

**TO 00-5-18**

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**TECHNICAL MANUAL**

**METHODS & PROCEDURES**

**AF TECHNICAL ORDER NUMBERING SYSTEM**

PREPARED BY AFSC COMMODITY TEAM

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## INTRODUCTION

### **1 PURPOSE AND SCOPE.**

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 Alphabetical Listing.** 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.

### **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.

### **3 RESPONSIBILITIES.**

**3.1 Publishing Authority.** 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.

**3.2 AFMC Responsibility.** 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.

**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.

**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.

**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.

**3.3 AFLCMC-LZPTP Responsibility.** 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 1.1.6 and Paragraph 1.1.7.

**3.4 Deviation Requirements.** 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.

### **4 IMPROVEMENT REPORT.**

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.



# CHAPTER 1

## GENERAL INFORMATION

### **1.1 GENERAL.**

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.

**1.1.1 TO Number Request.** 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.

#### **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).

**1.1.2 Mil-Std.** 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.

**1.1.3 TO Assigned Groups.** Numbers are assigned to group TOs according to the systems and equipment they cover (Paragraph 1.3.2), 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.

**1.1.4 Multiple TO Numbers on One Media.** 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 1.23).

**1.1.5 TO Categories.** TO categories are not numbered in a consecutive sequence. Currently, 42 categories are identified between Category 0 and Category 60 ( Paragraph 1.3.2). 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.

**1.1.6 CSTO/CSTCTO Series Headers Numbering.** All FMS numbering for CSTO/CSTCTO Series Headers will be completed using ETIMS. CSTO/CSTCTO Series Headers will begin with either a two-digit country specific code or XX for CSTO/CSTCTO Series Headers that will be utilized by multiple countries. See Table 1-1 for two-digit country specific code listing. Example of a CSTO: SR1F-15C-1 (SR is specific to Saudi Arabia) Example of multiple country CSTO: XX1F-15C-1 (XX is for more than one country) See: <https://www.samm.dsca.mil/table/table-c4t2a> for complete listing of FMS country codes.

**1.1.7 TO Catalog.** 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. The "XX" version of the Air Force TO Catalog is provided for FMS/SAP customers at AFSAC on line.

**1.1.7.1** 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 (AEODPS) software, published quarterly.

**1.1.7.2** 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.

**1.1.8 TO Number Verification.** 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. 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.

**1.1.9 TO Numbering Information.** In addition to correctly completing ETIMS screens, 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.

## **1.2 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).

## **1.3 TECHNICAL ORDER NUMBERING THEORY.**

**1.3.1 TO Grouping.** 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.

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

**1.3.1.2** 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.

**1.3.2 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
9	Aircraft and Missile Hydraulic, Pneumatic and Vacuum Systems
10	Photographic Equipment
11	Armament Equipment
12	Airborne Electronic Equipment
13	Aircraft Furnishings and In-Flight Feeding Equipment, Cargo Loading, Aerial Delivery and Recovery Equipment, Aircraft Fire Detection and Extinguishing Equipment
14	Deceleration Devices, Personal and Survival Equipment
15	Aircraft and Missile Temperature Control, Pressurizing, Air Conditioning, Heating, Ice Eliminating and Oxygen Equipment
16	Airborne Mechanical Equipment
21	Guided Missiles
22	Aerospace Vehicles
31	Ground Electronic Equipment
32	Standard and Special Tools
33	Test Equipment
34	Shop Machinery and Shop Support Equipment
35	Ground Handling, Support, Air and Missile Base Operating Equipment
36	Vehicles, Construction and Material-Handling Equipment
37	Fuel-, Oil- and Propellant-Handling Equipment
38	Non-aeronautical Engines
39	Watercraft Equipment
40	Commercial Air-Conditioning, Heating, Plumbing, Refrigerating, Ventilating and Water Treating Equipment
41	Subsistence and Food Service Equipment
42	Coating, Cleaning and Sealing Compounds and Fuels, Gases, Lubricants, Chemicals and Materials
43	Simulator and Training Devices
44	Common Hardware Equipment
45	Railroad Equipment
46	Office, Duplicating, Printing and Binding Equipment
47	Agriculture Equipment
49	Optical Instruments, Timekeeping and Navigational Equipment
50	Special Services Equipment
51	Automatic Test Systems
60	Explosive Ordnance Disposal Procedures

**1.3.3 TO Numbering Patterns.** 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.

**1.3.4 TO Number Groups vs Parts.** 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.

**1.3.5 TO Numbering Groups.** 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**

Group	Maximum Parts in this Group	Maximum Positions	Maximum Alphanumeric Characters and Program Sequence
1	3	9	NNNNNAANN or AAAANNNAAA
2	6	21	NNNNNAAAAAANNNAAAANA or AAAAANNNNN-NAAAANNNNAN
3	3	10	NNNNNAAANN or AAAAANNNAA
4	3	11	NNNNNAAAANN or AAAAANNNNAA
5	3	7	NNNAAN or AAANNNA
6	2	5	NNNA or AAANN
7	1	2	AA or NN

**1.3.6 TO Numbering Major Elements.** The five major elements of information considered most essential in assigning TO numbers are discussed below:

**1.3.6.1 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:

**1.3.6.1.1** 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

**1.3.6.1.2** 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

**1.3.6.2 Descriptive Nomenclature.** The nomenclature provided on the ETIMS Screens 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 1.19)
ARN	JETDS Nomenclature that indicates: A - Airborne; R - Radio; N - Navigation
24	Radio Model 24
2	Maintenance Manual

**1.3.6.3 Functional System.** The functional system furnished on the ETIMS screens 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.

**1.3.6.4 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.

**1.3.6.5 Joint Electronics Type Designation System (JETDS) Nomenclature.** Refer to Paragraph 1.19. 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.

#### **1.4 TECHNICAL ORDER NUMBERING PROCEDURES.**

TO Managers requesting TO number assignment submit ETIMS Request TO Number screen 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.

**1.4.1 DO86.** 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.

**1.4.2 Determine Category.** Using the FSC and equipment nomenclature, determine the appropriate TO category, equipment series and sub-series. For numbering General TOs, see Paragraph 1.18.

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

**1.4.4 Developing TO Titles.** 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.

#### **1.5 IDENTIFYING TYPES OF TECHNICAL ORDERS.**

**1.5.1 TO Types.** 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.

**1.5.2 Identifying TO Type.** 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.

## 1.6 NUMBERING RELATED TECHNICAL ORDERS.

**1.6.1 Authorized Numbers.** 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 1.12 for numbering abbreviated TOs and to Paragraph 1.14 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.

**1.6.2 Compatable TOs.** 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:

36A12-13-18-1	Operations Manual
36A12-13-18-2	Maintenance Manual
36A12-13-18-4	Parts Breakdown

**1.6.3 Equipment Modifications.** 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.

**1.6.4 Non-Compatable TOs.** 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).

**1.6.5 Numbering Similiar TO Types.** 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.

**1.6.6 Sectionalisation of Numbers.** 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 1.11.

### **1.7 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 1.6 and the appropriate section for the category involved. Section numbers may be assigned according to Paragraph 1.11, if appropriate.

### **1.8 NUMBERING MAINTENANCE DEPENDENCY CHARTS.**

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

### **1.9 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.

### **1.10 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 1.22 specifies number suffixes to use if there are multiple TO versions published (e.g., the database and discrete TOs).

### **1.11 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

**1.12 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

**1.13 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.

**1.14 NUMBERING TIME COMPLIANCE TECHNICAL ORDERS.**

**1.14.1 TCTO.** 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.

**1.14.1.1**

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

**1.14.1.2** 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.

**1.14.1.3** 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.

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

**1.14.3 TCTO Series Header.** 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.

### 1.14.3.1

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

1.14.3.2 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.

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

1.14.3.3.1 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.

1.14.3.3.2 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.

1.14.4 Establishing TCTO Series Header. To establish a TCTO series header, the TO Manager submits a ETIMS screen according to the DI, 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.

### 1.14.4.1

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
-----------	--

1.14.4.2 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.

### 1.14.4.3

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.
-----------	--

**1.14.5 Requesting TCTO Numbers.** 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.

**1.15 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.

**1.16 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.

**1.17 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 AFI 20-118. 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.

**1.17.1 Army TM Designators.** 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**

For Army TM Numbers Ending in:	Use Air Force Type-of-TO Designators:
-10	-1, -11, -21, etc.
-12	
-13	
-14	
-HR (Hand Receipt)	
-20	-2, -12, -22, etc.
-23	
-24	
-25	
-30	
-34	
-35	
-40	
-45	
-50	-3, -13, -23, etc.

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

For Army TM Numbers Ending in:	Use Air Force Type-of-TO Designators:
-L (LOAP)	-01
Any of the above numbers with a P suffix. (P is not the same as &P, which does not affect the AF designator.)	-4, -14, -24, etc.

## 1.18 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.

**1.18.1 General TO Numbers.** 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 1.14.4.2 & Paragraph 1.14.4.3) is also used for general TOs in these systems.

**1.18.1.1** Category general TOs apply to more than one type of aircraft, missile, or engine or to more than one equipment system in the category.

**1.18.1.2** 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.

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

Examples:	<u>TO Number</u>	<u>Equipment-Series</u>
	9H1-1-102	Accumulators
	9H2-1-102	Cylinders and Actuators
	34C1-1-101	Leather Cutting Machines
	34F2-1-111	Metal Finishing Machines
	36A1-1-141	Ambulances
	36A2-1-1	Commercial Fleet Vehicles

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

Examples:	<u>TO Number</u>	<u>Equipment-Sub-Series</u>
	34F2-2-1-111	Grinders
	34F2-3-1-121	Hones
	36A2-3-1-1-3	Ford Vehicles
	36A2-4-1-102	GMC Vehicles
	36A2-5-1-104	Chrysler Motors Vehicles

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

**1.19.1 JETDS Numbers.** 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*.

**1.19.1.1** 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.

1.19.1.2 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.

1.19.1.3 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.)

1.19.1.4 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.

1.19.2 **JETDS General TOs.** 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).

1.19.3 **JETDS Installation TOs.** 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.

1.19.4 **JETDS Equipment TOs.** 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.

1.19.5 **JETDS General Purpose TOs.** 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<sup>1</sup>**

Installation (1 <sup>st</sup> letter)	Type of Equipment (2 <sup>nd</sup> letter)	Purpose (3 <sup>rd</sup> letter)
A - Piloted aircraft	A - Invisible light, heat radiation	A - Auxiliary assembly <sup>2</sup>
B - Underwater mobile submarine	C - Carrier	B - Bombing
D - Pilotless carrier	D - Radiac	C - Communications (receiving and transmitting)
F - Fixed Ground	E - Laser	D - Direction finder reconnaissance and/or surveillance
G - General Ground Use	G - Telegraph or Teletype	E - Ejection and/or release

**Table 1-3. Table of JETDS Equipment Indicators<sup>1</sup> - Continued**

Installation (1 <sup>st</sup> letter)	Type of Equipment (2 <sup>nd</sup> letter)	Purpose (3 <sup>rd</sup> letter)
K - Amphibious	I - Interphone and public address	G - Fire control, or searchlight directing
M - Ground, mobile	J - Electromechanical or inertial wire covered	H - Recording and/or reproducing (graphic meteorological and sound)
P - Portable	K - Telemetering	K - Computing
S - Water	L - Countermeasures	M - Maintenance and/or test assemblies (including tool)
T - Ground, transportable	M - Meteorological	N - Navigational aids (including altimeters, beacons, compasses, racons, depth sounding, approach and landing)
U - General Utility	N - Sound in air	Q - Special, or combination of purposes
V - Ground, vehicular	P - Radar	R - Receiving, passive detecting
W - Water surface and underwater combination	Q - Sonar and underwater sound	S - Detecting and/or range and bearing, search
Z - Piloted and pilotless airborne vehicle combination	R - Radio	T - Transmitting
	S - Special types, magnetic, etc or combination of types	W - Automatic flight or remote control
	T - Telephone	X - Identification and recognition
	V - Visual and visible light	Y - Surveillance (search, detect, and multiple target tracking) and control (both fire and air control)
	W - Armament (peculiar to armament, not otherwise covered)	
	X - Facsimile or Television	
	Y - Data Processing	

**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.

**1.20 COUNTRY STANDARD TECHNICAL ORDER NUMBERS.**

**1.20.1 Country Standard TO.** 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.

**1.20.2 CSTO Designation.** 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.

**1.20.3 Standalone CSTO.** 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)."

**1.20.4 CSTO Country Designator.** 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 1.13.

**1.20.5 CSTO Component Equipment.** 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.

**1.20.6 CSTO Examples.** 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, <i>System Subsystem Sub-Subsystem Numbering</i> , Chapter 32)
JG	Job Guide Manual
30	Subsystem and Sub-Subsystem
3	Third in a Series of Manuals

- CSTO - Supplemental Manual to a USAF TO or to a Standalone CSTO:

VE33D7-3-181-2-1

VE	Designates Venezuela
33	Category 33
D	Special Purpose Test Equipment
7	Electrical and Electronic
3	Computers Sub-series
181	Represents Part Number 2120300 Series
2	Maintenance Instructions
1	Supplemental Manual

- CSTO - Supplemental to Another CSTO, (to be used with SR43D3-4-12-1-1):

SR43D3-4-12-1-1-1

SR	Saudi Arabia
43	Category 43
D	Training Devices
3	Flight Simulators Sub-series
4	Fighter Aircraft Simulators Sub-series
12	Represents Model F-15 Series Aircraft

1                   Operating Instructions  
 11                  First Section of a Sectionalized Manual  
 1                   Supplemental to CSTO

## 1.21 OPERATION AND MAINTENANCE INSTRUCTIONS IN WORK PACKAGE FORMAT.

**1.21.1 Work Package Format.** 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.

**1.21.2 Individual Work Packages.** Individual work packages will be numbered by the TO Manager using the following criteria:

**1.21.2.1** 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.

**1.21.2.2** 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).

**1.21.2.3** 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).

**1.21.2.4** 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).

**1.21.2.5** 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).

**1.21.2.6** Other work packages will be numbered WP 003 00, WP 004 00, and so on as required.

## 1.22 TECHNICAL ORDER DISTRIBUTION MEDIA SUFFIX CODES.

### **NOTE**

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

**1.22.1 Different Media Types.** 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.

**1.22.2 Media Suffix Codes.** 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:

<u>Code</u>	<u>Medium</u>
CD	CD-ROM
WA	Electronic Access (Web Access (digital))
DV	Digital Versatile Disk (DVD)

### **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.

**1.22.3 Media Suffix Recognition.** 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:

## TO 00-5-18

1.22.3.1 If a TO or set of TOs ( Paragraph 1.23 ) 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).

1.22.3.2 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.

### 1.22.4 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 1.10).

## 1.23 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.

## 1.24 TECHNICAL ORDER NUMBERING FOR ASD/AIA S1000D©, INTERNATIONAL SPECIFICATION FOR TECHNICAL PUBLICATIONS UTILIZING A COMMON SOURCE DATABASE.

1.24.1 S1000D. 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).

1.24.1.1 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.

1.24.1.2 The CSDB is a "store" of DMs required to produce technical publications.

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

1.24.2 S1000D Compliance. 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 1.10). 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.

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.

#### **NOTE**

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

**2.1.1 Air Force Catalog.** 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).

**2.1.2 Catalog Functions.** 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:

0-1-71

Consolidated Security Assistance Technical Order Index



## CHAPTER 3

# CATEGORY 00 - METHODS AND PROCEDURES TECHNICAL ORDERS

### 3.1 GENERAL.

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.

**3.1.1 00 TO Category.** 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.

**3.1.2 00 TO Numbering Pattern.** 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.

CL	-	Checklists
S	-	Operational Supplements
SS	-	Safety Supplements

**3.2.3.3** In addition to the three basic groups, another group may result by volumizing, according to Paragraph 1.11, 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 Example One.** 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

## TO 00-5-18

3.3.2 Example Two. 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 Example Three. 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 Aircraft Category 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 Multiple Aircraft Type.** 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 1.18.

**4.1.3 Multiple Production of Aircraft.** 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:

**Table 4-1. Basic Aircraft Mission and Non-Standard Vehicle Designators**

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

**NOTE**

TOs for Observation aircraft are identified by the basic mission symbol L instead of the alpha O as identified in AFJ 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 AFJ 16-401:

**Table 4-2. Modified Mission and Status Designators**

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

\* 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 1.18), groups one and two are established using the following designators:

- 1-1 - General Aircraft
- 1-1A - General Engineering Manuals
- 1-1B - Weight and Balance
- 1-1C - Air Refueling
- 1-1H - Aircraft Battle Damage Repair
- 1-1M - Non-Nuclear Munitions Delivery

**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
- 5 Basic Weight Checklist and Loading Data
- 5-1 Sample Checklist Basic Weight

-5-2	Loading Data
-6	Inspection Requirements
-7	Winterization Instructions
-8	Test Procedures, or Checkout Manuals
-9	Cargo Loading
-10	Power Package Buildup Instructions
-11	Auxiliary Power Package Buildup Instructions
-12	Maintenance Materiel Management Manuals
-13	Weapons Loading Manuals
-14	Atomic Loading and In-Flight
-15	Assembly, Test, and Storage Procedures
-16	Atomic Loading and In-Flight (Reserved for Nuclear Weapons)
-17	Storage of Aircraft
-18	Maintenance of Airborne Equipment
-19	Conversion Instructions
-20	Standard Practices
-21	Aircraft Inventory Record Master Guides
-22	Reserved
-23	Corrosion Control
-24	Reserved
-25 thru 31	Air Crew Weapon Delivery Manuals (Reserved for Nuclear Weapons)
-32	In-Flight Maintenance Manuals
-33	Non-Nuclear Munitions Loading
-33-1	Non-Nuclear Munitions Loading - Tactical Missions
-33-2	Non-Nuclear Munitions Loading - Strategic Missions
-33-3	Non-Nuclear Munitions Loading - Defense Missions
-33-4	Non-Nuclear Munitions Loading - Transport Missions
-34	Non-Nuclear Munitions Delivery Manuals
-34-1	Non-Nuclear Munitions Delivery - Tactical Missions
-34-2	Non-Nuclear Munitions Delivery - Strategic Missions
-34-3	Non-Nuclear Munitions Delivery - Defense Missions
-34-4	Non-Nuclear Munitions Delivery - Transport Missions
-35	Non-Munitions Accessories
-36	Non-Destructive Inspection Manuals
-37	Calibration and Measurement
-38	Aircraft Structural Integrity Program
-39	Aircraft Battle Damage Repair TOs
-43	Aircraft Mission Maintenance Data
-44	Combat Weapon Delivery System (Shall not include imbedded data)
-501	and higher-Time Compliance TOs (TCTO)
-100	General
-113	Critical Alloys and Precious Metals

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 Paragraph 4.4 and 4.5).

**4.3.1 Example One.** 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 Example Two.** 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 Example Three.** 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 Example Four.** 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 Example Five.** 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 Example Six.** Supplemental manual to a sectionalized maintenance instruction:

1F-4C-2-14-1

1	Category 1
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 Example Seven.** 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 04 - Unassigned
- 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**

- 60 - Standard Practices: Propeller
- 61 - Propellers/Propulsors
- 62 - Rotors
- 63 - Rotor Drives
- 64 - Tail Rotor
- 65 - Tail Rotor Drives
- 66 - Folding Blades/Pylon
- 67 - Rotors Flight Controls
- 68 - Unassigned
- 69 - Unassigned

**POWER PLANT**

- 70 - Standard Practices: Engine
- 71 - Power Plant
- 72 - Engine
- 72(1) - Engine: Turbine/Turboprop
- 72(2) - Engine: Reciprocating
- 73 - Engine Fuel and Control
- 74 - Engine Ignition
- 75 - Engine Air
- 76 - Engine Controls
- 77 - Engine Indicating
- 78 - Engine Exhaust
- 79 - Engine Oil
- 80 - Engine Starting

- 81 - Turbines
- 82 - Water Injection
- 83 - Accessory Gearboxes
- 84 - Propulsion Augmentation
- 85 - Reserved
- 86 - Lift System
- 87 thru 89 - Unassigned

#### **MILITARY SYSTEMS**

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

**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:

- FI - Fault Isolation Manual
- FR - Fault Reporting Manual
- GE - General Equipment Manual
- GS - General System Manual
- JG - Job Guide Manual
- SD - Schematic Diagram Manual
- WD - Wiring Data Manual

**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 Example One.** Supplemental manual applicable to F16A aircraft:

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

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)
JG	Job Guide Manual
00	General (No Specific Subsystem Identified)
1	First in a Series of Manuals
1	Identifies the First Supplemental Manual

**4.5.2 Example Two.** General fault reporting manual for F16B aircraft:

1F-16B-2-00FR-00-1

1	Category 1
F	Basic Mission Fighter
16	Aircraft Production Model
B	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
00	General (No Specific System Identified)
FR	Fault Reporting Manual
00	General (No Subsystem Identified)
1	First in a Series of Manuals

**4.5.3 Example Three.** 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)
JG	Job Guide Manual
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 Example Four.** 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

## TO 00-5-18

B Aircraft Production Series  
2 Number Reserved for Maintenance Instructions  
32 Landing Gear System (MIL-STD-1808, Chapter 32)  
JG Job Guide Manual  
30 Extension and Retraction Subsystem  
3 Third in a Series of Manuals

4.5.5 Example Five. 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 Engine Category 2. 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 Multiple Engines. TO data pertaining to more than one type of engine is numbered in the category general series.

5.1.3 Multiple Engine Models. 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.:

2J-F100	
2	Category 2
J	Jet Engines
F	Turbofan Subtype
100	Engine Model Number

##### 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.

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

2K-SR97

2 Category 2  
K Booster or Rocket Engine  
SR Solid Fuel Subtype  
97 Engine Model Number

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.

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
- 9 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 Example One. 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 Example Two. 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 Example Three. 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 Example Four. 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
2	Identifies PN 7453
3	Number Reserved for Overhaul Instructions

5.3.5 Example Five. 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
2JA18	POWER PACKAGE QEC
2K	BOOSTER AND ROCKET ENGINES
2K-LR	Liquid-Type Rocket Motors
2K-SR	Solid-Type Rocket Motors
2K-SRM	Solid-Type Propellant Missiles
2KA	ASSOCIATED EQUIPMENT
2KA1	POWER PLANT ASSOCIATED EQUIPMENT
2KA1-2	Control and Governor Assemblies
2KA1-3	Propulsion Valves
2KA1-4	Vent Adapters (Propulsion)
2KA1-5	Ejectors (Propulsion)
2KA1-6	Turbine Pumps
2KA1-7	Pack Assemblies
2KA1-8	Consoles
2KA1-9	Panel Assemblies (Propulsion)
2KA1-10	Nozzles
2R	RECIPROCATING ENGINES
2R-L	In-Line
2R-O	Opposed
2R-R	Radial
2RA	ASSOCIATED EQUIPMENT
2RA1	ENGINE CONTROL SYSTEMS
2RA1-2	Automatic
2RA1-3	Manual
2RA2	ENGINE COOLING EQUIPMENT
2RA2-2	Engine Cooling and Anti-Icing Fans
2RA3	ENGINE MOUNTING SYSTEMS
2RA3-2	Engine Mounts
2RA3-3	Vibration Isolators
2RA4	TURBO AND ENGINE DRIVEN SUPERCHARGERS
2RA5	SUPERCHARGER CONTROL SYSTEMS
2RA5-2	Control Systems
2RA5-3	Actuators
2RA5-4	Regulators
2RA5-5	Governors
2RA5-6	Junction Boxes
2RA5-7	Amplifiers
2RA5-8	Motors, Waste-Gate
2RA5-9	Pressuretrols
2RA5-10	Boost Selectors
2RA5-11	Control Valves
2RA5-12	Valves, Barometric Anti-Leak
2RA5-13	Adapter Units, Turbo-Regulators
2RA5-14	Switches, Air-Pressure
2RA6	SUPERCHARGER RELATED EQUIPMENT
2RA6-2	Intercoolers
2RA6-3	Motor Assemblies
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 Aircraft Propellers and Rotors Category 3.** 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 Multiple Propeller Assemblies.** TO data pertaining to more than one type of propeller assembly control is numbered in the category general series.

