

**TECHNICAL MANUAL**

**MAINTENANCE DATA DOCUMENTATION**

(ATOS)

THIS PUBLICATION SUPERSEDES TO 00-20-2, DATED 1 NOVEMBER 2012.

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Original..... 0 ..... 15 March 2016

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## INTRODUCTION

### 1. PURPOSE.

1.1 The purpose of this Technical Order (TO) is to provide a broad understanding of Maintenance Data Documentation (MDD) objectives, scope, concept, policies, and its intended use. It prescribes the rules for documenting entries on weapon systems, support systems, and equipment that has been selected for reporting by the equipment manager, as indicated by the Mission Capability (MICAP)/Maintenance Data Documentation (MDD)/Time Compliance Technical Order (TCTO) settings on the Standard Reporting Designator (SRD). This TO also explains the Integrated Maintenance Data System Central Database (IMDS CDB), Facility Equipment Maintenance System (FEMS), G081/Mobility Air Force Logistics Command & Control (G081/MAF LOG C2), Reliability and Maintainability Information System (REMIS), Automatic Test Equipment (ATE) and Comprehensive Engine Management System (CEMS). It provides an authoritative source for certain codes used and entries required in the MDD process, reporting rules, and documentation for cannibalization actions. Newly developed systems must comply with portfolio management requirements (Portfolio Management Requirements define the development and approval processes for new systems). (Tells you how to develop systems and get them approved.)

1.2 TO 00-20-2 provides policy and/or guidance for the individual maintenance activities for the collection and documentation of maintenance data. Maintenance personnel using this TO should be familiar with their related major command implementing directives, TOs, user's manuals, and the following:

- AFCSM 21-556, Vol. 2 IMDS Central Database (CDB)
- AFCSM 25-524, REMIS User Manual
- AFI 21-101, Aircraft and Equipment Maintenance Management
- AFI 21-102, Depot Maintenance Management
- AFI 21-118, Improving Air and Space Reliability and Maintainability
- AFI 21-202, Spacelift Maintenance and Mission Assurance
- AFI 21-204, Nuclear Weapons Maintenance Procedures
- AFI 23-101, Air Force Materiel Management
- AFI 33-150, Management of Cyberspace Support Activities
- TO 00-20-14, Air Force Metrology and Calibration Program
- TO 00-33A-1001, Methods And Procedures --General Cyberspace Support Activities Management Procedures and Practice Requirements
- TO 33K-1-100, Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries
- TO 33K-1-100-2, TMDE Calibration Notes, Calibration Interval, Technical Order, and Work Unit Code Reference Guide

1.3 The requirements of this TO apply to all levels of maintenance, including base level, depot and contractor. MAJCOMs may supplement 00-20 series TOs as required. For the purpose of the 00-20 series TOs, the term AFMC Single Manager (SM) includes System Program Directors (SPD), Product Group Managers (PGM), and Supply Chain Managers (SCM). For the purpose of maintenance policy, the Lead Commands are Air Combat Command, Air Mobility Command, Air Force Special Operations Command, Air Education and Training Command, Air National Guard, Air Force Reserve Command, Air Force Space Command, Global Strike Command and Air Force Materiel Command.

### NOTE

- All Air Force Precision Measurement Equipment Laboratories (PMEL) and Air Force Metrology and Calibration Program Office (AFMETCAL) will document and report MDD in accordance with TO 00-20-14, *Air Force Metrology and Calibration Program*, TO 33K-1-100-1, *Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries*, and TO 33K-1-100-2, *TMDE Calibration Notes, Calibration Interval, Technical Order and Work Unit Code Reference Guide*. The Air Force Metrology and Calibration Program's MDD is structured such that it may be assimilated into the larger Air Force Data Services (AFDS) database.
- Cyberspace weapon system units, 24 AF, 67 CW and 688 CW will document and report MDD in accordance with TO 00-33A-1001, *General Cyberspace Support Activities Management Procedures and Practice Requirements*. The Air Force Life Cycle Management Center (AFLCMC)/HNIK will use Remedy's Enterprise Information Technology Service Management system to collect, store and retrieve maintenance data associated with all cyberspace weapon systems.

2. SCOPE.

2.1 The MDD process begins with the delivery of the first asset to the field and extends through the operational phase of the life cycle of equipment. Additional rules and procedures are in Air Force documents, users manuals, and Major Command (MAJCOM) guidance that further bound the scope of the MDD process as it applies to base-level maintenance production involving labor.

2.2 The scope of MDD includes all functions outlined in AFI 21-series and MAJCOM implementing directives; functions maintaining training equipment listed as MDD reportable in the SRD table; contractors, (if not specified in the current contract, must be included during contract renewal) when accomplishing maintenance on MDD reportable equipment; historical documentation; and rules for reporting maintenance activities on direct labor, on and off-equipment maintenance, serially controlled items, peculiar maintenance actions and Time Change Items (TCI).

# CHAPTER 1

## OBJECTIVES AND USES OF THE MDD PROCESS

### 1.1 INTENT.

The intent of this TO is to provide guidance to the functional user for the use and operation of the MDD process. This TO also provides for the collection and storage of maintenance data for aircraft, spacelift assets, cruise missiles and Intercontinental Ballistic Missiles (ICBMs); excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS), drones, engines, Communications-Electronics (C-E) to include Air Force Space Command (AFSPC) satellite ground stations, mobile stations and radar systems, Cyberspace and Cyber-equipment systems, and C-E meteorological (CEM) equipment, Support Equipment (SE), Aerospace Ground Equipment (AGE), training devices, Nuclear Ordnance Commodity Management (NOCM) materiel, Reentry Vehicles and Reentry Systems (RV/RS), Real Property Installed Equipment (RPIE) utilizing the authorized reporting systems.

1.1.1 This TO is to be used in conjunction with the appropriate data system user manual to ensure proper procedures are applied.

1.1.2 This TO does not address the operation of the input and retrieval procedures. The mechanics of those processes are covered under major command directives, user manuals, and guide books.

### NOTE

All users of MDD systems must ensure that records do not include classified information. Major commands are responsible for providing guidance for reporting MDD during deployments or contingency operations when current data or locations may be detrimental to operations security. Handle data in accordance with (IAW) Air Force Policy Directive (AFPD) 31-4, *Information Security*.

### 1.2 OBJECTIVES.

1.2.1 The objectives of the MDD process are to provide a vehicle for: collecting, storing, and retrieving base-level, depot-level, and contractor-type maintenance data. Data is used in support of the United States Air Force (USAF) equipment maintenance program, reliability and maintainability improvement program, and the maintenance management system procedures.

### 1.3 CONCEPT.

The MDD process includes collection, storage and retrieval. The process provides for the data collection and monitoring of maintenance discrepancies. Rules and regulations govern the operations of each process. There are, however, several systems that are utilized for the input of MDD data. While each of these systems must follow the basic rules for the composition of the data elements and data entries, the procedures for data entry and operation of the following systems are contained in their user manuals and related documents:

- G081 IMDS for Mobility
- G105 IMDS CDB
- G099 REMIS
- D042 CEMS
- Q011 PAMS

1.3.1 As the processes operate within specified rules and procedures, essentially the following takes place:

1.3.1.1 During the collection process, data about maintenance production is entered and verified for accuracy.

1.3.1.2 This process allows for short and long term (historical) storage of data and the on-line and hard copy retrieval of data through user inquiry.

### 1.4 INTENDED USES OF DATA.

MDD data is intended for use at the site where data is collected and off site by major commands and Department of Defense (DoD).

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1.4.1 On the base, the intended use of the base-level maintenance production data is to provide information feedback to base managers and supervisors for controlling the maintenance operation.

1.4.1.1 In IMDS CDB, this information can be obtained through use of standard reports. Tailored reports may also be obtained through use of a Query Language Processor (QLP), and the Interactive Query Utility (IQU). In G081, reports can be generated in the FOCUS program. Examples of information that can be retrieved are:

1.4.1.1.1 Production information about the type of work accomplished, the work center that did the work, and the equipment on which the work was accomplished.

1.4.1.1.2 Equipment maintenance schedules and inventory information for maintenance actions that are required on a calendar basis.

1.4.1.1.3 Production and labor hour expenditures in either detailed or summary form. This includes labor expended to support other organizations or special projects.

1.4.1.1.4 Equipment failures and discrepancy information. This information is available in composite form by type of equipment and for individual equipment items.

1.4.1.1.5 A by-product of MDD is the maintenance of the actual configuration as it pertains to serial tracked and time-change items. Through MDD the current configuration status of the weapon system is maintained.

1.4.1.1.6 In addition, base maintenance managers and supervisors may obtain information concerning operational and support costs, except for C-E equipment, and ICBMs from the Air Force Total Ownership Cost (AFTOC) system which is described in [Chapter 2](#) of this TO.

1.4.1.1.7 Base maintenance managers and supervisors may also query REMIS for like equipment maintenance and operational data at its own or other base locations.

1.4.2 Off base, the intended use of the data within the MDD process is to provide information for use in the management of various programs established by Air Force (AF) and MAJCOM instructions and manuals.

1.4.2.1 Air Force Materiel Command (AFMC) has been designated as overall materiel manager for AF systems/equipment. This management requires all levels of maintenance production data. The data is used to:

1.4.2.1.1 Identify reliability, maintainability, and availability problems on AF equipment.

1.4.2.1.2 Establish priorities for product improvement actions.

1.4.2.1.3 Account for modifications to AF equipment and evaluate the effectiveness of modifications.

1.4.2.1.4 Validate inspections and time-change requirements and/or intervals.

1.4.2.1.5 Identify safety deficiencies and monitor corrective actions.

1.4.2.1.6 Validate or adjust calibration intervals.

1.4.2.1.7 Validate spares requirements.

1.4.2.1.8 Identify programmed depot maintenance requirements.

1.4.2.1.9 Evaluate deficiency reports and modification proposals from other commands or industry.

1.4.2.1.10 Compute the cost for billing the Air Mobility Command (AMC) and the Air National Guard (ANG) for reimbursable depot-level maintenance.

1.4.2.1.11 Determine TCTO kit distribution requirements and TCTO rescission dates.

1.4.2.1.12 Evaluate compliance with warranties.

1.4.2.1.13 Provide for configuration control and/or management.

1.4.2.2 In addition to using the data for internal AFMC management of AF equipment, AFMC provides:

1.4.2.2.1 Data on the performance and support requirements of current inventory equipment for industry to use in developing new systems and equipment.

1.4.2.2.2 Data for reports requested by Headquarters (HQ) USAF, the Departments of the Army and the Navy, the Inspector General (IG) (for accident investigation) and the major commands.

1.4.2.2.3 Data sent to appropriate agencies requiring comparable data used by AFMC.

1.4.2.2.4 Data on AF-wide repair capability to bases, major commands, and HQ USAF for the assessment and improvement of maintenance repair capabilities.

1.4.2.3 Data for operational command and control systems.

1.4.2.4 Data for HQ USAF accounting and finance for determining the cost of base-level maintenance operations.

1.4.3 At one time MDD was also used to determine manpower requirements. Although it is still a consideration in these computations it is not the primary source for decisions. MDD manhours must NOT be used for manning decisions. Maintenance manhours are used to determine repair times and cost to operate systems. Work centers must not inflate repair actions to account for personnel as this data is used for other management decisions.

## **1.5 ACCURACY OF DATA.**

For MDD to be useful to its many users, it is essential that the data in the system be accurate. To ensure accuracy and completeness, workcenter and shift supervisors are responsible for reviewing (on a daily basis) the data entered into the system by personnel under their control.

1.5.1 Data will be validated prior to entry into the database by tables pushed down to the source of entry. It is AF policy that all MDD systems and interfaces will have the same front end edits to ensure accuracy of the inputs. These edits will be in accordance with appropriate technical data. The performing workcenter supervisor is responsible for ensuring the validity of the data submitted. This means that the supervisor must ensure that the data describes what actually took place and the entries are documented according to the rules outlined in this TO.

## **1.6 DATA EDITS AND STANDARD TABLES.**

REMIS transmits the following edit tables to field Maintenance Information Systems (MIS): action taken, command, how malfunction, when discovered, type maintenance, work unit code (WUC), Master Job Standard Number (MJSN) and SRD codes. REMIS tables will take precedence whenever a conflict arises between the published table and the REMIS tables. See also paragraph 4.1 thru paragraph 4.1.2 for conflict resolution.

## **1.7 BENEFITS.**

The information provided through the MDD process is used in the management decision making process which results in many tangible benefits to the Air Force. These benefits are not always readily apparent to the individual involved in the documenting of data. However, a large portion of the cost of the MDD process is returned through improved reliability, maintainability, and availability of AF equipment.

## **1.8 AUTOMATED MDD SYSTEMS.**

When automated MDD systems are available, data will be input using procedures outlined in appropriate user manuals or directives. When an automated system is not available, manual methods will be used in conjunction with manuals or applicable system directives, but still in compliance with the intent of this TO. Absence of an automated system does not negate the requirement for accurate historical data collection or appropriate documentation of maintenance actions.

### **NOTE**

Tables used throughout this TO are included both to indicate documentation rules and denote non-automated methods.



## CHAPTER 2 RELATED DATA SYSTEMS

### 2.1 AFTOC MANAGEMENT SYSTEM.

2.1.1 Purpose. The AFTOC system was developed to improve management's decision making capability by compiling, consolidating, and maintaining a broader range of historical Operations and Support (O&S) cost data. AFTOC provides the visibility of weapon system O&S cost so that others may manage these costs within the life cycle cost process. It uses information provided by the MDD process to achieve this purpose.

2.1.2 Objectives. The objectives of the AFTOC system are:

2.1.2.1 To provide the DoD and USAF with visibility of O&S costs at the Mission, Design, and Series (MDS) and component WUC levels for aircraft, and the Type, Model, and Series (TMS) level for ground C-E equipment.

2.1.2.2 To provide the means to collect, maintain, and portray historical O&S cost data for weapon systems in terms of cost elements most useful to DoD and AF management requirements that are related to the Cost Analysis Improvement Group (CAIG) format.

2.1.2.3 To expand AF weapon system O&S cost MIS to obtain detailed data on weapon systems, subsystems, and replaceable component maintenance costs for use in making equipment replacement or modification decisions. Maintenance cost elements (labor, materiel, and support) must be identified for the subsystem and replaceable components which comprise system maintenance costs.

2.1.2.4 To provide improved logistics support cost information for use in acquisition planning, trade-off analysis studies, and budget requirements submissions.

2.1.2.5 To provide the capability to display this information in standard report formats and also provide demand type reports reflecting only particular user requirements to fulfill a specific purpose.

2.1.2.6 To contribute to the reduction of initial support costs by providing the capability to assimilate, portray, and retain for historical reference the cost of resources (labor, materiel, services, and overhead) directly and indirectly associated with base and depot logistics of aircraft subsystems and components.

2.1.2.7 To maintain a historical database for a minimum of 10 years.

2.1.2.8 To provide cost information to improve logistics policy decisions.

2.1.2.9 To identify system component reliability, effectiveness, and costs so that high support cost items may be identified and addressed.

