 Category 39
R Range Patrol Boats
4 Represents Type R-4
5 Number Reserved for Equipment Allowance List

30.4 CATEGORY 39 NUMBERING SERIES.

39 WATERCRAFT EQUIPMENT
39C CARGO BOATS
39P PERSONNEL BOATS
39R RANGE PATROL BOATS
39TG TUGBOATS
39V VESSELS
CHAPTER 31
CATEGORY 40 - COMMERCIAL AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING AND WATER TREATING EQUIPMENT

31.1 GENERAL.

31.1.1 Category 40 contains six systems. These systems are divided into equipment series and most of the equipment series are further divided into equipment subseries. Therefore TO numbers in this category use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 31.2.

31.1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

31.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

31.2 NUMBERING PATTERNS.

31.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

31.2.1.1 Part one is always the numeric 40 identifying Category 40.

31.2.1.2 Part two is an alpha character identifying the various systems, i.e., A - air-conditioners; H - heating equipment; P - plumbing equipment; R - refrigeration equipment; V - ventilating equipment; and W - water treating equipment.

31.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category are outlined in paragraph 31.4.

31.2.2 GROUP TWO. TO numbering patterns in Category 40 use both three and four groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

31.2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

31.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

31.2.3 GROUP THREE.

31.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions

31.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 40:

CL - Checklists
S - Operational Supplements
31.2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

31.2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs described in paragraph 31.2.3.1, above.

31.3 EXAMPLES OF CATEGORY 40 NUMBERING PATTERNS.

31.3.1 Operating instructions with illustrated parts breakdown for air-conditioner, type MA-5:

40A1-6-10-1
40  Category 40
A  Air-Conditioning Equipment
1  Air-Conditioner Series
6  Trailer Mounted Subseries
10 Represents Type MA-5
1  Number Reserved for Operating Instructions

31.3.2 A maintenance manual for a portable shower, model M1958:

40P1-2-2-2
40  Category 40
P  Plumbing Equipment
1  Bath and Shower Unit Series
2  Eight Shower Head Subseries
2  Represents Model M1958
2  Number Reserved for Maintenance Manuals

31.4 CATEGORY 40 NUMBERING SERIES.

40  COMMERCIAL AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING, AND WATER TREATING EQUIPMENT
40A  AIR-CONDITIONING EQUIPMENT
40A1  AIR-CONDITIONERS
40A1-2 Aircraft, Ground
40A1-3 Base Mounted
40A1-4 Self-Contained
40A1-5 Skid Mounted
40A1-6 Trailer Mounted
40A1-7 Pack
40A2  DEHUMIDIFIERS
40A2-2 Chemical
40A2-3 Mechanical
40A2-4 Electrical
40A3  COLLECTORS
40A3-2 Dust
40H  HEATING EQUIPMENT
40H1  BOILERS
40H2    FURNACES
40H3    HEATERS
40H3-2  (Not used)
40H3-3  (Not used)
40H3-4  Immersion
40H3-5  Space
40H3-6  (Not used)
40H3-7  Water
40P    PLUMBING EQUIPMENT
40P1    BATH AND SHOWER UNITS
40P1-2  8-Shower Head
40P1-3  12-Shower Head
40P1-4  24-Shower Head
40P1-5  32-Shower Head
40P1-6  Multi Shower Head
40P2    PUMPS
40P2-2  Centrifugal
40P2-3  Diaphragm
40P2-4  Helical Rotor
40P2-5  Pneumatic
40P2-6  Reciprocating
40P2-7  Rotary
40P2-8  Turbine
40P2-9  Steam Driven
40R    REFRIGERATING EQUIPMENT
40R1    COMPRESSORS
40R2    CONDENSING UNITS
40R3    COOLERS
40R3-2  Aircraft, Ground
40R3-3  Rivet
40R3-4  Unit
40R3-5  Water
40R3-6  Semi-Trailer Mounted
40R4    DISPLAY CASES
40R5    ICE CREAM PLANTS
40R6    ICE MAKERS
40R7    REFRIGERATORS
40R7-2  Film Processing
40R7-3  Household
40R7-4  Industrial
40R7-5  Reach-In
40R7-6  Walk-In
40R8    SODA FOUNTAIN EQUIPMENT
40V    VENTILATING EQUIPMENT
40V1    BLOWERS
40V2    FANS
40V2-2  Pedestal
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>40V2-3</td>
<td>Centrifugal</td>
</tr>
<tr>
<td>40V2-4</td>
<td>Axial</td>
</tr>
<tr>
<td>40V2-5</td>
<td>Propeller</td>
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<tr>
<td>40V3</td>
<td>VENTILATORS</td>
</tr>
<tr>
<td>40W</td>
<td>WATER TREATING EQUIPMENT</td>
</tr>
<tr>
<td>40W1</td>
<td>DEMINERALIZERS</td>
</tr>
<tr>
<td>40W2</td>
<td>DISTILLATION EQUIPMENT</td>
</tr>
<tr>
<td>40W3</td>
<td>HYPOCHLORINATION EQUIPMENT</td>
</tr>
<tr>
<td>40W4</td>
<td>PURIFICATION EQUIPMENT</td>
</tr>
<tr>
<td>40W5</td>
<td>SOFTENING EQUIPMENT</td>
</tr>
<tr>
<td>40W6</td>
<td>FILTERING EQUIPMENT</td>
</tr>
</tbody>
</table>
CHAPTER 32
CATEGORY 41 - SUBSISTENCE AND FOOD SERVICE EQUIPMENT

32.1 GENERAL.

32.1.1 Category 41 contains two subsistence and food service systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in category 41 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 32.2.

32.1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

32.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

32.2 NUMBERING PATTERNS.

32.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

32.2.1.1 Part one is always the numeric 41 identifying Category 41.

32.2.1.2 Part two is an alpha character identifying the two systems in the category, i.e., A - subsistence; and B - food service equipment.

32.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The series for this category are outlined in paragraph 32.4.

32.2.2 GROUP TWO. TO numbering patterns in Category 41 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

32.2.2.1 If only three basic groups are used in a numbering pattern, group two will contain one or more numeric characters representing the model, type or PN assigned to specific equipment.

32.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

32.2.3 GROUP THREE.

32.2.3.1 If a TO number has only three groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown

32.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 41:

    CL - Checklists
    S  - Operational Supplements
    SS - Safety Supplements
    WC - Workcards

32.2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.
32.2.4 GROUP FOUR. Group Four. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs described in paragraph 32.2.3.1, above.