**6.1.3 Multiple Propeller Motivations.** 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:

## TO 00-5-18

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 Title 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 Example One. 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 Example Two. 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 Example Three. 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  
3R2-3 Limiter  
3R2-4 Power Plant

3R2-5	Swashplate
3R3	SERVO ASSEMBLIES
3R4	GEAR BOX ASSEMBLIES
3R4-2	Main (Central)
3R4-3	Intermediate
3R4-4	Tail
3R4-5	Degreasers, Pumps
3R4-6	Nose Gear Box
3R4-7	Accessory Gear Box
3R5	AZIMUTH ASSEMBLIES
3R6	SLIP RING ASSEMBLIES
3R7	TRANSMISSIONS
3R7-2	Main Rotor
3R7-3	Forward Rotor
3R7-4	Aft Transmission
3R8	CLUTCH AND FAN ASSEMBLIES
3R9	GENERATORS AND DRIVE ASSEMBLIES
3R10	BRAKE AND DRUM ASSEMBLIES
3R11	STATOR ASSEMBLIES
3R12	SHAFT AND HOUSING ASSEMBLIES
3R13	CYLINDERS
3R14	STRUT ASSEMBLIES
3R15	FREEWHEEL UNITS
3R16	COUPLING ASSEMBLIES
3R17	BLOWERS AND DUCTS
3R18	RADIATORS
3R19	MAST ASSEMBLIES
3R20	SCISSORS
3R21	HANGARS

## CHAPTER 7

### CATEGORY 4 - AIRCRAFT LANDING GEAR

#### **7.1 GENERAL.**

**7.1.1 Aircraft Landing Gear Category 4.** 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 Multiple Systems.** Technical data pertaining to more than one system is numbered in the category general series.

**7.1.3 Multiple Series.** 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.**

## TO 00-5-18

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
- 6 Inspection Requirements
- 7 Installation Instructions
- 8 Test procedures, Checkout Manuals, or Programmed Tests

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 Example One. Intermediate maintenance instructions for the nose landing gear shock strut assembly, PN 2006600, on the F-16:

S2-80-2  
4 Aircraft Landing Gear  
S Struts, Shock-Absorbing  
2 Nose Landing Gear  
80 Number Assigned To Nose Strut PN 2006600  
2 Number Reserved For Intermediate Maintenance

7.3.2 Example Two. Depot overhaul instructions for the skid and locked wheel detector assembly, PN 40-143, on the B-52:

BA2-6-3  
4 Aircraft Landing Gear  
B Brake System  
A Associated Equipment  
2 Skid Detectors  
6 Number Assigned to Skid And Wheel Detector Assembly, PN 40-143  
3 Number Reserved For Depot Overhaul Instructions

7.3.3 Example Three. Illustrated parts breakdown for the anti-skid control valve assembly, PN 39-077, 39-113, and 39-171, on the F-4:

4BA4-86-4  
4 Aircraft Landing Gear  
B Brake Systems  
A Associated Equipment  
4 Valves, Hydraulic-Brake-Control

86 Number Assigned to Anti-Skid Control Valve Assembly, PN 39-077, 39-113, and 39-171  
 44 Number Reserved for Illustrated Parts Breakdown

#### 7.4 CATEGORY 4 TO NUMBERING SERIES.

4	AIRCRAFT LANDING GEAR
4A	LANDING GEARS
4A1	FLOAT
4A2	SKI
4A3	TRACK
4A4	GUIDE WHEEL
4A5	FLOTATION
4A6	POSITIONER
4AA	ASSOCIATED EQUIPMENT
4AA1	SKI
4B	BRAKE SYSTEMS
4B1	BRAKES
4B1-2	Carbon
4B1-3	Steel
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	Split (Tie Bolt)
4W1-3	Lock Ring
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	Split (Tie Bolt)
4W3-3	Lock Ring
4W4	OUTRIGGER
4W4-2	Split (Tie Bolt)
4W4-3	Lock Ring
4W5	HELICOPTER

## CHAPTER 8

### CATEGORY 5 - AIRBORNE INSTRUMENTS

#### **8.1 GENERAL.**

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.

**8.1.1 Airborne Instruments Category 5.** TO data pertaining to more than one system is numbered in the category general series.

**8.1.2 Multiple Systems.** 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.**

**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

## TO 00-5-18

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 **Example One.** 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 **Example Two.** 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 **Example Three.** 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	<b>CONTROLLERS</b>
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	<b>FILTERS</b>
5A10-2	Oil
5A10-3	Gyroscope
5A11	<b>GYROSCOPES</b>
5A11-2	Rate
5A11-3	Vertical
5A11-4	Directional
5A11-5	Attitude
5A11-6	Integrating
5A11-7	Displacement
5A12	<b>INDICATORS</b>
5A12-2	Direction
5A12-3	Trim
5A12-4	Attitude
5A12-5	Flight
5A12-6	Distance
5A12-7	Attitude (Use 5A12-4)
5A13	<b>PANELS AND FRAMES</b>
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	<b>SERVOS</b>
5A14-2	Electromechanical
5A14-3	Hydraulic
5A14-4	Transmitter
5A14-5	Central Gyroscope Reference System
5A15	<b>SERVO MECHANISMS</b>
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
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	SHAKER 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.

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.

**9.1.1 Aircraft and Missile Fuel Systems Category 6.** TO data pertaining to more than one system is numbered in the category general series.

**9.1.2 Mutiple Systems.** 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.

**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

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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:

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

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 Example One. 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 Example Two. 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 Example Three. 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 REFUELING SYSTEMS  
6A1               ACTUATORS

6A1-2 Hydraulic  
6A2 AMPLIFIERS (Use 8D or 8A)  
6A3 BOOM ASSEMBLIES  
6A4 INDICATORS  
6A5 NOZZLE ASSEMBLIES  
6A6 RECEPTACLE ASSEMBLIES  
6A7 STATIC DISCONNECTOR ASSEMBLIES  
6A8 HOSE REEL ASSEMBLIES  
6A9 VALVES  
6A9-2 Control  
6A9-3 Relief  
6A9-4 Float  
6A9-5 Selector  
6A9-6 Check  
6A9-7 Regulator  
6A9-8 Shutoff  
6A9-9 Adapter  
6A9-10 Response  
6A10 PUMPS  
6A10-2 Fuel Transfer  
6A11 TRANSMITTERS  
6A12 RECOIL ASSEMBLIES  
6A13 DRIVE UNITS  
6A14 SUPPRESSOR ASSEMBLIES  
6A15 COUPLINGS  
6A16 BUNGEE ASSEMBLIES  
6A17 ADAPTERS  
6A18 PROBES  
6A19 SELECTORS  
6A20 CYLINDERS  
6A21 DROGUES  
6A22 THERMISTORS  
6J AIRCRAFT AND MISSILE ENGINE FUEL SYSTEMS - TURBOJET AND TURBOPROP  
6J1 AMPLIFIERS  
6J1-2 Main System  
6J1-3 Afterburner System  
6J2 BAROMETRIC ASSEMBLIES  
6J3 FUEL CONTROLS  
6J3-2 Afterburner  
6J3-3 Emergency  
6J3-4 Main  
6J3-5 Starting  
6J3-6 Speed Limiter  
6J3-7 Valve  
6J3-8 Nozzle and Actuator  
6J4 QUICK DISCONNECT COUPLINGS  
6J5 FILTERS AND STRAINERS  
6J6 (Not Used)  
6J7 GOVERNORS  
6J8 NOZZLES  
6J9 PRIMER AND IGNITER ASSEMBLIES  
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
6J21	LIMITERS
6J21-2	Acceleration
6J22	COOLERS (Heat Exchangers)
6J23	MISSILE PLUMBING, FUEL
6J23-2	Restrictor
6J24	HEATERS

6J25 ACCUMULATORS  
6J26 DETECTORS  
6J27 CYLINDERS  
6J28 MANIFOLDS  
6J29 ACTUATOR ASSEMBLIES  
6K ROCKET ENGINE FUEL SYSTEMS  
6K1 VALVES  
6K1-2 Control  
6K1-3 Drain  
6K1-4 Shutoff  
6K1-5 Relief, Vent  
6K1-6 Disconnect  
6K2 GENERATOR ASSEMBLIES  
6K2-2 Gas  
6K3 GIMBAL AND MOUNT ASSEMBLIES  
6K3-2 Thrust Chamber  
6K4 SWIVEL ASSEMBLIES  
6K4-2 Mechanical  
6K5 THRUST CHAMBER ASSEMBLIES  
6K5-2 Boost Rocket  
6K6 REGULATORS  
6K6-2 Pressure  
6K7 COUPLINGS AND DISCONNECTS  
6K7-2 Couplings  
6K8 PUMP ASSEMBLIES  
6K8-2 Turbo  
6K9 INITIATORS  
6K10 NOZZLE ASSEMBLIES  
6K11 ADAPTERS  
6K12 ACTUATOR ASSEMBLIES  
6K13 PROBE ASSEMBLIES  
6P PURGING SYSTEMS  
6P1 NITROGEN VALVES  
6P1-2 Check Nitrogen  
6P1-3 Pressure Regulating  
6P1-4 Relief Nitrogen  
6P1-5 Control  
6P1-6 Shutoff  
6P2 GENERATOR PACKAGES  
6P2-2 Purge Gas  
6P3 CONTROLLERS  
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

## CHAPTER 10

### CATEGORY 7 - AIRBORNE ENGINE LUBRICATING SYSTEMS

#### **10.1 GENERAL.**

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.

**10.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**10.1.2 Multiple Series.** 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 Example One. 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 Example Two. 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 Example Three. 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 RECIPROCATING ENGINE LUBRICATING SYSTEMS  
7R1 COOLERS  
7R1-3 Oil Coolers  
7R2 FILTERS  
7R3 HEATERS  
7R4 PUMPS, RECIPROCATING-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



## CHAPTER 11

### CATEGORY 8 - AIRBORNE ELECTRICAL SYSTEMS

#### **11.1 GENERAL.**

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.

**11.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**11.1.2 Multiple Series.** 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.**

**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

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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:

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

11.2.3.3 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 and the specific types of TOs are then identified in group four.

11.2.4 **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.

### 11.3 EXAMPLES OF CATEGORY 8 NUMBERING PATTERNS.

11.3.1 **Example One.** 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

11.3.2 **Example Two.** 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

11.3.3 **Examples Three.** 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

### 11.4 CATEGORY 8 NUMBERING SERIES.

8                   AIRBORNE ELECTRICAL SYSTEMS  
8A                 ALTERNATING-CURRENT

8A1	ACTUATORS AND MOTORS
8A1-2	Bomb Bay Door
8A1-3	Camera Door
8A1-4	Magnetron
8A1-5	Cowl Flap and Air Plug
8A1-6	Tachometer (See 8A1-28)
8A1-7	Wing Flap, Dive Flap
8A1-8	Trim Tab, Boost
8A1-9	Oil Cooler, Inter-Cooler
8A1-10	Carburetor Air
8A1-11	Cockpit Heat and Vent
8A1-12	Anti-Ice, De-Ice
8A1-13	Engine, Prop Control
8A1-14	Valve
8A1-15	Pump
8A1-16	Radome Retract
8A1-17	Fan, Blower
8A1-18	Windshield Wiper
8A1-19	Compressor
8A1-20	Tip Tank, Jato Release
8A1-21	Fractional Horsepower
8A1-22	Integral Horsepower
8A1-23	Air Inlet Door, Screen
8A1-24	Nose Turret Empty Disposal
8A1-25	Regulating
8A1-26	Seat Control
8A1-27	Navigational
8A1-28	Generator, Tachometer
8A1-29	Heater
8A1-30	Hoist
8A1-31	Selector Door
8A1-32	Transmitter
8A1-33	Radar
8A1-34	Throttle
8A1-35	Antenna
8A1-36	Ram Air
8A1-37	Wingfold
8A1-38	Photographic Equipment
8A1-39	Switch
8A1-40	Autopilot
8A1-41	Spike Positioning
8A1-42	Pitot Tube
8A1-43	Turret Drive
8A1-44	Potentiometer
8A1-45	Training Equipment
8A1-46	Radio
8A1-47	Computer
8A1-48	Gearhead
8A1-49	Inflight Printer, Control
8A1-50	Test Set
8A1-51	Rudder
8A1-52	Transmission

8A1-53	Stabilizer
8A1-54	Launch Gear
8A1-55	Guidance
8A1-56	Lights
8A1-57	Ammunition Booster, Gunnery
8A1-58	Cryptographic Equipment
8A1-59	TV Viewfinder
8A1-60	Launcher, Guided-Missile (See 35M)
8A1-61	Engine Temperature Control
8A1-62	Driftmeter Fairing
8A1-63	Pressurization Unit
8A1-64	Indicator
8A1-65	Amplifier
8A1-66	Fire Control
8A1-67	Controlled Line Platform
8A1-68	Escape Capsule
8A1-69	Electronic Countermeasure
8A1-70	Lights (See 8A1-56)
8A1-71	Flare Ejection
8A1-72	Servo
8A1-73	Control
8A1-74	Timer
8A1-75	Recorder
8A1-76	Ramp
8A1-77	Plumbing
8A1-78	Drive (See 8A1-43)
8A1-79	Static Line Cable
8A1-80	Air Exit Door
8A1-81	Landing Gear
8A1-82	Shaker Assembly
8A1-83	Filter
8A1-84	Linear
8A2	POWER SUPPLIES
8A3	CONTROLLERS
8A3-2	Trim Tab
8A3-3	Afterburner
8A3-4	Starter
8A3-5	Generator
8A3-6	Wing Flap
8A3-7	Flasher
8A3-8	Timer
8A3-9	Temperature
8A3-10	Oil Cooler
8A3-11	Calibration
8A3-12	Rudder
8A3-13	Frequency and Load
8A3-14	Steering
8A3-15	Air Inlet
8A3-16	Paralleling
8A3-17	Warning Device
8A3-18	Panel
8A3-19	Winch and Hoist

8A4	CONNECTORS, PLUGS, ETC.
8A4-2	Mounting Rack and Tray
8A4-3	Contactor
8A5	DYNAMOTORS
8A5-2	0-100 MA
8A5-3	101-200 MA
8A5-4	201-300 MA
8A5-5	301-400 MA
8A6	GENERATORS (ENGINE DRIVEN)
8A6-2	0-1 KVA
8A6-3	2-7 KVA
8A6-4	8-9 KVA
8A6-5	10-15 KVA
8A6-6	16-20 KVA
8A6-7	21-30 KVA
8A6-8	31-40 KVA
8A6-9	41-60 KVA
8A6-10	61-120 KVA
8A7	MOTOR GENERATORS (ROTARY INVERTER)
8A7-2	0-1 AMP
8A7-3	1-250 VA
8A7-4	251-500 VA
8A7-5	501-1000 VA
8A7-6	1001-3000 VA
8A8	HEATERS AND DEFROSTERS
8A8-2	0-500 Watts
8A8-3	501-1000 Watts
8A8-4	1001-2000 Watts
8A9	VIBRATORS
8A9-2	Instrument Panel
8A10	LIGHTING EQUIPMENT
8A10-2	Landing
8A10-3	Taxi
8A10-4	Inter-Aircraft
8A10-5	Fluorescent Lights, Related Equipment
8A10-6	Flasher
8A10-7	Vibrator Pack
8A10-8	Anti-Collision
8A10-9	Display
8A10-10	Warning, Dimming Control
8A11	POWER SUPPLIES (See 8A2)
8A12	STARTERS
8A12-2	Combination Inertia - Direct Crank
8A12-3	Direct Crank
8A13	STARTER GENERATORS
8A13-2	1-100 amps
8A13-3	101-200 amps
8A13-4	201-300 amps
8A13-5	301-400 amps
8A14	TRANSFORMER RECTIFIERS
8A15	WARNING DEVICES
8A15-2	Audible Signal

8A15-3	(Do not use)
8A15-4	Fuel, Water Pressure
8A15-5	Stall Warning
8A16	VOLTAGE REGULATORS
8A17	SUPPRESSOR ASSEMBLIES
8A18	EJECTORS
8A19	TRANSFORMERS
8A20	AMPLIFIERS
8A21	FANS AND BLOWERS
8A22	TRANSMITTERS
8A23	CABLES
8A24	BOXES
8A24-2	Distribution
8A24-3	Junction
8A24-4	Control
8A25	PANELS - POWER DISTRIBUTION
8A26	INDICATORS
8A27	POWER MONITORS
8A28	ELECTROMAGNETIC UNITS
8C	COMBINATION ALTERNATING-AND DIRECT-CURRENT
8C1	ACTUATORS AND MOTORS
8C1-2	Bomb Door
8C1-3	Camera Door
8C1-4	Cockpit Canopy
8C1-5	Cowl Flap
8C1-6	Landing Gear
8C1-7	Wing Flap, Dive Flap
8C1-8	Trim Tab, Boost
8C1-9	Radio Set
8C1-10	Carburetor Air
8C1-11	Cockpit Heating and Ventilating
8C1-12	Anti-Ice and De-Ice
8C1-13	Engine Control
8C1-14	Valve
8C1-15	Pump
8C1-16	Radome Retract
8C1-17	Fan, Blower
8C1-18	Windshield Wiper
8C1-19	Compressor
8C1-20	Tip Tank, Jato Release
8C1-21	Fractional Horsepower Motor
8C1-22	Integral Horsepower Motor
8C1-23	Propeller Pitch and Mixture
8C1-24	Fire Detection
8C1-25	Positioning Control System
8C1-26	Temperature Control
8C1-27	Ground Cooling Door
8C1-28	Tachometer
8C1-29	Re-Entry Decoy
8C1-30	Cabin Pressure
8C1-31	Thrust Recovery
8C1-32	Winch

8C2	DO NOT NUMBER IN THIS SERIES
8C3	CONTROLLERS
8C3-2	Trim Tab
8C3-3	Afterburner Control
8C3-4	Starter
8C3-5	Generator
8C3-6	Wing Flap
8C3-7	Flasher
8C3-8	Timers
8C3-9	Temperature
8C3-10	Air Inlet
8C3-11	Inverter
8C3-12	Pylon
8C3-13	Voltage
8C3-14	Panel
8C3-15	Warning Device
8C3-16	Electrical
8C3-17	Landing Gear
8C3-18	Electronic
8C3-19	Digital Electronic
8C4	CONNECTORS, PLUGS, TERMINALS
8C5	DYNAMOTORS
8C5-2	0-100 MA
8C5-3	101-200 MA
8C5-4	201-300 MA
8C5-5	301-400 MA
8C5-6	401-1000 MA
8C5-7	1001-2000 MA
8C5-8	2001-3000 MA
8C5-9	3001-4000 MA
8C6	GENERATORS
8C6-2	200 amp DC - 1200 VA AC
8C6-3	60 amp - 28 VA DC
8C7	MOTOR GENERATORS
8C7-2	1-250 VA
8C7-3	251-500 VA
8C7-4	501-750 VA
8C7-5	751-1000 VA
8C7-6	1001-1500 VA
8C7-7	1501-2500 VA
8C7-8	2501-5000 VA
8C8	BOX ASSEMBLIES
8C9	INSTRUMENT PANEL VIBRATORS
8C9-2	0-5 lbs
8C9-3	6-10 lbs
8C9-4	11-15 lbs
8C9-5	16-20 lbs
8C9-6	21-25 lbs
8C10	LIGHTING EQUIPMENT
8C10-2	Landing
8C10-3	Cockpit
8C10-4	Inter-Aircraft

8C10-5                   Fluorescent  
8C10-6                   Flasher  
8C10-7                   Flood  
8C10-8                   Panels  
8C11                     POWER SUPPLIES  
8C11-2                   110V AC Input - 300V DC Output  
8C11-3                   28V DC Input - 28V AC Output  
8C11-4                   115V AC Input - 275V DC Output  
8C11-5                   195/210V AC Input - 24/31V DC Output  
8C11-6                   28V DC Input - 115V AC Output  
8C11-7                   195/210V AC Input - 28V DC 100 Amps Output  
8C11-8                   Converter  
8C12                     STARTERS  
8C12-2                   Inertia and Direct Crank  
8C12-3                   Direct Crank  
8C12-4                   Energizer  
8C13                     STARTER GENERATORS  
8C13-2                   1-100 amps  
8C13-3                   101-200 amps  
8C13-4                   201-300 amps  
8C13-5                   301-400 amps  
8C13-6                   Direct Current  
8C14                     TRANSFORMER RECTIFIERS  
8C14-2                   0-25 amps  
8C14-3                   26-50 amps  
8C14-4                   51-100 amps  
8C14-5                   0-120 amps  
8C14-6                   101-200 amps  
8C15                     WARNING DEVICES  
8C15-2                   Horn  
8C15-3                   Bell  
8C15-4                   Lamp  
8C15-5                   Warning Unit, Vacuum  
8C15-6                   Fuel Pressure  
8C15-7                   Oil Pressure  
8C15-8                   Warning, Caution Panel  
8C15-9                   Fire Detector  
8C15-10                  Stall Warning  
8C15-11                  Audible Signal  
8C16                     RESISTORS  
8C16-2                   Powerstats, Autotransformers  
8C17                     AMPLIFIERS  
8C17-2                   Autopilot  
8C18                     VOLTAGE REGULATORS  
8C19                     BOXES  
8C19-2                   Distribution  
8C19-3                   Junction  
8C20                     HEATING SYSTEM  
8C20-2                   Electrical  
8C21                     PANELS  
8C22                     FILTER ASSEMBLIES  
8D                        DIRECT CURRENT

8D1	ACTUATORS AND MOTORS
8D1-2	Cargo, Ramp Door
8D1-3	Camera Door
8D1-4	Cockpit Canopy
8D1-5	Cowl Flap, Air Plug
8D1-6	Landing Gear
8D1-7	Wing Flap, Dive Flap
8D1-8	Trim Tab, Boost
8D1-9	Oil Cooler, Intercooler
8D1-10	Carburetor Air
8D1-11	Cockpit Heat, Vent
8D1-12	Anti-Ice and De-Ice
8D1-13	Engine Control
8D1-14	Valve
8D1-15	Pump
8D1-16	Radome Retract
8D1-17	Fan, Blower
8D1-18	Windshield Wiper
8D1-19	Compressor
8D1-20	Tip Tank, Jato Release
8D1-21	Fractional Horsepower
8D1-22	Integral Horsepower
8D1-23	Propeller Pitch and Mixture
8D1-24	Hose Reel
8D1-25	Air Inlet Door, Scoop, Screen
8D1-26	Seat Control
8D1-27	Paratrooper, Spoiler Door
8D1-28	Rescue Door
8D1-29	Launcher Reel
8D1-30	Landing Light
8D1-31	Cargo Hook Unlatch
8D1-32	Bleed Air Supply System
8D1-33	Purge Gas Control
8D1-34	Approach Chute Door
8D1-35	Flight Refueling System
8D1-36	Hoist, Winch
8D1-37	Rescue Hatch
8D1-38	Nacelle Vent
8D1-39	Selector Door
8D1-40	Oil Cooler Door
8D1-41	Camera Hoist
8D1-42	Clutch
8D1-43	Wrench
8D1-44	Wing Heating, Venting
8D1-45	Guidance System
8D1-46	Step
8D1-47	Pitch Control
8D1-48	Hose Reel Door
8D1-49	Wing Tip Door
8D1-50	Ejection Door
8D1-51	Gun Post Door
8D1-52	Flight Refueling Pod Door

8D1-53	Locks (See 8D1-92)
8D1-54	Tail Skid
8D1-55	Alternator Cooling Door
8D1-56	Landing Gear Door
8D1-57	Bomb Sight
8D1-58	Amplifier
8D1-59	Power Unit
8D1-60	Beacon, Anti-Collision
8D1-61	Fuel Control
8D1-62	Switch
8D1-63	Transmission
8D1-64	Flight Control
8D1-65	Intervalometer
8D1-66	Rudder Control
8D1-67	Arming System
8D1-68	Trajectory Control
8D1-69	Fire Control
8D1-70	Paratainer Door
8D1-71	Missile Surface Control
8D1-72	Antenna
8D1-73	Turret Drive
8D1-74	Governor
8D1-75	Static Line Retriever
8D1-76	Gear Case
8D1-77	Calibrator
8D1-78	Particle Sampler
8D1-79	Training Equipment
8D1-80	Trailer
8D1-81	Camera
8D1-82	Radio, Radar Equipment
8D1-83	Transducer
8D1-84	Heat Exchanger
8D1-85	Brake
8D1-86	Rotor Blade Tracking
8D1-87	Generator
8D1-88	Thermostat
8D1-89	Launch Gear
8D1-90	Shifter
8D1-91	Pylon
8D1-92	Missile Release and Lock
8D1-93	Cooling
8D1-94	Launcher, Airborne Guided-Missile
8D1-95	Chaff Dispenser
8D1-96	Starter
8D1-97	Indicator
8D1-98	Bomb Rack
8D1-99	Transmitter
8D1-100	Stick Shaker
8D1-101	Thrust Reverse
8D1-102	Lateral Control
8D1-103	Arresting Hook
8D2	BATTERIES AND CHARGERS

8D3	CONTROLLERS
8D3-2	Trim Tab
8D3-3	Electronic
8D3-4	Afterburner
8D3-5	Starter
8D3-6	Generator
8D3-7	Interior Lighting
8D3-8	Flasher
8D3-9	Timer
8D3-10	Temperature
8D3-11	Landing Gear
8D3-12	Warning System
8D3-13	Brake System
8D3-14	Steering
8D3-15	Pressure Sensor
8D3-16	Rudder
8D3-17	Shaker
8D3-18	Panel Assembly
8D3-19	Control Box
8D3-20	Motor Control
8D3-21	Switch
8D3-22	Inverter, Synchronizer
8D3-23	Deceleration Parachute
8D3-24	Hoist
8D3-25	Counter
8D3-26	Dimming Control
8D3-27	Sight
8D3-28	Empennage (Stabilizing Tail Assembly)
8D3-29	Camera Control
8D3-30	Overhead Delivery
8D3-31	Detecting System
8D3-32	Wing Flap
8D3-33	Pitch, Roll
8D3-34	Systems
8D4	CONNECTORS, PLUGS, TERMINALS, ETC.
8D4-2	Conduit Assemblies
8D4-3	Rheostats
8D4-4	Plugs
8D4-5	Receptacles
8D5	DYNAMOTORS
8D5-2	0-100 MA
8D5-3	101-200 MA
8D5-4	201-300 MA
8D6	GENERATORS, ENGINE-DRIVEN
8D6-2	1-50 amps
8D6-3	51-100 amps
8D6-4	101-200 amps
8D6-5	201-300 amps
8D6-6	301-400 amps
8D6-7	20 KW
8D6-8	Tachometer Generators
8D7	MOTOR GENERATORS

8D7-2	Voltage Boosters
8D8	HEATERS AND DEFROSTERS
8D8-2	Ignition Heater
8D8-3	501-1000 watts
8D8-4	1001-2000 watts
8D8-5	2001-3000 watts
8D8-6	Purging Heater
8D9	INSTRUMENT PANEL VIBRATORS
8D9-2	0-5 pounds
8D9-3	6-10 pounds
8D9-4	11-15 pounds
8D9-5	16-20 pounds
8D9-6	21-25 pounds
8D10	LIGHTING EQUIPMENT
8D10-2	Landing
8D10-3	Cockpit
8D10-4	Inter-Aircraft
8D10-5	Fluorescent
8D10-6	Navigation
8D10-7	Panel
8D10-8	Indicator
8D10-9	Vibrator Pack
8D10-10	Clearance
8D10-11	Anti-Collision
8D10-12	Fire Control
8D10-13	Map Reading
8D10-14	Airborne Search
8D11	POWER SUPPLIES
8D11-2	Static Converter
8D11-3	Power Unit
8D12	STARTERS
8D12-2	Combination Inertia-Direct Crank
8D12-3	Direct Crank
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
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.