2.1.3 Intended Uses of Data. The AFTOC program has been developed as a repository of information for personnel throughout the AF as a tool to aid in accomplishing the following:

- Force and/or support program balance
- Weapon system comparisons
- Support resource planning
- Design trade studies to set Reliability and Maintainability (R&M) goals
- Logistics support alternatives
- Affordability studies
- Warranty and/or contractor support analysis
- Equipment maintenance management

2.1.4 Accuracy of Data. For AFTOC, the control of accuracy is the selection of the most correct data sources to feed the system. If the source data systems are accurate, then AFTOC will also be accurate. The MDD system is a key source of information used by the AFTOC system. The Weapon System Support Cost System (WSSCS) uses MDD data to allocate maintenance manhours and costs to the correct MDS. The Component Support Cost System (CSCS) uses MDD data to allocate direct maintenance manhours to the cost of operating and supporting aircraft components. The C-E system uses MDD data to correctly cost the maintenance effort to the applicable TMS. There is a 10-day window from transaction date to make corrections. Corrections cannot be made where Configurations or Scheduled Maintenance has been completed.

2.1.5 **Benefits.** AFTOC will provide decision makers a visibility of O&S costs that has never before been available. This visibility will enhance the decisions made by DoD and AF when attempting to identify the cost drivers of systems and subsystems that are experiencing a growth in O&S cost expenditures.

## 2.2 **REMIS (G099).**

2.2.1 **Purpose.** REMIS is the AF Maintenance Enterprise system providing organizational, intermediate, and depot-level operational authoritative information for all AF weapon systems (aircraft, remote-piloted vehicles (RPV), Satellite, Missile, Trainer, Mine Resistant Ambush Protected (MRAP) vehicles, C-E ICBM, ATE, and Support Equipment), supporting AF world-wide operating bases, locations, Logistics Complexes and HQ Leadership. REMIS is designed to accumulate data and provide information necessary to support the AF equipment maintenance program outlined in AFI 21-101. REMIS will provide accurate, near-real-time data accessibility to all levels of management. Selected weapon system data from the MISs will be transmitted electronically to REMIS. Increased data accuracy, timeliness, and accessibility will facilitate USAF development, implementation, and utilization of readiness initiatives, R&M programs, and other equipment maintenance management systems which keep AF equipment in serviceable condition, safely operable, and properly configured to meet mission needs. REMIS is the official AF system of record for the following data: AF Weapon System master inventory, Weapon System maintenance data, Master Validation tables, Inventory Assignment, Capability Status, Flying Hours, TCTO Status, and Chief Financial Office (CFO) reporting.

### 2.2.2 **Objectives.**

2.2.2.1 Enhance front-end design and increase the readiness and sustainability of USAF weapon systems by improving the availability, accuracy, and flow of essential equipment maintenance information.

2.2.2.2 Designate REMIS as the primary AF database for collecting and processing equipment maintenance information and supporting the objectives of the R&M 2000 program.

2.2.2.3 Structure REMIS by weapon system or major equipment category (e.g., engines) using distributive processing techniques.

2.2.3 **Scope.** The three application subsystems of REMIS (Equipment Inventory, Multiple Status, Utilization Reporting Subsystem (EIMSURS), Product Performance Subsystem (PPS), and Generic Configuration Status Accounting Subsystem (GCSAS) will provide uniform user interface, processing, and reporting capabilities. The EIMSURS, PPS, and GCSAS subsystems receive inputs from on-line users: IMDS CDB, contractors, and other AF data systems, in both batch and on-line modes. AF organizations may query the database, update validation tables, download data, and perform other functions within the security and/or access limits established by their approved user Identifications (IDs) and database views. This is accomplished through the use of a menu-driven process with on-line help screens. REMIS maintains detailed and summary data on-line. Non AFTO Form 95 archived historical data is also available by contacting REMIS Program Management Office (PMO).

2.2.4 **Concept.** The following discussion applies to the three application software programs: EIMSURS, PPS, and GCSAS.

2.2.4.1 **EIMSURS** - The EIMSURS provides both detailed data and summary and/or historical data for all items of aerospace vehicles, ATE, C-E, selected SE, aerospace ground equipment, and missiles for all AF organizational levels that report equipment maintenance data. This subsystem performs the following four functions: inventory reporting, status reporting, utilization reporting, Inventory/Status/Utilization (I/S/U) integration, and CFO reporting.

2.2.4.2 **PPS** - The PPS will provide the capability to evaluate maintenance actions, weapon system effectiveness and materiel deficiencies, thereby allowing management to identify equipment that requires corrective actions. This data will be primarily used by System Program Directors (SPDs), Item Managers (IMs), Equipment Specialists (ESs), and R&M analysts for identifying and resolving specific problem areas and for the improvement of resource utilization. The four main functions of PPS are MDD, equipment availability, reliability and maintainability metrics, and aircraft debriefing.

2.2.4.3 **GCSAS** - The GCSAS is a single unified information source for all AF weapon system configuration data. The GCSAS updates and integrates the functions of the Standard Configuration Management System (SCMS), the Advanced Configuration Management System (ACMS), the Commodity Configuration Management System (CCMS), and the B-1B Configuration Status Accounting System (CSAS). It absorbs the Embedded Computer System (ECS) software, the TCTO management and tracking software, and provides Computer Program Identification Number (CPIN) status and tracking.

2.2.5 **Intended Uses of Data.** The REMIS program has been developed as a repository of R&M information for personnel throughout the AF as an aid in accomplishing the following:

#### 2.2.5.1 **EIMSURS:**

- 2.2.5.1.1 Allocate flying hours and/or sorties per MDS and Program Element Code (PEC).
- 2.2.5.1.2 Monitor the utilization and/or operation of the fleet.
- 2.2.5.1.3 Determine aircraft configuration identification.
- 2.2.5.1.4 Provide selected weapon system status information.

#### 2.2.5.2 **PPS:**

- 2.2.5.2.1 Failure analysis and/or trending.
- 2.2.5.2.2 Warranty and/or guarantee tracking support.
- 2.2.5.2.3 Evaluate equipment maintenance concepts and plans.
- 2.2.5.2.4 Identify causes of high downtime or excessive support impacts.
- 2.2.5.2.5 Gauge weapon system support.
- 2.2.5.2.6 Aircraft debriefing analysis.

#### 2.2.5.3 **GCSAS:**

- 2.2.5.3.1 Provide cradle-to-grave tracking of serially-controlled configuration items.
- 2.2.5.3.2 Administration and management of TCTO data.
- 2.2.5.3.3 Administration and management of approved configuration data.
- 2.2.5.3.4 Administration and management of actual configuration and time-change inspection data.

2.2.6 Accuracy of Data. IMDS CDB data will be validated prior to entry into the database by tables pushed down to the source of entry. Mathematical calculations will be one hundred percent accurate to four positions right of any decimal point, when the numbers are expressed in scientific notation. It is the intent of the AF that all MDD systems should have the same edits and use the same push down tables.

### 2.3 **IMDS CDB (G105).**

2.3.1 Purpose. IMDS CDB is the AF primary, production-oriented, base-level automated MIS. The system supports all aircraft, Spacelift Assets, C-Es, and SE maintenance activities at bases worldwide, ANG and AFR sites, and selected North Atlantic Treaty Organization (NATO) locations. IMDS CDB is designed to provide base-level maintenance personnel the capability to:

- input data as actions occur and receive information, upon demand, at remote terminals in the maintenance complex
- receive and edit input data, store the data in the appropriate records and files, and produce management notices
- produce reports that contain either summarized or detailed data
- load all data relative to equipment to be maintained, the maintenance organization, its facilities and personnel to the computers' files as part of the initial system implementation
- capture data necessary to update files and produce off-base reports as part of the scheduling and control process
- aircraft database information for use in controlling and monitoring the on-going activity of maintenance and providing decision-making information tailored to specific needs

IMDS CDB automates aircraft history, aircraft scheduling, and aircrew debriefing processes and provides a common interface for entering base-level maintenance data into other standard logistics management systems. There is a 10-day window from transaction date to make corrections. Corrections cannot be made when Configurations or Scheduled Maintenance has been completed.

2.3.2 Objectives. The objectives of the IMDS CDB system are:

- 2.3.2.1 Eliminate and/or reduce nonproductive administrative tasks and improve efficiency.
- 2.3.2.2 To ensure Global Visibility of all managed assets and that this AF materiel is serviceable, operable, and properly configured.
- 2.3.2.3 Provide better capability for maintenance information programs and organizations to support AF peacetime and wartime missions.

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2.3.2.4 Provide more accurate maintenance data needed to develop technical requirements, concepts, and plans supporting weapon system development.

2.3.2.5 Identify changing needs for the worldwide maintenance community in the areas of personnel, equipment, and subsystem technology.

2.3.2.6 Provide more responsive maintenance systems and methods to support changing operational needs.

2.3.2.7 Support senior maintenance managers in their need to better organize and train to support wartime operational missions in the most effective and productive manner.

2.3.3 **Scope.** IMDS CDB is an event-oriented system. In most cases, data is entered to update the database as a result of some activity taking place in the maintenance environment. Retrieval of information from the database is dictated by the need of the functional user. This operating concept is implemented through on-line processing of data and the use of a networked database structure. On-line processing capability is provided by access to IMDS CDB via remote terminals located in the work areas. The user may enter data or retrieve information as the need arises. As a result, the database is maintained in a current state at nearly all times and information retrieved reflects up-to-date conditions. Local managers can control their resources through the use of the following subsystems:

- Status and Inventory
- Operational Events
- Inspection, Time Change and Automated History (AHE)
- Documented Discrepancies
- TCTO
- Location
- Equipment Transfer Procedures
- C-E Equipment Status and Inventory Reporting
- Automated Test Equipment Reporting System (ATERS)
- Maintenance Personnel
- Training Management Subsystem
- Personnel Transfer Procedures
- System Support
- Job Data Documentation (JDD)/Debrief/Maintenance Supply
- GCSAS
- IMDS Automated Forms
- Security
- Aerospace Expeditionary Force (AEF)

2.3.4 **Concept.** IMDS CDB performs three general functions at the Enterprise and base level: updates of the database, retrieval of information from the database for local use, and reporting of data required by higher HQs.

2.3.4.1 The database maintenance function provides the capabilities to enter new data, change existing data, and delete erroneous and obsolete data from the database. Extensive editing of input transactions is accomplished programmatically to ensure that only correct data is entered into the database.

2.3.4.2 The information function provides for two types of retrieval. These are: the processing of small volume retrievals on-line and the preparation of reports and listings by background batch programs which process independently of the on-line system.

2.3.4.2.1 On-line retrievals are processed at the time the transaction is input. The output is returned to the requesting remote terminal.

2.3.4.2.2 Background products are processed under the control of the UNISYS 2200 executive system. System saturation and amount of data to be extracted controls how quickly the products are processed. Background products are output on the high-speed printer at the Data Processing Center (DPC) or on the unit's remote line printer.

2.3.4.3 Reports required by higher HQs are produced as a by-product of normal base-level operation of IMDS CDB. These reports are output from the system at the specified time as a result of processing other specific transactions.

2.3.5 **Intended Uses of Data.** IMDS CDB is a large, dynamic, on-line system used to manage base-level maintenance equipment and personnel resources. It acts as primary maintenance data Source System for major commands, AFMC, HQ USAF, and other agencies to manage and track maintenance resources worldwide. IMDS CDB provides the capability for maintenance personnel to communicate to a central, regional computer via remote terminals in selected maintenance work areas to provide the following capabilities:

- 2.3.5.1 Tracks engines and their components, automates the engine manager's D042 reporting, and establishes and maintains the installed-on relationship between the engine and components.
- 2.3.5.2 Reports inventory gains and/or losses, Line Replaceable Unit (LRU) production time, and to have test equipment in the multiple status' open with an automatic calculation of capability.
- 2.3.5.3 Reports C-E equipment and mission gains and losses, maintain and report multiple status conditions against C-E equipment and missions, and record delays encountered in returning equipment and missions to operational status.
- 2.3.5.4 Tracks maintenance actions and has both maintenance and supply data.
- 2.3.5.5 Automates the location of aircraft, missiles, aerospace ground equipment.
- 2.3.5.6 On-line capability for maintenance personnel to document their maintenance actions.
- 2.3.5.7 Allows changes to aircraft status or inventory gains and losses.
- 2.3.5.8 Provides an Estimated Time In Commission (ETIC) monitor
- 2.3.5.9 Provides operational events, mission recording, and mission accomplishment.
- 2.3.5.10 Automates the inspection and time-change processes, forecasts TCTO and time-change requirements, and provides current operating time on an item of equipment.
- 2.3.5.11 Automates the transfer of personnel and equipment to other IMDS CDB units.
- 2.3.5.12 Maintains TCTO data pertaining to aircraft, engines, missiles, aerospace ground equipment, and C-E equipment owned by an organization to include AFSPC satellite ground stations, mobile stations and radar systems. Monitors and controls TCTO progression.
- 2.3.5.13 Automates the capability to monitor manpower resources and forecasts and schedules personnel training requirements.
- 2.3.5.14 Verifies actual and approved configurations.
- 2.3.5.15 Automates parts ordering for unscheduled requirements, time-change requirements, TCTOs, maintains maintenance event validation of supply requisition, and automates the process for tracking parts through the repair cycle.
- 2.3.5.16 Automates the debriefing process, generates flying and maintenance schedule on a monthly, weekly, or daily basis and updates and monitors the approved and actual configuration of an aircraft.
- 2.3.5.17 Automates the deficiency reporting process.

2.3.6 **Accuracy of Data.** Use of a networked database enhances the on-line processing of the data by permitting data which has been recorded one time to be accessed and used by multiple subsystems. This reduces the amount of data the user would otherwise be required to maintain in the system. Furthermore, since commonly used data occurs only one time in the database, the accuracy is improved. Also, workcenter and shift supervisors are responsible for reviewing on a daily basis the data entered into IMDS CDB by personnel under their control. This is to ensure accuracy and completeness of data entered into IMDS CDB. There is a 10-day window from transaction date to make corrections. Corrections cannot be made when Configurations or Scheduled Maintenance has been completed.

## **2.4 G081/MOBILITY AIR FORCE LOGISTICS COMMAND & CONTROL (G081/MAF LOG C2).**

2.4.1 **Purpose.** G081 provides both a maintenance management system and a logistics command and control system for the C-40, C-5, C-130, KC-10, KC-135 and C-17 fleets. This system operates on a central database located at Tinker AFB utilizing an Amdahl mainframe. It provides fleet-wide visibility of status and location of aircraft, discrepancy history, TCTO status, MDD history, personnel, back shop production control, training, SE, and AGE. All C-5, KC-10, KC-135 and C-17 home stations (including the Guard and Reserve) have access to the system. Outside Continental United States (CONUS) main en route locations have access and make updates to the system as well.