32.3 **EXAMPLES OF CATEGORY 41 NUMBERING PATTERNS.**

32.3.1 Illustrated parts breakdown for a food warming oven, type II, applicable to KC-135:

41B1-7-5-4

41 Category 41
B Food Service Equipment
1 Baking Equipment Series
7 Oven Subseries
5 Represents Type II
4 Number Reserved for Illustrated Parts Breakdown

32.3.2 Operating instructions for Peters-Dalton dishwashing machine, model HWC-80:

41B2-2-2-1

41 Category 41
B Food Service Equipment
2 Cleaning and Sanitation Equipment Series
2 Dishwashing Machine Subseries
2 Represents Model HWC-80
1 Number Reserved for Operating Instructions

32.4 **CATEGORY 41 NUMBERING SERIES.**

41 SUBSISTENCE AND FOOD SERVICE EQUIPMENT
41A SUBSISTENCE
41A1 BEVERAGES
41A2 DAIRY PRODUCTS
41A3 DRIED FOODS
41A4 FIELD AND COMBAT RATIONS
41A5 FROZEN FOODS
41A6 MEAT AND MEAT PRODUCTS
41A7 PROCESSED FOODS
41A8 TROPICAL PLANTS
41B FOOD SERVICE EQUIPMENT
41B1 BAKING EQUIPMENT
41B1-2 Doughnut Machine
41B1-3 Dough Divider
41B1-4 Dough Mixer
41B1-5 Dough Proofer
41B1-6 Fermentation Cabinet
41B1-7 Oven
41B1-8 Sifter
41B2 CLEANING AND SANITATION EQUIPMENT
41B2-2 Dishwasher
41B3 COOKING EQUIPMENT
41B3-2 Broiler
<table>
<thead>
<tr>
<th>Code</th>
<th>Equipment</th>
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<tbody>
<tr>
<td>41B3-3</td>
<td>Cooker</td>
</tr>
<tr>
<td>41B3-4</td>
<td>Fryer</td>
</tr>
<tr>
<td>41B3-5</td>
<td>Griddle</td>
</tr>
<tr>
<td>41B3-6</td>
<td>Range</td>
</tr>
<tr>
<td>41B3-7</td>
<td>Stove</td>
</tr>
<tr>
<td>41B3-8</td>
<td>Toaster</td>
</tr>
<tr>
<td>41B3-9</td>
<td>Warmer</td>
</tr>
<tr>
<td>41B3-10</td>
<td>Urn</td>
</tr>
<tr>
<td>41B4</td>
<td><strong>PREPARATION EQUIPMENT</strong></td>
</tr>
<tr>
<td>41B4-2</td>
<td>Grinder</td>
</tr>
<tr>
<td>41B4-3</td>
<td>Meat Cutter</td>
</tr>
<tr>
<td>41B4-4</td>
<td>Mixer</td>
</tr>
<tr>
<td>41B4-5</td>
<td>Peeler</td>
</tr>
<tr>
<td>41B5</td>
<td><strong>TESTING AND SCREENING EQUIPMENT</strong></td>
</tr>
</tbody>
</table>
CHAPTER 33
CATEGORY 42 - COATING, CLEANING AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS AND MATERIALS

33.1 **GENERAL.**

33.1.1 Category 42 contains seven systems divided into equipment or material series. The series, in some instances, are further divided into material types. TO numbers in Category 42 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 33.2.

33.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

33.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

33.2 **NUMBERING PATTERNS.**

33.2.1 GROUP ONE. This group has three parts identifying the category, system and material series.

33.2.1.1 Part one is always the numeric 42 identifying Category 42.

33.2.1.2 Part two is an alpha character identifying the various systems, i.e., A - dopes, paints, and cleaning compounds; B - fuels, lubricants, oxygen, and gases; C - chemicals; D - metals, plastics, and composition materials; E - rubber materials; F - cordage, leather, and miscellaneous fabric; and L - lumber.

33.2.1.3 Part three contains one or more numeric characters identifying the material series within a system. The material series numbers for this category are outlined in paragraph 33.4.

33.2.2 GROUP TWO. Since TO numbering patterns in Category 42 use both three and four basic groups, the identifiers in group two are not constant. The following describes both numbering patterns:

33.2.2.1 If the TO number uses only three basic groups, group two will have a numeric character identifying all TOs as being in a single, general Model-Type-Part Number series. This is due to the general or comprehensive nature of TO data in this category.

33.2.2.2 If the TO number contains four basic groups, the equipment or material series identified in part three of group one has been further divided into subseries. In this case, group two identifies the specific material subseries with one or more numeric characters.

33.2.3 GROUP THREE.

33.2.3.1 If the TO number has only three groups, the third group of the numbering pattern is made up of numeric characters identifying individual TOs. Specific numbers are not reserved to identify specific types of TOs as in other categories. In some instances the numeric characters are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 42.

   CL - Checklists
   S - Operational Supplements
   SS - Safety Supplements
   WC - Workcards

33.2.3.2 If the TO number has four basic groups, the third group contains a numeric character identifying all TOs as being in a single general Model-Type-Part Number series. This is due to the general or comprehensive nature of TO data in this category.

33.2.4 GROUP FOUR. Group Four When the TO number has four basic groups, the fourth group is made up of numeric characters identifying individual TOs. Specific numbers are not reserved to identify specific types of TOs as in other
categories. In some instances the numeric characters may be followed by one or more alpha characters described in paragraph 33.2.3.1.

### 33.3 Examples of Category 42 Numbering Patterns.

#### 33.3.1 Manual on fluids for hydraulic equipment:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42B2-1-3</td>
<td>Category 42</td>
</tr>
<tr>
<td>B</td>
<td>Fuels, Lubricants, Oxygen and Gases</td>
</tr>
<tr>
<td>2</td>
<td>Oil Series</td>
</tr>
<tr>
<td>1</td>
<td>General Model-Type-Part Number Series</td>
</tr>
<tr>
<td>3</td>
<td>Third Manual in a Series</td>
</tr>
</tbody>
</table>

#### 33.3.2 Manual on aircraft hoses:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42E1-1-1</td>
<td>Category 42</td>
</tr>
<tr>
<td>E</td>
<td>Rubber Materials</td>
</tr>
<tr>
<td>1</td>
<td>Aircraft Hose Series</td>
</tr>
<tr>
<td>1</td>
<td>General Model-Type-Part Number Series</td>
</tr>
<tr>
<td>1</td>
<td>First Manual in a Series</td>
</tr>
</tbody>
</table>

#### 33.3.3 Manual on quality control of nitrogen propellant pressurizing agent:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42B7-3-1-1</td>
<td>Category 42</td>
</tr>
<tr>
<td>B</td>
<td>Fuels, Lubricants, Oxygen, and Gases</td>
</tr>
<tr>
<td>7</td>
<td>High Energy Liquid Propellants</td>
</tr>
<tr>
<td>3</td>
<td>Propellant Pressurization</td>
</tr>
<tr>
<td>1</td>
<td>General Model-Type-Part Number Series</td>
</tr>
<tr>
<td>1</td>
<td>First Manual in a Series</td>
</tr>
</tbody>
</table>