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.

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

12.1.2 Multiple Equipment. 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 - pneudraulic 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.

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:

CL - Checklists

S - Operational Supplements  
SS - Safety Supplements  
WC - Workcards

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 Example One. 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 Example Two. 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 Example Three. 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	<b>CYLINDERS AND ACTUATORS</b>
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	<b>FILTERS AND RESTRICTORS</b>
9H3-2	Reservoir
9H3-3	Line
9H3-4	Vent
9H3-5	Magnetic
9H4	<b>PUMPS</b>
9H4-2	Engine Driven
9H4-3	Electric Motor Driven
9H4-4	Hand Driven
9H4-5	Air Driven
9H4-6	Engine Oil Driven
9H5	<b>RESERVOIRS</b>
9H5-2	Non-Pressurized
9H5-3	Pressurized
9H6	<b>TRANSMISSIONS</b>
9H6-2	Reciprocating Engine Driven
9H6-3	Jet Engine Driven
9H6-4	Turbine Driven
9H6-5	Transmission Drive
9H7	<b>POWER PACKS</b>
9H7-2	Electric Driven
9H7-3	Turbine Driven
9H8	<b>VALVES</b>
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	Divertor
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
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.**

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.

**13.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**13.1.2 Multiple Equipment.** 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.**

**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:

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

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

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

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

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

13.3.3 Example Three. 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  
1                   Mobile Laboratory Series  
7                   Photo Interpretation Subseries  
3                   Represents Type ES-64A  
1                   Number Reserved for Operating Instructions

13.4 CATEGORY 10 NUMBERING SERIES.

10	PHOTOGRAPHIC EQUIPMENT
10A	AIRBORNE CAMERAS AND EQUIPMENT
10A1	AIRCRAFT CAMERAS
10A1-2	Gun
10A1-3	Mapping
10A1-4	Radar Recording
10A1-5	Reconnaissance
10A1-6	Strike
10A1-7	Continuous Strip
10A1-8	Pair
10A1-9	Motion Picture
10A1-10	Optical
10A2	BODIES, LENS, CONES, REELS, ETC.
10A2-2	Bodies
10A2-3	Lens, Cone
10A2-4	Film Magazine
10A2-5	Reel
10A2-6	Magnetic Clutch and Brake Assembly
10A3	MOUNTS AND GYROSCOPES
10A4	VIEWFINDERS
10A5	CONTROLS
10A5-2	Film Magazine
10A5-3	Gun Camera
10A5-4	Mapping Camera
10A5-5	Radar Recording Camera
10A5-6	Reconnaissance Camera
10A5-7	Strike Camera
10A5-8	Strip Camera
10A6	CAMERA CONTROL SYSTEMS, UNIVERSAL
10A6-2	Amplifier Unit
10A6-3	Amplifier
10A6-4	Base Mounting
10A6-5	Chassis
10A6-6	Computer Unit
10A6-7	Computer
10A6-8	Control
10A6-9	Detector
10A6-10	Discriminator
10A6-11	Generator
10A6-12	Indicator
10A6-13	Intervalometer
10A6-14	Junction Box
10A6-15	Memory Delay Unit
10A6-16	Power Supply
10A6-17	Synchronizer Marker Unit
10A6-18	Pulse Shaper
10A6-19	Converter
10A6-20	Adapter

10A7	NIGHT PHOTO EQUIPMENT
10A7-2	Lamp Assembly
10A7-3	Photoflash Cartridge Ejector
10A7-4	Detector
10A8	PHOTO NAVIGATION EQUIPMENT
10A8-2	Pilot Director
10A8-3	Control System
10A8-3-2	Servo Amplifier
10A8-3-3	Heading Error Compensator
10A8-3-4	Indicator
10A8-3-5	Drift Angle Control Box
10A8-3-6	Tripping Pulse Duration
10A8-4	Converter
10A9	RECONNAISSANCE DEVICES
10A10	DATA DISPLAY SETS
10A11	TEST EQUIPMENT (Use 33D10)
10A12	LIGHT BOXES
10A13	PHOTOMETERS
10A14	ENCODERS
10A15	COOLING UNITS
10A16	CALIBRATORS
10A17	CAMERA PODS
10B	GROUND CAMERAS AND EQUIPMENT
10B1	GROUND CAMERAS
10B1-2	16MM (Still)
10B1-3	35MM (Still)
10B1-4	50MM (Still)
10B1-5	3 1/4 X 4 1/4
10B1-6	4 X 5
10B1-7	8 X 10
10B1-8	Copying
10B1-9	Identification
10B1-10	Data Recording
10B1-11	Oscilloscope
10B1-12	Hand
10B1-13	Tracking
10B2	EXPOSURE METERS
10B3	FLASH UNITS
10B4	LIGHT ASSEMBLIES
10B5	TRIPODS
10B6	STANDS
10B7	VIEWERS
10B8	ELECTRONIC OPTICAL TRACKING SYSTEM
10C	MOTION PICTURE CAMERAS AND EQUIPMENT
10C1	CAMERAS
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
10E17	EASELS
10E18	LIGHT ASSEMBLIES

10E19	CONTROLS
10E20	MECHANISMS
10E21	CODERS
10E22	SIMULATORS
10E23	REPRODUCERS
10E24	ANALYZERS
10E25	TRANSLATORS
10E26	EJECTOR SETS
10E27	METERS
10E27-2	Sensitometer
10E27-3	Densitometer
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
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	TEMPLLET 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



## CHAPTER 14

### CATEGORY 11 - ARMAMENT EQUIPMENT

#### **14.1 GENERAL.**

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**

Legacy 11N TO numbering did not follow standard formatting patterns, previously numbered 11N TOs will not be re-numbered solely to match the following numbering requirements.

**14.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**14.1.2 Multiple Equipment.** 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.** 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; N - nuclear weapons 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.**

## TO 00-5-18

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 Example One. 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 Example Two. 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
7	Identifies PN 2105220
1	Number Reserved for Operating Instructions

14.3.3 Example Three. 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 Example Four.** 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 Example Five.** 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
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
11B15	COUPLERS
11B15-2	Non-directional
11B15-3	Directional
11B16	COVERS
11B16-2	Bombsight
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 Nomenclature
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 Nomenclature
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
11B32-2	JETDS Nomenclature
11B33	RECEIVERS
11B33-2	Radar
11B33-3	Radio
11B34	RECEIVER-TRANSMITTERS
11B34-2	Radar
11B34-3	Radio
11B34-4	Television
11B35	RECEPTACLES
11B35-2	Bomb Release
11B36	RECORDERs
11B36-2	Video
11B36-3	Light and Time
11B36-4	Photo
11B37	REGULATORs
11B37-2	Current
11B37-3	Voltage
11B38	RELEASES
11B38-2	Bomb Rack
11B38-3	Bomb Shackle
11B39	SELECTORs
11B39-2	Bomb Group
11B39-3	Bomb Rack
11B40	SHACKLES
11B40-2	100- to 1600- pound Capacity

11B40-3	2000- to 5000- pound Capacity
11B40-4	4000- to 9000- pound Capacity
11B41	SIGHTS
11B41-2	M Type
11B41-3	S Type
11B41-4	T Type
11B41-5	Y Type
11B41-6	MA-2 and ASB-4
11B41-7	Illuminated
11B42	STABILIZERS
11B42-2	Periscopic Bombsight
11B42-3	Optics
11B42-4	Navigation
11B43	SYNCHRONIZERS
11B43-2	Type SN-() / APS
11B43-3	Antenna
11B43-4	Electrical
11B44	TIMERS
11B44-2	Type A
11B44-3	Time Meters
11B44-4	Bombing
11B44-5	Firing Mechanism
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
11B47-9	Stabilized
11B47-10	Navigation
11B47-11	Monitor
11B47-12	Control
11B47-13	Distribution
11B47-14	Weapons Release
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	PERISCOPES
11B63	ACCELEROMETERS
11B64	TRANSDUCER ASSEMBLIES
11B65	TRANSFORMER-RECTIFIER ASSEMBLIES
11B66	PLATFORMS
11B67	FANS (Use 11B52)
11B68	ANALYZERS
11B68-2	Polar Converter
11B68-3	Phase Shifter
11B68-4	Synchronizer
11B69	OPTICS GROUPS
11B70	DYNAMOTOR ASSEMBLIES
11B71	CAMERA SYSTEMS
11B72	REPEATERS
11B72-2	Radio
11B72-3	Pitch Angle
11B73	SWITCHES
11B73-2	Waveguide
11B74	DEMODULATORS
11B74-2	Altitude Control
11B75	MOTORS
11B75-2	Comparator
11B75-3	Blower
11B75-4	Drive
11B75-5	Indicator
11B75-6	Servo
11B76	CASES
11B76-2	Motor Gear
11B77	SLINGS
11B78	FRAMES
11B79	DISPLAYS
11B80	INTEGRATORS
11B81	RELEASE MECHANISMS
11B82	CHASSIS ASSEMBLIES
11B83	EVALUATORS
11B84	WAVEGUIDES
11B85	PACKAGES
11B85-2	Data
11B85-3	Camera
11B85-4	Doppler Radar

11B86                   CAMERA PACKAGES (Use 11B85-3)  
11B87                   CHAIN AND HOOK ASSEMBLIES  
11B88                   ASTROTRACKERS (Use 5N2)  
11B89                   ALTIMETERS  
11B89-2                Radio  
11B90                   NETWORKS (See 11B51 also)  
11B90-2                Camera  
11B91                   DIGITALIZERS  
11B91-2                Data  
11B92                   FILTERS  
11B92-2                Radar  
11B92-3                Radio  
11B93                   SCANNERS  
11B94                   INFRARED ASSEMBLIES  
11B95                   ADAPTERS AND PLUG-IN UNITS  
11B96                   MATRIX ASSEMBLIES  
11C                     CHEMICAL WARFARE AGENTS, EXPLOSIVES, GASES AND WEAPONS  
11C1                    CHEMICAL WARFARE AGENTS  
11C2                    CHEMICAL WARFARE BOMBS  
11C2-2                Gas  
11C2-3                Incendiary  
11C2-4                Smoke  
11C3                    CHEMICAL WARFARE EXPLOSIVES  
11C4                    FLAME THROWERS  
11C4-2                Portable  
11C4-3                Mechanized  
11C5                    GASES  
11C5-2                Blister  
11C5-3                G Series  
11C5-4                Mustard and Derivatives  
11C5-5                Tear  
11C6                    GENERATORS  
11C6-2                Smoke  
11C7                    GRENADES  
11C7-2                Frangible  
11C7-3                Incendiary  
11C7-4                Smoke  
11C8                    HANDLING EQUIPMENT  
11C8-2                Containers  
11C8-3                Hoists  
11C8-4                Kits  
11C8-5                Maintenance Sets  
11C8-6                Mixing, Transfer Units  
11C8-7                Dispensers, Dispersers  
11C9                    INCENDIARIES  
11C9-2                Mixing and Transfer Kits, Fuel  
11C9-3                Document Destroyers  
11C10                 (RESERVED)  
11C11                 MORTARS  
11C12                 GENERATORS  
11C12-2               Smoke  
11C13                 SMOKE POTS

11C14	SMOKES
11C14-2	Screening
11C15	TANKS
11C15-2	Smoke
11C15-3	Liquid Agent Spray
11C15-4	Power Spray (Dry)
11C16	DISCHARGERS
11C17	VALVES
11C18	ACTUATOR
11D	DECONTAMINATING, IMPREGNATING, AND PROTECTIVE EQUIPMENT
11D1	DECONTAMINATING EQUIPMENT
11D1-2	Delousing
11D1-3	Portable
11D1-4	Truck Mounted
11D1-5	Skid Mounted
11D1-6	Trailer Mounted
11D2	IMPREGNATING EQUIPMENT
11D2-2	Impregnites
11D2-3	Impregnating Plants
11D3	PROTECTIVE EQUIPMENT
11D3-2	Protectors
11D3-3	Shelters
11E	BIOLOGICAL WARFARE AGENTS
11E1	NOT USED
11E2	BOMBS
11E3	AGENTS
11F	FIRE CONTROL SYSTEMS AND EQUIPMENT
11F1	FIRE CONTROL SYSTEMS
11F1-A	Type A
11F1-B	Type B
11F1-C	Type C
11F1-E	Type E
11F1-F	Type F
11F1-M	Type M
11F1-P	Type P
11F1-T	Type T
11F2	ACCELEROMETERS
11F2-2	Lift
11F2-3	Voltage
11F2-4	Gravity Drop
11F2-5	Cageable
11F3	ADAPTERS (See 11F64 also)
11F3-2	Range Servo
11F3-3	Sight
11F3-4	Test
11F3-5	Radar
11F3-6	Detector
11F4	AMPLIFIERS
11F4-2	Audio Frequency
11F4-3	Electronic Control
11F4-4	Intermediate Frequency
11F4-5	Preamplifier

11F4-6	Servo
11F4-7	Sight
11F4-8	Computer
11F4-9	Antenna Control
11F4-10	Synchro Signal
11F4-11	Resolver
11F4-12	Automatic Frequency
11F4-13	Deflection
11F4-14	Power Supply
11F4-15	Gyroscope
11F4-16	Steering Signal
11F4-17	Attack Display
11F4-18	Memory
11F4-19	Video
11F4-20	Oscillator Control
11F4-21	Transponder
11F4-22	Interrogator
11F4-23	Counter
11F5	ANTENNAS
11F6	ASSEMBLIES
11F6-2	Tail Section
11F7	BLOWERS
11F8	BOXES
11F8-2	Control
11F8-3	Firing
11F8-4	Junction, Interconnecting
11F8-5	Terminal
11F9	PROGRAMMERS (Use 11F97)
11F10	CENTRAL SYSTEMS
11F10-2	Computer
11F10-3	Fire Control
11F10-4	Indicator
11F10-5	Power
11F10-6	Radar
11F10-7	Servo
11F10-8	Auxiliary
11F11	COMPRESSED AIR SYSTEMS
11F12	COMPUTERS
11F12-2	Angle of Attack
11F12-3	Flight Data
11F12-4	Free Gyroscope
11F12-5	Range
11F12-6	Sight
11F12-7	Turret
11F12-8	Interceptor Fighting, Fixed
11F12-9	Air Navigation
11F12-10	Altitude
11F12-11	Gun Data
11F12-12	Terminal Box
11F12-13	Target Position
11F12-14	Analog
11F12-15	Air Data

11F12-16	Launch
11F12-17	Toss Bomb (Use 11B10)
11F12-18	Roll Error
11F12-19	Jump Angle
11F12-20	Annunciator
11F12-21	Servo
11F12-22	Digital
11F12-23	Signal
11F12-24	Armament Control
11F12-25	Programmer
11F13	CONTROLS
11F13-2	Amplifier
11F13-3	Antenna
11F13-4	Console Switching
11F13-5	Hydraulic Range
11F13-6	Indicator
11F13-7	Range
11F13-8	Power Supply
11F13-9	Radar Set
11F13-10	Roll and Pitch
11F13-11	Intervalometer
11F13-12	Remote
11F13-13	Flight Monitor
11F13-14	Computer
11F13-15	Remote Controls (Use 11B13-12)
11F13-16	Automatic Frequency
11F13-17	Missile
11F13-18	Altitude
11F13-19	Selector
11F13-20	Receiver
11F13-21	Roll Rate
11F13-22	Rate of Turn
11F13-23	Positioning
11F13-24	Signal
11F13-25	Intercommunication
11F13-26	Radio Set
11F13-27	Alarm
11F13-28	Coder-Decoder
11F13-29	System
11F13-30	Action Range
11F13-31	Equipment Package
11F13-32	Laser
11F14	CONTROLLERS
11F14-2	Antenna
11F14-3	Gun Sight
11F14-4	Thyration
11F14-5	Altitude Differential
11F14-6	Missile
11F15	CONVERTERS AND GENERATORS
11F15-2	Frequency
11F15-3	Signal Data
11F15-4	Angle Data

11F15-5	Auto Gain Control, Waveform
11F15-6	Static
11F16	CORDS
11F17	DESICCATORS
11F17-2	Sight
11F18	FILTERS AND REACTORS
11F19	GRIPS
11F19-2	Ranging Throttle
11F20	GYROSCOPES
11F21	HEADS
11F21-2	Radio Frequency
11F21-3	Sight
11F21-4	Optical
11F22	HORNS
11F22-2	Antenna
11F23	INDICATORS
11F23-2	Cathode Ray
11F23-3	Meter
11F23-4	Target
11F24	INDICATOR CIRCUITS
11F25	KITS
11F25-2	Mounting
11F25-3	Pressurizing
11F25-4	Suppressor
11F25-5	Harmonization
11F26	LINES
11F26-2	Delay
11F26-3	Transmission
11F27	MIXERS
11F27-2	Duplexer
11F27-3	Frequency
11F28	MODULATORS
11F29	MOTORS
11F29-2	AC Induction
11F29-3	Fractional Horsepower
11F29-4	Direct-Current
11F29-5	Hydraulic
11F29-6	Rotating
11F30	MOTOR GENERATORS
11F30-2	Amplidyne
11F30-3	Type PU
11F30-4	Transformer
11F30-5	Pulse Sweep
11F30-6	Amplifier Sweep
11F30-7	Indicator Sweep
11F30-8	Pulse Clock
11F30-9	Radar
11F30-10	Tachometer
11F30-11	Induction
11F30-12	Range Function
11F31	MOUNTINGS AND MOUNTS
11F32	PANELS

11F32-2	Control
11F32-3	Test
11F33	POWER SUPPLIES
11F33-2	Amplifier
11F33-3	Computer
11F33-4	Indicator
11F33-5	Low Voltage
11F33-6	Type E-9
11F33-7	Track
11F33-8	Search
11F33-9	Precision
11F33-10	High Voltage
11F33-11	Television
11F33-12	Transistor
11F33-13	Control
11F33-14	Auxiliary
11F33-15	Multiple Voltage
11F33-16	Static Voltage Regulator
11F33-17	Hydraulic
11F34	PUMPS
11F35	RADAR SETS
11F35-2	Gun Laying
11F35-3	Search, Navigation
11F35-4	Track
11F36	RECEIVER-TRANSMITTERS
11F37	REGULATORS
11F37-2	AC Voltage
11F37-3	DC Voltage
11F37-4	Flight Control
11F38	SERVOS
11F38-2	Range
11F38-3	Roll
11F39	SIGHTS
11F39-2	Automatic Computing
11F39-3	Compensating
11F39-4	Non-computing
11F39-5	Interpupillometer
11F39-6	Infrared
11F39-7	Periscope
11F40	SIGHTING STATIONS
11F40-2	Hemisphere
11F40-3	Pedestal
11F40-4	Periscopic
11F40-5	Yoke
11F41	SIMULATORS
11F41-2	Gun Sight
11F42	SYNCHRONIZERS
11F43	TEST SETS (Use 33D5)
11F44	TRANSFORMERS
11F44-2	Power
11F44-3	Pulse
11F44-4	Synchronizer

11F45	TRANSMITTERS
11F45-2	Radar
11F45-3	Pressure
11F45-4	Radio
11F45-5	Range
11F45-6	Bearing
11F46	TURRETS
11F47	UNITS
11F47-2	Range
11F47-3	Resolver
11F47-4	Rocket Setting
11F47-5	Sight Drive
11F47-6	Sight Selector
11F47-7	Timer
11F47-8	Switching
11F47-9	Radar Indicator
11F47-10	Electronic Warning
11F47-11	Television Monitor
11F47-12	Logic Control
11F47-13	Display
11F47-14	Alignment
11F47-15	Weapons Delivery Control
11F48	VISORS
11F49	WAVEGUIDES
11F50	DETECTORS
11F50-2	Angle of Attack
11F50-3	Infrared
11F50-4	Laser
11F51	RELAY ASSEMBLIES
11F52	OSCILLATORS
11F53	SUPPRESSORS
11F54	ATTENUATORS
11F55	RACKS
11F55-2	Electrical
11F55-3	Amplifier
11F55-4	Dehydrator, Filter
11F56	POTENTIOMETERS
11F56-2	Radar Equipment
11F57	TRANSDUCERS
11F57-2	Pressure
11F58	CABINETS
11F58-2	Utility
11F59	HEATERS
11F59-2	Cabinet
11F60	POINTERS
11F60-2	Line of Sight
11F61	COLUMNS
11F61-2	Control
11F62	COMPENSATORS
11F62-2	Angle of Attack
11F63	COUPLERS
11F64	ADAPTERS (Use 11F3)

11F65            WIND DIRECTION SETS  
11F66            FIGHTER MISSILE SYSTEMS  
11F67            BOOSTERS  
11F68            VALVES  
11F69            RECEIVERS  
11F70            TUNERS  
11F71            RESOLVERS  
11F72            MECHANISMS  
11F73            TELEVISION CAMERAS  
11F74            HANDLES  
11F75            TELEVISION SYSTEMS  
11F76            MEMORY DEVICES  
11F76-2          Register  
11F76-3          Drum  
11F77            ELECTRONIC CLUTTER SETS  
11F78            BARORESISTOR  
11F79            COMPARATORS  
11F80            DUCT ASSEMBLIES  
11F81            SWITCHES  
11F81-2         Electronic  
11F81-3         Relay  
11F81-4         Radio  
11F81-5         Pressure  
11F81-6         Waveguide  
11F82            METERS  
11F83            CLUTCHES  
11F84            DEMODULATORS  
11F85            EVALUATORS  
11F86            PHOTOGRAPHIC RECORDERS  
11F87            SELECTORS  
11F87-2         Target  
11F88            MANIFOLDS  
11F89            CODER-DECODERS  
11F90            DRIVE ASSEMBLIES  
11F91            ISOLATORS  
11F92            BOTTLE ASSEMBLIES  
11F93            TANKS  
11F94            HOSES  
11F95            SEALS  
11F96            CARTRIDGES  
11F96-2         Toss Bomb Computer  
11F97            PROGRAMMERS (See 11F9 also)  
11F98            DISPLAY SETS  
11F99            TRACKING SETS  
11F100          PLOTTING BOARDS  
11F101          PROCESSORS  
11G              GUIDANCE AND CONTROL SYSTEMS AND EQUIPMENT  
11G1              CONTROL SYSTEMS  
11G1-2          System  
11G1-3          Flight Control  
11G2              GUIDANCE SYSTEMS  
11G2-2          System