2.4.2 **Objectives.** The system provides base maintenance managers the ability to track each aircraft and determine what maintenance is required to get the aircraft available for generation. HQ AMC weapon system managers and analysis personnel get fleet wide information for overall management of the weapon system and can also determine historical trends. The system provides HQ AMC/TACC logistics command and control with the ability to determine where aircraft are located and their status as an aid to decision making process. The system is continuously modified to meet their requirements. An example: C-5 aircraft have weight and pressurization restrictions and the system has been modified to display these

restrictions by aircraft or by total number of aircraft associated with a base. Currently there are system interfaces with REMIS (AFI 21-103 and MDD data), CEMS Increments I - III (AF engine management system), CEMS IV (C-17 engine trending system), and the Global Decision Support System (GDSS), which is the operations command and control system for AMC.

## 2.5 CEMS (D042).

2.5.1 Purpose. CEMS is the data system that has been identified by Congress as the USAF standard data system for the tracking of Air Force Engine Status, Accountability, and Critical parts life tracking. CEMS provides on-line real-time data accessibility to all levels of management. CEMS supports the Congressional Financial reporting requirements, the engine accountability requirements in AFI 20-115, *Propulsion Management for Aerial Vehicles*, and the Critical parts life tracking requirements of the 00-25-5-1-x series of TOs. CEMS reporting requirements are stated in TO 00-25-254-1. CEMS supports the On-Condition Maintenance (OCM) and Reliability Centered Maintenance (RCM) concepts for engines.

### 2.5.2 Objectives.

2.5.2.1 Enhance the readiness and sustainability of USAF weapon systems by providing all levels of management accurate real-time essential weapon system engine maintenance information.

2.5.2.2 Develop CEMS as the centralized propulsion system management information system.

2.5.2.3 Design CEMS as the primary AF database for collecting and processing of weapon system engine status, accountability, TCTO and Critical parts life tracking.

2.5.2.4 Structure CEMS by propulsion system (e.g., engines) using distributive processing techniques with additional Client server capabilities.

2.5.3 Scope. CEMS is structured into seven major sub-systems, D042A-G with the additional capability of ORACLE based client server access. AF organizations report data to the system on-line interactive mode via terminal or through the Integrated Base-level Engine Management System (IBEMS) program that requires only a single input for the updating of both CEMS and IMDS CDB. Users may query the CEMS databases, download data, and perform other functions within the security and/or access limits established by their approved user IDs). This is accomplished through the use of a menu-driven on-line (IMS) and Time Sharing Options (TSO) programs.

2.5.4 Concept. The following identifies the seven sub-systems that are fully integrated to make up CEMS.

2.5.4.1 D042A – Status Reporting

2.5.4.2 D042B – Inventory/Financial Management

2.5.4.3 D042C – Allocation and Distribution

2.5.4.4 D042D – Pipeline Analysis

2.5.4.5 D042E – Configuration Management

2.5.4.6 D042F – TCTO Management

2.5.4.7 D042G – Actuarial Experience Computation

2.5.5 Accuracy of Data. CEMS data will be validated during the reporting action based on coded edits and tables. These edits and tables are maintained by the requirements generated by the propulsion management community and approved by the Functional Advocate, HQ AF/A4LY. Once approved, all requirements are evaluated for feasibility then prioritized by the CEMS Internal Configuration Control Board (ICCB) that is chaired by the CEMS Project Coordinator. The Chair acts on behalf of the Major Command Engine Managers, Propulsion Community, and CEMS representatives to optimize scheduling of all requirements to meet the propulsion community's needs.

## CHAPTER 3

# MAINTENANCE DATA DOCUMENTATION PROCESS

### 3.1 DOCUMENTATION CONCEPT.

To have valid and reliable maintenance data, both the users and the providers of data must have a clear understanding of the concept for documenting maintenance data. This concept is addressed below by describing its four major characteristics: documentation categories, data entry, data codes, and documentation rules.

#### 3.1.1 Documentation Categories.

3.1.1.1 All MDD data is grouped into one of two categories (See [Table 3-1](#)). Data documented to describe maintenance performed on end items of equipment are categorized as "on-equipment". Generally, data documented to describe maintenance performed on assemblies, subassemblies, or components removed from an end item of equipment are categorized as "off-equipment." By documenting within the appropriate categories, both on-base and off-base users will have available data which fully describes where, when, what, and how maintenance production resources are used. Indirect labor reporting is not required, but is authorized for use at the unit level.

3.1.1.2 Job discovery and entry into the database is accomplished, in general, by one of four modes of operation: A discrepancy may be found (1) during scheduled maintenance events or (2) unscheduled maintenance events, being input as they occur; (3) as the result of aircrew debriefing and be associated with specific aircraft flight and input during debrief; or (4) as the result of discovery by an on-board recording device which may be input electronically.

3.1.2 Data Entry. All four modes of data entry are accomplished at the base level. At depot level, data will be entered directly into REMIS or into a depot reporting tool that directly feeds REMIS (i.e., DRILS/PDMSS). The MDD process uses standard codes to minimize the computer space required to store the data, streamline data entry, and allow computer processing in the analysis of the data. These codes are in the manual, and tables used in IMDS/REMIS/G081.

### 3.2 RULES FOR DOCUMENTATION.

Support of the documentation concept requires rules to ensure that documentation is accomplished consistently. These rules specify the format to use for each category of documentation, and when to use which codes. The rules for documenting data for the MDD system are written in a tabular form called a Decision Logic Table (DLT). [Table 3-3](#), Convenience of Making Repair, is used as an example and is read in the following manner:

3.2.1 The first decision to be made is found in column A. Is the item being worked upon "on" or "off" equipment? This narrows the decision field to either rules 1 through 5 (on-equipment) or to rules 6 and 7 (off-equipment).

3.2.2 To further narrow the decision field, column B is used. Select the rule(s) that best indicate the action taken. Example, action taken on an on-equipment task is "F"; repair narrows the decision field to rules 1, 2, or 4.

3.2.3 Further, if the item is a recoverable item, only rules 1 and 2 now apply.

3.2.4 If the workcenter making the repair removes the reparable item and does not reinstall the reparable before leaving the end item, then rule 2 applies.

3.2.5 Maintenance actions that are entered into the AFTO Form 781K, *Aerospace Vehicle Inspection, Engine Data, Calendar Inspection and Delayed Discrepancy Document* and do not require a symbol, but are entered as a note, do not require MDD as outlined in TO 00-20-1.

3.2.6 [Table 3-3](#), provides the workcenter an opportunity to decide where the reparable item will be repaired. Before the decision is made as to repair location, these conditions must be met:

- The item is a reparable item.
- No demand for the item is placed on supply.
- The reparable item can be returned to service.

With these conditions established, the repair will then be documented as "on-equipment" or "off-equipment". Once the documentation (on or off-equipment) is completed the rules in [Table 3-3](#) will be used.

3.2.7 Maintenance performed on transient USAF, AFRC, and ANG aircraft will be entered in the MDD system. Data required for off-base processing is provided by the station where the maintenance was performed. Maintenance and servicing performed on AMC industrial funded aircraft do not require the data transmission to the home station.

3.2.8 Entries for work accomplished by maintenance teams from outside the maintenance complex, such as depot or contractor field teams, will be processed through the workcenter where the work is performed, using the depot/contractor workcenter code. Teams are required to document all work accomplished at equipment operating sites. Team supervisors will be responsible for completeness and accuracy of data submitted by the team. The maintenance team's home station may pull production information from REMIS for the work performed to ensure second position in the workcenter code to preclude duplication of off-base reporting.

### **3.3 TROUBLESHOOTING AND REMOVAL TO FACILITATE OTHER MAINTENANCE.**

The term "troubleshooting" denotes the action of determining the defective component(s) which require(s) repair and/or replacement. The term "removal to facilitate other maintenance" denotes the action of removing serviceable assemblies, subassemblies, or components to gain access to the desired system and/or components. When either is actually accomplished, the action will be documented as on-equipment.

3.3.1 If the action taken for convenience of repair is not completed and the removed repairable item is not reinstalled before leaving the equipment end item, an AFTO Form 350, *Repairable Item Processing Tag*, with blocks 1, 2, and 14 documented, will be attached to the removed item. It is not the intent to have tags placed on items to be reinstalled if the items are kept with the end system, and the serviceability is not in question.

3.3.2 In the case of phase inspections or similar maintenance actions where large numbers of items are removed to facilitate other maintenance, such as all access panels on an aircraft, it may not be practical to attach AFTO Form 350 to every item. In this case, one AFTO Form 350 may be used, provided that the items identified by the AFTO Form 350 are kept together.

3.3.3 Alternate local procedures may be used in place of the AFTO Form 350 provided the procedure ensures serviceability and identification integrity of removed items to the end item.

### **3.4 VALIDITY AND RELIABILITY OF DATA.**

The performing workcenter supervisor is responsible for ensuring the validity of the data submitted. This means that the supervisor must ensure that the data describes what actually took place and the entries are documented according to the rules outlined in this TO.

### **3.5 MAINTENANCE ACTIONS NOT REQUIRING MDD REPORTING.**

Support procedures and manpower validation requirements for certain categories of work or equipment are not contingent on information from the MDD process. Maintenance reporting requirements pertaining to organizations, equipment, or categories of work with written exemptions will be listed in this TO. Approved exemptions for equipment which has an SRD assigned will be listed in the REMIS SRD table. Requests for MDD exemptions will be submitted by letter to the requester's major command. The exemption request should include as a minimum, justification for the exemption, the SRD of the equipment; or if the request is for an organizational exemption; the major end items of equipment that the organization reports MDD against. Chapters 1 and 2 of this TO will help you understand the many uses and other data systems that utilize MDD data, and the factors weighed by the reviewing authorities listed in the next paragraph.

3.5.1 When the major command receives an exemption request, and if they agree with it, they will submit a letter stating their position to the managing Program Manager (PM) with information copies to HQ AFMC/A4FI. These two organizations will evaluate the exemption request and forward their recommendations to HQ AFMC/A4FI for consolidation and evaluation. Maintenance associated with the following conditions or equipment will not be input to the MDD process with the exception of TCTO. Approved organizational MDD exemptions are listed in paragraph 3.6.

3.5.2 Weapon or support system maintenance actions occurring within six months prior to phasing the system out of the active inventory. This exemption only applies to systems which are programmed and funded for replacement and/or have a definite replacement or deactivation time schedule. This excludes any equipment being transferred to another organization, service or country, or which will be retained and/or stored as a serviceable and/or repairable substitute or spare asset. Organizations that want to make use of this type of exemption must follow the request procedures in paragraph 3.5.

3.5.3 Nuclear Weapons. This includes all activity in a nuclear munitions work center (i.e., Reentry Vehicle and/or Reentry System (RV/RS) shop, Maintenance and Inspection (M&I), Assembly Surveillance and Inspection (AS&I), or

Integrated Maintenance Facility (IMF). Documentation guidance provided herein (i.e., start and/or stop time entries) will still apply. TCTOs on Nuclear Ordnance Commodity Management (NOCM) items listed in 11N series WUC manuals will be reported as required.

3.5.4 Explosive ordnance disposal team actions including reconnaissance, identification, rendering safe and subsequent disposal of hazardous explosive materiel.

3.5.5 Administrative telephone plant maintenance with the exception of the Preventive Maintenance Inspection (PMI) master listing for scheduling and documenting the performance of PMIs.

3.5.6 MDD requirements with the exception of TCTO documentation have been exempted for Defense Satellite Communications System (DSCS) earth terminals and their associated subsystems.

**3.6 EXEMPTED ORGANIZATIONS AND EQUIPMENT.**

This paragraph provides a list of organizations that are exempt from certain procedures outlined in this TO. These exemptions identify specific organizations and the exemptions granted. Deviations to the MDD process procedures beyond those outlined in this TO are not authorized. In all cases below, all TCTO compliances will be documented. The following exemptions are granted to the indicated organizations.

3.6.1 Audiovisual Activities. All audiovisual equipment is exempt from reporting into the MDD process. This includes the previously exempted AMC Aerospace Audio Visual Service (AAVS) activities.

**3.7 INPUT OF MDD DIRECTLY TO REMIS BY DEPOT, CONTRACTORS, AND SPECIAL ACTIVITIES.**

3.7.1 Where system-to-system interfaces are not available, each repair center will input all reportable depot MDD to REMIS via desk top computers or a Local Area Network (LAN) system. Contractors will also input data directly to REMIS. It is the responsibility of the repair centers to ensure all MDD data (depot and contractor) is collected except where exempted by the prime management contracting agency or the System Manager (SM).

3.7.2 SMs or the prime contracting agency having reportable contractor maintenance that do not elect to have MDD input direct to REMIS, will make arrangements to have the manually prepared data from those contractors input to REMIS. The SM or the prime contracting agency will ensure the data meets the system edit criteria.

3.7.3 See the REMIS user manual for specific information for entering data direct to REMIS.

3.7.4 Contractor MDD must be reported to REMIS either by authorized depot reporting tool (i.e., DRILLS/PDMSS), or by electronic media as specified in a specific contract.

3.7.5 When specified by the contract, contractors may manually prepare data using the applicable format listed in the Data Item Description. Data may be typewritten or legibly hand-scribed; however, illegible, inaccurate, or incomplete data will be returned to the contractor for correction.