### 33.4 Category 42 Numbering Series.

- **42** COATING, CLEANING, AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS, AND MATERIALS
- **42A** DOPES, PAINTS, AND CLEANING COMPOUNDS
- **42A1** CLEANING COMPOUNDS
- **42A2** DOPES AND PAINTS
- **42A3** GLUES AND CEMENTS
- **42B** FUELS, LUBRICANTS, OXYGEN, AND GASES
- **42B1** FUELS
- **42B2** OILS
- **42B3** GREASES
- **42B4** COMPRESSED GASES
- **42B5** GAS STORAGE AND SERVICING CYLINDERS
- **42B6** LIQUID OXYGEN
- **42B7** HIGH ENERGY LIQUID PROPELLANTS
- **42B7-2** JP-4 - General
- **42B7-3** Propellant Pressurization - General
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>42C</td>
<td>CHEMICALS</td>
</tr>
<tr>
<td>42C1</td>
<td>ENGINE</td>
</tr>
<tr>
<td>42C2</td>
<td>METAL TREATMENT</td>
</tr>
<tr>
<td>42D</td>
<td>METALS, PLASTICS, AND COMPOSITION MATERIALS</td>
</tr>
<tr>
<td>42D1</td>
<td>ALUMINUM ALLOYS</td>
</tr>
<tr>
<td>42D2</td>
<td>COMPOSITION MATERIALS</td>
</tr>
<tr>
<td>42D3</td>
<td>MAGNESIUM ALLOYS</td>
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<td>42D4</td>
<td>PLASTICS</td>
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<td>42D5</td>
<td>STEEL</td>
</tr>
<tr>
<td>42E</td>
<td>RUBBER MATERIALS</td>
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<tr>
<td>42E1</td>
<td>AIRCRAFT HOSE</td>
</tr>
<tr>
<td>42E2</td>
<td>RUBBER SEALS AND PACKING</td>
</tr>
<tr>
<td>42F</td>
<td>CORDAGE, LEATHER, AND MISCELLANEOUS FABRIC</td>
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<tr>
<td>42L</td>
<td>LUMBER</td>
</tr>
</tbody>
</table>
CHAPTER 34
CATEGORY 43 - SIMULATOR AND TRAINING DEVICES

34.1 GENERAL.

34.1.1 Category 43 contains three simulator and training systems. These systems are divided into equipment series and most of the equipment series are further divided into equipment subseries. TO numbers in Category 43 use both three and four basic groups in the numbering pattern for data identification. The numbering patterns for both forms are discussed in paragraph 34.2.

34.1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

34.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

34.2 NUMBERING PATTERNS.

34.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

34.2.1.1 Part one is always the numeric 43 identifying Category 43.

34.2.1.2 Part two is an alpha character identifying the simulator and training systems, i.e., D - training devices; E - training equipment; and X-components. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., DA, EA.

34.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 34.4.

34.2.2 GROUP TWO. TO numbering patterns in Category 43 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

34.2.2.1 If only three basic groups are used in the numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

34.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

34.2.3 GROUP THREE.

NOTE

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

34.2.3.1 If a TO number has only three groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category.

-01 List of Applicable Publications (LOAP)
-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions and Installation Test Procedures
34.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 43:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

34.2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

34.2.4 GROUP FOUR. Group Four. In those cases where the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 34.2.3.1.

34.3 **EXAMPLES OF CATEGORY 43 NUMBERING PATTERNS.**

34.3.1 Operating instructions for a mission simulator system, F-111 aircraft:

43D3-4-11-11

- 43 Category 43
- D Training Devices
- 3 Flight Simulator Series
- 4 Fighter Aircraft Simulator Subseries
- 11 Represents Model F-111 Aircraft
- 11 Number Reserved for Operating Instructions

34.3.2 Operating instructions for a resident trainer and mobile training set, C-5A aircraft:

43E24-2-7-1

- 43 Category 43
- E Training Equipment
- 24 Mobile Trainer Series
- 2 Cargo Aircraft Simulator Subseries
- 7 Represents Model C-5 Aircraft
- 1 Number Reserved for Operating Instructions

34.3.3 Overhaul instructions with illustrated parts breakdown for a turbine outlet temperature indicator, PN D06G0015-1:

43X5-23-2-3

- 43 Category 43
- X Simulator Components
- 5 Indicator Series
- 23 Temperature Indicator Subseries
- 2 Represents PN D06G0015-1
- 3 Number Reserved for Overhaul Instructions
NOTE

During about 1960, eight TO numbers, using five groups in the numbering pattern, were assigned in the 43D7-13 series. This was contrary to the standard practice and constitutes an exception. In the event that new TO numbers are added to extend this series, the character “2” used as the fourth group in all above mentioned eight TO numbers should be eliminated. This will change the series pattern to the standard four-group format.

43  SIMULATOR AND TRAINING DEVICES
43D TRAINING DEVICES
43D1 BOMBING
43D2 MISSILE
43D2-2 GAM-87A (Skybolts)
43D2-3 LGM-30 (Minuteman)
43D2-4 SM-68 (Titan)
43D2-5 SM-65 (Atlas)
43D2-6 GAM-83 (AGM-12 Bullpup)
43D2-7 AGM-69A (SRAM)
43D2-8 AGM-86B
43D2-9 BGM-109G (Tomahawk)
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NOTE
During about 1960, eight TO numbers, using five groups in the numbering pattern, were assigned in the 43D7-13 series. This was contrary to the standard practice and constitutes an exception. In the event that new TO numbers are added to extend this series, the character “2” used as the fourth group in all above mentioned eight To numbers should be eliminated. This will change the series pattern to the standard four-group format.

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CHAPTER 35
CATEGORY 44 - COMMON HARDWARE EQUIPMENT

35.1 GENERAL.

35.1.1 Category 44 contains two common hardware equipment systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in Category 44 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 35.2.

35.1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

35.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

35.2 NUMBERING PATTERNS.

35.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

35.2.1.1 Part one is always the numeric 44 identifying Category 44.

35.2.1.2 Part two is an alpha character identifying the various hardware systems, i.e., B - bearings; and H - hardware.

35.2.1.3 Part three contains one or more numeric characters that identify the equipment series within a system. The numbering series for this category is outlined in paragraph 35.4.

35.2.2 GROUP TWO. TO numbering patterns in Category 44 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

35.2.2.1 If the TO number uses only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

35.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

35.2.3 GROUP THREE.

35.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements
-7 Installation Instructions

35.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 44:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

GROUP FOUR. Group Four. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 35.2.3.1.