11G2-3	Control, Technical
11G2-4	Forward Emanating
11G2-5	Midcourse
11G2-6	Nonemanating
11G2-7	Full Course
11G2-8	Mark I
11G2-9	Airborne
11G2-10	Inertial
11G3	WARHEAD TRANSPORT VEHICLE (Do not use - See 36A11)
11G4	OPTICAL-MECHANICAL ELECTRONIC
11G5	BOX ASSEMBLIES
11G5-2	Junction
11G5-3	Control
11G6	COMPUTERS
11G6-2	Digital
11G6-3	Electronic
11G6-4	Gyro
11G6-5	Velocity
11G6-6	Signal
11G6-7	Transverse
11G6-8	Elevation
11G7	CONTROLS
11G7-2	Surface
11G7-3	Arming
11G7-4	Tracker
11G7-5	Bank Angle
11G7-6	Nozzle
11G7-7	Guided Bomb
11G8	AMPLIFIERS
11G8-2	Signal
11G8-3	Control
11G8-4	Astrotracker
11G8-5	Platform
11G8-6	Digital
11G8-7	Electronic Control
11G8-8	Magnetic
11G8-9	Power
11G8-10	Servo
11G8-11	Preamplifiers
11G9	POWER SUPPLIES
11G9-2	Electrical
11G9-3	Pneumatic
11G9-4	Hydraulic
11G10	PLATFORMS
11G10-2	Scanner
11G10-3	Stable
11G10-4	Sensing
11G11	GYROSCOPES
11G11-2	Inertial
11G11-3	Vertical
11G11-4	Rate
11G12	ACTUATOR (PACKAGE) ASSEMBLIES

11G12-2	Not Used
11G12-3	Elevon
11G12-4	Stabilizer
11G12-5	Spoiler
11G13	OPERATING MECHANISMS
11G13-2	Spoiler
11G14	INSTRUMENTS
11G14-2	Range Safety
11G14-3	Inertial
11G14-4	Accelerometer
11G15	GIMBAL ASSEMBLIES
11G16	SWITCH ASSEMBLIES
11G17	RACKS
11G17-2	Electrical
11G17-3	Electronic
11G18	PANELS
11G18-2	Electrical
11G19	CELESTIAL NAVIGATION
11G19-2	Astrotrackers
11G20	CONVERTERS
11G21	PROGRAMMERS
11G22	UNITS
11G22-2	Transfer
11G22-3	Flight Control (Use 11G1)
11G22-4	Measurement
11G22-5	Processor, Distributor
11G22-6	Regulator
11G22-7	Station Program
11G23	FANS AND BLOWERS
11G23-2	Blower
11G24	GENERATORS
11G24-2	Tracking
11G24-3	Motor
11G24-4	Pulse
11G24-5	Signal
11G25	REGULATING DEVICES
11G25-2	Voltage
11G25-3	Chronometers
11G26	RECEIVERS AND TRANSMITTERS
11G26-2	Data
11G27	SERVOS
11G28	TIMER ASSEMBLIES
11G29	REFERENCES
11G29-2	3-Axis
11G30	RELAYS
11G31	REGISTER ASSEMBLIES
11G31-2	Servo Trim
11G32	DETECTORS
11G33	MODULE ASSEMBLIES
11G34	DISCRIMINATORS
11G35	SIGNAL CONDITIONERS
11G36	OSCILLATORS

11G37	DISTRIBUTION ASSEMBLIES
11G38	TRANSDUCERS
11G39	CABLE ASSEMBLIES
11G40	CHASSIS ASSEMBLIES
11G41	INTERCONNECT ASSEMBLIES
11G42	CIRCUIT CARD ASSEMBLIES
11G43	TARGET DETECTING DEVICES
11H	HAZARD DETECTING EQUIPMENT
11H1	BIOLOGICAL DETECTING EQUIPMENT
11H2	CHEMICAL DETECTING EQUIPMENT
11H3	MINE DETECTING EQUIPMENT
11H4	RADIOLOGICAL DETECTING EQUIPMENT
11H4-2	Radiac
11H4-3	Computer Indicator
11H4-4	Counter
11H4-5	Densitometer
11H4-6	Dosimeter
11H4-7	Meter
11H4-8	Radioactive Test Sample
11H4-9	Container
11H4-10	Vapotester
11H4-11	Monitor
11H5	INDUSTRIAL HAZARDS DETECTING EQUIPMENT
11K	GUIDED GLIDE WEAPONS
11K1	AIR LAUNCHED
11K2	GUIDED BOMBS, TYPE GBU-2
11K10	GUIDED BOMBS, TYPE GBU-10
11K15	GUIDED BOMBS, TYPE GBU-15
11K20	GUIDED BOMBS, TYPE GBU-20, -22, AND -24
11K25	GUIDED BOMBS, TYPE GBU-27/B
11K28	GUIDED BOMBS, TYPE GBU-28A/B
11K31	GUIDED BOMBS, TYPE GBU-31
11K36	GUIDED BOMBS, TYPE GBU-36
11L	LAUNCHERS AND EQUIPMENT
11L1	AIRBORNE LAUNCHERS
11L1-2	Missile
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
11N	NUCLEAR WEAPONS AND EQUIPMENT
11N-1-	RESERVED
11N-2-	RESERVED
11N-4-	RESERVED
11N-5-	RESERVED
11N-20-	RESERVED
11N-35-	RESERVED
11N-40-	RESERVED
11N-45-	RESERVED
11N-50-	RESERVED
11N-60-	RESERVED
11N-100-	RESERVED
11N-B	RESERVED
11N-C	COMPLEMENTS
11N-CRV	COMPLEMENTS-REENTRY VEHICLE
11N-DE	RESERVED
11N-H	RESERVED
11N-HRV	HEADLIGHT EQUIPMENT-REENTRY VEHICLE
11N-L	LAUNCHERS
11N-PRV	PRACTICE REENTRY VEHICLE
11N-PW	PRACTICE WARHEADS
11N-RS	REENTRY SYSTEMS
11N-RS12	MK12 REENTRY SYSTEM
11N-RS133	MMIII REENTRY SYSTEM
11N-RS21	MK21 REENTRY SYSTEM
11N-RV	REENTRY VEHICLES
11N-RV12	MK12 REENTRY VEHICLE
11N-RV21	MK21 REENTRY VEHICLE
11N-T	RESERVED
11N-TRV	TEST EQUIPMENT, REENTRY VEHICLES
11N-U	RESERVED
11N-UC	RESERVED
11N-UW	RESERVED
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	Expendable 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
11W3-3	Pistol
11W3-3-2	.22 Caliber
11W3-3-3	.45 Caliber
11W3-3-4	9MM
11W3-4	Revolver
11W3-4-2	.38 Caliber
11W3-4-3	.45 Caliber
11W3-5	Rifle
11W3-5-2	.22 Caliber
11W3-5-3	.30 Caliber
11W3-5-4	7.62MM
11W3-5-5	5.56MM
11W3-6	Shotgun
11W3-6-2	12-Gauge
11W3-6-3	16-Gauge
11W3-7	Submachine Gun
11W3-8	Line Throwing Gun
11W3-9	Grenade Launcher
11WA	WEAPONS ASSOCIATED EQUIPMENT
11WA1	FIRING TABLES
11WA1-2	Heavy Caliber
11WA1-3	Light Caliber
11WA1-4	Mortar
11WA1-5	Rifle
11WA2	CAMOUFLAGE EQUIPMENT

**TO 00-5-18**

11WA3

POWER UNIT

## CHAPTER 15

### CATEGORY 12 - AIRBORNE ELECTRONIC EQUIPMENT

#### **15.1 GENERAL.**

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.

**15.1.1 Primary Systems.** Category 12 contains seven primary airborne electronic equipment systems. These systems are divided into equipment series and further divided into equipment subseries 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.

**15.1.2 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**15.1.3 Multiple Equipment.** Information relating to more than one equipment series is numbered in the system general series.

**15.1.4 JETDS TOs.** General TOs for JETDS equipment are described in Paragraph 1.19.

#### **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 alphabetic 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 alphabetic 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 alphabetic 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.**

**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

## TO 00-5-18

- 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 Alignment 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 Example One. 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 Example Two. 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                   JETDS Nomenclature Equipment  
APQ128           Identifies Specific Terrain Following Radar Set  
34                  Number Reserved for Illustrated Parts Breakdown

15.3.3 Example Three. Operating and maintenance instructions with illustrated parts breakdown for electronic counter-measure 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 Example Four.** 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	JETD5 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
12S11-3	Signal Corps
12S11-4	Commercial
12S11-5	AF Nomenclature
12S12	SECURE COMMUNICATION EQUIPMENT
12S12-2	JETDS Nomenclature
12S12-3	Signal Corp Nomenclature
12S12-4	Commercial Nomenclature



## 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.**

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.

**16.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**16.1.2 Multiple Equipment.** 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

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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 Example One. 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 Example Two. 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 Example Three. 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  
                      EXTINQUISHING 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
13F14	SERVICING UNITS



## CHAPTER 17

### CATEGORY 14 - DECELERATION DEVICES, PERSONAL AND SURVIVAL EQUIPMENT

#### 17.1 GENERAL.

Category 14 contains three systems. These systems are divided into equipment series and most of the systems are further divided into equipment subspecies 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.

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

17.1.2 Multiple Equipment. 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 subspecies. In this case group two identifies the specific equipment subspecies 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 Example One. 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 Example Two. 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 Example Three. 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.**

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.

**18.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**18.1.2 Multiple Equipment.** 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.**

**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

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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 Example One. 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 Example Two. 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 Example Three. 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  
15A-2               Systems

15A1	REGULATORS
15A1-2	Cabin Pressure
15A1-3	Cabin Temperature
15A1-4	Air Pressure
15A2	VALVES
15A2-2	Shutoff
15A2-3	Control
15A2-4	Safety
15A2-5	Selector
15A2-6	Mixing
15A2-7	Pressure Regulator
15A2-8	Check
15A2-9	Relief
15A2-10	Spill
15A2-11	Dump
15A2-12	Filter
15A2-13	By-Pass
15A2-14	Shuttle
15A2-15	Slide
15A2-16	Modulating
15A2-17	Flood
15A2-18	Drain
15A3	REFRIGERATION AND PRESSURIZATION UNITS
15A3-2	Turbine
15A3-3	Refrigeration Package
15A3-4	Fan, Blower
15A4	INTERCOOLERS (HEAT EXCHANGERS)
15A5	TEMPERATURE SENSING DEVICES
15A5-2	Control
15A5-3	Anticipator
15A5-4	Thermostat
15A5-5	Pick-Up Assembly
15A5-6	Sensor
15A5-7	Transmitter
15A6	FILTERS
15A6-2	High Temperature
15A7	SEPARATORS
15A7-2	Air Moisture
15A8	CONTROLS
15A8-2	Limit
15A8-3	Air
15A8-4	Pressure
15A8-5	Temperature
15A8-6	Changer
15A8-7	Timer
15A8-8	Selector
15A8-9	Dive Rate
15A8-10	Turbine
15A8-11	Panels
15A9	PUMPS
15A9-2	Air Turbine
15A9-3	Centrifugal

15A10	LINKAGE ASSEMBLIES
15A10-2	Air-Conditioning Package Unit
15A11	SUPERCHARGERS
15A11-2	Cabin
15A12	DETECTORS
15A12-2	Air Flow
15A12-3	Ice
15A13	EJECTORS
15A14	DEHYDRATORS
15A15	VENTURI TUBES
15A16	COMPRESSORS
15A17	ABSORBERS
15A18	DEHUMIDIFIERS
15A19	TIRE INFLATION UNITS
15A20	INDICATORS
15A21	AIR OUTLETS
15A22	TRANSDUCERS
15E	ICE ELIMINATING EQUIPMENT
15E1	PUMPS
15E1-2	Circulating
15E1-3	Metering
15E2	VALVES
15E2-2	Shutoff
15E2-3	Selector
15E2-4	Regulating
15E2-5	Control
15E2-6	Relief
15E2-7	Drain
15E2-8	By-Pass
15E3	CONTROLS
15E3-2	Electric
15E3-3	Manual
15E3-4	Air
15E4	SEPARATORS
15E4-2	Oil
15E4-3	Water
15E5	FILTERS
15E5-2	Fluid
15E5-3	Hot Air
15E6	RESERVOIRS (TANKS)
15E6-2	Fluid
15E7	FANS AND BLOWERS
15E7-2	Nose Radome
15E7-3	Cockpit Defogging
15E8	JOINT ASSEMBLIES
15E9	EJECTORS
15H	CABIN HEATING EQUIPMENT
15H1	HEATERS
15H1-2	Combustion
15H1-3	Electric
15H2	PUMPS
15H2-2	Vane

15H2-3	Cam
15H2-4	Air Driven
15H3	BLOWERS
15H3-2	Fan
15H4	IGNITION UNITS
15H4-2	Vibrator
15H5	VALVES
15H5-2	Control
15H5-3	Butterfly
15H5-4	Check
15H6	THERMOSTATS
15H6-2	Control
15H6-3	Anticipator
15H6-4	Fuel
15H6-5	Air
15H7	IMPELLERS
15M	MISSILE TEMPERATURE CONTROL EQUIPMENT
15M1	COOLING SYSTEMS
15M2	VALVES
15M2-2	Check
15M2-3	Control
15M3	HEAT EXCHANGERS
15M4	FANS AND BLOWERS
15M5	CONTROLS
15X	AIRCRAFT OXYGEN SYSTEMS AND EQUIPMENT
15X1	SUPPLY CYLINDERS
15X1-2	Low Pressure
15X1-3	High Pressure
15X1-4	Emergency Bailout
15X1-5	Cylinder, Valve Assembly
15X2	CONVERTERS, LIQUID-OXYGEN
15X2-2	5-Liter Capacity
15X2-3	25-Liter Capacity
15X2-4	8-Liter Capacity
15X2-5	20-Liter Capacity
15X2-6	10-Liter Capacity
15X2-7	75-Liter Capacity
15X2-8	15-Liter Capacity
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

15X5-5	Smoke
15X6	REGULATORS, OXYGEN FLOW
15X6-2	Continuous Flow
15X6-3	Demand
15X6-4	Manual Pressure Demand
15X6-5	Automatic Pressure Demand
15X7	AIRBORNE TEST EQUIPMENT (Do not use)
15X8	VALVES
15X8-2	Low Pressure
15X8-3	High Pressure
15X8-4	Pressure Reducing Release
15X8-5	Filler
15X8-6	Liquid, Buildup, Vent
15X8-7	Regulating
15X8-8	Filter
15X8-9	Check
15X8-10	Drain
15X8-11	Shutoff
15X8-12	Coupling
15X9	TRANSDUCERS
15X10	CONTROL PANELS
15X11	SURVIVAL KITS
15X12	SEAT PACKS
15X13	DISCONNECT ASSEMBLIES
15X14	TRANSMITTERS
15X15	MANIFOLDS
15X16	SWITCHES
15X17	HEAT EXCHANGERS
15X18	HOSE ASSEMBLIES
15X19	GENERATORS
15X20	METERS
15X21	VENTILATORS
15X22	SEPARATORS
15X23	CONTROLLERS

## CHAPTER 19

### CATEGORY 16 - AIRBORNE MECHANICAL EQUIPMENT

#### **19.1 GENERAL.**

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.

**19.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**19.1.2 Multiple Equipment.** 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

## TO 00-5-18

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 Example One. 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 Example Two. 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 Example Three. 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
16A1-11	Tab Control
16A1-12	Tail Skid
16A1-13	Wing Flap
16A1-14	Auxiliary
16A1-15	Canopy Jettison
16A1-16	Dive Flap
16A1-17	Main Landing Gear Door
16A1-18	Camera Door
16A1-19	Rear Landing Gear Door
16A1-20	Windshield
16A1-21	Air Exit Door
16A1-22	Throttle Control
16A1-23	Drag Chute Door
16A1-24	Nose Landing Gear Door
16C	CONTROL MECHANISMS
16C1	CONTROL UNITS
16C1-2	Tab, Aileron
16C1-3	Flap
16C1-4	Brake
16C1-5	Rudder
16C1-6	Door
16C1-7	Elevator
16C1-8	Spoiler
16C1-9	Wheel
16C1-10	Stabilizer
16C1-11	Steering
16C1-12	Landing Gear
16C1-13	Antenna
16C1-14	Valve
16C1-15	Parachute Release
16C1-16	Special Stores
16C1-17	Bombing System
16C1-18	Fuel Boom
16C1-19	Flight Simulator
16C1-20	Canopy Latch
16C1-21	Head
16C1-22	Instrument Box
16C1-23	Emergency Hydraulic Power
16C1-24	Gimbal Assembly
16C1-25	Sector Box
16C1-26	Mixer
16C1-27	Control Stick
16C1-28	Positioning Lever
16C1-29	Pod Release
16C1-30	Surface, Wing-Fold, Wing-Tip, Fold-up, Trailing Edge
16C1-31	Propeller
16C1-32	Air Inlet
16C1-33	Stairs, Ladder
16G	GEAR BOX, DRIVE, AND SCREWJACK ASSEMBLIES

16G1	GEAR BOXES
16G2	DRIVE MECHANISMS
16G2-2	Angle
16G2-3	Torque
16G2-4	Bevel
16G2-5	Hexagon
16G2-6	Worm
16G2-7	Power Plant
16G3	SCREWJACK MECHANISMS
16G3-2	Screwjack Assembly
16G4	UNIVERSAL JOINTS
16G5	SHAFTS
16G5-2	Alternator
16G5-3	Disconnect Assembly
16G5-4	Torque
16G5-5	Power Transmission
16G5-6	Nozzle
16GA	ASSOCIATED EQUIPMENT
16GA3	SCREWJACK MECHANISMS
16GA3-2	Limiter
16GA3-3	Plug (Do not use)
16GA4	GEAR BOXES (Do not use)
16K	RELEASE MECHANISMS
16K1	RELEASE ASSEMBLIES
16K1-2	Jettison
16K1-3	Landing Gear
16K1-4	Parachute
16K1-5	Escape Hatch
16K1-6	Capsule Disconnect
16K1-7	Pod
16K1-8	Bomb Bay Rack
16K1-9	Disconnect
16K1-10	Carriage Shackle
16L	LOCKING AND LATCHING MECHANISMS
16L1	LOCKING AND LATCHING
16L1-2	Drag Parachute Compartment
16L1-3	Gear
16L1-4	Door
16L1-5	Pilot's Canopy
16L1-6	Strut
16L1-7	Rudder, Stabilizer, Elevator
16L1-8	Pod
16L1-9	Arresting Hook
16L1-10	Aerial Delivery
16L1-11	Wing Flap
16R	REGULATING MECHANISMS
16R1	REGULATORS
16R1-2	Cable Tension
16R1-3	Quadrant
16R1-4	Canopy Seal
16R1-5	Control Box
16R1-6	Linkage Assembly

16W	STRUCTURAL COMPONENTS (AIRFRAME)
16W1	WINDOW ASSEMBLIES
16W1-2	Window
16W2	CANOPY ASSEMBLIES
16W3	DOOR ASSEMBLIES
16W4	CAPSULE ASSEMBLIES
16W5	RADOME ASSEMBLIES
16W6	PYLON ASSEMBLIES
16W7	PANEL ASSEMBLIES
16W8	CARRIAGE AND SHACKLE ASSEMBLIES
16W9	BODY ASSEMBLIES
16W10	COUNTERBALANCE ASSEMBLIES
16W11	PLATE ASSEMBLIES
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
16W21	MISSILE SPACERS
16W22	PIN ASSEMBLIES
16W23	SEAL ASSEMBLIES
16W24	REVERSER ASSEMBLIES
16W25	BEARINGS
16W26	RACK AND MOUNT ASSEMBLIES
16W27	CONSOLES
16W28	EXHAUST VALVES
16W29	TUBES
16W30	BATTERY BOX ASSEMBLIES
16W31	NACELLE VENTILATION EJECTORS
16W32	LEADING EDGE ASSEMBLIES (WING)
16W33	ARRESTING GEAR ASSEMBLIES
16W34	TANK ASSEMBLIES
16W35	ADAPTER ASSEMBLIES
16W36	LINERS
16W37	COVERS
16W38	CONTROL COLUMN ASSEMBLIES
16W39	CONNECTING LINKS
16W40	NOSE ASSEMBLIES
16W41	PODS
16W42	GLARESHIELD ASSEMBLIES
16W43	TAILPIPE ASSEMBLIES



## CHAPTER 20

### CATEGORY 21 - GUIDED MISSILES

#### **20.1 GENERAL.**

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.

**20.1.1 Multiple Systems.** 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

**20.1.2 Multiple Models.** 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

**20.1.3 Multiple Production Series.** 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.

**20.1.4 Missle Timeframe.** 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.

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 Example One. 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 Example Two. Inspection requirements for the AGM-12C missile:

21M-AGM12C-6  
 21                   Category 21  
 M                   Missiles  
 AGM               Air-to-Ground Missile  
 12               Missile Model Number  
 C                   Production Series

6 Number Reserved for Inspection Requirements

**20.3.3 Example Three.** 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.**

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.

**20.4.1 Shortening TO Numbers.** 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.

**20.4.2 Example One.** 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.**

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.

**21.1.1 Multiple Aerospace Vehicles.** 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.

**21.1.2 Single Type Aerospace Vehicle.** 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.

**21.1.3 Multiple Production Series Aerospace Vehicle.** 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.**

**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:

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

**21.3 EXAMPLES OF CATEGORY 22 NUMBERING PATTERNS.**

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

22R-MER6A-1  
22                   Category 22  
R                   Rockets  
MER               Rocket Type  
6                   Rocket Model Number  
A                   Production Series A  
1                   Number Reserved for Operating Instructions

21.3.2 Example Two. An illustrated parts breakdown for the 494L system used in the aerospace program:

22R-494L-4  
22                   Category 22  
R                   Rockets  
494L              L System identification  
4                   Number Reserved for Illustrated Parts Breakdown

## CHAPTER 22

### CATEGORY 31 - GROUND ELECTRONIC EQUIPMENT

#### **22.1 GENERAL.**

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.

**22.1.1 Primary Systems.** Category 31 contains seven primary ground electronic equipment systems. These systems are divided into equipment series; some are further divided into equipment subseries 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.

**22.1.2 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**22.1.3 Multiple Equipment.** Information relating to more than one equipment series is numbered in the system general series.

**22.1.4 JETDS TOs.** General TOs for JETDS equipment are described in Paragraph 1.19.

#### **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 alphabetic 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 alphabetic 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 alphabetic AF nomenclature comprises group two.

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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 subseries.

22.2.2.2.2 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.