**Table 3-1. Documentation Criteria for MDD Systems and Non-MDD Systems**

On-Equipment		Non-MDD System	
MDD System		Non-MDD System	
1.	Data source for documenting on-equipment AFTO Form 349, <i>Maintenance Data Collection Record</i> . (Figure 3-1)	1.	Tag reparable items.
2.	Documenting maintenance actions on equipment and items such as:	2.	Process a "No Demand Transaction" recoverable (reference TO 00-20-3).
	a. Adjustments	3.	Identify the discrepancy of the reparable item.
	b. Cannibalization	4.	Source document used by standard base supply system to determine demand levels.
	c. Corrosion treatment	5.	Dispatching specialists
	d. Delayed Discrepancy Repair	6.	Identifying

**Table 3-1. Documentation Criteria for MDD Systems and Non-MDD Systems - Continued**

<b>On-Equipment</b>			
<b>MDD System</b>		<b>Non-MDD System</b>	
	e. Inspection f. Removal of components g. Remove to facilitate other maintenance h. Replacement of components i. Special inspection j. Support general k. TCTOs  l. Time-change items m. Troubleshooting	7. 8. 9.	a. Number of Specialist dispatched b. Shop dispatching c. Reason for dispatch Action d. Where dispatched e. Length of dispatch f. Delayed discrepancies Determining when to schedule maintenance, e.g., inspection, delayed discrepancies, TCTOs, etc. Historical records Reimbursable
<b>Off-Equipment</b>			
<b>MDD System</b>		<b>Non-MDD System</b>	
1.	Data source for documenting off-equipment AFTO Form 349.	1.	Identify location of reparable during repair cycle.
2.	Documenting maintenance actions on assemblies, subassemblies, or components such as:	2.	Identify status of reparable through the repair cycle.
	a. Adjustment	3.	Source document used by standard base supply system to determine demand levels.
	b. Assemble	4.	Source document for identifying Not Repairable This Station (NRTS) actions to off-base repair facilities.
	c. Bench check	5.	Tag reparable subassemblies or components removed from reparable assemblies.
	d. Corrosion	6.	Dispatching specialists
	e. Fabrication	7.	Identifying:
	f. Manufacturing		a. Number of specialists dispatched
	g. Scheduling, calibration, and repair of TO 33K-1-100 items		b. Shop dispatching
	h. Special inspections		c. Reason for dispatch
	i. Support general		d. Where dispatched
	j. TCTO		e. Length of dispatch
		8.	Determining when to schedule maintenance, e.g., inspections, delayed discrepancies, TCTOs, etc.
		9.	Historical records
		10.	Reimbursable Billing
<b>NOTE</b>			
To determine when to use the AFTO Form 349 or 350 series tags, refer to <a href="#">Table 3-4</a>			

**Table 3-2. Determining Which References To Use**

	<b>A</b>	<b>B</b>
<b>Line</b>	<b>To Determine</b>	<b>Refer To</b>
1	Which items to document on a maintenance record for on-equipment documentation.	Table 3-5 and Table 3-6
2	Which items to document on a maintenance record for off-equipment documentation.	Table 3-7 and Table 3-8
3	Uses of the maintenance records.	Table 3-4 and Table 3-5
4	Uses of the AFTO Form 350.	Table 3-2 and Table 3-4
5	Rules for convenience of making repair.	Paragraph 3.2 and Table 3-3
6	The multiple line entries for a maintenance record for on and off-equipment.	Table 3-9
7	Data codes and elements to enter on the AFTO Form maintenance records.	Chapter 4
8	Documentation rules for Electronic Countermeasures (ECM) pods.	Paragraph 7.6.2
9	Documentation rules for TCTOs.	Paragraph 9.3 and Table 3-11
10	Information on the terms “troubleshooting” and “removal to facilitate other maintenance.”	Paragraph 3.3
11	Documentation rules for depot-level maintenance performed by the ALC, Technology Repair Center (TRC) or their contractors.	Chapter 4

Table 3-3. Convenience of Making Repair

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>Rule</b>	<b>if the convenience of repair is documented as</b>	<b>and the action taken</b>	<b>and the removed repairable is</b>	<b>and the workcenter that repairs the repairable item</b>	<b>then personnel will</b>
1	On-equipment	is documented as F	a recoverable item	installs the same repairable item (now serviceable) and does not leave the equipment end item until the repair is complete.	ensure that an AFTO Form 350, Part II, is documented and processed as a Maintenance Turnaround (TRN) Transaction IAW TO 00-20-3.
2	On-equipment	is documented as F	a recoverable item	does not install the item (now serviceable) before leaving the equipment end item	document an AFTO Form 350 and attach Part I to the repairable item (now serviceable) and ensure that an AFTO Form 350, Part II, is documented and processed as a Maintenance Turnaround (TRN) Transaction IAW TO 00-20-3.
3	On-equipment	for repair is not completed	a recoverable item	does not install the item before leaving the equipment end item	document an AFTO Form 350 and attach the form to the repairable item
4	On-equipment	is documented as F	a non-recoverable	installs and/or repairs repairable item (now serviceable) and does not leave the equipment end item until the repair is complete	not attach an AFTO Form 350
5	On-equipment	for repair is not completed	a non-recoverable	does not install the item (now serviceable) before leaving the equipment end item	document an AFTO Form 350 and attach the form to the repairable item
6	Off-equipment	is documented as A, F, G, K, L, V, or Z	a recoverable item with a documented AFTO Form 350 attached	installs the same item (now serviceable)	
7	Off-equipment	is documented as A, F, G, K, L, V, or Z	a non-recoverable item with a documented AFTO Form 350 attached	installs the same item (now serviceable)	

Table 3-4. Selection of Which AFTO Form to Use at the Home Station for the MDD System

	A	B	C	D
Rule	If the productive direct work hours are	and the work	and the work center is	then use
1	used to perform on- or off-equipment work that does <b>not</b> require the removal or replacement of a repairable item	does <b>not</b> include the accomplishment of delayed discrepancies, overdue inspections, overdue TCTOs, and	subject to automated systems	appropriate user's manual
2	used to perform on- or off-equipment work that does require the removal or replacement of a repairable item	does <b>not</b> include the accomplishment of delayed discrepancies, overdue inspections, overdue TCTOs, and	subject to automated systems	AFTO Form 350
3	used to perform on- or off-equipment work that does <b>not</b> require the removal or replacement of a repairable item	(does include) the accomplishment of delayed discrepancies,	subject to automated systems	AFTO Form 350
4	used to perform on- or off-equipment work that does require the removal or replacement of a repairable item	(does include) the accomplishment of delayed discrepancies,	subject to automated systems	AFTO Form 350
5	used to perform on- or off-equipment work that does <b>not</b> require the removal or replacement of a repairable item	(does include) the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Form 349
6	used to perform on- or off-equipment work that does require the removal or replacement of a repairable item	(does include) the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Forms 349 and 350
7	to perform on- or off-equipment work that does <b>not</b> require the removal or replacement of a repairable item	does not include the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Form 349
8	used to perform on- or off-equipment work that does require the removal or replacement of a repairable item	does not include the accomplishment of delayed discrepancies,	not subject to automated systems	AFTO Forms 349 and 350

Table 3-5. Maintenance Items to Document for On-Equipment Data\*\*\*

	A	B	C	D
Rule	If the equipment end item is	and an ID number	and the productive direct work	then personnel will document items
1	at its home base	is not assigned	does <b>NOT</b> require the removal and replacement of a tracked item in the WUC table	1, 2, 3, 26, and 27
2	at its home base	is assigned	requires the removal and replacement of a tracked item in the WUC table	1, 2, 3, 6, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28**
3	not at its home base	is assigned	does <b>NOT</b> require the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
4	not at its home base	is assigned	requires the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28**
5	not at its home base	is not assigned	does <b>NOT</b> require the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
6	not at its home base	is not assigned	requires the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 6, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28**
7	at its home base	is not assigned	requires the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, 27, and 28
8	at its home base	is not assigned	does <b>NOT</b> require the removal and replacement of a tracked item in the WUC table	1, 2, 3, 4, 5, 26, and 27
9	at its home base	is assigned	requires an engine change*	1, 2, 3, 6, 10, 11, 12, 13, 22, 26, 27, and 28
10	not at the home base	is assigned	requires an engine change*	1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 26, 27, and 28
11	not at the home base	is assigned	is performed on an installed gas turbine or reciprocating engine and NO time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 26, and 27
12	not at the home base	is assigned	is performed on an installed gas turbine or reciprocating engine and a time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28
13	not at the home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and NO time-change item is removed and replaced	1, 2, 3, 4, 5, 26, and 27

Table 3-5. Maintenance Items to Document for On-Equipment Data\*\*\* - Continued

Rule	A If the equipment end item is	B and an ID number	C and the productive direct work	D then personnel will document items
14	not at the home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and a time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28
15	at its home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and NO time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 26, and 27
16	at its home base	is not assigned	is performed on an installed gas turbine or reciprocating engine and a time-change item or serially-controlled item is removed and replaced	1, 2, 3, 4, 5, 6, 19, 0, 21, 22, 23, 24, 25, 26, 27, and 28
17	at its home base	is not assigned	is support general	1, 2, 3, 4, and 5
18	at its home base	is assigned	is support general	1, 2, and 3
19	not at its home base	is assigned	is support general	1, 2, 3, 4, and 5
20	not at its home base	is not assigned	is support general	1, 2, 3, 4, and 5
21	at its home base	is not assigned	is support general	1, 2, 3, 4, and 5
*	When documenting an engine change, an ID number will always be used.			
**	For wheels and tires, blocks 25 and 28 do not require entries.			
***	For documenting block 29, refer to the appropriate chapter of this TO.			

Table 3-6. Maintenance Items Documentation of On-Equipment Data\*

	<b>A</b>	<b>B</b>	<b>C</b>
<b>Rule</b>	<b>If the equipment end item is</b>	<b>and the productive direct work is</b>	<b>then personnel will document</b>
1	at its home base and has an ID number as-signed	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, and N
2	at its home base and has an ID number as-signed	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, and N
3	at its home base and has no ID numbers as-signed	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, L, and N
4	at its home base and has no ID numbers as-signed	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, L, and N
5	not at home station	performed on other than an installed engine	A, C, D, E, F, G, H, I, J, K, L, and N
6	not at home station	performed on an installed engine	A, B**, C, D, E, F, G, H, I, J, K, L, and N
7	transient or deployed and has no ID number assigned	support general	A, C, G, H, I, J, K, L, and N
8	at its home base and has an ID number as-signed	support general	A, C, G, H, I, J, K, and N
9	at its home base and has no ID numbers as-signed	support general	A, C, G, H, I, J, K, L, and N
*	For documenting column M, refer to the appropriate chapter of this TO.		
**	Note engine work must be identified by an ID number.		
***	For optional use of column L refer to the appropriate chapter of this TO.		

Table 3-7. Maintenance Items Documentation for Off-Equipment Data\*\*\*

	A	B	C	D
<b>Rule</b>	<b>If the assembly, sub-assembly, or component</b>	<b>and the item</b>	<b>and the AFTO Form 350</b>	<b>then personnel will document</b>
1	is a repairable item	is not a serially-controlled or a time-change item	is attached and block 2 contains an ID number	1, 2, 3, 19, 20, 21*, 26, and 27
2	is a repairable item	is not a serially-controlled or a time-change item	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, and 27
3	is a repairable item	is not a serially-controlled or a time-change item	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, and 27
4	is a repairable item	is a serially-controlled assembly requiring removal and re-placement of serially-controlled subassembly**	is attached and block 2 contains an ID number	1, 2, 3, 19, 20, 21*, 26, and 27
5	is a repairable item	is a serially-controlled assembly requiring removal and re-placement of serially-controlled subassembly**	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, and 27
6	is a repairable item	is a serially-controlled assembly requiring removal and re-placement of serially-controlled subassembly**	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, and 27
7	is a repairable item	is a time-change item	is attached and block 2 contains an ID number	1, 2, 3, 19, 20, 21*, 26, 27, and 28
8	is a repairable item	is a time-change item	is attached and block 2 is blank or the ID number is obliterated	1, 2, 5, 19, 20, 21*, 26, 27, and 28
9	is a repairable item	is a time-change item	is attached and block 2 contains a serial number, and block 6 an MDS	1, 2, 5, 19, 20, 21*, 26, 27, and 28
*	Block 21 is used when a repairable item has an ETI.			
**	A second AFTO Form 349 is required to document the removal and replacement of the serially-controlled item, blocks 1, 2, 5, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28. For depot repair shops, SRU subassemblies which are not configured to their higher assembly LRU, require serial numbers must be entered in the MDD record when the SRU is removed and subsequently repaired. This process applies to designated WUCs established by the applicable weapon system manager.			
***	For documenting block 29 refer to the appropriate chapter of this TO.			

**Table 3-8. Maintenance Items Documentation for Off-Equipment Data\*\***

	<b>A</b>	<b>B</b>
<b>Rule</b>	<b>If the AFTO Form 350 that is attached to the reparable item</b>	<b>then personnel will document</b>
1	Contains a command activity ID	A, C, D*, E*, F*, G, H, I, J, K, L***, and N
2	Does not contain a command activity ID	A, C, D*, E*, F*, G, H, I, J, K, and N
*	For support general work entries not required.	
**	For documenting column M, refer to the appropriate chapter of this TO.	
***	For optional use of column L, refer to the appropriate chapter of this TO.	

**Table 3-9. Number of Action Lines to Use for Both On and Off-Equipment Documentation**

	<b>A</b>	<b>B</b>	<b>C</b>
<b>Rule</b>	<b>If the maintenance crew does</b>	<b>and the work is started and completed</b>	<b>then personnel will use</b>
1	not stop for more than 15 minutes or change crew size	by the same category of labor from the same work center	one action line
2	stop for more than 15 minutes but does not change crew size	by the same category of labor from the same work center	more than one action line
3	not stop for more than 15 minutes and does change crew size	by the same category of labor from the same work center	more than one action line
4	stop for more than 15 minutes and does change crew size	by the same category of labor from the same work center	more than one action line
5	not stop for more than 15 minutes or change crew size	and the labor category from the same workcenter changes before completion	more than one action line
6	stop for more than 15 minutes but does not change crew size	and the labor category from the same workcenter changes before completion	more than one action line
7	not stop for more than 15 minutes and does change crew size	and the labor category from the same workcenter changes before completion	more than one action line
8	stop for more than 15 minutes and does change crew size	and the labor category from the same workcenter changes before completion	more than one action line
9	not stop for more than 15 minutes or change crew size	by different categories of labor from the same workcenter	more than one action line
10	stop for more than 15 minutes but does not change crew size	by different categories of labor from the same workcenter	more than one action line
11	not stop for more than 15 minutes and does change crew size	by different categories of labor from the same workcenter	more than one action line
12	stop for more than 15 minutes and does change crew size	by different categories of labor from the same workcenter	more than one action line
<p><b>NOTE</b></p> <p>This table is not applicable for depot MDD.</p>			

Table 3-10. Maintenance Items Documentation for a Tracked Item in the WUC Table

Rule	A If the manhour expenditures	B and an ID number	C and the productive direct work	D then technicians will document
1	are documented against an air-craft, air-launched missile, ground-launched missile, drones, and related training equipment	is assigned to the end item of equipment	involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 6*, 15, 19, 20, 21, 22, 28, and columns A through K, and N**
2	are documented against an air-craft, air-launched missile, ground-launched missile, drones, and related training equipment	is assigned to the end item of equipment	involves removal and concurrent replacement of an asterisk item (other than an engine)	items 1, 2, 3, 6*, 15, 19, 20, 21, 22, 23, 24, 25*, 28, and column A through K, and N**
3	are documented against an air-craft, air-launched missile, ground-launched missile, drones, and related training equipment	is assigned to the end item of equipment	involves installation of a replacement asterisk item (other than an engine) accomplished separately from the removal	items 1, 2, 3, 6, 15, 22 (see tag number used for the removal), 23, 24, 25*, 28, and columns A through K, and N**
4	are documented against an air-craft, air-launched missile, ground-launched missile, drones, and related training equipment	is assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is an aerospace vehicle on end item of AGE	items 1, 2, 3, 6, 15, 23, 24, 25*, 28, and columns A through K, and N**
5	are documented against an air-craft, air-launched missile, ground-launched missile, drones, and related training equipment	is assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is not an aerospace vehicle on end item of AGE	items 1, 2, 3, 15, 19, 20, 21, (19, 20, and 21 are used to identify the assembly the item is being installed in) 23, 24, 25*, 28, and columns A through K, and N**
6	are documented against an air-craft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal of an engine and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 6*, 10, 11, 15, 22, 28, and columns A through K, and N**
7	are documented against an air-craft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves removal and concurrent replacement of an engine	items 1, 2, 3, 6*, 10, 11, 12, 13, 15, 22, 28, and columns A through K, and N**
8	are documented against an air-craft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment	involves installation of an engine accomplished separately from the removal	items 1, 2, 3, 6, 12, 13, 15, 22, 28, and columns A through K, and N**