35.3 EXAMPLES OF CATEGORY 44 NUMBERING PATTERNS.

35.3.1 A maintenance manual for anti-friction bearings:

44B-1-102
44 Category 44
B Bearings
1 System General Series
102 Number Reserved for General Series Maintenance Instructions

35.3.2 Overhaul instructions for an air starter coupling assembly, PN 3127-10:

44H1-2-3-3
44 Category 44
H Hardware
1 Aircraft Common Hardware Series
2 Coupling Subseries
3 Represents PN 3127-10
3 Number Reserved for Overhaul Instructions

35.4 CATEGORY 44 NUMBERING SERIES.

44 COMMON HARDWARE EQUIPMENT
44B BEARINGS
44H HARDWARE
44H1 AIRCRAFT COMMON HARDWARE
44H1-2 Coupling
44H1-3 Valve
44H2 UTILITY HARDWARE
44H2-2 Washer
44H2-3 Security Hardware
44H3 AIRCRAFT HOSE CLAMPS
CHAPTER 36
CATEGORY 45 - RAILROAD EQUIPMENT

36.1 GENERAL.

36.1.1 Category 45 contains two railroad equipment systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 36.2.

36.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

36.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

36.2 NUMBERING PATTERNS.

36.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

36.2.1.1 Part one is always the numeric 45 identifying Category 45.

36.2.1.2 Part two is an alpha character identifying the railroad equipment systems, i.e., A - rolling stock; and E - right-of-way maintenance equipment. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA or EA.

36.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 36.4.

36.2.2 GROUP TWO. TO numbering patterns in Category 45 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

36.2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

36.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries will be identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

36.2.3 GROUP THREE.

36.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

36.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 45:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
36.2.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

36.2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 36.2.3.1.

36.3 **EXAMPLES OF CATEGORY 45 NUMBERING PATTERNS.**

36.3.1 Operating instruction for diesel electric locomotive, model 539-S:

45A2-2-13-1

45 Category 45  
A Rolling Stock  
2 Locomotive Series  
2 Diesel Electric Subseries  
13 Represents Model 539-S  
1 Number Reserved for Operating Instructions

36.3.2 Illustrated parts breakdown for a railway diesel crane, model 825D:

45E4-2-5-4

45 Category 45  
E Right-of-Way Maintenance Equipment  
4 Crane Series  
2 Diesel Crane Subseries  
5 Represents Model 825D  
4 Number Reserved for Illustrated Parts Breakdown

36.4 **CATEGORY 45 NUMBERING SERIES.**

45 RAILROAD EQUIPMENT  
45A ROLLING STOCK  
45A1 CARS  
45A1-2 Box  
45A1-3 Flat  
45A1-4 Hospital Unit  
45A1-5 Maintenance  
45A1-6 Tank  
45A2 LOCOMOTIVES  
45A2-2 Diesel, Electric  
45A2-3 Gasoline  
45AA ASSOCIATED EQUIPMENT  
45AA2 BRAKE EQUIPMENT  
45E RIGHT-OF-WAY MAINTENANCE EQUIPMENT  
45E1 BRAKES  
45E2 BRIDGES  
45E3 COMPRESSORS  
45E4 CRANES  
45E4-2 Diesel  
45E4-3 Gasoline  
45E4-4 Steam
| 45E5 | DERRICKS          |
| 45E6 | HAMMERS          |
| 45E7 | SIGNAL DEVICES   |
| 45E8 | TRACKS           |
| 45E9 | TRACK SHIFTERS   |
| 45E10| JACKS            |
| 45E11| WINCHES          |
| 45E12| HEATERS          |
| 45E13| TAMPERS          |
CHAPTER 37
CATEGORY 46 - OFFICE, DUPLICATING, PRINTING AND BINDING
EQUIPMENT

37.1 GENERAL.

37.1.1 Category 46 contains three systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 37.2.

37.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

37.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

37.2 NUMBERING PATTERNS.

37.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

37.2.1.1 Part one is always the numeric 46 identifying Category 46.

37.2.1.2 Part two is an alpha character identifying the various systems, i.e., A - office equipment; D - duplicating equipment; and P - printing and binding equipment.

37.2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 37.4.

37.2.2 GROUP TWO. TO numbering patterns in Category 46 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering patterns for both forms:

37.2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

37.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

37.2.3 GROUP THREE.

37.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

37.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 46:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards
37.2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

37.2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 37.2.3.1.

37.3 **EXAMPLES OF CATEGORY 46 NUMBERING PATTERNS.**

37.3.1 A maintenance manual for a calculator, model 9820A:

46A1-4-5-2

46 Category 46
A Office Equipment
1 Machine Series
4 Calculator Subseries
5 Represents Model 9820A
2 Number Reserved for Maintenance Manuals

37.3.2 An operating instruction for a mimeograph duplicator, model 92:

46D1-9-2-1

46 Category 46
D Duplicating Equipment
1 Machine Series
9 Stencil Subseries
2 Represents Model 92
1 Number Reserved for Operating Instructions

37.4 **CATEGORY 46 NUMBERING SERIES.**

46 OFFICE, DUPLICATING, PRINTING, AND BINDING EQUIPMENT

46A OFFICE EQUIPMENT
46A1 MACHINES
46A1-2 Accounting
46A1-3 Adding
46A1-4 Calculating
46A1-5 Card Recording
46A2 PANTOGRAPH
46A3 SAFES AND LOCKERS
46A4 TYPEWRITERS
46A5 READERS
46D DUPLICATING EQUIPMENT
46D1 MACHINES
46D1-2 Addressing
46D1-3 Blue Printing
46D1-4 Embossing
46D1-5 Gelatin
46D1-6 Photographic
46D1-7 Plate
46D1-8 Spirit
46D1-9 Stencil
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<td>46D1-10</td>
<td>White Print</td>
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<tr>
<td>46P</td>
<td>PRINTING AND BINDING EQUIPMENT</td>
</tr>
<tr>
<td>46P1</td>
<td>CUTTERS</td>
</tr>
<tr>
<td>46P2</td>
<td>DRILLS</td>
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<tr>
<td>46P3</td>
<td>FRAMES</td>
</tr>
<tr>
<td>46P4</td>
<td>GRAINING MACHINES</td>
</tr>
<tr>
<td>46P5</td>
<td>PRESSES</td>
</tr>
<tr>
<td>46P6</td>
<td>WHIRLERS</td>
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CHAPTER 38
CATEGORY 47 - AGRICULTURE EQUIPMENT

38.1 GENERAL.

38.1.1 Category 47 contains four agriculture systems which are divided into equipment series. This category does not have a division of its equipment series into equipment subseries. Therefore the TO numbering pattern for this category will only contain three basic groups.

38.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

38.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

38.2 NUMBERING PATTERNS.

38.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

38.2.1.1 Part one is always the numeric 47 identifying the Category 47.

38.2.1.2 Part two is an alpha character identifying the agriculture systems, i.e., A - cultivation and soil preparation equipment; B - harvesting equipment; C - mowing equipment; D - weed and pest control. Associated equipment is identified by adding an alpha A immediately following the system identifier, e.g., AA.

38.2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 38.4.