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 Example One. Operating and maintenance instructions for timing and telephone set, type ML-110:

31M1-3ML110-1

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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 Example Two. 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 Example Three. 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 Example Four. 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 Example Five. 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  
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  
31P RADAR-ELECTRONIC EQUIPMENT

31P1	AUXILIARY
31P1-2	JETDS Nomenclature
31P1-4	Commercial Nomenclature
31P2	CONTROLS
31P2-2	JETDS Nomenclature
31P2-3	Signal Corps Nomenclature
31P2-4	Commercial Nomenclature
31P3	HEIGHT FINDING
31P3-2	JETDS Nomenclature
31P3-4	Commercial Nomenclature
31P4	IDENTIFICATION, FRIEND-OR-FOE
31P4-2	JETDS Nomenclature
31P5	NAVIGATION
31P5-2	JETDS Nomenclature
31P5-4	Commercial Nomenclature
31P6	SEARCH
31P6-2	JETDS Nomenclature
31P6-3	Signal Corps Nomenclature
31P6-4	Commercial Nomenclature
31P7	SURVEILLANCE
31P7-2	JETDS Nomenclature
31P8	COUNTERMEASURES
31P8-2	JETDS Nomenclature
31P8-4	Commercial Nomenclature
31P9	OVER-THE-HORIZON
31P9-2	JETDS Nomenclature
31R	RADIO-ELECTRONIC EQUIPMENT
31R1	AUXILIARY
31R1-2	JETDS Nomenclature
31R1-3	Signal Corps Nomenclature
31R1-4	Commercial Nomenclature
31R2	COMMUNICATION
31R2-2	JETDS Nomenclature
31R2-3	Signal Corps Nomenclature
31R2-4	Commercial Nomenclature
31R2-5	AF Nomenclature
31R3	CONTROL
31R3-2	JETDS Nomenclature
31R3-3	Signal Corps Nomenclature
31R3-4	Commercial Nomenclature
31R4	NAVIGATION
31R4-2	JETDS Nomenclature
31R4-3	Signal Corps Nomenclature
31R4-4	Commercial Nomenclature
31R5	RELAY MICROWAVE
31R5-2	JETDS Nomenclature
31R5-4	Commercial Nomenclature
31R6	(Not used)
31S	SPECIAL-ELECTRONIC EQUIPMENT
31S1	AUXILIARY
31S1-2	JETDS Nomenclature
31S1-4	Commercial Nomenclature

31S2	FACSIMILE
31S2-2	JETDS Nomenclature
31S2-4	Commercial Nomenclature
31S3	RECORDING
31S3-2	JETDS Nomenclature
31S3-3	Signal Corps Nomenclature
31S3-4	Commercial Nomenclature
31S4	TELEVISION
31S4-2	JETDS Nomenclature
31S4-4	Commercial Nomenclature
31S4-5	AF Nomenclature
31S5	COMPUTER SYSTEMS
31S5-2	JETDS Nomenclature
31S5-4	Commercial Nomenclature
31S5-5	AF Nomenclature
31S6	COUNTERMEASURES
31S6-2	JETDS Nomenclature
31S6-4	Commercial Nomenclature
31S7	TELEMETRY
31S7-2	JETDS Nomenclature
31S7-4	Commercial Nomenclature
31S8	CONTROL
31S8-2	JETDS Nomenclature
31S8-4	Commercial Nomenclature
31S9	SPECIAL DETECTING
31S9-2	JETDS Nomenclature
31S9-4	Commercial Nomenclature
31S10	SIMULATED COHERENT RADIATION DEVICES
31S10-2	JETDS Nomenclature
31S10-4	Commercial Nomenclature
31S11	FIBER OPTIC
31S11-2	JETDS Nomenclature
31S11-4	Commercial Nomenclature
31S12	NONSTANDARD CRYPTOGRAPHIC EQUIPMENT
31W	GROUND WIRE, FIXED-ELECTRONIC EQUIPMENT
31W1	AUXILIARY
31W1-2	JETDS Nomenclature
31W1-3	Signal Corps Nomenclature
31W1-4	Commercial Nomenclature
31W2	INSIDE PLANT
31W2-2	JETDS Nomenclature
31W2-3	Signal Corps Nomenclature
31W2-4	Commercial Nomenclature
31W2-10	AFCS Engineering - Installation Standards
31W3	OUTSIDE PLANT
31W3-4	Commercial Nomenclature
31W3-10	AFCS Engineering - Installation Standards
31W4	TELETYPE
31W4-2	JETDS Nomenclature
31W4-4	Commercial Nomenclature
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
31X2-41	Signal Source Assembly
31X2-45	Coupler Group
31X2-47	Indicator
31X2-50	Circuit Assembly
31X2-55	Exerciser
31X2-56	Adapter Unit
31X2-57	Recorder, Memory Erase Unit
31X2-58	Reproducer
31X2-61	Modulator, Demodulator
31X2-62	Inserter
31X2-63	Alignment Equipment
31X2-66	Zeroing Unit
31X2-67	Pulse Assembly
31X2-68	Reset Assembly
31X2-69	Drawer
31X2-71	Filter, Network
31X2-73	Instrument Assembly
31X2-74	Computer
31X2-77	Semiconductor Device Set
31X3	LAUNCH CONTROL AND COUNTDOWN
31X3-2	Launch Control - Countdown
31X3-3	Console, Launch Control, and Countdown
31X3-6	Countdown Relay
31X3-8	Panel
31X3-10	Control

31X3-11	Programmer
31X3-12	Monitor
31X3-13	Power Supply
31X3-15	Recorder Group, Memory Erase Unit
31X3-16	Switching Unit
31X3-18	Synchronizer
31X3-23	Multiplexer
31X3-27	Decoder
31X3-28	Printed Circuit Assembly
31X3-31	Alarm
31X4	<b>POWER DISTRIBUTION EQUIPMENT</b>
31X4-2	Power Distribution Unit
31X4-3	Generation and Distribution Panel
31X4-5	Control Unit
31X4-8	Electrical Cable
31X7	<b>GROUND GUIDANCE EQUIPMENT</b>
31X7-2	System
31X7-3	Control Assembly
31X7-5	Power Supply Assembly
31X7-8	Amplifier Assembly
31X7-14	Converter
31X7-16	Computer
31X7-24	Storage Device
31X7-45	Timing Device
31X7-51	Altimeter
31X7-52	Stabilizer
31X8	<b>CODE PROCESSING</b>
31X8-2	Consoles
31XA	<b>ASSOCIATED EQUIPMENT AND COMPONENTS FOR MISSILE GROUND OPERATIONAL EQUIPMENT</b>
31XA2	INTERCONNECTING KITS
31XA3	COUPLERS
31XA4	VALVES
31XA5	SWITCHES
31XA6	MOTORS
31XA7	JUNCTION BOXES
31XA9	PUMPS
31XA16	LOAD DUCTS
31Z	<b>GROUND DEFENSE SYSTEMS</b>
31Z-10	AFCS Engineering - Installation Standards, General
31Z1	SYSTEM TECHNICAL ORDERS
31Z2	SITE TECHNICAL ORDERS
31Z3	FACILITY TECHNICAL ORDERS
31Z4	SPECIAL COMMUNICATIONS PROJECTS

## CHAPTER 23

### CATEGORY 32 - STANDARD AND SPECIAL TOOLS

#### 23.1 GENERAL.

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.

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

23.1.2 Multiple Equipment. 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

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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 Example One. 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 Example Two. 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 Example Three. 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, Demounte
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
32A16	SWAGERS
32A17	DETECTORS

32A18            CALIBRATORS  
32A19            TEMPLATES AND GAUGES  
32A20            KITS  
32A20-2          Adjusting  
32A20-3          Tool, Tire Inflation  
                    Assembly Kit  
32A20-4          Mount  
32A20-5          Rigging  
32A20-6          Installation  
32A20-7          Wiring  
32A21            BORING TOOLS  
32A21-2          Carburetor Jet  
32A21-3          Auger  
32A21-4          Structural Repair  
32A22            TARGET ASSEMBLIES  
32A23            EXTRACTORS  
32A24            ROLLERS  
32A25            TEST TOOLS  
32A26            BRAZING TOOLS  
32A27            CLAMPS  
32A27-2          Guidance Set  
32A27-3          Nose  
32A28            EJECTORS  
32A28-2          Air  
32A29            CONTROL UNITS  
32A29-2          Heat  
32A30            GAUGES (See 32A19)  
32A31            PULLERS (See 32A23 Also)  
32A32            EXTRACTORS (Use 32A23)  
32A33            CUTTERS  
32A34            SPREADERS  
32A35            PULSER  
32A36            ERASING DEVICES  
32A37            PROTRACTORS (Use 32A15)  
32A38            SERVICE TOOLS  
32A39            COUNTERS  
32A40            FRONT LENGTH TOOL  
32A41            REELS  
32B              STANDARD TOOLS  
32B1             CUTTERS  
32B1-2          Cable  
32B2             DRILLS  
32B2-2          Electric  
32B2-3          Pneumatic  
32B3             GAUGES  
32B4             GRINDERS  
32B4-2          Electric  
32B4-3          Pneumatic  
32B5             RIVETERS  
32B5-2          Pneumatic  
32B5-3          Hydraulic  
32B6             HAMMERS

32B6-2	Pneumatic
32B6-3	Electric
32B7	IRONS
32B7-2	Electric
32B8	PLANES
32B8-2	Hand
32B8-3	Electric
32B9	PULLERS
32B10	SANDERS
32B10-2	Electric
32B10-3	Pneumatic
32B11	SCREWDRIVERS
32B11-2	Pneumatic
32B12	SHAVERS
32B12-2	Pneumatic
32B13	SAWS
32B13-2	Electric
32B13-3	Pneumatic
32B14	WRENCHES
32B14-2	Electric
32B14-3	Hand
32B14-4	Pneumatic
32B14-5	Hydraulic
32B15	ETCHERS
32B15-2	Electric
32B16	KITS
32B16-2	Canvas Repair
32B17	DRILL ATTACHMENT
32B17-2	Cutoff and Burring Tool
32B18	REFACING TOOLS
32B19	CRIMPING TOOLS
32B20	WRAPPING TOOLS



## CHAPTER 24

### CATEGORY 33 - TEST EQUIPMENT

#### **24.1 GENERAL.**

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.

**24.1.1 Multiple Series.** 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.

**24.1.2 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**24.1.3 Multiple Equipment.** 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.**

**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
- 7      Installation Instructions and Installation Test Procedures

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- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Instructions

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 Example One. Illustrated parts breakdown for a ballistics computer test set, PN T-101235:

33D5-5-78-4  
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 Example Two. Operating and maintenance instructions for a radar analyzer test set, type AN/APM-226:

33D7-10-23-1  
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 Example Three. 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 Example Four. 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 Example Five.** 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	SERVOSCOPES
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	TELETYPEWRITERS
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
33D5-41	Multiplier
33D5-42	Receiver - Transmitter
33D5-43	Display Unit
33D5-44	Gear Accuracy
33D5-45	Limiter
33D5-46	Comparator, Analyzer
33D5-47	Synchronizer
33D5-48	Drive
33D5-49	Infrared Tester
33D5-50	Tool Kit
33D5-51	Ratiometers (Use 33A1)
33D5-52	Transducer
33D5-53	Rack
33D5-54	Plug-In Assembly
33D5-55	Filter
33D5-56	Spray Tank
33D5-57	Rocket
33D5-58	Nitrogen Circulator
33D5-59	Firing Pin
33D5-60	Guided Glide Weapon
33D5-61	Destructor
33D5-62	Eluminator
33D5-63	Stores
33D5-64	Motor
33D5-65	Collimator
33D5-66	Dispenser
33D5-67	Fuze
33D6	AUTOMOTIVE
33D6-2	Brake
33D6-3	Engine
33D6-4	Headlight
33D6-5	Instrument
33D6-6	Wheel
33D7	ELECTRICAL AND ELECTRONIC
33D7-2	Amplifier

33D7-3	Computer
33D7-4	Intercommunication
33D7-5	Phasing and Null Station
33D7-6	Power Supply
33D7-7	Quartz Crystal Unit
33D7-8	Simulator
33D7-9	Gyroscope, Gyroscope Platform
33D7-10	Analyzer
33D7-11	Radome
33D7-12	Data Recorder, Reader
33D7-13	Countermeasures
33D7-14	Identification, Friend-or-Foe - Radar
33D7-15	RF Head
33D7-16	Air Data System
33D7-17	Converter
33D7-18	Relay
33D7-19	Selector
33D7-20	Indicator
33D7-21	Shift Register
33D7-22	Detector, Leak Detectors
33D7-23	Servo
33D7-24	Video
33D7-25	Console
33D7-26	Teletypewriter
33D7-27	Antenna Boresight
33D7-28	Voltage, Current
33D7-29	Transmitter, Transceiver
33D7-30	Telemetering
33D7-31	Circuit
33D7-32	Pods
33D7-33	Module, Scanner Test Station
33D7-34	Tracking
33D7-35	Antenna
33D7-36	Receiver
33D7-37	Detection Radar Data Takeoff
33D7-38	System, Circuit Board
33D7-39	Scorer
33D7-40	Time Delay
33D7-41	Routing Assembly
33D7-42	Programmer
33D7-43	Rectifier
33D7-44	Radar
33D7-45	Calibration
33D7-46	Beacon
33D7-47	Control, Temperature Controllers
33D7-48	Miss Distance Measuring
33D7-49	Electronic Circuit Plug-In
33D7-50	Adapters, Interface Unit
33D7-51	Reconnaissance
33D7-52	Cylinder
33D7-53	Compressor
33D7-54	Go-No-Go

33D7-55	Discriminator
33D7-56	Oscillator
33D7-57	Electron Tube
33D7-58	Device, Drive
33D7-59	Generator
33D7-60	Comparator
33D7-61	Unit, Auxiliary Power Unit
33D7-62	Meteorological
33D7-63	Platform, Gyroscope, Accelerometer
33D7-64	Telegraph
33D7-65	Evaluator
33D7-66	Matrix Unit
33D7-67	Anti-Aircraft Fire Control
33D7-68	Memory
33D7-69	Magnetic Drum, Disk
33D7-70	Binary
33D7-71	Radio
33D7-72	Driver
33D7-73	Target Drone
33D7-74	Refrigeration
33D7-75	Multiplexer
33D7-76	Card
33D7-77	Display
33D7-78	Interrogator
33D7-79	Motor
33D7-80	Laser
33D7-81	Readout
33D7-82	Certification
33D7-83	Buffer
33D7-84	Error Corrector
33D7-85	Cold Proof Load Tester
33D7-86	Monitor
33D7-87	Compensator
33D7-88	TV Monitor
33D7-89	Mixer
33D7-90	Assembler
33D7-91	Editor
33D7-92	PROMS (Programmable Read-Only Memory System)
33D7-93	EROMS (Eraseable Read-Only Memory System)
33D7-94	ROMS (Read-Only Memory System)
33D7-95	Blanking
33D7-96	Processor
33D7-97	EPROMS (Eraseable Programmable Read-Only Memory Systems)
33D7-98	Vessel Assembly
33D7-99	Outlet Assembly
33D9	GUIDED MISSILES
33D9-2	Fuel System
33D9-3	Guidance System
33D9-4	Hydraulic
33D9-5	Power Plant (Engine)
33D9-6	Power Supply
33D9-7	Flight Control

33D9-8	Selector Van
33D9-9	Missile Components
33D9-10	Release Navigation Computer
33D9-11	Generator and Case Assembly
33D9-12	Hoist Support Boom
33D9-13	Payload
33D9-14	Simulator
33D9-15	Amplifier
33D9-16	Power Box
33D9-17	Control
33D9-18	Actuator, Motor
33D9-19	Adapter
33D9-20	Fuzing System
33D9-21	Oscillator
33D9-22	Gauge
33D9-24	Resolver
33D9-25	Timers
33D9-26	Ignitor
33D9-27	Targeting Tester
33D9-28	Frequency Meter
33D9-29	Indicator, Counter
33D9-30	Checkout
33D9-31	Pneumatic
33D9-32	Selector
33D9-33	Mechanical Instrument
33D9-34	Exerciser
33D9-35	Converter
33D9-36	Battery
33D9-37	Inverter
33D9-38	Circuit
33D9-39	Calibration
33D9-40	Analyzer, Dynamic Signal
33D9-41	Inspection Equipment Tester
33D9-42	Radar
33D9-43	Command
33D9-44	Beacon
33D9-45	Launch Control
33D9-46	Antenna
33D9-47	Transmitter and Receiver
33D9-48	Pack
33D9-49	Rectifier
33D9-50	Reference
33D9-51	Tape
33D9-52	Junction Box
33D9-53	Computer
33D9-54	Miscellaneous Test Set
33D9-55	Pump
33D9-56	Platform
33D9-57	Meter, Measuring
33D9-58	Generator, Controller
33D9-59	Electrical System
33D9-60	Interrogator

33D9-61	System Tester
33D9-62	Transponder
33D9-63	Acid System
33D9-64	Re-Entry Vehicle
33D9-65	Motor Generator
33D9-66	Synchro Zeroing
33D9-67	Computer (See 33D9-53)
33D9-68	Cable
33D9-69	Jack Box
33D9-70	Density
33D9-71	Gimbal Assembly
33D9-72	Gyroscope
33D9-73	Fluid Transfer System
33D9-74	Programmer Device, Fault Isolation
33D9-75	Transducer
33D9-76	Network
33D9-77	Distributor
33D9-78	Propellant Handling
33D9-79	Auxiliary Ring
33D9-80	Hydro-Pneumatic Trailer
33D9-81	Liquid Oxygen Trailer
33D9-82	Power Distribution Trailer
33D9-83	Fault Isolation, Security System Alarm Set
33D9-84	Leakage Detector
33D9-85	Optical
33D9-86	Checkout Tray
33D9-87	Signal Conditioner
33D9-88	Relay
33D9-89	Instrumentation
33D9-90	Stabilization Filter
33D9-91	Engine (See 33D9-5)
33D9-92	Valve (See 33D9-106)
33D9-93	Thermal Resistor
33D9-94	Adjuster
33D9-95	Moisture Content Tester
33D9-96	Handler's Environment
33D9-97	Telephone
33D9-98	Servo
33D9-99	Confidence Tester
33D9-100	Message Generator, Sweep
33D9-101	Continuity Tester
33D9-102	Cannister
33D9-103	Dead Weight
33D9-104	Recording
33D9-105	Triplexer
33D9-106	Valve (See 33D9-92)
33D9-107	Verifier
33D9-108	Safety and Arming
33D9-109	Sensing Instrument
33D9-110	Injection
33D9-111	Monitor
33D9-112	Data Link

33D9-113	Insulation
33D9-114	Rapid Firing
33D9-115	Transistorized Unit
33D9-116	Video Unit, Monitor
33D9-117	Reader (Decoder)
33D9-118	Oscilloscope (Do not use)
33D9-119	Trucks
33D9-120	Gas Systems
33D9-121	Offensive Subsystem
33D9-122	Heater, Cooler
33D9-123	Electronic Component
33D9-124	Trainer
33D9-125	Signal Generator (See 33D9-100)
33D9-126	Roofs and Erector
33D9-127	Ordnance
33D9-128	Panel, Release Control
33D9-129	Module
33D9-130	Cylinder
33D9-131	Switch
33D9-132	Sensitol Unit
33D9-133	Communication
33D9-134	Umbilical
33D9-135	Destruction System
33D9-136	Sequence Assembly
33D9-137	Alarm
33D9-138	Contamination Unit
33D9-139	Sump Tank
33D9-140	Alignment
33D9-141	Discriminator
33D9-142	Accelerometer
33D9-143	Degausser
33D9-144	Astrotracker
33D9-145	Receiver
33D9-146	Tuning Head
33D9-147	Ejector Rack
33D9-148	Common Missile Assembly
33D9-149	Missile Bit
33D9-150	Data Simulator
33D10	PHOTOGRAPHIC EQUIPMENT
33D10-2	Camera
33D10-3	Diaphragm Test Fixture
33D10-4	Ejector
33D10-5	Collimator
33D10-6	Servo Test
33D10-7	Developer, Processor
33D10-8	Magazine
33D10-9	Shutter Trip, Timer
33D10-10	Simulator
33D10-11	Spot Scanner
33D10-12	Amplifier
33D10-13	Control
33D10-14	Modulator, Demodulator

33D10-15	Power Supply
33D10-16	Measuring, Counting
33D10-17	Mockup System
33D10-18	Oscillator
33D10-19	Indicator
33D10-20	Table
33D10-21	Gyroscope
33D10-22	Radar Recording Camera
33D10-23	Viewfinder
33D10-24	Detector
33D10-25	Photogrammetric
33D10-26	Mounting Base, Chassis
33D10-27	Mount (Use 33D10-26)
33D10-28	Analyzer
33D10-29	Switch
33D10-30	Balance Tester
33D10-31	Photo Recording Unit
33D10-32	Synchronizer
33D10-33	Converter
33D10-34	Drive Assembly
33D10-35	Photoflash
33D10-36	Calibrator
33D10-37	Photo Adapter Unit
33D10-38	Fixture
33D10-39	Cooling Unit
33D10-40	Transducer
33D10-41	Printer
33D10-42	Encoder
33D10-43	System
33D10-44	Computer
33D10-45	Cassette
33D10-46	Module
33D10-47	Infrared Photo Reconnaissance
33D10-48	Focusing Aid
33D10-49	Verifier
33D11	PHYSIOLOGICAL
33D11-2	Lie Detector
33D11-3	Stereoscopic
33D11-4	Test Chamber
33D12	TRAINING DEVICES
33D12-2	Current and Voltage
33D12-3	Recorder
33D12-4	Servo
33D12-5	System
33D12-6	Console
33D12-7	Tow Target
33D13	FLIGHT SIMULATORS
33D13-2	Bomber
33D13-3	Cargo
33D13-4	Test Rack
33D13-5	Test Cart
33DA	ASSOCIATED EQUIPMENT

33DA1	ADAPTERS
33DA2	RELAYS
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
33DA13	POWER DISTRIBUTION
33DA14	AIR- AND SELF- TEST
33DA15	MISSILE ELECTRONICS
33DA16	SERVOS
33DA17	COMPARATORS
33DA18	TIMERS (Use 33A1-10)
33DA19	PROGRAMMERS
33DA20	BOX ASSEMBLIES, REGULATOR CHASSIS
33DA21	Fixture ASSEMBLIES
33DA22	LOAD BANKS
33DA23	LOAD BOXES (Use 33DA22)
33DA24	REGULATORS
33DA25	BOXES
33DA26	CHARGERS
33DA27	CONVERTERS
33DA28	PNEUMATIC SYSTEMS
33DA29	AMPLIFIERS
33DA30	RECORDERS
33DA31	OSCILLOSCOPES
33DA32	DRAWERS
33DA33	CHAMBERS
33DA34	DELAY LINES
33DA35	CONSOLES
33DA36	VALVES
33DA37	ATTACHMENTS
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)
33DA52	MICROWAVE

33DA53	FREQUENCY SOURCE
33DA54	LIMIT COUNTERS
33DA55	RESOLVERS
33DA56	ANTENNA DRIVERS
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
33DA65	REGISTERS
33DA66	MICRO-POSITIONERS
33DA67	FANS AND BLOWERS (See 35E)
33DA68	DISC ASSEMBLIES
33DA69	PRESELECTOR ASSEMBLIES
33DA70	VERNISTATS
33DA71	SYNCHRONIZERS
33DA72	TRANSMITTERS
33DA73	DIGITIZERS
33DA74	COMMUTATORS
33DA75	GAUGES
33DA76	ACCUMULATORS
33DA77	THERMOSTATS
33DA78	LEAK TRACING DEVICES (See 33D3-31 and 33D9-84)
33DA79	PRESSURE BOXES (Use 33DA20)
33DA80	PLATE ASSEMBLIES
33DA81	MOTORS AND ACTUATORS (See 33D7-79)
33DA82	COMPUTERS (See 33D7-3)
33DA83	COMPENSATORS
33DA84	TANKS
33DA85	BENCHES
33DA86	SWITCHES
33DA87	TABLES
33DA88	THERMOMETERS, TEMPERATURE INDICATORS
33DA89	STARTERS
33DA90	RECTIFIERS
33DA91	GRAVITY TESTERS
33DA92	CALIBRATORS (See 33D7-45)
33DA93	TRANSPOUNDER SETS
33DA94	ALTERNATORS
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
33DA109	DIVIDING HEADS
33DA110	TRANSPORTS
33DA111	PLOTTERS
33DA112	LOADERS
33DA113	TAPE HEADS
33DA114	OPTICAL UNITS
33DA115	TAPES AND TAPE COMPONENTS
33DA116	TARGETS
33DA117	POSITIONERS
33DA118	APPLICATORS
33DA119	MODULES (See 33D7-33)
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.**

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.

**25.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**25.1.2 Multiple Equipment.** 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.**

**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

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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:

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

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 Example One. 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 Example Two. 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 Example Three. 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	Disintegrating
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
34Y30	HOSE ASSEMBLY MACHINES
34Y31	SEALANT EQUIPMENT
34Y32	PRESSES
34Y33	CABINETS
34Y34	ALIGNING EQUIPMENT
34Y34-2	Connecting Rod Aligner
34Y35	ENGRAVING MACHINES
34Y35-2	Pantograph
34Y36	LINKING MACHINES
34Y37	DUST FREE BENCHES
34Y38	MILLING MACHINES (FOUNDRY)
34Y39	THAWING MACHINES

34Y40	DESCALING MACHINES
34Y41	DRYERS
34Y42	CONTROL UNITS
34Y43	CHAMBERS

# CHAPTER 26

## CATEGORY 35 - GROUND HANDLING, SUPPORT, AIR AND MISSILE BASE OPERATING EQUIPMENT

### 26.1 GENERAL.

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.

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

26.1.2 Multiple Equipment. 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.

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
- 4 Illustrated Parts Breakdown

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- 5 DCSC Technical Maintenance Standards
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

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 1.6.2 through Paragraph 1.6.6.