Table 3-10. Maintenance Items Documentation for a Tracked Item in the WUC Table - Continued

Rule	A If the manhour expenditures	B and an ID number	C and the productive direct work	D then technicians will document
9	are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	is not assigned to the end item of equipment	involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 4, 5, 6*, 15, 19, 20, 21, 22, 28, and columns A through L, and N**
10	are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	is not assigned to the end item of equipment	involves removal and concurrent replacement of an asterisk item (other than an engine)	items 1, 2, 3, 4, 5, 6*, 15, 19, 20, 21, 22, 23, 24, 25*, 28, and columns A through L, and N**
11	are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	is not assigned to the end item of equipment	involves installation of a replacement asterisk item (other than an engine) accomplished separately from the removal	items 1, 2, 3, 4, 5, 6, 15, 22 (same tag number used for the removal), 23, 24, 25*, 28, and columns A through L, and N**
12	are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	is not assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is an aerospace vehicle on end item of AGE	items 1, 2, 3, 4, 5, 6, 15, 23, 24, 25*, 28, and columns A through L, and N**
13	are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	is not assigned to the end item of equipment	involves initial installation of an item and the next higher assembly is not an aerospace vehicle on end item of AGE	items 1, 2, 3, 4, 5, 15, 19, 20, 21 (19, 20, and 21 are used to identify the assembly the item is being installed in) 23, 24, 25*, 28 and columns A through L, and N**
14	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves removal of an engine and replacement is not accomplished concurrently with the removal	items 1, 2, 3, 4, 5, 6, 10, 11, 15, 22, 28, and columns A through L, and N
15	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves removal and concurrent replacement of an engine	items 1, 2, 3, 4, 5, 6, 10, 11, 12, 13, 15, 22, 28, and columns A through L, and N
16	are documented against aircraft not at its home base	is not assigned to the end item of equipment	involves installation of an engine accomplished separately from the removal	items 1, 2, 3, 4, 5, 6, 12, 13, 15, 22, 23, 28, and columns A through L, and N

**NOTE**

An entry is required in column B when the WUC or LCN begins with 21 thru 29, or LCN equivalent that begins with 71 or 72, or when the component is a GCSAS-approved configuration item loaded with an egress indicator of "E" or "B".

\* Item entries not required for items for which time records are not maintained.

**Table 3-10. Maintenance Items Documentation for a Tracked Item in the WUC Table - Continued**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>Rule</b>	<b>if the manhour expenditures</b>	<b>and an ID number</b>	<b>and the productive direct work</b>
**	Units under major commands implementing directives will enter the AFSC (with an "X" in the skill level) in column N and the employee number of the senior crew member in block 15. <b>then technicians will document</b>		

Table 3-11. Documentation for TCTOs

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>Rule</b>	<b>If the TCTO directs modification of the</b>	<b>and an end item ID number</b>	<b>and the productive direct work</b>	<b>then technicians will document</b>
1	A weapon system or equipment end item	is assigned	does not involve serially-controlled item or an engine	items 1 through 3, 15, and 28; and columns A, C through K, and N**
2	A weapon system or equipment end item	is assigned	involves a serially-controlled item or an engine	items 1 through 3, 15, 19, 20, 21, and 28; and columns A, C through K, and N**
3	A weapon system or equipment end item	is assigned	involves an installed engine (2 or 35 category TCTOs) and no 1 category TCTO has been issued	items 1, 2, 3 (engine ID number), 15, 19, 20, 21, and 28; and columns A through K, and N**
4	A weapon system or equipment end item	is assigned	involves an installed engine and a TCTO in the 1 category has been issued in addition to the engine TCTO in the 2 or 35 category	two records. One for the 1 category with entries in items 1 through 3 (aircraft ID number) 15, and 28; and columns A through K, and N** with "O" in column J. The second one for the 2 or 35 category will have entries in items 1 through 3 (engine ID number) 15, 19, 20, 21, and 28; and columns A through K, and N**
5	A weapon system or equipment end item	is not assigned	does not involve a serially controlled item or an engine	items 1 through 5, 15, and 28; and columns A, C through L, and N**
6	A weapon system or equipment end item	is not assigned	involves a serially-controlled item or an engine	two records. The first will have entries in items 1-5, 15, 19-21, and 28; and columns A, C through L, and N**. The second will have entries in items 1, 2, 5, 15, 19, 20, 21, and 28; and columns A through L, and N**, with the WUC of item in column C and with an "O" in column J.
7	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is assigned	involves a tracked item in the WUC table	two records. The first record is compliance against the end item. Items 1, 2, 3, 15, 28; and columns A, C-K, and N**. The second record is the removal and replacement action.* Items 1, 2, 15, 19-25, 28; and columns A, C through K, and N**. Column A entry must be a "T", column C must be the WUC of the item and column J must be an "O". Crew size is only entered on the first record.

Table 3-11. Documentation for TCOTs - Continued

	A	B	C	D
Rule	If the TCOT directs modification of the	and an end item ID number	and the productive direct work	then technicians will document
8	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is not assigned	involves a tracked item in the WUC table	two records. The first record is compliance against the end item. Items 1, 2, 3, 4, 5, 15, 28; and columns A, C-L, and N**. The second record is the removal and replacement action.* Items 1, 2, 3, 4, 5, 15, 19 through 25, 28; and columns A, C-L, and N**. Column A entry must be a "T", column C must be the WUC of the item, and column J must be "O". Crew size is only entered on the first record.
9	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component.	is assigned	does not involve a tracked item	items 1, 2, 3, 15, 28; and columns A, C through K, and N**.
10	A weapon system, support system, or an equipment end item by removing an unmodified component and replacing with a modified component	is not assigned	does not involve a tracked item	items 1, 2, 3, 4, 5, 15, 28; an columns A, C through L, and N**.
<p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Actions on engines or engine components should contain a column "B", component position code when working on an installed engine.</li> <li>• When TCOTs are accomplished by transient maintenance base, the original record will be placed in the 781 binder for home station use in updating historical files.</li> <li>• In automated information systems, the two records may be combined into a single screen or spread over several screens.</li> <li>* If the TCOT involves removal and replacement of more than one item identified by a tracked item in the WUC table, a separate record must be prepared for each removal and replacement action.</li> <li>** For TCOTs other than commodity category, units managed under major commands implementing directives will enter the AFSC (with an "X" in skill level) in column N and the employee number of the senior crew member in item 15. For commodity category TCOTs, enter AFSC (with an "X" in skill level) in column N if there is no entry in block 21. If there is an entry in item 21, leave column N blank.</li> </ul>				



**LEGEND**

- |   |   |
|---|---|
| 1. Job Control Number *                       | 23. Installed Part Number                   |
| 2. Work Center or CAGE Code for Contractors * | 24. Installed Serial Number or Lot Number   |
| 3. ID Number or Serial Number *               | 25. Installed Operating Time                |
| 4. MDS/TMS/TMSM or Equipment Designator *     | 26. Discrepancy *                           |
| 5. SRD *                                      | 27. Correction Action                       |
| 6. Time                                       | A. Type Maintenance Code *                  |
| 7. Pri  | B. Component Position                       |
| 8. Sortie No                                  | C. Work Unit Code or Reference Designator * |
| 9. Location                                   | D. Action Taken Code                        |
| 10. Engine Time                               | E. When Discovered Code                     |
| 11. Engine I.D.                               | F. How Malfunction Code                     |
| 12. Installed Engine Time                     | G. Units Completed                          |
| 13. Installed Engine I.D.                     | H. Start Hour                               |
| 14.   | I. Stop Day and Hour                        |
| 15.   | J. Crew Size                                |
| 16.   | K. Category of Labor                        |
| 17.   | L. Command Activity ID *                    |
| 18. Master Job Standard Number                | M. SCH Code                                 |
| 19. Federal Stock Class *                     | N. Employee Number *                        |
| 20. Part Number *                             |   |
| 21. Serial Number or Lot Number *             |   |
| 22. AFTO 350 Tag Number *                     |   |

For definitions and exceptions, see [Chapter 4](#)

\* -MIS may pre-fill subsequent screens

**Figure 3-1. AFTO Form 349, Maintenance Data Documentation Record (Sheet 2)**

<b>AFTO FORM 350</b> <b>20121109</b>			<b>PREVIOUS EDITIONS MAY</b> <b>BE USED</b>		
<b>REPARABLE ITEM PROCESSING TAG</b>					
Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. Send comments regarding this burden estimate to any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 120, Arlington, VA, 22202-4302, and the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington DC 20503. Please DO NOT RETURN your form/questionnaire to either of these addresses. Send your completed form/questionnaire to: Prime Weapon					
1 JOB CONTROL NO.	2. I.D. NO./SERIAL NO	3. TM	3A. SRD	4. WHEN DISC	
5. HOW MAL	6 MDS	7. WORK UNIT CODE OR LOGISTICS CONTROL NO		8 ITEM OPER TIME	9. QTY
10 FSC	11 PART/LOT NUMBER				
12. SERIAL NUMBER		13, SUPPLY DOCUMENT NUMBER			
14 DISCREPANCY					
15 SHOP USE ONLY					
15A DMC/ACT ID			15B SHOP ACTION TAKEN		
16. SUPPLY DOCUMENT NUMBER					
17 NOMENCLATURE					
18 PART NUMBER			18A WORK UNIT CODE OR LOGISTICS CONTROL NO		
19 NSK					
20 ACTION TAKEN		21. QTY	22 RPC USE ONLY		

H8801484

Figure 3-2. AFTO Form 350, Reparable Item Processing Tag

<b>WARNING</b>						
UNAUTHORIZED PERSONS REMOVING, DEFACING, OR DESTROYING THE TAG (OR LABEL) MAY BE SUBJECT TO A FINE				OF NOT MORE THAN \$1000 OR IMPRISONMENT FOR NOT MORE THAN 1 YEAR OR BOTH.		
23. NSN			24. SRAN CODE			
25. TRANSPORTATION CONTROL NUMBER						
STATUS CHANGED TO						
26. SERVICEABLE						
27. CONDEMNED						
28. SUPPLY INSPECTOR'S STAMP						
29.		YR	JULIAN DATE			TIME
BASE REPAIR CYCLE DATA						
DATE REMOVED	REC BY RPC					
TO:						AWM
TO:						
TO:						AWP
TO:						
TO:						
TO:						
DATE COMPLETED						

H9000010

Figure 3-3. AFTO Form 350, Reparable Item Processing Tag (Reverse)

## CHAPTER 4

### CODES AND ENTRIES USED IN THE MAINTENANCE DATA DOCUMENTATION PROCESS

#### 4.1 USE OF CODES.

This chapter covers both field- and depot-level (organic and contract) maintenance documentation. Exceptions pertaining to depot level are noted at the end of each paragraph. The MDD process uses coded information for data recording to provide the required procedures and information. The use of codes also facilitates data retrieval to produce reports and summarized data for use in maintenance and/or logistics management. Data elements, codes and compatibility edits can be found in the REMIS tables, and this TO. The REMIS tables take precedence over all other sources for MDD data elements and codes. Narrative information in MDD complements coded data. Care must be taken not to include classified data in the narratives, which will be contained in maintenance management information systems.

#### NOTE

REMIS tables take precedence over all other sources for MDD data elements and codes (I.E. -06).

4.1.1 The peculiar rules for documenting the codes and entries described in this chapter are contained in [Chapter 7](#).

4.1.2 Recommended changes, additions, and deletions to these codes and/or data elements will be forwarded through the applicable TCM with an AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply* for the publication they are in. Procedures for submitting an AFTO Form 22 are outlined in TO 00-5-1.

4.1.2.1 SRD related requests will be submitted as prescribed in AFI 23-106, *Assignment and Use of Standard Reporting Designators*.

4.1.2.2 Recommendations concerning Job Control Number (JCN) and workcenter codes will be forwarded through command channels to HQ AFMC/A4FI.

4.1.2.3 Changes to WUCs will be submitted through command channels to the applicable PM TO Office of Primary Responsibility (OPR) TCM on an AFTO Form 22, in accordance with TO 00-5-1. The TO OPR has final approval authority for WUCs below the system level (first two positions of the WUC) except for support general and sub-indentured end item WUCs, like those for engines or Pods. System-level WUC prefixes (first two characters) are defined by equipment type in MIL-DTL-38769. Support General WUCs are defined in Appendix I of this TO. New codes must be approved by HQ AFMC/A4FI prior to use in weapon system tables. Sub-indentured end item WUC tables are developed by the OPR for that equipment, as defined in [Chapter 10](#) of this TO and MIL-DTL-38769. Submitted change requests must be accompanied by a complete evaluation from the PM TO OPR. As a minimum, the evaluator's findings must include an approval and/or disapproval recommendation or position and all required editing that will be necessary in the event the proposal is approved. This also applies to non-ALC managed equipment.

4.1.2.4 Since WUC table OPRs and their contact information can often change, currency can be verified by using the Enhanced Technical Information Management System (ETIMS) database at <https://www.my.af.mil/etims/ETIMS/index.jsp>. WUC tables are maintained by the OPR for the applicable -06 WUC Manual, referred to as an ES in ETIMS.

4.1.2.5 Questions regarding general construction and design of Technical Manuals, Standards, and Specifications (TMSS) should be directed to the OPR for the specific publication. Contact information for Standards and Specifications can be found in the ASSIST Online database at <https://assist.dla.mil/>.

#### 4.2 JCN.

The JCN is used to report, control, and identify each maintenance action. All maintenance jobs will be assigned a JCN. The responsibility for assignment and control of JCNs is outlined in major command implementing instructions.

4.2.1 Locally, this number provides a means to tie together all on and off equipment actions taken, the employees hours expended and the failed parts replaced in satisfying a maintenance requirement whether it be the correction of a discrepancy, completion of an inspection, a TCTO, or time change.

4.2.2 Each individual job will have a JCN assigned, with the exception of cannibalization actions. For specific cannibalization JCN rules, reference [Chapter 5](#). Every action taken that is related to the job, regardless of workcenter, time or place will have the same JCN that was originally assigned to the job. Rules for assigning JCNs are contained in [Table 4-1](#). Cannibalization actions will be documented with a separate JCN from the discrepancy. The original discrepancy and actions taken to Facilitate Other Maintenance (FOM) will have their own JCN with reference to the CANN JCN identified within the discrepancy narrative. Use of these rules will permit control of all related actions, and provide the ability to tie information together in data systems for analysis purposes.

4.2.3 The base-level JCN consists of nine characters. The first five characters represent the ordinal day, such as 96041 for 10 February 1996. The last four characters are used to identify jobs, and normally consist of a daily or monthly job sequence number such as 0001 for the first job of the day or month. Using the cited examples, the JCN would be 960410001.

#### NOTE

Depots will use the JCN from the AFTO Form 350 (or equivalent) when entering data into REMIS. If the JCN is not provided, depots will use the JCN creation procedures in this paragraph.