38.2.2 GROUP TWO. Inasmuch as the numbering pattern for this category has only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

38.2.3 GROUP THREE.

38.2.3.1 The third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 47:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

38.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 47:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

38.3 EXAMPLE OF CATEGORY 47 NUMBERING PATTERNS.

38.3.1 An operating instruction for a sprayer, PN 44-10000-1:

47D1-5-1

47 Category 47
D Weed and Pest Control Equipment
I Sprayer Series
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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</thead>
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<td>47</td>
<td>AGRICULTURE EQUIPMENT</td>
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<td>CULTIVATION AND SOIL PREPARATION</td>
</tr>
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<td>CULTIVATORS</td>
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<td>47A2</td>
<td>HARROWS</td>
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<td>47A3</td>
<td>PLOWS</td>
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<td>47A4</td>
<td>SOIL MIXERS</td>
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<tr>
<td>47B</td>
<td>HARVESTING EQUIPMENT</td>
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<td>SPRAYERS</td>
</tr>
<tr>
<td>47D2</td>
<td>WEED BURNERS</td>
</tr>
</tbody>
</table>
CHAPTER 39
CATEGORY 49 - OPTICAL INSTRUMENTS, TIMEKEEPING AND NAVIGATION EQUIPMENT

39.1 GENERAL.

39.1.1 Category 49 contains three systems that are divided into three equipment series. This category does not have a division of its equipment series into equipment subseries. Therefore the TO numbering pattern for this category will only contain three basic groups.

39.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

39.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

39.2 NUMBERING PATTERNS.

39.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

39.2.1.1 Part one is always the numeric 49 identifying Category 49.

39.2.1.2 Part two is an alpha character identifying the various systems, i.e., A - optical instruments; B - timekeeping equipment; and C - navigation equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., AA.

39.2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 39.4.

39.2.2 GROUP TWO. Since the numbering pattern for this category uses only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

39.2.3 GROUP THREE.

39.2.3.1 The third group identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in Category 49:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-5 Test Procedures
-6 Inspection Requirements

39.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 49:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

39.3 EXAMPLES OF CATEGORY 49 NUMBERING PATTERNS.

39.3.1 An operating instruction for a navigation watch, type AN5740:
T.O. 00-5-18

49B2-3-1
49 Category 49
B Timekeeping Equipment
2 Watch Series
3 Represents Type AN5740
1 Number Reserved for Operating Instructions

39.3.2 Test procedures for a surveying compass, type N5334:

49C1-4-5
49 Category 49
C Navigation Equipment
1 Compass Series
4 Represents Type N5334
5 Number Reserved for Test Procedures

39.4 CATEGORY 49 NUMBERING SERIES.

49 OPTICAL INSTRUMENTS, TIMEKEEPING, AND NAVIGATION EQUIPMENT
49A OPTICAL INSTRUMENTS
49A1 BINOCULARS
49A2 MOUNTS
49A3 QUADRANTS
49A4 TELESCOPES
49A5 TRANSITS
49A6 PERISCOPE
49A7 AIMING CIRCLES
49A8 THEODOLITES
49A9 COLLIMATORS
49A10 MISSILE LAYING EQUIPMENT
49A11 CALIBRATION AND ALIGNMENT EQUIPMENT
49A12 SPOTTING SETS
49A13 MICROSCOPES
49A14 CATHEOMETER
49A15 CLINOMETERS
49A16 RANGE FINDERS
49A17 SPECTROPHOTOMETERS
49A18 ASSOCIATED EQUIPMENT
49A19 ALIDADES
49B TIMEKEEPING EQUIPMENT
49B1 CLOCKS
49B2 WATCHES
49B3 TIMERS
49C NAVIGATION EQUIPMENT
49C1 COMPASSES
49C2 INDICATORS
CHAPTER 40
CATEGORY 50 - SPECIAL SERVICES EQUIPMENT

40.1 GENERAL.

40.1.1 Category 50 contains four systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 40.2.

40.1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

40.1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

40.2 NUMBERING PATTERNS.

40.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

40.2.1.1 Part one is always the numeric 50 identifying Category 50.

40.2.1.2 Part two is an alpha character identifying the special services equipment systems, i.e., A - musical instruments; B - athletic equipment; C - sanctuary equipment; and D - laundry equipment.

40.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 40.4.

40.2.2 GROUP TWO. TO numbering patterns in Category 50 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

40.2.2.1 If only three groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

40.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment series is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

40.2.3 GROUP THREE.

40.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-1 Operating Instructions
-2 Service or Maintenance Manuals
-3 Depot Maintenance or Overhaul Instructions
-4 Illustrated Parts Breakdown
-6 Inspection Requirements

40.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 50:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

40.2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.
40.2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 40.2.3.1, above.

40.3 EXAMPLES OF CATEGORY 50 NUMBERING PATTERNS.

40.3.1 Operating instructions for an electric organ, model C-2G:

50A1-3-3-1
50 Category 50
A Musical Instruments
1 Organ Series
3 Electronic Organ Subseries
3 Represents Model C-2G
1 Number Reserved for Operating Instructions

40.3.2 Illustrated parts breakdown for laundry unit, model ELT9T:

50D1-2-14
50 Category 50
D Laundry Equipment
1 Laundry Unit Series
2 Represents Model ELT9T
14 Number Reserved for Illustrated Parts Breakdown

40.4 CATEGORY 50 NUMBERING SERIES.

50 SPECIAL SERVICES EQUIPMENT
50A MUSICAL INSTRUMENTS
50B ATHLETIC EQUIPMENT
50C SANCTUARY EQUIPMENT
50D LAUNDRY EQUIPMENT
50D1 LAUNDRY UNITS
CHAPTER 41
CATEGORY 51 - AUTOMATIC TEST SYSTEMS

41.1 GENERAL.

41.1.1 Normally test procedures, test control or programmed test TOs are numbered with related equipment in the various airborne and ground component categories. However, TOs pertaining to depot level, automatic test equipment software and software instruction manuals are numbered in Category 51. Three types of automatic test equipment numbered in this category can be defined as Computer Operated Multifunction Electronic Test Stations (COMETS); General Purpose Automatic Test Systems (GPATS); and Versatile Automatic Test Equipment Systems (VATES). GPATS and VATES TOs relate test modules to Line Replaceable Units (LRUs) and Shop Replaceable Units (SRUs) of an airborne or ground system. COMETS TOs identify LRUs and SRUs with a test system. Another basic difference between these automatic systems is GPATS and VATES test software do not require computer memory banks for test operations and can only test singular Units Under Test (UUTs). COMETS test software operates with computer memory banks and has the capability to test components of several systems on one test station.

41.1.2 Automatic Test Equipment in Category 51 contains seven systems. These systems are divided into equipment series and some of the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 41.2.

41.1.3 TO data pertinent to more than one system in this category is numbered in the category general series.

41.1.4 Information relating to more than one equipment series within a system is numbered in the category general series.

41.2 NUMBERING PATTERNS.

41.2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

41.2.1.1 Part one is always the numeric 51 identifying Category 51.

41.2.1.2 Part two is an alpha character identifying the various systems, i.e., C - computer operated multifunction electronic test stations; E - aircraft engines; N - navigation instruments; P - radar equipment; T - master hardware; and V - versatile automatic test equipment.