### 26.3 EXAMPLES OF CATEGORY 35 TO NUMBERING PATTERNS.

26.3.1 Example One. 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 Example Two. 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 Example Three. 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
35E4	SHELTERS
35E5	TENTS
35E6	BRIDGES
35E6-2	Pontoon
35E7	HEATERS
35E7-2	Aircraft Ground

35E7-3	Engine and Shelter
35E7-4	Utility, Low Silhouette Heater
35E7-5	Heat Exchanger
35E7-6	Space
35E7-7	Gyro
35E8	BARRIERS
35E8-2	Runway
35E8-3	Runup Fence
35E9	AIR-CONDITIONERS AND FREEZERS
35E10	GROUND COOLERS
35E11	GROUND BLOWERS AND FANS
35E12	VENTILATORS
35E13	PUMPS
35E14	COMPRESSOR BUILDINGS
35E15	MISSILE A AND M SHOPS, MAIN GROUND AIDS PENETRATION
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
35E36	WARNING DEVICES
35EA	ASSOCIATED EQUIPMENT
35EA1	NOZZLES
35EA2	SPEED REDUCERS
35EA3	FIRE PROTECTION AND SAFETY SHELTERS
35EA4	AIR-CONDITIONING
35EA4-2	Fan, Blower
35EA4-3	Valve
35EA4-4	Compressor
35EA4-5	Field, Rotor Assembly
35EA4-6	Tachometer
35EA4-7	Adapter, Duct
35EA4-8	Pump
35EA4-9	Filler, Bleeder
35EA5	LAUNCHER SHELTER, HIGH- AND LOW-HELUM
35EA5-2	Valve
35EA5-3	Control-Indicator Assembly
35EA6	RIM BUILDING COMPONENTS
35EA7	DECONTAMINATION SYSTEM
35EA7-2	Pump
35EA7-3	Valve
35EA7-4	Measuring, Controlling Instrument
35EA8	CONTROL BENCH UNITS
35EA8-2	Pump
35EA9	PURGING AND CLEANING EQUIPMENT
35EA9-2	Valve
35EA9-3	Indicator
35F	AIR FIELD LIGHTING AND ELECTRICAL EQUIPMENT
35F1	CABINETS
35F2	CONTROL PANELS
35F3	CUBICLES
35F4	LAMP CHANGERS
35F5	LIGHTS
35F5-2	Air Traffic Control
35F5-3	Approach and Runway
35F5-4	Beacon
35F5-5	Flood
35F5-6	Lantern
35F5-7	Searchlight
35F5-8	Range
35F5-9	Flashlight
35F5-10	Marker

35F5-11	Launch
35F6	PANELBOARDS
35F7	REFLECTORS
35F8	REGULATORS
35F9	RELAYS
35F10	SIRENS
35F11	SWITCHBOARDS
35F12	WIND INDICATORS
35F13	BATTERIES
35F14	SWITCHES
35F15	ELECTRIC MOTORS
35F16	STARTERS
35F17	FANS
35F18	ELECTRIC POWER TRANSFER CONTROLS
35G	AIRCRAFT GROUND SUPPORT EQUIPMENT
35G3	SUPPORT ASSEMBLIES
35G3-1	General Support Equipment
35G3-3	Stand
35G5	KITS (HANDLING)
35G5-2	Panel and Rack
35G5-4	Gimbal Kit
35M	MISSILE SUPPORT EQUIPMENT
35M1	SYSTEM TECHNICAL ORDERS
35M1-2	Fluid Distribution
35M1-3	Propellant Utilization
35M1-4	Gas Distribution
35M1-5	Silo Helium Charge
35M1-6	Monorail
35M1-7	Crib Suspension
35M1-8	Damper, Lock System
35M1-9	Personnel Access
35M1-10	Environmental Control
35M2	ERECTION EQUIPMENT
35M2-2	Mount, Erector
35M2-3	Hydraulic Pumping Unit
35M2-4	Trunnion Erector (Use 35M2-2)
35M2-5	Buffer Assembly
35M2-6	Ratchet Assembly
35M3	LAUNCHING EQUIPMENT
35M3-2	Launcher, Alignment Assembly
35M3-3	Shock Absorber
35M3-4	Indicator
35M3-5	Adapter Unit
35M3-6	Boom
35M3-7	Aligning
35M3-8	Support and Positioner
35M3-9	Pack
35M3-10	Balancer
35M3-11	Rescue
35M4	MISSILE- AND COMPONENT- HANDLING EQUIPMENT
35M4-2	Installation Fixture
35M4-3	Carrier

35M4-4 Loader  
35M4-5 Hydraulic Jack (Do not use - see 35A2)  
35M5 SERVICERS  
35M5-2 Hydro-Pneumatic  
35M5-3 Hydraulic  
35M5-4 Pneumatic  
35M5-5 Electric  
35M6 RING ASSEMBLY AND EQUIPMENT  
35M6-2 Auxiliary Ring Assembly  
35M6-3 Start Assembly  
35M6-4 Filling Assembly  
35M6-5 Control Assembly  
35M6-6 Cable Mast  
35M7 PROPELLANT SERVICING UNITS  
35M7-2 Nitrogen  
35M7-3 Liquid Oxygen  
35M7-4 Solvent  
35M7-5 Gas  
35M7-6 Ammonia  
35M7-7 Adapter  
35M7-8 Hydraulic  
35M7-9 Freon  
35M8 RECHARGING UNITS  
35M8-2 Nitrogen  
35M8-3 Oxygen  
35M8-4 Refrigerant  
35M9 PRESSURIZING UNITS  
35M9-2 Nitrogen  
35M9-3 Canister  
35M10 CONTROL UNITS  
35M10-2 Nitrogen  
35M10-3 Pressurization  
35M10-4 Propellant  
35M10-5 Temperature  
35M10-6 Hydraulic, Pneumatic  
35M10-7 Silo  
35M11 PANELS (PROPELLANT)  
35M11-2 Nitrogen  
35M11-3 Liquid Oxygen  
35M11-4 Ammonia  
35M12 INDICATORS  
35M12-2 Dew Point  
35M13 REGULATORS  
35M13-2 Pressure  
35M14 VALVES  
35M14-2 Shutoff  
35M14-3 Vent, Relief  
35M14-4 Regulator  
35M14-5 Control  
35M14-6 Selector  
35M14-7 Check  
35M14-8 Shuttle

35M14-9	Relay
35M15	FILTERS AND STRAINERS
35M15-2	Hydraulic
35M15-3	Pneumatic
35M15-4	Pressure
35M15-5	Liquid Oxygen
35M16	SENSORS
35M16-2	Liquid
35M16-3	Overspeed
35M17	CYLINDERS
35M17-2	Hydraulic
35M17-3	Actuating
35M17-4	Pneumatic
35M17-5	Mechanical
35M18	MOTORS
35M18-2	Electric
35M18-3	Hydraulic
35M18-4	Pneumatic
35M19	PUMPS
35M19-2	Electric
35M19-3	Hydraulic
35M19-4	Hand
35M19-5	Pneumatic
35M20	METERS AND MEASURING EQUIPMENT
35M20-2	Meter
35M20-3	Indicator
35M21	ACCUMULATORS
35M21-2	Hydraulic
35M21-3	Pneumatic
35M21-4	Propulsion
35M22	BEARINGS
35M22-2	Flanged
35M22-3	Spherical Roller
35M22-4	Floating
35M23	BRAKES
35M23-2	Hydraulic
35M24	GAUGES
35M24-2	Pressure
35M25	SURGE AND DESURGE EQUIPMENT
35M25-2	Hydraulic
35M25-3	Pneumatic
35M26	LOCK AND RELEASE ASSEMBLIES
35M27	ACTUATORS
35M27-2	Electro-Mechanical
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)
35MA4-13	Meter (See 35M20)

## CHAPTER 27

# CATEGORY 36 - VEHICLES, CONSTRUCTION AND MATERIAL-HANDLING EQUIPMENT

### **27.1 GENERAL.**

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.

**27.1.1 Multiple Systems.** TO data pertaining to more than one system is numbered in the category general series.

**27.1.2 Multiple Equipment.** 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

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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:

- CL - Checklists
- LC - Lubrication Charts
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

27.2.3.3 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.

27.2.4 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.

### 27.3 EXAMPLES OF CATEGORY 36 NUMBERING PATTERNS.

27.3.1 Example One. 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

27.3.2 Example Two. 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

27.3.3 Example Three. 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

### 27.4 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
36A11-16	Telephone Maintenance

36A11-17	Textile Repair
36A11-18	Utility
36A11-19	Van
36A11-20	Water Tank
36A11-21	Electronic Equipment, Enclosure Trailer
36A11-22	Photographic Equipment
36A11-23	Bolster
36A11-24	Pilotless Aircraft
36A11-25	Test Equipment
36A11-26	Water-Alcohol Tank
36A11-27	Radar Equipment, Radio Equipment
36A11-28	Heater
36A11-29	Housetrailer
36A12	TRUCKS
36A12-1A	1/4-Ton - 2-Ton
36A12-1B	2 1/2-Ton
36A12-1C	4-Ton and Over
36A12-2	Amphibian
36A12-3	Bomb Service
36A12-4	Bridge Erecting
36A12-5	Cargo
36A12-6	Carryall
36A12-7	Chemical Service
36A12-8	Crash, Fire and Rescue
36A12-9	Decontaminating
36A12-10	Dump
36A12-11	Field Lighting
36A12-12	Firefighting
36A12-13	Fuel, Oil Servicing
36A12-14	Pickup
36A12-15	Prime Mover
36A12-16	Refuse Collection
36A12-17	Shop
36A12-18	Stake and Platform
36A12-19	Telephone Maintenance
36A12-20	Weapon Carrier
36A12-21	Wrecking
36A12-22	Crane
36A12-23	Waste, Water
36A12-24	Multipurpose
36A12-25	Marker, Traffic Line
36A12-26	Liquid Nitrogen
36A12-27	Refrigerating
36A13	TRUCK TRACTORS
36A14	ARMORED
36C	CONSTRUCTION EQUIPMENT
36C1	AUGERS
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	<b>SHOVELS</b>
36C23-2	Crawler Mounted
36C23-3	Truck Mounted
36C23-4	Wheeled
36C24	<b>SPREADERS</b>
36C25	<b>SWEEPERS</b>
36C25-2	Self-Propelled
36C25-3	Towed
36C25-4	Magnetic
36C25-5	Manually Propelled
36C26	<b>TRACTORS</b>
36C26-2	Crawler
36C26-3	Wheeled
36C27	<b>TRAILERS</b>
36C28	<b>WAGONS</b>
36C29	<b>WELL DRILLERS</b>
36C30	<b>PILE DRIVERS</b>
36C30-2	Telescoping
36C31	<b>MOTORIZED COMPRESSORS</b>
36C31-2	Wheeled
36C32	<b>CARRIERS</b>
36C32-2	Snow Plow
36C32-3	Crane-Shovel
36C33	<b>COLLECTORS</b>
36C33-2	Dust
36C34	<b>COMPACTORS AND VIBRATORS</b>
36C34-2	Pneumatic, Gasoline Engine Driven
36C35	<b>CLEANING MACHINES</b>
36C36	<b>RIPPERS AND PAVING BREAKERS, JACKHAMMERS</b>
36C37	<b>EXCAVATORS</b>
36C37-2	Multipurpose
36G	<b>GAS GENERATING EQUIPMENT</b>
36G1	<b>GENERATING AND CHARGING PLANTS</b>
36G1-2	Generating Plant, Oxygen or Nitrogen
36G1-3	Hydrogen Generator
36G2	<b>FILTER ASSEMBLIES</b>
36M	<b>MATERIAL-HANDLING EQUIPMENT</b>
36M1	<b>CRANES</b>
36M1-2	Electrically Driven
36M1-3	Engine Driven
36M2	<b>LIFTS</b>
36M2-2	Fork
36M2-3	Platform
36M2-4	Scoop
36M3	<b>TRACTORS</b>
36M3-2	Electrically Driven
36M3-3	Engine Driven
36M4	<b>TRAILERS</b>
36M5	<b>TRUCKS</b>
36M5-2	Straddle
36M5-3	Wheel Type

36M5-4	Liftainer
36M5-5	Fixed Platform
36M6	POSITIONERS
36M6-2	Pallet
36M7	WHEELBARROWS
36MA	ASSOCIATED EQUIPMENT
36MA1	STACKERS (FORK LIFT)
36MA2	ELEVATORS
36R	ORDNANCE EQUIPMENT
36R1	(Not used)
36R2	ARMORED CARS
36R3	CARRIAGES
36R4	CARRIERS
36R4-2	Cargo
36Y	COMPONENTS - VEHICLES, CONSTRUCTION, AND MATERIAL HANDLING EQUIPMENT
36Y1	ANGLEDOZERS
36Y2	ATTACHMENTS
36Y2-2	Auger
36Y2-3	Magnet
36Y2-4	Shovel
36Y2-5	Snow Plow
36Y2-6	Sweeper
36Y3	AXLES, WHEEL ASSEMBLIES, BRAKE ASSEMBLIES
36Y4	BATTERIES AND BATTERY CABLES
36Y5	BINS
36Y6	BODIES
36Y6-2	Bus
36Y6-3	Dump
36Y6-4	Fire Truck
36Y6-5	Lift
36Y6-6	Passenger Car
36Y6-7	Refuse Collection
36Y6-8	Conveyor Delivery
36Y6-9	Ambulance
36Y6-10	Van
36Y7	BRAKES
36Y8	BUCKETS
36Y9	BULLDOZERS
36Y10	CHASSIS
36Y11	CLUTCHES
36Y12	FEEDERS
36Y13	GAUGES AND INSTRUMENTS
36Y14	GRADATION UNIT
36Y15	HEATERS
36Y16	HOISTS
36Y17	KITS
36Y17-2	Cold Starting
36Y17-3	Follow-me
36Y17-4	Hard Top Closure
36Y17-5	Personnel Heater
36Y17-6	Power Plant

36Y17-7	Winterization
36Y17-8	Brake Control
36Y17-9	Fire Protection
36Y17-10	Conveyor
36Y18	LIGHTS
36Y18-2	Flood
36Y18-3	Instrument
36Y18-4	Clearance
36Y18-5	Vehicle
36Y19	MOTORS
36Y20	METERS
36Y21	MOWERS
36Y22	POWER CONTROL UNITS
36Y23	POWER TRAINS
36Y24	PROPORTIONERS (VARIABLE FLOW)
36Y25	PUMPS
36Y26	RADIATORS
36Y27	SAWS
36Y28	SEGREGATORS
36Y29	SHOCK ABSORBERS
36Y30	SPRINGS
36Y31	TANKS
36Y31-2	Asphalt
36Y31-3	Fuel
36Y31-4	Vehicular
36Y31-5	Water
36Y32	TIRES AND TUBES
36Y32-2	Safety Guard
36Y33	TRANSMISSIONS
36Y34	WHEELS
36Y35	WINCHES
36Y36	WINDSHIELDS
36Y37	ROPES
36Y37-2	Wire Rope
36Y38	CUBICLES
36Y38-2	Power Distribution
36Y39	TRACKS
36Y39-2	Rubber
36Y40	FILTERS
36Y40-2	Fluid
36Y41	PACKS
36Y42	BELTS AND PULLEYS
36Y43	SPACERS
36Y44	CARRIAGES
36Y45	REELS
36Y46	ACTUATORS
36Y47	CONTROLS
36Y48	BOGIES
36Y49	CYLINDER ASSEMBLIES
36Y50	VALVES
36Y51	PIPELINES (Use 37C)
36Y52	BLADES

36Y53	BLOWERS
36Y54	SEPARATORS
36Y55	COMPRESSORS
36Y56	SHOCKS (Use 36Y29)
36Y57	LANDING JACKS
36Y58	AIR COMPRESSORS
36Y59	VEHICLE ONLOADING EQUIPMENT
36Y60	STEERING GEARS
36Y61	CARBURETORS



## CHAPTER 28

### CATEGORY 37 - FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT

#### 28.1 GENERAL.

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.

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

28.1.2 Multiple Equipment. 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

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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
- SS - Safety Supplements
- WC - Workcards

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 Example One. 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 Example Two. 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 Example Three. 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
37C9	CLEANING AND PURGING EQUIPMENT
37C10	CONNECTORS
37C11	GAUGES
37CA	ASSOCIATED EQUIPMENT
37CA1	PROPELLANT TRANSFER
37CA1-2	Valve
37CA1-3	Breather Set

## CHAPTER 29

### CATEGORY 38 - NON-AERONAUTICAL ENGINES

#### **29.1 GENERAL.**

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.

**29.1.1 Multiple Systems.** TO data pertaining to more than one system in this category is numbered in the category general series.

**29.1.2 Multiple Equipment.** 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

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LC - Lubrication Charts  
S - Operational Supplements  
SS - Safety Supplements  
WC - Workcards

29.2.3.3 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.

29.2.4 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.

29.3.1 Example One. 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

29.3.2 Example Two. 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

29.3.3 Example Three. 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.

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.

30.1.1 Multiple Systems. TO data pertinent to more than one system in this category is numbered in the category general series.

30.1.2 Multiple Equipment. 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 Example One. An operating and maintenance instruction for a mechanized landing craft, type LCM 8:

39 Category 39  
C Cargo Boats  
47 Represents Type LCM 8  
1 Number Reserved for Operating Instructions

30.3.2 Example Two. 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 Example Three. 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.**

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.

**31.1.1 Multiple Systems.** TO data pertaining to more than one system in this category is numbered in the category general series.

**31.1.2 Multiple Equipment.** 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

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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  
SS - Safety Supplements  
WC - Workcards

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 Example One. 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 Example Two. 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

40V2-3	Centrifugal
40V2-4	Axial
40V2-5	Propeller
40V3	VENTILATORS
40W	WATER TREATING EQUIPMENT
40W1	DEMINERALIZERS
40W2	DISTILLATION EQUIPMENT
40W3	HYPOCHLORINATION EQUIPMENT
40W4	PURIFICATION EQUIPMENT
40W5	SOFTENING EQUIPMENT
40W6	FILTERING EQUIPMENT

## CHAPTER 32

### CATEGORY 41 - SUBSISTENCE AND FOOD SERVICE EQUIPMENT

#### **32.1 GENERAL.**

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.

**32.1.1 Multiple Systems.** TO data pertaining to more than one system in this category is numbered in the category general series.

**32.1.2 Multiple Equipment.** 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 Example One. 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 Example Two. 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
41B3-3	Cooker
41B3-4	Fryer
41B3-5	Griddle
41B3-6	Range
41B3-7	Stove
41B3-8	Toaster
41B3-9	Warmer
41B3-10	Urn
41B4	PREPARATION EQUIPMENT
41B4-2	Grinder
41B4-3	Meat Cutter
41B4-4	Mixer
41B4-5	Peeler
41B5	TESTING AND SCREENING EQUIPMENT



## CHAPTER 33

### **CATEGORY 42 - COATING, CLEANING AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS AND MATERIALS**

#### **33.1 GENERAL.**

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.

**33.1.1 Multiple Systems.** TO data pertinent to more than one system in this category is numbered in the category general series.

**33.1.2 Multiple Equipment.** 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. 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 Example One. Manual on fluids for hydraulic equipment:

42B2-1-3

42	Category 42
B	Fuels, Lubricants, Oxygen and Gases
2	Oil Series
1	General Model-Type-Part Number Series
3	Third Manual in a Series

33.3.2 Example Two. Manual on aircraft hoses:

42E1-1-1

42	Category 42
E	Rubber Materials
1	Aircraft Hose Series
1	General Model-Type-Part Number Series
1	First Manual in a Series

33.3.3 Example Three. Manual on quality control of nitrogen propellant pressurizing agent:

42B7-3-1-1

42	Category 42
B	Fuels, Lubricants, Oxygen, and Gases
7	High Energy Liquid Propellants
3	Propellant Pressurization
1	General Model-Type-Part Number Series
1	First Manual in a Series

### 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
42C	CHEMICALS
42C1	ENGINE
42C2	METAL TREATMENT
42D	METALS, PLASTICS, AND COMPOSITION MATERIALS
42D1	ALUMINUM ALLOYS
42D2	COMPOSITION MATERIALS
42D3	MAGNESIUM ALLOYS
42D4	PLASTICS
42D5	STEEL
42E	RUBBER MATERIALS
42E1	AIRCRAFT HOSE
42E2	RUBBER SEALS AND PACKING
42F	CORDAGE, LEATHER, AND MISCELLANEOUS FABRIC
42L	LUMBER



## CHAPTER 34

### CATEGORY 43 - SIMULATOR AND TRAINING DEVICES

#### 34.1 GENERAL.

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.

**34.1.1 Multiple Systems.** TO data pertaining to more than one system in this category is numbered in the category general series.

**34.1.2 Multiple Equipment.** 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.

**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

## TO 00-5-18

- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Manuals

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. 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 Example One. 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 Example Two. 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 Example Three. 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

34.4 CATEGORY 43 NUMBERING SERIES.

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)
43D2-10	LGM-118A (Peacekeeper)
43D2-11	AGM-129
43D2-12	AGM-131A (SRAM 2)
43D2-13	RESERVED
43D2-14	AGM-65A/B (Maverick)
43D3	FLIGHT SIMULATORS
43D3-2	Bomber
43D3-2-5	B-52
43D3-2-7	B-52 (Use 43D3-2-5)
43D3-3	Cargo
43D3-3-5	C-130
43D3-3-8	C-135
43D3-3-10	C-123
43D3-3-12	C-130B (Use 43D3-3-5)
43D3-3-13	C-130E (Use 43D3-3-5)
43D3-3-15	C-5A
43D3-4	Fighter
43D3-4-12	F-15
43D3-4-13	F117A
43D3-5	Cockpit
43D3-5-3	RB-66
43D3-5-12	C-5
43D3-5-13	C-130
43D3-5-15	F-16
43D3-6	Missile
43D3-6-2	TM-61
43D3-6-3	SM-62
43D3-7	VISUAL
43D3-7-2	SMK-23/F37A-T
43D3-7-3	SMK-87/F37A-T
43D3-7-4	Virtual Image
43D3-7-5	SMK-92/F37A
43D3-7-6	117/WST
43D3-8	Attack Aircraft
43D3-8-3	A-10A
43D3-9	Helicopter

43D3-9-2	CH-3E, HH-53C
43D3-10	Electronic Aircraft
43D3-10-2	E-3
43D3-11	Trainer
43D3-11-2	T-46A
43D4	GUNNERY TRAINING
43D4-2	Fixed
43D4-3	Flexible
43D5	INSTRUMENT FLYING
43D6	NAVIGATION
43D7	RADIO AND RADAR
43D7-2	AN/APG
43D7-3	AN/APN
43D7-4	AN/APQ; AN/GJW
43D7-5	AN/APS
43D7-6	AN/GJW (See 43D7-4 also)
43D7-7	AN/GPN
43D7-8	AN/GPQ
43D7-9	Control
43D7-10	Telemetry
43D7-11	Countermeasures
43D7-12	AN/ASQ and AN/GSQ
43D7-13	Associated Equipment
43D7-14	Fire Control
43D7-15	Beacon Set
43D7-16	Search Radar and Detecting
43D7-17	AN/FRC
43D7-18	AN/APY
43D7-19	AN/MST
43D8	INDOCTRINATION TRAINERS AND CHAMBERS
43D8-2	Egress System
43D8-3	Indoctrination Chamber
43D8-3-2	20-Man
43D8-3-3	16-Man
43D8-3-4	Test Chamber
43D8-3-5	6-Man
43D8-3-6	Recompression
43D8-4	High Altitude Helmet and Suit Training Aid
43D8-5	Night Vision
43D8-6	Missiles
43D8-7	Centrifuge
43D9	MOCK-UP AIRSPEED TRAINERS
43D10	DRIVER TRAINING
43D11	WEAPON SIMULATORS
43D12	ENGINES
43D13	TRAINERS
43D13-3	TAU Series
43D13-4	Operator (Do not use)
43D14	(Do not use)
43D15	(Do not use)

43D16	LAUNCH CONTROL AND CHECKOUT
43D16-2	Control System
43D16-3	Launch Complex System
43D16-4	Launch Operator Trainer
43D16-5	Checkout Trainer
43D16-6	Umbilical Tower Trainer
43D16-7	Launch Enable System
43D17	GUIDANCE SYSTEM TRAINERS
43D17-2	Airborne
43D17-3	Ground
43D17-4	Computer
43D17-5	Subsystem
43D18	PROPULSION TRAINERS
43D18-2	System Trainer
43D19	FLIGHT CONTROL TRAINERS
43D19-2	System
43D19-3	Ground Support Equipment
43D20	HYDRAULIC AND PNEUMATIC SYSTEMS
43D20-2	System
43D21	STORAGE, TRANSFER AND PRESSURIZATION
43D21-2	Liquid Oxygen
43D21-3	Helium
43D21-4	Propellant
43D22	ELECTRICAL SYSTEMS
43D22-2	System
43D22-3	Power Conversion and Distribution
43D22-4	Trouble Analysis
43D22-5	Missile Safety and Arming
43D23	INSTALLATION AND TRANSPORTATION
43D23-2	Rocket and Explosive Bolt
43D23-3	Ordnance Installation
43D23-4	Engine
43D23-5	Missile Handling
43D23-6	Pylon/Installation/Missile Loading
43D23-7	Thermo-Conditioner
43D23-8	Hydraulic System
43D24	PROGRAMMERS
43D24-2	Propellant Loading
43D24-3	Propulsion Signal
43D25	TEST SET (Do not use)
43D26	PROCEDURES
43D27	ALIGNMENT TRAINERS
43D28	ANTENNA SYSTEM TRAINERS
43D29	SILO TRAINERS
43D30	AIR-CONDITIONING
43D31	LAUNCHER TRAINERS
43D32	LAUNCH SITE TRAINERS
43D32-2	Equipment
43D32-3	Operation and Maintenance
43D33	MAINTENANCE
43D33-2	Security Support Bench
43D33-3	Thermo-Conditioner