4.2.3.1 For hourly and calendar phased inspections, the sixth position of the JCN will be an alpha or numeric character assigned per [Table 4-2](#). When more than one phase inspection is accomplished concurrently, the JCN for the highest-numbered phase will be assigned (periodic, hourly post-flight, minor and major isochronal inspections, home stations checks). C-E calendar inspections allow for alpha characters in positions six and seven.

4.2.3.2 A block of sequence numbers for the seventh, eighth, and ninth positions of the JCN will be reserved and assigned to those discrepancies discovered during the "look" phase, an inspection which requires a separate JCN. Unique JCNs from the sequence will be assigned to record all major discrepancies which include those discrepancies discovered against work-unit-coded asterisk items, those discrepancies carried forward which were not corrected during the inspection, and those discrepancies which require ordering items from supply. All minor discrepancies discovered (e.g., safety wire, item loose) will be completed under the look phase inspection JCN. A JCN assigned for use in recording preflight, basic postflight, or other support general actions will not be used when documenting the correction of a discrepancy that has been previously assigned a JCN. Alpha characters in JCNs are also required for SE, AGE, and ATE.

4.2.4 Due to requirements for assuring unique JCNs AF wide under the procedures outlined for inspections, alpha characters will not be used in the sixth position of the JCN except as authorized in this TO. AMC is exempted from this requirement for the TF39 engine JCNs due to expanded Malfunction and Detection, Analysis Recording Subsystem (MADARS) and/or Ground Processing System (GPS) capability.

4.2.5 The primary purpose for assigning JCNs to discrepancies utilizing the first five positions of the inspection JCN plus consecutive sequence numbers is to make them easy to track and to simplify retrieval of inspection data at base level. The reserved block of sequence numbers should be adequate enough to ensure that discrepancies requiring unique JCNs can be assigned sequential numbers during an inspection. The primary reason for assigning a block of sequence numbers is to assure unique JCNs are available and assigned when the same numbered phase or like inspections are accomplished on two or more of the same end items within the maintenance complex on the same day. Although this is not a common occurrence, it does happen and could result in duplication of JCNs and thus destroy their uniqueness.

4.2.6 Blocks of JCNs may be assigned to equipment, organizations or certain recurring maintenance actions in accordance with the requirements in this TO and the procedures contained in AFI 21-101. The AF Form 861, *Base/Transient Job Control Number Register*, provides a method of controlling and recording JCN assignments. An IMDS CDB screen provides for the documentation of base and/or transient maintenance actions. Either can be used as a record of assigned blocks of JCNs or of each individual JCN assignment. When the AF Form 861 is used, each JCN should be closed out by drawing a line through that entry, by entering a check mark, or some other visible means of identifying a JCN for which all work has been completed. A JCN may be terminated by the assigning unit when an item is shipped to another base or transferred to another unit and there is no indication that the item will be returned.

### 4.3 WORKCENTER CODE.

The workcenter code consists of five characters and is used to identify organizational elements to which maintenance personnel are assigned. Standard workcenter codes which are used by all organizations engaged in maintenance functions, and the responsibilities for assigning and coordinating workcenter codes are outlined in AFI 21-101 and major command implementing directives. Standard workcenter codes for all types of workcenters are covered in appendix A of this TO. Workcenters, except the non-reporting ones, may fall under two or more of the workcenters described below.

4.3.1 There are four types of workcenters referred to in the MDD process:

4.3.1.1 The owning workcenter has the basic custodial and maintenance responsibility for an item of equipment.

4.3.1.2 The performing workcenter is the one performing maintenance or contributes labor toward a maintenance requirement. This includes workcenters assigned responsibility for equipment calibration. When maintenance is performed by owning workcenter personnel on their own equipment, they represent both the owning and performing workcenters.

4.3.1.3 A reporting workcenter is any workcenter to which maintenance personnel are assigned, although reporting may be exempted. The work center code entry will represent the workcenter code of the performing technician. When two or more individuals of the same workcenter participate, one entry is sufficient; however, if two or more workcenters participate, separate entries are required. When two or more individuals from the same workcenter, managed under the decentralized maintenance concept, participate in the same maintenance action, separate entries for each AFSC involved are required.

4.3.1.4 A non-reporting workcenter is where maintenance personnel may expend manhours, but to which no maintenance personnel are assigned. Examples of non-reporting workcenters are those for maintenance contractors who provide maintenance data, or for training equipment which is not assigned to maintenance, but requires maintenance support. Units may establish a workcenter named "depot" for depot support teams.

4.3.2 Maintenance performed on transient USAF, Air Reserve, and ANG aircraft will be entered in the MDD system. Data required for off-base processing is provided by the station where the maintenance was performed. Maintenance and servicing performed on AMC industrial funded aircraft do not require the data transmission to the home station.

4.3.3 Entries for work accomplished by maintenance teams from outside the maintenance complex, such as depot or contractor field teams, will be processed through the workcenter where the work is performed, using the depot/contractor workcenter code. Teams are required to document all work accomplished at equipment operating sites. Team supervisors will be responsible for completeness and accuracy of data submitted by the team. The maintenance team's home station may pull production information from REMIS for the work performed to ensure second position in the workcenter code to preclude duplication of off-base reporting.

4.3.4 For organic depot workload, this block will always have the Resource Control Center (RCC) code entered. For contractors, use the code supplied by the contracting PM, usually the Contractor and Government Entity (CAGE) code.

#### NOTE

IMDS units must ensure they do not confuse the locally developed Workcenter mnemonic with the Workcenter Records (WCR) in the local MIS. Workcenter mnemonics follow different construction rules as dictated in AFCSM 21-569, Volume 2.

#### 4.4 ID NUMBER.

The ID number consists of five characters, and is used at the base level to identify an end item of equipment on which work was performed or from which an item was removed. The first character of the ID number is normally the type equipment code, such as "A" for aircraft. The last four characters of the ID number are normally the same as the last four positions of the equipment serial number. To preclude duplicate ID numbers, the last four positions may be a modified number of a locally developed alphanumeric designator.

4.4.1 The ID number is a unique code, and its use must be understood in order to know how certain data elements are used for maintenance actions. For on-equipment work, this code is interpreted by a computer routine into the owning workcenter, the equipment serial number, registration number or end item equipment designator, as applicable; the MDS, Type Model Series Modification (TMSM), TMS or end item WUC, and the SRD. For off-equipment work, this same ID number will convert to owning workcenter and SRD code. This feature minimizes errors in essential information since up to four data elements can be accurately input by recording a single five-character ID number.

#### NOTE

Since ID numbers are of a "local" design, they are not used for editing in the REMIS enterprise-level system. To ensure data reporting accuracy, it is critical that the data elements represented by an ID number (i.e. Equipment Designator, manufacturer's serial number, SRD, etc) accurately reflect the equipment it is assigned to. If uncertain, workcenters should contact the weapon system SPM.

4.4.2 There are three basic categories of ID numbers:

4.4.2.1 ID number assigned to specific end item equipment. This includes aircraft, missiles, engines, pods, serialized SE (registered and non-registered), trainers, AGE, ATE, and ground C-E equipment to include AFSPC satellite ground stations, mobile stations and radar systems.

4.4.2.2 ID number assigned to categories 2, 3, and 4 Test Measurement, and Diagnostic Equipment (TMDE).

4.4.2.3 ID numbers assigned to non-registered SE, such as maintenance stands, dollies, or miscellaneous equipment on which maintenance is performed.

4.4.2.3.1 One of two types of ID numbers will be assigned to certain end items as outlined in subparagraph below. To further explain the requirements for assigning of ID numbers for SE, the following will be applied:

4.4.2.3.1.1 Individual ID numbers will be assigned to registered and/or powered SE, and non-registered SE which is selected by local (base) management for ID assignment by individual end item serial number.

4.4.2.3.1.2 Grouped ID numbers are assigned to SE which is not managed by registration or serial number, and SE items which do not require detailed MDD data for each individual item. Items of SE that are assigned an ID number under the grouped SE concept must have the same end item WUC and SRD for each ID number. For instance, all maintenance stands grouped under a single grouped SE ID number must have the same end item WUC and SRD.

4.4.2.4 Grouped ID numbers may also be assigned to selected operational equipment utilized by Air Education Training Command (AETC) technical training centers for training purposes, and for documenting preventive maintenance inspections on locally reported ground C-E like equipment end items. For equipment subject to on-equipment maintenance actions, such as teletype sets, the grouped SE procedures may be used in conjunction with the applicable SRD code assigned to the teletype set. (An ID number may also be assigned to items of training equipment located in one confined area to facilitate documentation of support general and minor on-equipment repair actions. WUC "ZYA00" or "ZY200" and SRD code "TRD" will be used as the end item identification when assigning the grouped ID number for assemblies used for training purposes). Repairs or TCTOs performed by AETC technical training center personnel on training equipment assemblies normally not subject to on-equipment maintenance (such as AN/ARC-34 sets) will be documented as off-equipment maintenance actions. However, minor repair actions, if performed at the training site, will be documented as on-equipment actions.

4.4.2.5 End items (generally SE and/or AGE, ATE) which have an item of TMDE installed as a component should have an ID number assigned (with first character B, G or H).

4.4.3 Equipment which may not require ID numbers are items that are frequently transferred from one owning workcenter to another; items which are infrequently subject to maintenance actions; low inventory items; items not assigned to maintenance organizations and items subject only to off-equipment maintenance actions. If an item is an end item and has an SRD assigned to it, it must have an ID number assigned to it for inventory tracking purposes. ALC managed equipment that does not have an assigned SRD are considered not up-channel reportable and would not warrant having an ID number assigned. Questions about inventory and maintenance tracking of these items should be referred to the PM.

4.4.4 There is no requirement to assign ID numbers to transient aircraft and missile transporters because they are recorded under the transient equipment procedures. Others are shop support for base supply, conventional, munitions, and SE or C-E being repaired by a central repair facility for other activities. Shop equipment, handtools, industrial equipment, some nondestructive inspection equipment, components, and items not MDD reportable will not have ID numbers assigned, other than identified in this chapter.

4.4.5 Work accomplished and recorded without an ID number precludes identification of the owning workcenter in the MDD process, however, it requires entry of a command code. Lack of an owning workcenter code should not cause any problems if the preceding instructions are followed. The owning workcenter identification would have little value for equipment that does not require ID numbers.

4.4.6 The equipment list will be purged of ID numbers that are no longer required. Each activity that has items with ID numbers assigned is responsible for providing information through their organization for the documentation activity to maintain ID number assignments current and accurate (AFI 21-101 and/or major command implementing directives). Organizations which rotate equipment to other locations with the probability of some or all of this equipment being returned, may retain ID numbers. This procedure should be monitored to eliminate ID numbers when it becomes apparent that the items will not be returned.

4.4.7 The ID number is not used within REMIS or in depot maintenance. End item equipment designator and complete serial number will be used in lieu of an ID number.

#### **4.5 MDS AND/OR TMS AND/OR TMSM.**

When an ID is not utilized at base level, one has not been assigned, or for transit equipment, use the MDS, TMS, TMSM, or the equipment designator as found in the SRD table.

#### **4.6 FEDERAL STOCK CLASS (FSC).**

Enter the federal supply classification code of the item being modified or removed. The FSC is the first four digits of the National Stock Number (NSN) and cannot begin with zero or be all zeros.

#### **4.7 PART AND/OR LOT NUMBER.**

Enter the part number and also the lot number, if applicable, of the item being modified or removed. Include all applicable characters used to make up the part number. Part numbers are left justified and can have no leading or embedded spaces. They are up to 15 character alpha - numeric with no special characters allowed except for "-"(dashes), "/" (slashes) and "."(periods). Slashes or dashes are not allowed as the first or last character. For conventional munitions items within FSC 1300 such as propulsion units, igniters, warheads, fuses, squibs, or primers (item 20) will contain the lot number of the item. Any equipment with a catalogued Egress Indicator of "B" or "C" must also include a lot number.

#### **4.8 SERIAL NUMBER OR OPERATING TIME.**

Enter the serial number of the item being modified or removed if it is a serially-controlled item. Serial numbers are right justified, prefixed with zeroes, are 10 alpha-numeric characters for most equipment, 15 characters for C-E, and contain no special characters at all. If the serial number exceeds the maximum permitted length, enter only the last 10 or 15 characters, accordingly. Enter the current operating time of the time-change or serially-controlled item Reliability Improvement Warranty (RIW) items included being removed.

#### **4.9 TAG NUMBER.**

Enter the entire AFTO Form 350 tag number that is prepared and is to be attached to the removed item which was identified with a tracked indicator in the WUC table. If installation is accomplished separately from the removal action, a suspense AFTO Form 349 may be initiated.

#### **4.10 INSTALLED ITEM PART NUMBER/LOT NUMBER.**

Enter the part number and also the lot number, if applicable, of the item being installed. For conventional munitions time-change items being installed, enter the lot number. Any equipment with a catalogued Egress Indicator of "B" or "C" must also include a lot number. See paragraph 4.7 regarding part number format consideration.

#### **4.11 OPERATING TIME.**

Enter the previous operating time of the time-change or serially-controlled item (RIW items included) being installed. This entry will be the time since last overhaul to the nearest whole hour. For items containing Elapsed Time Indicators (ETIs) the entry will be the ETI reading to the nearest whole hour. For calendar items, the entry will be to the nearest whole day or month, as applicable.

#### **4.12 DISCREPANCY.**

### **NOTE**

Do not enter any classified information in unclassified systems.

Provide a narrative description that completely describes the problem, including multiple Built in Test (BIT) fault codes. Provide as much detail as possible to aid in failure analysis and help speed repairs.

#### 4.13 CORRECTIVE ACTION.

##### NOTE

Do not enter any classified information in unclassified systems.

Provide detailed actions taken to correct the problem. As with discrepancy data, detail is important to analysts and engineers for failure analysis and product improvement.

4.13.1 The corrective action narrative will contain a "free text narrative describing the action taken to correct the discrepancy."

4.13.2 This narration will contain information closely matching the action taken code used, the WUC nomenclature as loaded in IMDS CDB and TOs (if not provided for in Work Center Event (WCE) narrative), the how malfunctioned code for nature of defect (not required if no change from WCE narrative) and units produced identified in the Detailed Data Record (DDR) line entry. Several examples of what is minimally acceptable to place in the corrective action block and the reasons why are listed below.

##### NOTE

The term "item" in parentheses below identifies the system/components being worked on.

4.13.2.1 Bench check in progress, work in progress, further maintenance required, repair in progress, bench check and repair in progress, troubleshooting (item), adjustment of (item) in work, etc. These statements can be used when 00 units is placed in the coded line entry identifying that the maintenance action being performed is placed on hold for work stoppage, crew size change or category of labor change.

4.13.2.2 Bench Checked (item) found serviceable; repaired (item); (item) has no output - repaired (item); hardware loose - replaced minor hardware on (item); removed and reinstalled (item) to FOM; troubleshot (item); inspected (item) -could not duplicate write-up no defect found; installed (item); calibrated (item); adjusted (item) - ops checked good; (item) had no output - bench checked and repaired; (item) loose-adjusted and ops checked good, etc. Used when 01 units is placed in the coded line entry identifying that the maintenance action being performed on the (item) is finally accomplished.