41.2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 41.4.

41.2.2 GROUP TWO. TO numbering patterns in Category 51 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

41.2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

41.2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

41.2.3 GROUP THREE.

41.2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO (see Appendix C for a complete list of types of TOs). The following is a list of numbers reserved to identify specific types of TOs in this category:

-06 Work Unit Code Manuals
-07 thru -09 Reserved
-1 Operating Instructions
-2 Service or Maintenance Manuals
-4 Illustrated Parts Breakdown
41.2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 51:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

41.2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

41.2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 41.2.3.1.

41.3 EXAMPLES OF CATEGORY 51 NUMBERING PATTERNS.

41.3.1 Operating and maintenance instructions with parts list for a microwave shop repair unit test adapter, PN 12A11786-1:

51C1-7-1
51 Category 51
C Computer Operated Test Station
1 Microwave SRU Test Station Series
7 Represents PN 12A11786-1
1 Number Reserved for Operating Instructions

41.3.2 Checkout manual for TF-39-GE-1A gas turbine engine:

51E1-3-18-1
51 Category 51
E Aircraft Engine
1 Jet Engine Series
3 Represents TF-39 Model Engine
18 Number Reserved for Checkout Manuals
1 First Manual in a Series

41.3.3 Operating and service instruction for a ratio transformer, PN 588618-401:

51T21-2-1
51 Category 51
T Master Hardware
21 Transformer Series
2 Represents PN 588618-401
1 Number Reserved for Operating Instructions

41.3.4 Checkout manual for type SN-38011/APQ-113 fire control radar:

51P2-2-7-8-1
51 Category 51
41.4 CATEGORY 51 NUMBERING SERIES.

51 AUTOMATIC TEST EQUIPMENT
51C COMPUTER OPERATED TEST STATIONS (COMETS)
51C1 MICROWAVE SHOP REPAIR UNIT TEST STATIONS
51C2 HIGH VOLTAGE VIDEO ANALOG MODULE TEST STATIONS
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CHAPTER 42
ALPHABETICAL LIST OF EQUIPMENT NAMES TO TECHNICAL ORDER NUMBER GROUPS

42.1 ALPHABETICAL LIST OF EQUIPMENT NAMES.

The following is an alphabetical list of equipment names to technical order number groups.

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Heating
Plumbing
Refrigerating
Ventilating
Water Treating
AIR EQUIPMENT
Engine Component, Non-aeronautical
AIR EVACUATION
General Technical Order
AIR INSTALLATION
Electrical Facility
Fire Protection and Rescue
General Technical Order
Harvest Eagle Water System
AIRBORNE EQUIPMENT
Electronic
Instrument
Mechanical
Weapon
AIRCRAFT
Attack
Bomber
Cargo/Transport
Fighter
Helicopter
Observation
Special Electronic
Trainer
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Inflation Unit
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Special
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<thead>
<tr>
<th>Component</th>
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<td>Bombing System Trainer</td>
<td>43E29</td>
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<td>Component</td>
<td>43X</td>
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<td>Device</td>
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<td>Device, Associated</td>
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<td>Equipment</td>
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<td>Gunship System Trainer</td>
<td>43E30</td>
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<td>Mobile Trainer</td>
<td>43E24</td>
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<tr>
<td>Resident Trainer</td>
<td>43E23</td>
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<td>DOD 4120.15-L</td>
<td>Model Designation of Military Aerospace Vehicles</td>
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<tr>
<td>DOD 5105.38-M</td>
<td>Security Assistance Management Manual (SAMM), Appdx 4</td>
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<tr>
<td>AFI 16-401(I)</td>
<td>Designating and Naming Defense Military Aerospace Vehicles</td>
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<tr>
<td>AFJI 21-301</td>
<td>Interservicing of Technical Manuals and Related Technology</td>
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<td>AFMAN 23-110V9</td>
<td>Security Assistance Program Procedures</td>
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<tr>
<td>AFMCI 21-301</td>
<td>Air Force Materiel Command Technical Order System Implementing Policies</td>
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<td>AFMCMD 406</td>
<td>Oklahoma City Air Logistics Center (OC-ALC)</td>
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<tr>
<td>AFPD 63-1/20-1</td>
<td>Acquisition and Sustainment Life Cycle Management</td>
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<td>AF 63-101</td>
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<td>DA PAM 25-30</td>
<td>Consolidated Index of Army Publications and Blank Forms</td>
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<td>TO 00-5-1</td>
<td>AF Technical Order System</td>
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<td>TO 00-5-3</td>
<td>AF Technical Order Life Cycle Management</td>
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<tr>
<td>TO 00-5-15</td>
<td>Air Force Time Compliance Technical Order Process</td>
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<tr>
<td>MIL-STD-196</td>
<td>Joint Electronics Type Designation System</td>
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<tr>
<td>MIL-STD-1808</td>
<td>Interface Standard; System, Subsystem, Sub-Subsystem Numbering</td>
</tr>
<tr>
<td>MIL-PRF-83495</td>
<td>Technical Manuals - On-Equipment Maintenance Manual Set</td>
</tr>
<tr>
<td>MIL-DTL-87929</td>
<td>Technical Manuals, Operation and Maintenance Instructions in Work Package Format (For USAF Equipment)</td>
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<td>ASD/AIA S1000D</td>
<td>International Specification for Technical Publication Utilizing a Common Source Database</td>
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<tr>
<td>D086</td>
<td>Mission Workload Assignments System</td>
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<tr>
<td>Air Force TO Catalog</td>
<td>Accessed through AF Portal using ETIMS</td>
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<td>TO Numbering, Indexing and Control Record</td>
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<tr>
<td>AFTO 204</td>
<td>TO Numbering, Indexing and Control Record (Continuation)</td>
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<td>DD 61</td>
<td>Request for Nomenclature</td>
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<td>Air Armament Center</td>
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<tr>
<td>AEDOPS</td>
<td>Automated EOD Publications System</td>
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<tr>
<td>AFMC</td>
<td>Air Force Materiel Command</td>
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<tr>
<td>AFLCMC</td>
<td>AF Life Cycle Management Center</td>
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<tr>
<td>AFMCi</td>
<td>AFMC Instruction</td>
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<tr>
<td>AFMETCAL</td>
<td>Air Force Metrology &amp; Calibration</td>
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<td>AFPD</td>
<td>Air Force Policy Directive</td>
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<td>AFTO</td>
<td>Air Force Technical Order (forms)</td>
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<tr>
<td>ALC</td>
<td>Air Logistics Center</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<td>ARSS</td>
<td>Armament Systems Squadron</td>
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<td>ATOS</td>
<td>Automated TO System</td>
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<td>CAC</td>
<td>Common Access Card</td>
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<td>CAGE</td>
<td>Contractor And Government Entity (Code)</td>
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<td>CBSG</td>
<td>Combat Sustainment Group</td>
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<td>CBSS</td>
<td>Combat Sustainment Squadron</td>
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<td>CL</td>
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<td>CSDB</td>
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<td>CSTO</td>
<td>Country Standard TO</td>
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<td>DLA</td>
<td>Defense Logistics Agency</td>
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<td>DM</td>
<td>Data Module (S1000D)</td>
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<td>Department of Defense</td>
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<td>EOD</td>
<td>Explosive Ordnance Disposal</td>
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<td>ES</td>
<td>Equipment Specialist</td>
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<td>ETIMS</td>
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<td>ETM</td>
<td>Electronic Technical Manual</td>
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<td>Fault Reporting (Manual) (MIL-PRF-83495)</td>
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<td>Job Guide (MIL-PRF-83495)</td>
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<td>MMAC</td>
<td>Material Management Aggregate Code</td>
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APPENDIX B
DEVELOPING TO TITLES

B.1 GENERAL.