43D34	NETWORKS
43D34-2	Sequence and Monitor
43D35	INSPECTION
43D36	SAFETY
43D37	COMMUNICATIONS
43D37-2	System
43D38	ATMOSPHERIC RESEARCH EQUIPMENT
43D39	GROUND ELECTRONIC SYSTEMS
43DA	ASSOCIATED EQUIPMENT
43DA1	PRINTER MECHANISM
43DA2	RECORDERS
43DA3	ANNOUNCERS
43DA4	MAGAZINES
43DA5	DECODERS
43DA6	TOOLS
43DA7	DESICCATORS
43DA8	CYLINDERS AND NITROGEN CYLINDERS
43DA9	CARDS
43DA10	PATCHBOARDS
43DA11	AMPLIFIERS
43DA12	DRIVERS
43DA13	VISUAL SYSTEMS
43DA13-2	Monitor and Components
43DA13-3	Projector and Components
43DA13-4	Camera and Components
43DA14	AUTOMATED FLIGHT TRAINING SYSTEMS
43DA14-2	Training Set, Mission - Simulator
43E	TRAINING EQUIPMENT
43E1	CARRIERS
43E1-2	Target
43E1-3	Radar
43E1-4	Electricity Demonstration
43E2	CONTROLS
43E2-2	Auto-Pilot
43E2-3	Pneumatic
43E3	KITS
43E3-2	Film Assessing
43E3-3	Radar Set Adapter
43E3-4	Radar Set Dolly
43E4	GENERATORS
43E4-2	Signal
43E5	PANELS
43E6	POWER SYSTEMS
43E6-2	Windlass
43E6-3	Power Supply
43E6-4	Rectifier
43E6-5	Engine
43E6-6	Motor Generator
43E7	RADIO AND RADAR
43E7-2	Accessory
43E7-3	Interphone System
43E7-4	Radio Range

43E7-5	Training Set
43E7-6	Signal
43E7-7	Scorer
43E7-8	Receiver
43E7-9	Amplifier
43E7-10	Converter
43E8	RECORDERS - REPRODUCERS (See 43X16 also)
43E8-2	Sound
43E9	READERS AND VISICORDERS
43E10	SIMULATORS
43E10-2	Bombsight
43E10-3	Radio, Radar
43E10-4	Line Store
43E10-5	Small Arms Fire
43E10-6	Circuit Analysis
43E10-7	Signal
43E10-8	Switch
43E10-9	Mortar
43E10-10	Antenna Assembly
43E10-11	Motion System
43E10-12	Control Tower
43E11	TARGETS
43E12	TRANSPONDER GROUPS (Interconnector)
43E14	WINDLASSES
43E15	CATAPULTS
43E16	LAUNCHERS
43E17	TOW TARGETS
43E17-2	Actuator
43E17-3	Cart
43E18	LOADING
43E19	TELEGRAPHIC
43E19-2	Code Training
43E20	REGULATORS
43E20-2	Oxygen
43E20-3	Pressure
43E21	LIQUID
43E21-2	Oxygen
43E22	CHEMICALS
43E22-2	Biological and Radiological
43E23	RESIDENT TRAINERS
43E23-2	Cargo Aircraft
43E23-2-2	C-141A
43E23-2-3	C-5A
43E23-3	FIGHTER ACFT
43E23-3-4	F-15
43E23-3-5	F117A
43E23-4	Helicopters
43E23-4-2	HH-43
43E23-4-3	HH-53B
43E23-4-4	TF-1F
43E23-4-5	UN-1N
43E23-5	Bomber Aircraft

43E23-5-2	B-52
43E24	MOBILE TRAINERS
43E24-2	Cargo Aircraft
43E24-2-3	C-135
43E24-2-4	C-133
43E24-2-5	EC-121
43E24-2-7	C-5A
43E24-2-8	C-10
43E24-2-9	C-130
43E24-2-10	C-17
43E24-3	Fighter Aircraft
43E24-3-9	F-15
43E24-3-10	F-16
43E24-4	Helicopter Aircraft
43E24-4-2	UH-1
43E24-4-3	HH-53C
43E24-5	Bomber Aircraft
43E24-5-2	B-52
43E24-5-4	B-1B
43E24-5-5	B-2A
43E24-6	Attack Aircraft
43E24-6-4	A-10
43E24-7	Observation Aircraft
43E24-7-2	OV-10A
43E24-8	Trainer Aircraft
43E24-8-2	T-38
43E24-8-3	T-46
43E24-8-11	T-38A
43E24-9	Electronic Aircraft
43E24-9-2	E-3
43E24-9-3	E-8
43E25	PROJECTORS
43E26	DIGITAL COMPUTERS (Use 31S5)
43E27	WIND TUNNELS
43E28	EXPLOSIVE DISPOSAL
43E29	BOMBING SYSTEMS TRAINER
43E30	GUNSHIP SYSTEMS TRAINERS
43E30-2	C-130
43EA	ASSOCIATED EQUIPMENT (Use 43X)
43X	COMPONENTS
43X1	AUTOSYNS
43X2	CABLES
43X3	DISPLAYS
43X3-2	Radar Data
43X3-3	Graphic
43X3-4	Control
43X3-5	System
43X4	FLARES
43X5	INDICATORS
43X5-2	Altimeter
43X5-3	Artificial Horizon
43X5-4	Cross Pointer

43X5-5	Directional Gyroscope
43X5-6	Landing
43X5-7	Standard Beam Approach
43X5-8	Turn and Bank
43X5-9	Single Autosyn
43X5-10	Photo Firing
43X5-11	Accelerometer
43X5-12	Attitude
43X5-13	Doppler
43X5-14	Compass
43X5-15	Altitude
43X5-16	Oxygen
43X5-17	Tachometer
43X5-18	Airspeed
43X5-19	Flap
43X5-20	Landing Gear
43X5-21	Fuel
43X5-22	Velocity
43X5-23	Temperature
43X5-24	Oil Pressure
43X5-25	Digital Angle
43X5-26	Radar Navigator
43X5-27	Groundspeed
43X5-28	Rudder Trim
43X5-29	Hydraulic Pressure
43X5-30	Torque
43X5-31	Hover
43X5-32	Engine
43X5-33	Horizontal Situation
43X5-34	Course
43X6	MAPS
43X6-2	Supersonic Radar
43X7	METERS AND MEASURING EQUIPMENT
43X8	COUNTERS AND TIMERS
43X9	PROTECTIVE BAGS
43X10	ADAPTERS
43X10-2	Universal Delivery
43X10-3	Monitor
43X10-4	Electrical
43X10-5	Installation
43X11	THERMOSTATS
43X12	REELS
43X12-2	Tow Target
43X13	LOAD SENSOR
43X14	VALVES
43X15	AMPLIFIERS
43X16	RECORDERs (See 43E8 also)
43X17	PUMPS
43X17-2	Vacuum
43X17-3	Hydraulic
43X18	SETTING DEVICES
43X19	DISCONNECT UNITS

43X20	TRAINER ATTACHMENTS
43X21	MECHANISMS AND DRIVES, DISK DRIVES
43X22	STANDS
43X23	COMPRESSORS
43X24	CYLINDERS
43X25	ACTUATORS
43X26	ACCUMULATORS
43X27	TANK ASSEMBLIES
43X28	POWER UNITS
43X29	NAVIGATION
43X30	SERVOS
43X31	PANELS
43X32	GEAR BOXES
43X33	SERVOMOTORS
43X34	LIGHT ASSEMBLIES
43X35	COMPUTERS
43X36	CONVERTERS
43X37	ALTIMETERS
43X38	UNITS
43X39	PLOTTERS
43X40	GENERATORS
43X40-2	Target
43X40-3	Sweep
43X40-4	Pulse
43X40-5	Function
43X40-6	Vector
43X41	POWER SUPPLIES
43X42	KITS
43X43	CONTROLS
43X44	DATA TERMINALS
43X45	TAPE TRANSPORTS
43X46	MONITORS
43X47	PRINTERS
43X48	READOUT UNITS
43X49	ANALYZERS
43X50	MODULES
43X51	TRANSLATORS
43X52	CARD ASSEMBLIES
43X53	VOLTAGE, CURRENT, AND RESISTANCE UNITS
43X54	TAPES AND DRUM ASSEMBLIES AND COMPONENTS
43X55	GAUGES
43X56	SYSTEMS
43X57	HUMIDIFIERS
43X58	PROJECTORS
43X59	PALLET ASSEMBLIES

## CHAPTER 35

### CATEGORY 44 - COMMON HARDWARE EQUIPMENT

#### **35.1 GENERAL.**

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.

**35.1.1 Multiple Systems.** TO data pertaining to more than one system in this category is numbered in the category general series.

**35.1.2 Multiple Equipment.** 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

35.2.3.3 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.

35.2.4 Group Four. Group Four. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in Paragraph 35.2.3.1.

### 35.3 EXAMPLES OF CATEGORY 44 NUMBERING PATTERNS.

35.3.1 Example One. 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 Example Two. 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.**

Category 45 contains two railroad equipment systems. These systems are divided into equipment series and the equipment series are further divided into equipment subspecies. 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.

**36.1.1 Multiple Systems.** TO data pertinent to more than one system in this category is numbered in the category general series.

**36.1.2 Multiple Equipment.** 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 subspecies. In this case, the equipment subspecies 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

## TO 00-5-18

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

36.2.3.3 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 Example One. 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 Example Two. 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.

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.

37.1.1 Multiple Systems. TO data pertinent to more than one system in this category is numbered in the category general series.

37.1.2 Multiple Equipment. 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

## TO 00-5-18

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 Example One. 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 Example Two. 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	PANTOGRAPHS
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
46D1-10	White Print
46P	PRINTING AND BINDING EQUIPMENT
46P1	CUTTERS
46P2	DRILLS
46P3	FRAMES
46P4	GRAINING MACHINES
46P5	PRESSES
46P6	WHIRLERS



## CHAPTER 38

### CATEGORY 47 - AGRICULTURE EQUIPMENT

#### 38.1 GENERAL.

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.

38.1.1 Multiple Systems. TO data pertinent to more than one system in this category is numbered in the category general series.

38.1.2 Multiple Equipment. 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 Example One. An operating instruction for a sprayer, PN 44-10000-1:

47D1-5-1

47 Category 47  
D Weed and Pest Control Equipment  
1 Sprayer Series  
5 Represents PN 44-10000-1  
1 Number Reserved for Operating Instructions

38.4 CATEGORY 47 NUMBERING SERIES.

47	AGRICULTURE EQUIPMENT
47A	CULTIVATION AND SOIL PREPARATION
47A1	CULTIVATORS
47A2	HARROWS
47A3	PLOWS
47A4	SOIL MIXERS
47B	HARVESTING EQUIPMENT
47C	MOWING EQUIPMENT
47C1	LAWN MOWERS
47C2	TURF MOWERS
47C3	LAWN EDGERS
47D	WEED AND PEST CONTROL EQUIPMENT
47D1	SPRAYERS
47D2	WEED BURNERS

# CHAPTER 39

## CATEGORY 49 - OPTICAL INSTRUMENTS, TIMEKEEPING AND NAVIGATION EQUIPMENT

### 39.1 GENERAL.

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.

39.1.1 Multiple Systems. TO data pertinent to more than one system in this category is numbered in the category general series.

39.1.2 Multiple Equipment. 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 Example One. An operating instruction for a navigation watch, type AN5740:

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 Example Two. 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	PERISCOPES
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
49AA	ASSOCIATED EQUIPMENT
49AA1	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.**

Category 50 contains four systems. These systems are divided into equipment series and the equipment series are further divided into equipment subspecies. 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.

**40.1.1 Multiple Systems.** TO data pertinent to more than one system in this category is numbered in the category general series.

**40.1.2 Multiple Equipment.** 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 subspecies. 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 Example One. 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 Example Two. 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.**

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.

**41.1.1 Primary Series.** 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.

**41.1.2 Multiple Series.** TO data pertinent to more than one system in this category is numbered in the category general series.

**41.1.3 Multiple Equipment.** 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.**

## TO 00-5-18

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
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

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 Example One. 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 Example Two. 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 Example Three. 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 Example Four.** Checkout manual for type SN-38011/APQ-113 fire control radar:

51P2-2-7-8-1  
 51 Category 51  
 P Radar Equipment  
 2 Fire Control Radar Series  
 2 AN/APQ Subseries  
 7 Represents SN-38011/APQ-113  
 8 Number Reserved for Checkout Manuals  
 1 First Manual in a Series

**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
51C3	MULTIFUNCTION ANALOG/DIGITAL MODULE TEST STATIONS
51C4	PRECISION AC/DC ANALOG MODULE TEST STATIONS
51C5	DIGITAL LOGIC MODULE TEST STATIONS
51C6	AEROSPACE GROUND EQUIPMENT MODULE TEST STATIONS
51C7	LOGIC CIRCUIT CARD ANALYZER TEST STATIONS
51C8	HEADS UP DISPLAY CATHODE RAY TUBE ELECTRONICS TEST STATIONS
51C9	SYSTEM TIMING UNIT SCAN CONVERTER TUBE TEST STATIONS
51C10	DOPPLER RADAR ANTENNA CALIBRATION SYSTEM TEST STATIONS
51C11	GENERAL RADIO GR1792D SYSTEM
51E	AIRCRAFT ENGINES
51E1	JET ENGINES
51E1-2	J-79
51E1-3	TF-39
51E1-5	J-57
51E1-7	TF-30
51E1-8	TF-33
51E1-9	TF-41
51E1-10	T-56
51N	NAVIGATION INSTRUMENTS
51N1	NAVIGATION SYSTEMS
51N2	INERTIAL REFERENCE UNITS
51N3	COMPUTER DISPLAY UNITS
51N4	ALL WEATHER LANDING SYSTEMS
51P	RADAR EQUIPMENT
51P1	TERRAIN FOLLOWING RADAR
51P1-2	Type AN/APQ
51P2	FIRE CONTROL RADAR
51P2-2	Type AN/APQ
51P2-3	Type AN/APA
51P2-4	Type AN/GJQ

51P2-5	Type AN/AWG
51P3	IDENTIFICATION FRIEND-OR-FOE RADIO SETS
51P3-2	Type AN/APX
51P4	ULTRA HIGH FREQUENCY COMMUNICATION SETS
51P4-2	Type AN/APS
51P5	COUNTERMEASURES SETS
51P5-2	Type AN/ALR
51P5-3	Type AN/ALE
51P6	ALTIMETERS
51P6-2	Type AN/APN
51P7	INTERFERENCE BLANKER
51P7-2	Type AN/U
51R	RADIO EQUIPMENT
51R1	AUTOMATIC DIRECTION FINDER
51R1-2	Type AN/ARA
51R2	TACTICAL AIR NAVIGATION
51R2-2	Type AN/ARN
51R2-3	Type AN/ARN-21C
51R3	INSTRUMENT LANDING SYSTEM RADIO RECEIVING
51R3-2	Type AN/ARN
51R4	INTERCOMMUNICATION SET
51R4-2	Type AN/AIC
51T	MASTER HARDWARE
51T1	MASTER HARDWARE SYSTEMS
51T2	AMPLIFIERS
51T3	ANALYZER
51T4	CONTROLLERS
51T5	CONVERTERS
51T6	GENERATORS
51T7	INDICATORS
51T8	LOAD ASSEMBLIES
51T9	MEMORY UNITS
51T10	METERS
51T11	MONITORS
51T12	OSCILLATORS
51T13	POWER SUPPLIES
51T14	PRINTERS
51T15	READERS
51T16	READOUTS
51T17	SIMULATORS
51T18	SWITCHING UNITS
51T19	RESISTANCE UNITS
51T20	TAPE PREPARATION UNITS
51T21	TRANSFORMERS
51T22	SYNTHESIZERS
51T23	AVIONICS INTERFACE UNITS
51T24	PUNCHES
51T25	SUBSCRIBERS
51T26	ADAPTERS
51T27	ELECTRONIC CIRCUIT PLUG-IN UNITS
51T28	FLIGHT CONTROL COMPUTERS
51T29	PHOTOGRAPHY

51V	VERSATILE AUTOMATIC TEST EQUIPMENT
51V1	GUIDANCE EQUIPMENT
51V2	ADAPTERS
51V3	ANALYZERS
51V4	CONVERTERS
51V5	FREQUENCY MEASURING
51V6	MULTIMETERS
51V7	POWER SUPPLIES
51V8	VOLTMETERS
51V9	MISSION EQUIPMENT
51V10	AUXILIARY ASSEMBLIES



## 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.

##### ABSORBERS

Air-Conditioning and Pressurizing	15A17
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##### ACCELEROMETERS

Automatic Flight Control System	5A24
---------------------------------	------

Bombing System	11B63
----------------	-------

Fire Control System	11F2
---------------------	------

Flight Instrument	5F2
-------------------	-----

Guidance and Control System	11G14-4
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Navigation Instrument	5N9
-----------------------	-----

Training Component Indicator	43X5-11
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##### ACCELEROMETERS AND GYROS, COMBINED

Automatic Flight Control System	5A32-2
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##### ACCUMULATORS

Aircraft or Missile Engine Fuel System	6J25
--	------

Hydraulic System, Aircraft and Missile	9H1
--	-----

Missile Support	35M21
-----------------	-------

Pneumatic System, Aircraft and Missile	9P1
--	-----

Training Component	43X26
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##### ACTUATORS

Air Refueling System	6A1
----------------------	-----

Airborne Mechanical	16A1
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Alternating- and Direct-Current, Airborne	8C1
---	-----

Alternating-Current, Airborne	8A1
-------------------------------	-----

Automatic Flight Control System	5A44
---------------------------------	------

Direct-Current, Airborne	8D1
--------------------------	-----

Egress System	11P9
---------------	------

Engine Fuel System	6J29
--------------------	------

Guidance System	11G12
-----------------	-------

Hydraulic System, Aircraft and Missile	9H2
--	-----

Loading and Servicing, Associated	35DA6
-----------------------------------	-------

Missile Support	35M27
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Pneumatic System, Aircraft and Missile	9P2
--	-----

Rocket Engine Fuel System	6K12
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Supercharger Control, Airborne-Engine	2RA5-3
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Training Component	43X25
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##### ACTUATORS AND MOTORS

Airborne Electrical System	8
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Alternating- and Direct-Current	8C1
---------------------------------	-----

Alternating-Current	8A1
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Direct-Current	8D1
----------------	-----

##### ADAPTER ASSEMBLIES

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Structural Component, Airframe	16W35
ADAPTER KITS	
Photographic	10G17
ADAPTER UNITS	
Bombing System	11B95
Checkout, Missile	31X2-56
Supercharger Control System	2RA5-13
ADAPTERS	
Air Refueling System	6A17
Automatic Flight Control System	5A2
Camera Control System	10A6-20
Cluster Bomb	11A12
Electric Power Supply	35CA28
Engine and Temperature Instrument	5E2
Fire Control System	11F3
Fuel- and Oil-Handling	37A1
Launcher	11LA8
Loading and Servicing	35DA3-6
Missile Support	35M35
Navigation Instrument	5N19
Rocket Engine Fuel System	6K11
Shop Support	34Y21
Starting	35D12-3
Training Components	43X10
Turbojet and Turboprop Aircraft and Engine Fuel System	6J12
ADMINISTRATIVE PUBLICATIONS	
Blank Forms	00-35D
General Technical Order	00-35
Supply	00-35A
AERIAL DELIVERY SYSTEMS	
Cargo Loading, Tiedown, and Aerial Delivery	13C
Kit	13C7
Pick-up System	13C8
AEROSPACE VEHICLES	
Booster	22G
Probe	22P
Rocket	22R
Satellite	22S
Spacecraft	22J
AFT HUB (TAIL)	
Rotor Assembly	3R1-8
AFTERSURNER CONTROL SYSTEMS	
Jet Engine	2JA1
AGENTS	
Chemical Warfare	11C1
AGRICULTURE EQUIPMENT	
Mowing	47C
Weed and Pest Control	47D
AIMING CIRCLES	
Optical Instrument	49A7
AIR COMPRESSORS	
Shop Support	34Y1

Vehicle Components	36Y58
AIR-CONDITIONERS	
Commercial	40A1
Simulator and Training	43D30
Utility Operating	35E9
Utility Operating, Associated	35EA4
AIR-CONDITIONING AND PRESSURIZING EQUIPMENT	
Aircraft and Missile	15A
AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING AND WATER TREATING EQUIPMENT, COMMERCIAL	
Air-Conditioning	40A
Heating	40H
Plumbing	40P
Refrigerating	40R
Ventilating	40V
Water Treating	40W
AIR EQUIPMENT	
Engine Component, Non-aeronautical	38X25
AIR EVACUATION	
General Technical Order	00-75
AIR INSTALLATION	
Electrical Facility	00-105A
Fire Protection and Rescue	00-105E
General Technical Order	00-105
Harvest Eagle Water System	00-105K
AIRBORNE EQUIPMENT	
Electronic	12
Instrument	5
Mechanical	16
Weapon	11W
AIRCRAFT	
Attack	1A
Bomber	1B
Cargo/Transport	1C
Fighter	1F
Helicopter	1H
Observation	1L
Special Electronic	1E
Trainer	1T
Utility	1U
AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING, CARGO LOADING, AERIAL DELIVERY AND RECOVERY, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT	
Cargo Loading, Tiedown and Aerial Delivery	13C
Fire Detecting and Extinguishing	13F
Furnishing	13A
Inflight Feeding	13B
Recovery	13D
AIRFRAME COMPONENTS (STRUCTURAL)	
Airborne Mechanical	16W
AIRSPEED COMPENSATORS	
Automatic Flight Control	5A6-2
AIRSPEED TRAINERS	

Mock-up	43D9
ALARMS	
Launch Control and Countdown, Missile	31X3-31
ALIDADES	
Optical Instrument	49AA1
ALIGNMENT AND CALIBRATION EQUIPMENT	
Optical	49A11
ALIGNMENT ASSEMBLIES	
Checkout, Missile	31X2-63
ALPHABETICAL PUBLICATIONS	
Technical Order Index	0-2
ALTERNATING AND DIRECT CURRENT SYSTEMS	
Airborne Electrical	8C
ALTERNATING CURRENT SYSTEMS	
Airborne Electrical	8A
ALTERNATORS	
Electrical Power Supply, Associated	35CA24
Propeller, Electrical	3EA1
Propeller, Hydraulic	3HA11
ALTIMETERS	
Automatic Test	51P6
Bombing System	11B89
Flight Instrument	5F3
Ground Guidance, Missile	31X7-51
Training Component	43X37
ALTITUDE COMPENSATORS	
Automatic Flight Control System	5A6-3
AMBULANCES	
Aerial Delivery	13C7-25
Vehicle	36A1
AMMUNITION	
Aerial Delivery	13C7-18
Armament	11A
Gun	11A13
AMPLIFIERS	
Air Refueling System (See 8A1-65 and 8D1-58)	6A2
Aircraft and Missile Engine Fuel System	6J1
Aircraft Reciprocating Engine Fuel System	6R11
Alternating- and Direct-Current	8C17
Alternating-Current	8A20
Automatic Flight Control System	5A3
Automatic Test	51T2
Bombing System	11B2
Box, Training Component	43X15
Checkout, Missile	31X2-38
Direct-Current	8D19
Electronic Camera Control	10A6-3
Engine and Temperature Instrument	5E3
Fire Control System	11F4
Flight Instrument	5F4
Ground Communications, Missile	31X1-10
Ground Guidance, Missile	31X7