4.13.2.3 Complied with, completed (used only when 01 units is placed in the coded line entry identifying that a support general code with only one tasking towards it is accomplished such as: 03100 -- preflight inspection or TCTO).

4.13.2.4 WCE entered in error time taken to close WCE (Used only when 01 units is placed in the coded line entry identifying that the maintenance action being performed was opened incorrectly or needs to be closed due to a maintenance action being incorrectly coded). Reference paragraph 4.24 (Command and/or Activity Identification).

#### 4.14 PARTS REPLACED DURING REPAIR (BIT/PIECE DATA).

Bit & Piece reporting will be used to document non-reparable and/or non-recoverable items that failed and were replaced during on-equipment maintenance actions. This does not include major assemblies, subassemblies, or parts that are documented previously. Entries will be restricted to non-reparable and/or non-recoverable items that contributed to the failure of the end item being repaired. Entries for common hardware such as standard nuts, bolts, or seals that are replaced for convenience or to ensure quality of repair will not be included. Action Taken Codes are restricted to F or G for on-equipment and A, F, or G for off-equipment. Specific entries required for reportable parts replaced during repair are as follows:

4.14.1 FSC. Enter the FSC of the component or part identified by each line entry.

4.14.2 Part Number. Enter the part number of the component or part. If the item does not have a part number, enter the reference designator. For conventional munitions items, enter the part number of the item being replaced during repair as it is listed in the applicable WUC table. Include slashes and dashes between numerics only.

4.14.3 WUC/LCN. If a component or part that is replaced has an assigned WUC/LCN, enter the WUC/LCN. If an component or part does not have an assigned WUC/LCN, use the appropriate Not Otherwise Coded (NOC) WUC/LCN for higher assembly (see paragraph 4.18.8). If a NOC WUC/LCN does not exist, use the WUC/LCN for the higher assembly. For electronics equipment, enter the WUC/LCN of the next higher assembly rather than leaving this column blank.

**4.14.4 Reference Symbol.** This field is primarily for use in documenting actions for electronics equipment that use unique item identifiers, i.e. Reference Designator Index (RDI), Fault Code, Central Indicating Troubleshooting (CTIS) Code (CMC). However, as an option, it may be used for other equipment as outlined below:

**4.14.4.1** When reporting maintenance actions on electronic equipment, enter the position within a circuit in which the failed part was installed. For example, V101, R101, or C405. The reference number stamped or printed on the chassis adjacent to the item being replaced will be used as the reference symbol entry. When a reference symbol is not available, a noun or an abbreviation of no more than nine characters that describes the part that is replaced may be entered in this column.

**4.14.4.2** For other than electronics items, enter the noun of the part or an abbreviation of no more than nine characters; for example, brush, bearing, or armature. These entries are used for data products; therefore, the standardization of entries and abbreviations that are used come from the PM TO OPR who manages them.

**4.14.5 Quantity.** Enter the quantity of parts, as related to each line entry, that were replaced during repair.

**4.14.6 R&M Purposes.** Bit & Piece documentation applies to all levels of documentation.

#### **4.15 STANDARD REPORTING DESIGNATOR (SRD).**

An SRD code is a three-character code used in a variety of MISs. It is used to facilitate the reporting, accounting, and analytical processes of designated end items of equipment by maintenance and supply agencies and facilitate data interchange from one MIS to another. The SRD also identifies whether an item is MICAP, MDD, and/or TCTO reportable, or only inventory tracked, and what Type Maintenance and When Discovered Codes are permissible for the end item.

**4.15.1** All up-channel reportable, non-classified SRD codes are contained in the REMIS SRD table.

**4.15.2** All up-channel reporting begins with the assignment of an end item equipment designator and associated SRD code. All other reporting is linked to one of these two elements. If an item qualifies for an SRD, the SRD must be assigned prior to equipment fielding in order that inventory and maintenance reporting can occur. Without them, R&M data cannot be collected. Guidelines for additional uses and for requesting changes, additions, and/or deletions to SRDs are contained in AFI 23-106. Workcenter supervisors and/or inventory managers will ensure SRDs are accurately associated with assigned inventory. Questions about SRD assignment should be directed to the weapon system SPM.

**4.15.3** For components being repaired at the depot received from the field, use the SRD from the AFTO Form 350 tag or automated version shipped with the item.

#### **4.16 TYPE MAINTENANCE CODE (TMC).**

The TMC consists of one character and is used to identify the type of work that was accomplished, such as scheduled or unscheduled maintenance. TMCs are contained in the appendix of this TO and REMIS Reference tables. TMCs permitted for individual equipment are stipulated by the assigned SRD code, as defined in Appendix D. Special inspections, (04-series WUC/135-series LCN) support general codes and maintenance performed during a special inspection will be documented using TMC "S" (special inspection), excluding transient maintenance.

#### **4.17 COMPONENT POSITION.**

The component position is a one digit numerical character which is used to identify the position of the installed engine, engine related item, or egress item. An entry is required when installing or performing maintenance on an installed engine or engine component. Engine WUCs are those which begin with 21, 22, 23, 24, 25, 26, 27, 28, or 29. Valid component position entries for egress items are 0-8. If the engine or engine related part is not directly tied to a specific engine position, the entry will be zero (0). For example, the two water tanks on the KC-135 each service two engines, therefore the component position should be zero (0). An entry is also required when installing egress items. Egress items are identified by Egress Indicators.

#### **4.18 WUC REFERENCE MIL-DTL-38769 (USAF).**

WUCs are 5-characters in length and will not contain embedded spaces or special characters. They are used as a quick reference number to identify system, subsystem, and component relationship between end items. WUCs are also used to identify maintenance requirements or maintenance accomplished. WUCs also reflect the hierarchy of installation of repairable and/or trackable items installed to an end item. For R&M analysis, equipment failures should be reported to the fifth character whenever possible. WUCs provide a standard method of sorting maintenance data and of summarizing different levels of detail that is not applicable to all types of equipment. They also provide the ability to use the data for commonly

used sub-system and component (i.e. ACES II seats) managers to view reported data across multiple platforms. This capability is also used to assess corrective action. When combined with the SRD, a highly flexible and informative data retrieval capability is available, and is utilized at all levels of management. For ALC managed equipment, these codes are published in WUC manuals (-06), and REMIS tables for each reportable weapon and support system, including aircraft, engines, trainers, select ground CEM, support equipment, munitions, and TMDE. COTS C-E equipment may have WUCs loaded to REMIS by AFSPC/CYSS. Other base-level equipment that is not managed by an ALC will not have WUC tables loaded to REMIS, but may have tables developed for use in the local MIS, provided the equipment does not transmit this data to REMIS. Individual MAJCOMs have the option of using a limited number of WUCs assigned in a special category to identify tasks of a general nature, such as equipment servicing, cleaning, inspection, storage, ground safety, record keeping, weapons handling, and repetitive shop tasks. Although they are WUCs, they are identified as "support general codes". Authorized support general codes are listed in Appendix I. Alpha characters "I" and "O" are not used in WUCs to prevent confusion with the numerical characters "one" and "zero". WUCs represent the component slot that an item or assembly may be installed into, where part numbers represent the specific item that is installed into it. Generally, different parts that meet the same "form, fit, and function" could be installed to the same component slot identified by a single WUC, as identified in the equipment -4 manual.

4.18.1 The first two characters of the WUC for aircraft and missiles identify the type of system the assembly or component is part of, as defined in MIL-DTL-38769, Tables I - VII. For aircraft, missiles and the engines that install to them, they will always indicate a functional system level below the end item level, such as flight control or launch control system.

4.18.1.1 For other equipment: SE, C-E, ATE and Trainers, the first two characters can either represent the end item or lower-level system the end item (i.e. AK000 - can both represent a transmitter end item as well as transmitter equipment that installs into an antenna end item, which uses AA000 as a system level WUC).

4.18.2 With any system, the third and fourth characters identify subsystems or major assemblies as applicable. The fifth character normally identifies repairable items, however, there are limited exceptions where codes are assigned for non-repairable critical parts and structural members.

4.18.3 The first two characters of support general codes are standard in all WUC tables and identify categories of work such as cleaning, servicing, or special inspections. The first character is always "0" (zero). The last three positions of the support general codes for scheduled (03) and special (04) inspections identify the inspection category or type inspection. See paragraph 4.18.11.2 for SG LCN guidance.

4.18.4 The WUC in combination with an ATC is used to describe a "unit of work". An entry of one or more units completed must also be made to record a completed action. An example of a unit of work would be removal and replacement of an antenna. It would be documented with a WUC for the antenna, with an ATC for removed and replaced, and a unit count of one.

4.18.5 WUC tables IAW MIL-DTL-38769 (most current version obtained through ASSIST online <https://assist.dla.mil/online/start/>) that is put on contract are prepared through the AFMC acquisition procedures (See TO 00-5-3) and are delivered concurrently with new equipment. WUCs are published in the -06 WUC Manual in the applicable weapon or support system series, or in a general equipment series. For selected types of equipment, AFMC acquires an equipment list and is responsible for assigning the WUCs. When weapon systems develop fault code indexes that filter WUC to a more precise LRU, i.e. CMC, ensure the code is captured in either the discrepancy or corrective action block for those organizations that use digital information gathering programs. For all equipment, AFMC is responsible for coordinating with the commands to validate coding requirements and for maintaining the currency of WUC tables. To request changes to the requirements in MIL-DTL-38769 for developing WUCs, send requests to the Air Force TMSS activity Helpdesk (AFLCMC/HIAM), email address: SGMLsupport@wpafb.af.mil.

4.18.6 The PM is responsible for development of WUC tables and/or manuals. Use of the SRD or ID number of the equipment on which work was accomplished will identify the data as pertaining to this equipment regardless of the WUC table used. All systems with up channel reportable MICAP or MDD will have a WUC table in REMIS and will be used in preference to the WUC manuals.

4.18.7 When work that cannot be related to an individual subsystem is performed on an entire functional system, or when the work cannot be related to an individual component is performed on a subsystem, the appropriate system or subsystem code must be used, respectively. Supervisors must ensure that system codes are used only when the work definitely cannot be identified to an individual system, or in the case of subsystem, to a component. IMDS CDB users may get a REMIS WUC table by processing screen #841.

4.18.8 The listing of "9" in the fifth position or a "99" in the fourth and fifth position of the WUC indicates the item on which work was performed is Not Otherwise Coded (NOC). A NOC entry would relate to the subsystem, and will be used only when a component of the subsystem or item on which work is required is not work-unit coded. Work performed on non-coded items that attach to a coded assembly, such as fittings or clamps, will be recorded using the WUC for the coded assembly.

4.18.9 The S-, C-, T-, and/or W-coded items in the WUC tables and references to these WUCs in this TO, pertain to items designated as serially-controlled, configuration controlled, time changed, or warranted.

4.18.10 When depot maintenance is performed on a reparable subassembly, the WUC entry on the AFTO Form 349 will be obtained from block 7 of the AFTO Form 350 attached to the subassembly.

4.18.11 Logistics Control Numbers (LCNs) may be used in lieu of WUC by fifth-generation aircraft and their installed engines. They are used in the same nature as their WUC counterparts with the following exceptions: The decision to assign LCNs for an aircraft must be done during system acquisition, prior to fielding, with approval by HAF/A4M. Once deployed, systems will not be permitted to switch from WUCs to LCNs or LCNs to WUCs. Caution should be used in opting to use LCNs for aircraft that share the same engine with other aircraft that may already be assigned WUCs, as LCNs and WUCs cannot coexist in a single table and the existing engine WUC table cannot be converted to LCNs.

4.18.11.1 LCNs are based on MIL-STD-1808 and may be between 6 and 15 characters in length. LCNs must not contain embedded spaces or special characters. The first two characters of the LCN represent the type of system the assembly or component is part of, as defined in MIL-STD-1808. The second character defines the sub-system. The third position defines the sub-sub-system. The remaining characters identify the subject (component) and function.

4.18.11.2 Support General LCNs are defined in Appendix I and begin with 05 through 15, excluding 06, using the first three characters of the LCN, as prescribed in MIL-STD-1808, and followed by the corresponding WUC.

4.18.11.3 LCNs do not subscribe to the use of an "NOC" code to capture maintenance on items not otherwise LCN listed. Work performed on non-coded items that attach to a coded assembly, such as fittings or clamps, will be recorded using the LCN for the coded assembly. Other non-coded items will be documented against the next higher assembly that is coded.

4.18.12 Usage Factor. Usage Factor represents the ratio of actual use (on) time of the individual WUCs (system, subsystem, and component) to operating (flying hours, etc...) time for the weapon system. It provides a capability to adjust flying hours to actual component use hours where beneficial for management evaluation.

4.18.13 Quantity per Application. Quantity per Application (QPA) represents the total number of items (components) of the same WUC that are installed on the next higher assembly.

#### 4.19 **ACTION TAKEN CODE (ATC).**

The ATC consists of one character and is used to identify the maintenance action that was taken, such as the removal and replacement of a component. Action taken codes are standard for all equipment and are listed in all WUC tables. A complete list of authorized ATCs is contained in Appendix E to this TO and the REMIS reference tables.

#### **NOTE**

The recording of action taken, when discovered and how malfunctioned codes are not required with support general WUCs.

4.19.1 **ATC Entries.** The ATCs will always identify the action taken to correct a deficiency, or the action performed on the item identified by the WUC entered in column C of the AFTO Form 349. Codes "A", "B", "C", and "D" will be used only during bench check action (off-equipment only). Codes "A", "B", and "C" may also be used for on-equipment, but are limited to engines only in accordance with [Appendix E](#). The bench check codes may be used for reporting partial bench check completion provided that a "0" (zero) is recorded for units complete. On-equipment reporting of ATCs 0-9 and A, B, C is permitted for uninstalled engines. Codes "1" through "9" can be used during subsequent shop processing. Shop code repairs are accomplished after reporting a "C" ATC at the time of bench check.

4.19.1.1 ATC "G" (repairs and/or replacement of minor parts, hardware, etc.) will only be used when a specific item being repaired or replaced does not have a WUC. When action taken code "G" is used, the WUC entry in column C will be that of the next higher or most directly related assembly to the part being repaired or replaced. When using ATC "G", never use a NOC WUC in lieu of a valid WUC related to the repaired or replaced item.

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4.19.1.2 For on-equipment work, ATC "H" (equipment checked - no repair required) will be used only when an inspection or operational check reveals that the reported discrepancy does not exist or cannot be duplicated, or when the apparent malfunction of an item is attributed to a failure of associated equipment. If the discrepancy does not exist or cannot be duplicated, how malfunctioned code 799 (no defect) will be used instead of a code which describes the reported discrepancy. How malfunctioned code "812" (no defect-indicated defect caused by associated equipment malfunction) will be used when the apparent malfunction of an item is attributed to a failure of associated equipment.