A TO title relates to the subject and content so users can recognize the applicability of the TO and tell the difference between TOs with similar applications. The TO title is used to determine the TO number Category and assign the last segment of the TO number. TCTO Series Headers use abbreviated titles containing only the Mission/Design/Series (MDS – e.g., MODEL B-52 SERIES H) or Type/Model/ Series (TMS – e.g., TYPE AN/ARN131) of the systems or equipment covered. The TO Manager will enter the specific titles of individual TCTOs when requesting TCTO number assignment. When a commercial manual does not include a complete title, prepare an Identifying Technical Publication Sheet (ITPS) according to MIL-HDBK-1221, Evaluation of Commercial Off-The-Shelf (COTS) Manuals, identifying the complete, accurate TO title and any supplemental data provided.

B.2 RULES.

B.2.1 Do not enter "TECHNICAL MANUAL" as part of the TO title (included automatically by MIL-STD-38784).

B.2.2 Do not enter the word "PRELIMINARY" for the same reason. Preliminary status is shown by setting ETIMS "flags" during indexing.

B.2.3 Identify supplemental manuals in the first line of the title. Separate from the rest of the title by a space, two dashes, and a space. Example: SUPPLEMENTAL MANUAL.

B.2.4 In the next part of the TO title, list the type of TO (e.g., maintenance instructions, flight manual, illustrated parts breakdown (IPB), etc.) to tell what kind of technical data is included in the TO and determine the "Group (segment) Three" (TO type) portion of the TO number. Separate the type of TO or medium from the rest of the TO title by using a space, two dashes, then a space. Exception: MIL-PRF-83495 TOs will be listed as shown in paragraph B.2.8, below.

B.2.4.1 Use only the types of TOs or media listed in TO 00-5-18.

B.2.4.2 Abbreviations may be used (OPR = Operation; INSTR = Instructions; MAINT = Maintenance; INTMD = Intermediate; INSP = Inspection; etc.), but must be easily translatable.

B.2.4.3 Include "INSTR" in the title of any instructional TOs. Examples:

- FLIGHT MANUAL
- OPR INSTR
- MAINT INSTR
- JOB GUIDE
- CHECKLIST
- INTMD INSTR
- INSP REQUIREMENTS

B.2.4.4 If the TO consists of a combination of types, the types are listed in the order listed in TO 00-5-18 (e.g., operating instructions (-1) first, maintenance instructions (-2) next and parts list (PL) or IPB (-4) following).

- Examples:
  - OPR AND SVC INSTR
  - MAINT INSTRU WITH IPB
  - OVHL INSTR WITH IPB
  - OPN AND SVC INSTR WITH PL

B.2.5 The next part of the title identifies the intended level of maintenance if the TO is restricted for use at a specified level. (Note that "INTMD INSTR" as used in paragraph B.2.4.3 above is not restricted to use at the intermediate level.) Separate the intended level of maintenance from the rest of the title by using a comma and one space. Examples:

- MAINT INSTRU - DEPOT
- ASSEMBLY, CHECKOUT, AND MAINT INSTRU - ORG AND INTMD
B.2.6 For MIL-PRF-83495 organizational maintenance manuals, the type of TO or medium and the intended level of maintenance may be combined, followed by the function. Separate the type of TO and the level of maintenance from the function with a space, two dashes, and a space. Separate the function from the main part of the TO title by using a comma and a space. **Examples:**

- ORG MAINT - JOB GUIDE
- ORG MAINT - FAULT REPORTING
- ORG MAINT - GENERAL SYSTEM

B.2.7 Enter the subject or the equipment identification in the main part of the title. List the subject of the TO, or name of the equipment and the type, series, model and part number, in that order, when these elements apply. The NSN may be shown if required. Enter the manufacturer name in parentheses following the equipment number. Do not split a type, series, model or part number between two lines. The words type, series, model or part number are not considered part of the number. **Examples:**

- IPB - HOT AIR SHUTOFF VALVE, MODEL CV-2S3.5, PN 105150-2 (STRATOS)
- OVHL INSTR WITH IPB - POWER SUPPLY, TYPE ECU-45/A, PN 28VS1006 (WAGNER)

B.2.8 List the TO title classification in parentheses following the main part of the title for classified TOs. **Examples:**

- MAINT INSTR - INTMD, COUNTER-MEASURES RECEIVER
- TYPE R-1854/ALR-46(V), PN 31-032491-02 (ITEK) (TITLE UNCL)

**NOTE**

The classification of the TO and title is entered into ETIMS during the indexing process, and will appear as a "U," "C" or "S" in the TO detail screen of the TO catalog. The Department of Energy classifications for nuclear weapons technical data classified as "Restricted Data" and "Formerly Restricted Data" are not currently supported in ETIMS, and must be made part of the TO title when applicable.

B.2.9 When a proposed TO meets the criteria for a sectionalized manual (that is, it is sufficiently large and has natural divisions in tasks or equipment breakout which make several smaller manuals more usable and more manageable), each section must be numbered and indexed individually. A separate ETIMS "Manage TM Numbering; Assign a Publication Number" request must be submitted for each section. Each submittal lists the individual title and the relationship of each section to the group is set using the "Manage TM Index; Update an Index Entry" process, "Options; Update Index Data; Publication Association" function. The following examples show TO titles for a group of four sections, all having the same basic TO number. **Examples:**

- IPB - RECEIVER GP, TYPE OA-2504/ALD-5 (RAYTHEON)
- IPB - SIGNAL ANALYSIS, PROGRAMMER GP, TYPE OA-2505/ALD-5 (RAYTHEON)
- IPB - INDICATOR RECORDER GP, TYPE OA-2506/ALD-5 (RAYTHEON)
- IPB - ANTENNA GP, TYPE OA-2507/ALD-5 (SYLVANIA)

B.2.10 Various terms are used to describe the test procedures or operator manuals and the reference manuals which describe software-related instructions for embedded computers. These "dash eight" (-8) manuals contain documentation on how to use software programs identified in the CPIN System to check out, test or maintain computer hardware. The initiator ensures the title always identifies the specific function of the software documentation. **Examples:**