Guidance System	11G8
Jet Engine Lubricating System	7J9
Liquid-Level, Quantity, and Flow Measuring Instrument	5L2
Navigation Instrument	5N2
Position and Pressure Instrument	5P1
Supercharger Control	2RA5-7
Training Component	43X15
Training Device	43DA11
ANALYTICAL SYSTEMS	
Photographic	10H11
ANALYZERS	
Automatic Test	51T3
Bombing System	11B68
Engine and Temperature Instrument	5E1-2
Photographic Processing	10E24
Training Component	43X49
ANNOUNCER	
Simulator or Training Device	43DA3
ANTENNAS	
Bombing System	11B3
Fire Control System	11F5
ANTICIPATORS	
Refrigeration, Temperature-Sensing	15A5-3
ARMAMENT EQUIPMENT	
Bombing System	11B
Chemical Warfare	11C
Munitions, Bombs, Explosives	11A
ARMORED VEHICLES	
Ordnance-Handling	36R2
Vehicle	36A14
ASSEMBLY MACHINES, HOSE	
Shop Support	34Y30
ASTRODOMES	
Aircraft	13A11
ATMOSPHERIC RESEARCH EQUIPMENT	
Meteorological-Electronic, Airborne	12M5
Training Device	43D38
ATOMIC AND RADIOLOGICAL WARFARE	
General	00-110A
ATTACHMENTS	
Bombing System, Camera	11B49
Propeller, Electrical	3EA7
Radio Range, Training	43E7-4
Training Component	43X20
Vehicle, Construction, and Material-Handling	36Y2
ATTENUATORS	
Fire Control System	11F54
AUGERS	
Construction	36C1
AUTOMATIC TEST EQUIPMENT	
Aircraft Engines	51E
Computer Operated Test Station (COMETS)	51C

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Master Hardware	51T
Modular Automatic Test	33
Navigation Instrument	51N
Radar	51P
Radio	51R
Versatile Automatic Test	51V
<b>AUTOMOBILES</b>	
Vehicle	36A7
<b>AUTOPILOT SYSTEMS</b>	
Flight Control	5A1-2
<b>AUXILIARY METEOROLOGICAL-ELECTRONIC EQUIPMENT</b>	
Airborne	12M1
Ground	31M1
<b>AUXILIARY RADAR ELECTRONIC EQUIPMENT</b>	
Airborne	12P1
Ground	31P1
<b>AUXILIARY RADIO ELECTRONIC EQUIPMENT</b>	
Airborne	12R1
Ground	31A1
<b>AUXILIARY SPECIAL ELECTRONIC EQUIPMENT</b>	
Airborne	12S1
Ground	31S1
<b>AUXILIARY WIRE FIXED ELECTRONIC EQUIPMENT</b>	
Ground	31W1
<b>AXLES</b>	
Electrical Power Supply	35CA17
Vehicle, Construction and Material-Handling	36Y3
<b>AZIMUTH ASSEMBLIES</b>	
Rotor	3R5
<b>BAKING EQUIPMENT</b>	
Food Service	41B1
<b>BALANCERS</b>	
Special Tool	32A1
<b>BAROMETRIC ASSEMBLIES</b>	
Aircraft and Missile Engine Fuel System	6J2
<b>BAROMETRIC METEOROLOGICAL-ELECTRONIC EQUIPMENT</b>	
Airborne	12M2
Ground Electronic	31M2
<b>BARORESISTOR</b>	
Fire Control System	11F78
<b>BARRIERS</b>	
Runup Fence	35E8-3
Runway	35E8-2
<b>BATH AND SHOWER UNITS</b>	
Plumbing	40P1
<b>BATTERIES</b>	
Electrical Equipment, DC	8D2
Lighting and Electrical, Ground, Handling	35F13
Vehicle, Construction, and Material-Handling	36Y4
<b>BATTERY CHARGERS</b>	
Power Supply, Electrical, Ground, Handling	35C3-2
<b>BEAM ASSEMBLIES</b>	

Loading and Servicing	35D14
BEARINGS	
Engine, Non-aeronautical	38X1
Hardware	44B
Structural Component, Airframe	16W25
BELTS AND SHOULDER HARNESSSES	
Aircraft Furnishing	13A1
BENCHES	
Dust Free, Shop Support	34Y37
BENDING MACHINES	
Shop Machinery, Metal-Forming	34G1-10
BEVERAGE UNITS	
In-Flight Feeding	13B6
BINOCULARS	
Optical Instrument	49A1
BINS	
Loading and Servicing	35D11
Vehicle, Construction, and Material-Handling	36Y5
BLADES	
Propeller, Electrical	3EA2
Propeller, Hydraulic	3HA1
Rotor Assembly	3R1
Vehicle, Construction, and Material-Handling Component	36Y52
BLANKERS	
Automatic Test Interference	51P7
Bombing System	11B55
BLASTING CAPS AND SQUIBS	
Armament	11P5
BLOWERS	
Bombing System	11B52
Cabin Heating	15H3
Direct-Current	8D18
Fire Control System	11F7
Missile Temperature Control	15M4
Refrigeration and Pressurization	15A3-4
Rotor Assembly	3R17
Utility Operating, Ground	35E11
Vehicle, Construction, and Material-Handling Component	36Y53
Ventilating	40V1
BOATS	
Aerial Delivery Kit	13C7-28
Watercraft	39
BODIES	
Airborne Camera	10A2-2
Motion Picture Camera	10C11
Vehicle, Construction, and Material-Handling	36Y6
BODY ASSEMBLIES	
Structural Component, Airframe	16W9
BOILERS	
Heating	40H1
BOMBING SYSTEMS AND EQUIPMENT	
Armament	11B

Simulator or Training Device	43D1
BOMBS	
Armament	11A
Chemical Warfare	11C2
Explosive	11A1
Guided	11K
Incendiary	11A2
Practice or Leaflet	11A3
BOOMS	
Air Refueling System	6A3
Egress System	11P11
BOOST SELECTORS	
Supercharger Control	2RA5-10
BOOSTERS	
Airborne Weapon	11W1-3
Fire Control System	11F67
BOOSTERS AND BURSTERS	
Armament	11A4
BOOSTERS AND ROCKET ENGINES	
Liquid	2K-LR
Missile, Associated	2KA
Missile, Solid-Propellant	2K-SRM
Solid	2K-SR
BORESIGHTS	
Special Tool	32A2
BORING MACHINES	
Metal Cutting, Shop Machinery	34C2-2
Wood Cutting, Shop Machinery	34C4-9
BORING TOOLS	
Special Tool	32A21
BOTTLES	
Fire Control System	11F92
Pressure, Pneumatic	9P1-2
BOX ASSEMBLIES	
Battery	16W30
Combination AC/DC	8C8
Filter, Hydraulic Propeller	3HA10
Gear, Rotor-Assembly	3R4
BOXES	
Alternating-Current	8A24
Automatic Flight Control	5A4
Bombing System	11B5
Combination AC/DC	8C19
Direct-Current	8D25
Electric Power Supply	35CA1
Fire Control System	11F8
Gear, Airborne-Mechanical	16G1
Guidance System	11G5
Junction, Missile-Operational	31XA7
Liquid-Level, Quantity, and Flow Measuring Instrument	5L3
Navigation Instrument	5N17
BRACE ASSEMBLIES	

Strut	4SA6
BRACKETS	
Photographic Reel	10H10
BRAKES	
Airborne	10A2-6
Jet Engine	2JA4
Landing Gear	4B
Landing Gear, Associated	4BA
Line Installation	4SA4
Rotor Assembly	3R10
Shop Machinery, Metal-Forming	34G1-2
Vehicle, Construction, and Material-Handling Component	36Y7
BRAZING TOOLS	
Special Tool	32A26
BREAKERS	
Special Tool	32A10
Tire Repair, Shop Support	34Y9-6
BREATHING UNITS	
Survival	14S5
BRIDGES	
Aerial Delivery Kit	13C7-11
Railroad	45E2
BUCKETS	
Vehicle, Construction, and Material-Handling Component	36Y8
BUFFETS	
In-Flight Feeding	13B4
BUILDINGS	
Compressor	35E14
Prefabricated, Utility-Operating	35E3
BULK MATERIALS	
Aerial Delivery	13C7-39
BULLDOZERS	
Vehicle, Construction, and Material-Handling Component	36Y9
BUNGEE ASSEMBLIES	
Air Refueling System	6A16
BUSES	
Vehicle	36A3
CABINETS	
Electric Power Supply	35CA2
Fire Control System	11F58
Lighting and Electrical, Ground, Handling	35F1
Shop Support	34Y33
CABLE LAYING EQUIPMENT	
Construction	36C13
CABLE UNITS	
Checkout, Missile	31X2-36
CABLES	
Alternating-Current	8A23
Battery, Vehicle, Construction, and Material-Handling	36Y4
Electric Power Supply	35CA3
Electrical, Power-Distribution, Missile	31X4-8
Guidance and Control System	11G39

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Ignition, Turbojet and Turboprop	8E1-6
Launcher	11LA10
<b>CABLEWAYS</b>	
Loading and Servicing	35D1
Loading and Servicing, Associated	35DA1
<b>CALCULATING MACHINES</b>	
Office	DOP42
<b>CALIBRATION EQUIPMENT</b>	
Optical	49A11
<b>CALIBRATION PROCEDURES</b>	
Test	33K
<b>CALIBRATORS</b>	
Airborne Camera	10A16
Automatic Flight Control	5A5
Bombing System	11B53
Liquid-Level, Quantity, and Flow Measuring Instrument	5L4
Special Tool	32A18
<b>CAMERAS</b>	
Airborne, Aircraft	10A1
Bombing System	11B71
Component	10A2
Ground	10B1
Microfilm	10F1
Motion Picture	10C1
Motion Picture, Hand-Held	10C13
Photographic Instrumentation	10L1
Television, Fire-Control System	11F73
<b>CAMOUFLAGE EQUIPMENT</b>	
Weapon	11WA2
<b>CANOPY ASSEMBLIES</b>	
Structural Component, Airframe	16W2
<b>CAP ASSEMBLIES</b>	
Fuel and Water	6J18
Jet Engine	2JA7
<b>CAPACITORS</b>	
Liquid-Level, Quantity, and Flow Measuring Instrument	5L23
Relays, Airborne-Electrical System	8R11
<b>CAPSULE ASSEMBLIES</b>	
Structural Component, Airframe	16W4
<b>CARBINES</b>	
Ground Weapon	11W3-2
<b>CARBURETORS</b>	
Aircraft Reciprocating Engine Fuel System	6R1
Component, Vehicle, Construction	36Y61
Engine Component, Non-aeronautical	38X2
<b>CARD ASSEMBLIES</b>	
Training Component	43X52
<b>CARDS</b>	
Training Device	43DA9
<b>CARGO LOADING, TIEDOWN, AND AERIAL DELIVERY EQUIPMENT</b>	
Aircraft	13C
<b>CARRIAGE AND SHACKLE ASSEMBLIES</b>	

Structural Component, Airframe	16W8
<b>CARRIERS</b>	
Construction	36C32
Ordnance	36R4
Training	43E1
Weapon, Aerial-Delivery	13C7-16
<b>CARS</b>	
Passenger	36A7
Railroad	45A1
<b>CARTRIDGES</b>	
Egress System	11P7
Fire Control System	11F96
Munitions	11A24
Structural Component, Airframe	16W16
Strut, Aircraft-Landing-Gear	4SA10
<b>CARTS</b>	
Fuel- and Oil-Handling	37A2
Loading and Servicing	35D29
Training (Tow Target)	43E17-3
<b>CASE ASSEMBLIES</b>	
Airframe Structural Component	16W16
<b>CASES, CARRYING AND STORAGE</b>	
Bombing System	11B76
Photographic	10G16
Utility Operating (Also see 35E20)	35E19
<b>CATAPULTS AND EJECTORS</b>	
Egress Systems	11P1
<b>CEMENTS AND GLUES</b>	
Dope, Paint, and Cleaning Compound	42A3
<b>CENTRAL SYSTEMS</b>	
Fire Control	11F10
<b>CENTRIFUGE EQUIPMENT</b>	
Indoctrination Training	43D8-7
<b>CHAIN AND HOOK ASSEMBLIES</b>	
Bombing System	11B87
<b>CHAMBERS</b>	
Expansion	4BA10
Indoctrination Trainer	43D8-3
Shop Support	34Y43
Welding, Shop	34W9
<b>CHANNEL ASSEMBLIES</b>	
Hydraulic, Aircraft and Missile	9H27
Propeller, Electrical	3EA15
<b>CHARGERS</b>	
Airborne, Weapon	11W1-4
<b>CHARGING PLANTS</b>	
Gas Generating	36G1
<b>CHASSIS</b>	
Bombing System	11B82
Flight Instrument	5FA2
Guidance and Control System	11G40
Launcher	11LA11

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Loading and Servicing	35DA16
Vehicle, Construction, and Material-Handling Component	36Y10
CHECKOUT EQUIPMENT	
Electronic, Missile-Operational	31X2
CHEMICAL AND BIOLOGICAL WARFARE AGENTS, DECONTAMINATING, IMPREGNATING, PROTECTIVE AND HAZARD DETECTING EQUIPMENT	
Chemical Warfare Agent, Explosive, Gas or Weapon	11C
Decontaminating, Impregnating, and Protective	11D
CHEMICALS	
Biological and Radiological	43E22-2
Engine and Metal Treatment	42C2
Training	43E22
CHILLERS AND HEATERS	
Photographic Processing	10E4
CHOCK ASSEMBLIES	
Aircraft and Missile Handling	35B9
CHOPPERS	
Photographic Processing	10E16
CHUTES	
Airborne, Weapon	11W1-5
CIRCUIT ASSEMBLIES	
Checkout, Missile	31X2-50
Indicator	11F24
Launch Control and Countdown, Missile	31X3-28
CIRCUIT BREAKERS	
Switch	8S4
CIRCUIT CARD ASSEMBLIES	
Guidance and Control System	11G42
CLAMPS	
Aircraft Hose, Common-Hardware	44H3
Missile Support	35M35
Special Tool	32A27
CLEANERS	
Motion Picture Camera	10C2
Shop Support	34Y2
CLEANING AND PURGING EQUIPMENT	
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Gas	33A7
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Hydraulic	33A2
Inspection	33B
Inspection, Shop	33B7
Inspection, Stand	33B5
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Laboratory Fixture	33C4
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Optical Inspection	33B4
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THEODOLITES	
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Missile Support Equipment	35M40
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THROTTLES	
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THRUSTERS	
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Fire Control System	11F57
Flight Instrument	5F12
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Photographic Processing	10E25
Training Component	43X51
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Missile Support	35M32
Rotor	3R7
Vehicle, Construction, and Material-Handling Component	36Y33
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Bombing System	11B46
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Engine and Temperature Instrument	5E12
Fire Control System	11F45
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Navigation Instrument	5N12
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TRANSPORTATION	
Packaging Order, General	00-85B
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Airbase Operating	35E
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VALVES	
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Engine Component, Non-aeronautic	38X16
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Jet Engine Lubricating System	7J6
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Missile Support	35M14
Missile Temperature Control	15M2
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Oxygen System	15X8
Photographic Processing	10E35
Pneumatic, Strut	4SA7
Pneumatic System, Aircraft or Missile	9P5
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Purging System	6P1
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Photographic Kit	10G14
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Gasoline, Non-aeronautical	38V2
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Component	36Y
Construction	36C
Gas Generating	36G
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Vehicle	36A
Warhead Transport	36A11
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Fan	40V2
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VIBRATORS	
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Fire Control System	11F48
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Night, Special Airborne Electronic	12S10
Training, Associated	43DA13
VOLTAGE AND CURRENT EQUIPMENT	
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VULCANIZERS	
Tire Repair, Shop Support	34Y9-3
WAGONS	
Construction	36C28
WARNING DEVICES	
Alternating- and Direct-Current	8C15
Alternating-Current	8A15
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Photographic Processing	10E13
WASTE GATE MOTORS	
Supercharger Control	2RA5-8
WATCHES	
Timekeeping	49B2
WATER COOLERS	
In-Flight Feeding	13B7
WATER PURIFICATION EQUIPMENT	
Aerial Delivery Kit	13C7-7
WATER SUPPLIES	
Photographic Kit	10G13
WATER TREATING EQUIPMENT	
Commercial	40W

Separator (Filter)	34Y18
<b>WATERCRAFT AND ASSOCIATED EQUIPMENT</b>	
Cargo Boat	39C
Personnel Boat	39P
Range Patrol Boat	39R
Tugboat	39TG
Vessel	39V
<b>WAVEGUIDE</b>	
Bombing System	11B84
Fire Control System	11F49
<b>WEAPONS AND EQUIPMENT</b>	
Aerial Delivery Kit	13C7
Air Launched Guided Glide Weapon	11K1
Airborne	11W1
Atomic, Aerial Delivery	13C7-47
Chemical	11C
Ground	11W2
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Small Arms	11W3
Weapon, Associated	11WA
<b>WEAPON SIMULATORS</b>	
Training	43D11
<b>WEED AND PEST CONTROL EQUIPMENT</b>	
Agriculture	47D
<b>WEIGHING EQUIPMENT</b>	
Handling and Weighing	35B2
<b>WEIGHT AND BALANCE EQUIPMENT</b>	
Cargo Loading, Tiedown, and Aerial Delivery	13C12
<b>WELDING AND HEAT TREATING EQUIPMENT</b>	
Shop Machinery	34W
<b>WHEEL ASSEMBLIES, AXLES, AND BRAKE ASSEMBLIES</b>	
Vehicle, Construction, and Material-Handling	36Y3
<b>WHEELBARROWS</b>	
Material Handling	36M7
<b>WHEELS</b>	
Aircraft Landing Gear	4W
Vehicle, Construction, and Material-Handling Component	36Y34
<b>WINCHES</b>	
Loading and Servicing (Also see 35D4)	35D7
Vehicles, Construction, and Material-Handling Component	36Y35
<b>WIND DIRECTION AND VELOCITY, METEOROLOGICAL-ELECTRONIC EQUIPMENT</b>	
Airborne	12M4
Fire Control System	11F65
Ground	31M5
<b>WIND INDICATORS</b>	
Air Field Lighting and Electrical	35F12
<b>WIND TUNNELS</b>	
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<b>WINDLASSES</b>	
Training	43E14
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WINDSHIELD WIPERS	
Hydraulic System, Aircraft or Missile	9H9
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Ground	31W
WIRE MARKING MACHINES	
Shop Support	34Y10
WOOD	
Cutting Machine, Shop	34C4
WRAPPING AND PACKAGING EQUIPMENT	
Shop Support	34Y11
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WRENCHES	
Special Tool	32A5
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Automatic Flight Control	5A1-5
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## APPENDIX A

### GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

#### A.1 LIST OF REFERENCED AND RELATED PUBLICATIONS.

<u>Number</u>	<u>Title</u>
DOD 4120.15-L	Model Designation of Military Aerospace Vehicles
DOD 5105.38-M	Security Assistance Management Manual (SAMM), Appdx 4
AFI 16-401(I)	Designating and Naming Defense Military Aerospace Vehicles
AFJI 21-301	Interservicing of Technical Manuals and Related Technology
AFMAN 23-110V9	Security Assistance Program Procedures
AFMCI 21-301	Air Force Materiel Command Technical Order System Implementing Policies
AFMCMD 406	Oklahoma City Air Logistics Center (OC-ALC)
AFPD 63-1/20-1	Acquisition and Sustainment Life Cycle Management
AF 63-101	Acquisition and Sustainment Life Cycle Management
DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms
TO 00-5-1	AF Technical Order System
TO 00-5-3	AF Technical Order Life Cycle Management
TO 00-5-15	Air Force Time Compliance Technical Order Process
MIL-STD-196	Joint Electronics Type Designation System
MIL-STD-1808	Interface Standard; System, Subsystem, Sub-Subsystem Numbering
MIL-PRF-83495	Technical Manuals - On-Equipment Maintenance Manual Set
MIL-DTL-87929	Technical Manuals, Operation and Maintenance Instructions in Work Package Format (For USAF Equipment)
ASD/AIA S1000D	International Specification for Technical Publication Utilizing a Common Source Database
D086	Mission Workload Assignments System
Air Force TO Catalog	Accessed through AF Portal using ETIMS

#### A.2 LIST OF REFERENCED AND RELATED FORMS.

<u>Number*</u>	<u>Title</u>
AFTO 22	Technical Manual (TM) Change Recommendation and Reply
DD 61	Request for Nomenclature

#### A.3 LIST OF ACRONYMS.

AAC	Air Armament Center
AEODPS	Automated EOD Publications System
AFMC	Air Force Materiel Command
AFLCMC	AF Life Cycle Management Center
AFMCI	AFMCI Instruction
AFMETCAL	Air Force Metrology & Calibration
AFPD	Air Force Policy Directive
AFTO	Air Force Technical Order (forms)
ALC	Air Logistics Center
ARSS	Armament Systems Squadron

ATOS	Automated TO System
CAC	Common Access Card
CAGE	Contractor And Government Entity (Code)
CBSG	Combat Sustainment Group
CBSS	Combat Sustainment Squadron
CD-ROM	Compact Disk-Read-Only Memory
CL	Checklist
CONUS	Continental U.S.
COTS	Commercial Off-The-Shelf
CPIN	Computer Program Identification Number
CSDB	Common Source Data Base (IETM & S1000D)
CSTO	Country Standard TO
DA	Department of the Army
DLA	Defense Logistics Agency
DM	Data Module (S1000D)
DoD	Department of Defense
DVD	Digital Versatile Disk
EOD	Explosive Ordnance Disposal
ES	Equipment Specialist
ETIMS	Enhanced Technical Information Management System
ETM	Electronic Technical Manual
FI	Fault Isolation (Manual) (MIL-PRF-83495)
FMP	Flight Manuals Program
FMS	Foreign Military Sales
FOMM	Functionally-Oriented Maintenance Manuals
FR	Fault Reporting (Manual) (MIL-PRF-83495)
FSC	Federal Stock Class
GE	General Equipment (Manual) (MIL-PRF-83495)
GS	General Systems (Manual) (MIL-PRF-83495)
IAW	In Accordance With
IETM	Interactive Electronic Technical Manual
IM	Item Manager
IOS	Interim Operational Supplement
IPB	Illustrated Parts Breakdown
IPDF	Indexed Portable Document Format® (Adobe®)
ISS	Interim Safety Supplement
ITPS	Identifying Technical Publication Sheet
JETDS	Joint Electronics Type Designation System
JG	Job Guide (MIL-PRF-83495)
JIL	Joint Interest List (Navy)
MDS	Mission / Design / Series
MIL-DTL	Military Detail (specification)
MIL-PRF	Military Performance (specification)
MIL-STD	Military Standard
MMAC	Material Management Aggregate Code
MPTO	Methods & Procedures TO
MSUG	Materiel Sustainment Group
NSWC IHEOTDT	Naval Surface Warfare Center, Indian Head EOD Technology Division
NW	Nuclear Weapon
NWC	Nuclear Weapons Center
PAM	Pamphlet
PC	Product Center

PM	Program Manager
PM	Publication Module
PSN	Publication Stock Number
SAMM	Security Assistance Management Manual
SAP	Security Assistance Program
SATODS	Security Assistance TO Data System
SD	Schematic Diagram (Manual) (MIL-PRF-83495)
SWP	Sub-Work Package (MIL-PRF-83495)
TCM	Technical Content Manager
TCTO	Time Compliance TO
TM	Technical Manual
TO	Technical Order
U.S.	United States
UAV	Unmanned Air Vehicle
USAF	United States Air Force
VTOL/STOL	Vertical Take-Off & Landing / Short Take-Off & Landing
WAN	Wide Area Network
WC	Work Cards
WD	Wiring Diagram (Manual) (MIL-PRF-83495)
WP	Work Package (MIL-PRF-83495)
WUC	Work Unit Code



## 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 Standard Manuals. Do not enter "TECHNICAL MANUAL" as part of the TO title (included automatically by MIL-STD-38784).

B.2.2 Preliminary Manuals. Do not enter the word "PRELIMINARY" for the same reason. Preliminary status is shown by setting ETIMS "flags" during indexing.

B.2.3 Supplemental Manuals. 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 TO Type. 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 Level of Maintenance.** 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
- CHECKLIST - MAINT INSTR, ORG (FLT LINE)
- MAINT INSTR WITH IPB - INTMD

**B.2.6 MIL-PRF-83495.** 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 Subject or Equipment.** 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 Classification.** 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 Sectionalized Manual.** 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 Reference Manuals.** 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 Special Notations.** 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.2.12 Contractor Data.** 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 Prime System Application.** 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 Equipment Information.** 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 TCTO Series Header.** 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 System Information.** 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)

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- 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)  
Configuration Guide  
Exterior/Interior Aircraft Markings (Category 1)  
Performance Test Cards  
Reference Guide or Reference Manual  
Test Procedure  
User's Manual
- 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)