- CHECKOUT TAPE MANUAL - INDICATOR PANEL, TYPE RU-118, RADAR BOMB DIRECTING CENTRAL TYPE AN/TSQ-96 (REEVES)
- TEST PROCEDURES MANUAL - CONTROL INTERCOMMUNICATIONS SET, C-9655/A, PN 3397101 (HUGHES)

B.2.11 List any special notations in parentheses, such as (FORMERLY TO 12R2-4-171-2), or (THIS MANUAL INCOMPLETE WITHOUT TO 31M-2TMQ15-2), or (SA- ALC USE ONLY), or (USED WITH TO 36A11-21-2). Only notations of a permanent nature about the TO itself are listed here. See "4" below for other catalog notes. Identify commercial manuals with an entry in parentheses at the end of the title. **Example:**

- OPR INSTR - DODGE TRUCKS, MEDIUM AND HEAVY DUTY (COMMERCIAL MANUAL)

B-2
B.2.12 Identify contractor data, as follows. **Example:**

- CONTRACTOR ACCEPTANCE REQUIREMENTS DOCUMENT AR30873-702

**B.3 SYSTEM APPLICATION.**

System application data is required both as part of the TO title and in the TO record in the ETIMS Pub Index. The data are used to provide Lists of Applicable Publications (LOAPs) and to update USAF TO Catalog TO number to Equipment number cross-reference data. The LOAPs provide an aid for selection of or familiarization with TOs for a specific system and determination of TO file requirements. The Catalog cross-reference provides the capability to determine TO coverage for a specific piece of equipment, and helps to prevent acquiring duplicate tech data between services. The capability to withdraw data by system application requires consistent adherence to the rules below.

**B.3.1** Using the "Manage TM Numbering; Assign a Publication Number" process, enter only applications to prime aircraft, missiles, space launch vehicles, C-E systems, and engines listed in the D086, *Mission Workload Assignments System* into the "Request Air Force Pub Number" screen, in the "Weapon System Application" field.

**B.3.2** In order to provide a record of application and cross-reference to equipment and commodities, enter the applicable equipment TMS, part number, etc., using the ETIMS "Perform Acquisition; Update Equipment Data" process to associate TO numbers with Equipment part numbers.

**B.3.3** Leave system application data blank when establishing a TCTO series and for General and MPTOs. Enter the data when individual TCTOs are indexed.

**B.3.4** Enter system, equipment or commodity numbers as part of the TO title, as follows:

**B.3.4.1** Enter the appropriate system (that is, "B-52A," "F-15A" etc.) Do not split an application title entry between title lines such as "KC" one line and "135" on the next line.

**B.3.4.2** The applicable aircraft or missile series designation must be included (DOD 4120.15-L). When entering applications of several series in the same system, include the complete listing for each series. Use a comma between applications in the same series. **Example:** Use "F-111A, F-111B, F-111D," not "F-111A, B, D." For a TO applicable to B52G and H, enter "B-52G, B-52H."

**B.3.4.3** Use an asterisk (*) between systems. **Examples:** "B-52A, B-52D*KC-135A*F-102A."

**B.3.4.4** When a modified mission is designated, it is considered a separate system for application entry. **Example:** Use "F15A*TF-15A," not "F/TF-15A" nor "F-15A, TF1A."

**B.3.4.5** Include covered equipment and commodity TMS/part number/contractor number information as part of each applicable TO title. **Examples:** Use "MA-1A," "MD-3," "PN 324576-4," "Lockheed 458632-15."
APPENDIX C
TYPES OF TECHNICAL ORDERS

C.1 IDENTIFYING TYPES OF TECHNICAL ORDERS.

The following is a list of types of TOs.

- -01 List of Applicable Publications (LOAP)

- -06 Work Unit Code Manual

- -1 Operation Manual or Instruction Manual
  Flight Manual (Category 1)
  Erection Manual (Category 35)
  Receiving at Site (Category 35)
  Use and Storage (Category 35)
  Aerial Delivery of Supplies & Equipment (Category 13)
  Systems Manual
  Shop Manual (Category 38)
  Diagnostic Manual
  Handling (Category 11)
  Packaging
  Lube Order -1LC-1

- -2 Service/Maintenance/Checkout Servicing Sheet (Except Category 2) (Organizational Maintenance)
  Calibration & Measurement Summary (All Categories except 1, 2, or 21)
  Shop Manuals (Category 36)
  Winterization Equipment (Category 36)
  Assembly, Service, or Maintenance Instruction (Category 21)
  Assembly & Test Procedures (Category 31 \{31S9\})
  Maintenance Dependency Charts (Category 31 \{31S9\})
  Facility Manual (Category 31Z3)
  Wiring Diagrams (Category 01)
  Calibration Procedures
  Trouble Shooting & Repair Manual

- -3 Overhaul Instruction, Circuit Diagrams or Work Specifications
  Structural Repair (Category 1, 21, or 22)
  Block Diagrams
  Repair Instruction
  Depot Maintenance

- -4 IPB/Parts Catalog
  Parts Breakdown
  All Turn Around Procedures

- -5 Overhaul Changes (Category 2)
Calibration & Measurement Summary (Category 2)
DCSC Tech Maintenance Standards
Command Manual (Category 31)
Basic Weight Checklist and Loading Data (Category 1)
Weight & Balance Manual (Category 21 or 22)
Engineering Standards

Aircraft Loading & Checkout Procedures (Category 31 {31S9})
Primary Standards (Category 33)

-6 Inspection Requirements (Except Category 2)
Field Maintenance Instruction (Category 2)

-7 Installation Instructions
Directory Manual (Category 31)
Test and/or Programming Procedures
Winterization Instructions (Category 1)
Test and/or Checkout Procedures (Category 21)
Storage Procedures (Category 11)

-8 Checkout Manuals, Checkout and/or Programmed Test (Program Manual)
Performance Test Cards
Exterior/Interior Aircraft Markings (Category 1)

-8-1 User’s Manual
Test Procedure
Configuration Guide

**NOTE**

The number -8 includes subsequent sequence numbers indicated as 8-1, 8-2, 8-x, etc. This sequence number is used in all categories.

-9 Alignment Instructions
Corrosion Control (Category 10)
Non-Destruction Inspection Manual (Category 2)
Cargo Loading (Category 1)
Disposal Manual (Category 11)
Aircraft Structural Integrity Program (Category 1)

-10 Power Package Buildup Instruction (Category 1)
Engine Buildup Instruction (Category 21)
GEEIA Installation Standards (Category 31)

-16 Warhead Loading (Category 21)
-17 Storage of Missile (Category 21)
   Storage of Aerospace Vehicles (Category 22)

-18 Field Maintenance – Material (Category 21, 22)

-21 Missile Inventory Record Mater Guide (Category 21)

-22 Control Manual (Category 21)

-23 Corrosion Control (Category 21)

-26 Non-Destructive Inspection Manual (Category 21)

-27 Calibration and Measurement Manual (Category 2)