4.19.1.3 ATC "X" (test-inspection-service) will be used to report inspection, servicing, or testing of components removed from end items for in-shop actions that are prescribed in inspection requirements tables. For these actions, the WUC of the component will be entered in column C rather than the support general code of the inspection being performed on the end item. ATC "X" will also be used to document functional checks for items withdrawn from supply stocks. This code may also be used when an item is sent to another shop for test, inspection, or service action. ATC "X" (test-inspect-service) will be used for on-equipment operational checks that are not accomplished and a part of the installation or repair action. These deferred operational checks will always be recorded using the JCN of the original discrepancy.

4.19.1.4 ATC "Y" (troubleshooting) will be used when the troubleshooting is being reported separately from the repair action. WUC entries will be restricted to the defective system or subsystem that required the troubleshooting whose last position of WUC is zero. Do not use item or component WUCs. When all troubleshooting action has been completed, the line entry to report troubleshooting will show one (1) unit produced. When ATC "Y" is used, the how malfunction code cannot be "799" (no defect), use of this code necessitates completion of two separate line entries, or two separate forms, one for the troubleshoot phase and one for the repair phase.

### NOTE

ATC "Y" with Units Produced (UP) of 1 will complete the troubleshooting activities, but will not close the WCE or the event. Another WCE or DDR line of documentation must be entered to reflect the status of the original discrepancy that caused the event creation. (Example: ATC 'X' and HMC 799 with UP of 1.)

4.19.1.5 If a bench check is completed and repair action is deferred, ATC "C" and "1" (one) unit will be entered on the AFTO Form 349. When a bench check is started but not completed, it should be documented with ATC "C" and a "0" (zero) unit entry. If reassembly of the item is required before placing it in an AWP status, an entry indicating the parts required should be recorded on block 29 of the AFTO Form 349 or on the attached AFTO Form 350 for future reference. This will eliminate unwarranted disassembly and reassembly until all of the required parts are received.

4.19.1.6 When completion of an in-shop repair action is deferred after ATC "C" (bench check deferred) and a unit complete has been recorded, the deferral of the repair action will be reported on an AFTO Form 349 using the applicable ATC and "0" (zero) units. The AFTO Form 350 will remain attached to the item for identifying reparable status and for a reference to document the repair action when work is resumed.

4.19.1.7 The NRTS ATC "0" through "9" have been established to identify the reasons for NRTS determinations. Selection of the NRTS code will be based on the most predominate cause for the inability to repair the item. Selecting the predominant cause when multiple causes exist and providing a single report input are mandatory to prevent distortion in the number of failures that are being reported. Items processed to local commercial contractors will be reported using ATC "D".

4.19.1.8 Code "1" will be used only when the repairs required to make the item serviceable are specifically prohibited in TOs containing base-level repair restrictions (TO 00-20-3).

4.19.1.9 Code "2" will be used when repair is authorized but cannot be accomplished due to lack of equipment, tools, skills, or facilities. This code may be used when authority has not been granted to obtain necessary tools or test equipment. However, the lack of tools and test equipment will not take precedence over NRTS code "1", lack of authority to perform repairs, when base repair is specifically prohibited.

4.19.1.10 Code "8" will be used when items that are authorized for base-level repair are directed to be returned to depot facilities by specific authority from the IM or system manager. Items that are forwarded to a depot facility under this code will be shipped complete with all recoverable parts and subassemblies that constitute a complete assembly, unless shipment of the assembly without all parts and subassemblies has been specifically authorized in writing (TO 00-20-3).

4.19.1.11 Off-Equipment workcenters must use action taken codes E, P, Q, R, S, T and U to identify major removal and replacements of items. Note that on-line users should ensure accuracy of these inputs because once entered, no corrections can be done toward any of the codes on the DDR line.

4.19.2 When a determination is made that an item requires a DR, refer to TO 00-35D-54 for instructions on handling of DR exhibits. If repair is not authorized, the AFTO Form 349 will be closed out with an ATC "C". If the item is to be shipped as a DR exhibit, an AFTO Form 349 will be completed using action taken NRTS code "8".

#### **4.20 WHEN DISCOVERED CODE (WDC).**

The WDC consists of one alpha-numeric character and is used to identify when a defect or maintenance requirement was discovered. WDCs are contained in Appendix H of this TO and REMIS reference tables. Each code may have more than one definition, depending on the group of systems under maintenance. The WDC assigned when the discrepancy was first discovered will be used for all subsequent repair actions.

#### **NOTE**

The recording of action taken, when discovered, and how malfunction codes are not required with support general WUCs.

4.20.1 When the discrepancy is discovered during a depot-level overhaul, the on-equipment record will use WDC "S".

4.20.2 If the item under repair came from another location, use the WDC recorded on the AFTO Form 350 or automated equivalent.

#### **4.21 HOW MALFUNCTIONED CODE (HMC).**

The HMC consists of three numeric characters and is used to identify the nature of the defect and **NOT** the cause of discrepancy. To provide maximum utility, these codes are also used to report accomplishment of TCTO actions, or to show certain actions that can occur on items when neither a failure nor a defect existed. How malfunctioned codes are contained in Appendix G and REMIS reference tables.

#### **NOTE**

The recording of action taken, when discovered and how malfunctioned codes are not required with support general WUCs.

4.21.1 How Malfunctioned Code Entries. This code will always identify the nature of the defect that existed on the system, subsystem, or component identified. The HMC will identify the nature of the defect for parts replaced during repair.

4.21.1.1 The number of how malfunctioned codes is maintained at a minimum to simplify reporting. The codes do not, therefore, specifically describe all conditions that may be encountered during maintenance. If there is not a specific how malfunctioned code that describes the condition, the code that most nearly identifies the nature of the defect will be recorded in the how malfunctioned code column.

4.21.1.2 A single how malfunctioned code will be used on the maintenance record to report failure or malfunction of an item. If more than one defect exists on the same work-unit-coded item at the same time, only the most predominant defect will be reported against the item. Other defects will be corrected at the same time, and manhour expenditures for all work required will be reported on the line entry pertaining to the predominant failure or malfunction. This rule does not apply when defects are discovered on other work-unit-coded items within the same system or subsystem. In these cases, separate line entries will be made on the maintenance record to identify these defects.

4.21.1.3 How malfunctioned code "553" (does not meet specification, drawing, or other conformance requirements) will be used to identify improper manufacture or overhaul of components or parts that have been issued from supply stock. This code will not be used in conjunction with the reporting of repair actions on failed items. This code is only used with WDC "Y" (upon receipt or withdrawal from supply stocks). HMC 553 will not be used with SRD code "RSA".

4.21.1.4 How Malfunction Codes 242 (failed to operate) and 374 (internal failure) can only be use with ATCs 2, A, B, and C when on-equipment reporting, and 0-9 and C and D when off-equipment reporting. The use of 242 or 374 with any other ATC will be rejected as an error.

4.21.1.5 HMC "800" (no defect - component removed and/or reinstalled to facilitate other maintenance) will be used whenever a job involves removal and/or reinstallation of a work-unit-coded component to gain access to an item or area. The removal and/or replacement of separately work-unit-coded access panels or subassemblies that are related to the repair action will be treated as part of the repair action.

4.21.1.6 HMC 689 (Conductive Path Defect/Failure) will be used to document wiring system conductive path malfunctions that cause an on-equipment (Type 1 or 2) malfunction or failure. "Wiring system conductive path" refers to the wires, fiber optic lines, connectors, and components (e.g. a switch or relay) that are external to an LRU, or other sub-system components, such as a generator or motor, that conveys power or data between such LRUs. Use of 689 will require the entry of additional data pertinent to the conductive path malfunction. This additional data includes the failed wire, harness or component part number; the failure location; malfunction cause; and solution. This data is required for detailed trend analysis by maintenance managers, system managers, and engineers. In G081, a separate screen is used to enter this data. User is automatically sent to this screen when HMC is 689.

#### **4.22 UNITS PRODUCED (UP).**

The UP entry permits the identification of completed maintenance actions that were in progress but not completed actions in which a workcenter participated, but was not the workcenter assigned primary responsibility for completion of the action. One of the following must be met for a unit produced: Completion of a TCTO or completion of the Look portion of a Phase or Inspection; Documenting a Time change, unscheduled maintenance action, or scheduled Fix Phase action; When a new Action Taken is to be used and the last action has been completed.

4.22.1 A unit entry of "1" (one) will be documented when a completion action is to be reported. The unit entry identifies the number of times the action taken was performed on the item or the number of times the support general action was performed. When a bench check is deferred for Awaiting Parts (AWP), it will be reported as a completed maintenance action. For job flow packages, TCTOs, and Class II modifications, the prime work center will document a unit entry of "1" or more to report completion of all actions that make up the package. Tasking number 1 of Inspection Packages will be identified as the task completion event in order to avoid inadvertent completion sign-offs when documenting sequential tasks. All other workcenters will document "0" (zero) units to indicate partial job completion. Package maintenance documentation procedures may be applied for periodic, phase or other inspections, TCTO compliance and special inspections. This paragraph is not applicable to depots.

4.22.1.1 A unit entry of more than one indicates the number of times that the action taken was performed on the item identified or the number of times the support general action identified was performed. An entry of "0" (zero) indicates that the workcenter did not have primary responsibility for completion of the maintenance action or that the action stopped prior to completion.

4.22.1.2 When a line entry is closed out for work stoppage, crew size change or category of labor change, the appropriate Action Taken code and "00" units will be entered to record the action. When that action is restarted, carry forward the same Action Taken code until that maintenance action is complete, then document units reflecting the number of times that action occurred. Do not begin another action until the first action has been completed. When documenting the removal/replacement of serially tracked parts, the UP can only be 00 or 1.

4.22.1.3 Units entries are limited to a two digit number. If it is necessary to report more than 99 units, an additional line entry will be used to reflect the additional units completed.

#### **NOTE**

Depot Maintenance only reports UP of 1 for task completion; UP of 00 is not used.

#### **4.23 CATEGORY OF LABOR.**

This data element is used to differentiate types of manhour expenditures. If all members of a maintenance crew are the same category of labor, only one entry is required. If more than one category of labor (military and civilian) is performing the same maintenance task, or if overtime manhours are expended, an entry is required to reflect each category of labor. Care must be taken in documenting the crew size and units to prevent erroneous manhour and unit data. Reference appendix C of this TO.

4.23.1 Any manhours expended by an individual technician in excess of his normal duty shift (as reflected on the master workcenter, normally 8 hours) must be documented as overtime. In no case can an entry have an elapsed time (difference between start and stop hours) greater than 10 hours or less than 1 minute for a maintenance action.

**NOTE**

The category of labor is not used at depot level.

**4.24 COMMAND AND/OR ACTIVITY IDENTIFICATION.**

All maintenance performed on transient aircraft and equipment with no local ID number assigned must have the two-position command code entered for the owning command for work-unit-coded items and for support general. The command code must also be used when reporting off-equipment maintenance using only the SRD code. When used as an activity identifier, a locally devised two-position code can be used to identify the following: special projects, tenant support, cross utilization training, or any other locally required purpose. Major command and reporting designator identity codes used for MDD are listed in appendix B of this TO. When it is determined that a maintenance action has been documented incorrectly in IMDS CDB and cannot be corrected using normal JDD correction options, enter "ER" in the activity identifier (AI). The "ER" coded line entries should be excluded from data compilations and analysis since they denote invalid data entries (MAJCOM option).

**4.25 EMPLOYEE NUMBER/USERID.**

The employee number serves to identify the individual who has recorded a maintenance action. For bases not supported by IMDS CDB, the employee numbers are locally assigned and must be unique within a workcenter. Bases supported by IMDS CDB a five-position employee number is programmatically assigned when the individual is loaded to the IMDS CDB database. This employee number is unique and will be used for documenting maintenance actions. An employee number is not required for G081 generated jobs that are part of a job package (i.e., Isochronal Inspections, -6 Inspections, TCTO, Debrief, etc.). In these instances, the employee number block will be blank. For bases supported by IMDS CDB, a unique USERID is assigned and will be used for maintenance documentation. The USERID is assigned for the span of your military/civilian career.

4.25.1 When two or more individuals from the same workcenter are involved in a maintenance action, the employee number/USERID of the team supervisor or senior member should be used to record the action. This pertains to Category Labor Code accounting. This does not apply to maintenance forms documentation when the individual completing maintenance actions sign off tasks they are qualified for.

**4.26 START AND STOP TIME.**

The start and stop time entries will always reflect the time expended by the individual or crew for the work described. The start and stop time entries will be completed to close out the line entry for any delay or work stoppage which exceeds 15 minutes, and for crew size or category of labor changes. The start and stop time entries, when considered with the crew size, produce the total manhours expended to accomplish the maintenance action. Start time and/or stop time will be the Julian day, hour, and minute that the task was completed. Start or stop times for midnight will be documented as "2400." Systems on which real time reporting would divulge classified vulnerabilities will be reported only after the system has been restored to operation and the JCN has been closed. Refer to the database manager for delayed reporting override edits.

4.26.1 The documented time range of the start and stop time toward a maintenance action, can only be used once on the same Julian date per employee number. Workcenters using automated test equipment may document simultaneous maintenance actions to maximize test capabilities, personnel efficiency, and accurately record time for all tasks.

4.26.2 A common problem among maintenance workcenters is the erroneous documentation of NRTS actions. This documentation mistakenly included handling to and from supply as part of the NRTS time documented in IMDS CDB. Time documented for NRTS action should consist only of the accomplishment of the bench check as applicable and the NRTS paperwork as long as the combined time does not exceed 10 hours. If the bench check exceeds 10 hours, document the first line entry as a bench check-repair deferred and follow up with the appropriate NRTS action.

4.26.3 Shifts are normally 8 hours, but may be up to 10 hours. This is a MAJCOM option.

4.26.4 Supervisors accomplishing direct labor will report the time expended. This is done to account for the cost of ownership and operation. It is also used to compute the "mean time to..." equations.

**NOTE**

Start and stop times are not used at depot level. Depots report the total actual manhours required to complete the job. Depots will record the date the job was completed for configuration reporting.

**4.27 CREW SIZE ENTRIES.**

The one-digit crew size entry will always reflect the number of individuals from the same workcenter (same category of labor) that actually participated in the maintenance action during the period of time documented identifying the action. Participation is defined as: "expending direct labor accomplishing required maintenance." A zero is used when it is necessary to document package reporting for completion of an inspection. When the crew size exceeds nine, an additional entry will be used to reflect the additional number of technicians.

**NOTE**

Depots do not use crew size.

**4.28 BUILT-IN-TEST (BIT) FAULT REPORTING.**

Systems that have BIT fault reporting will report fault codes (primary if multiple codes) in the appropriate field of an automated system, or in the discrepancy narrative. When more than one fault code is recorded for a single discrepancy, enter the additional fault data in the discrepancy block.

**4.29 MASTER JOB STANDARD NUMBERS (MJSN).**

MJSNs are used to facilitate the automated transfer of weapon system time change and inspection data between bases, and between bases and depots. MJSNs will be used to report Inspections, Time Change Item and serially controlled item. If the first position of the MJSN is an alpha character, the MJSN is standard across weapon systems.

**Table 4-1. Assignment of Maintenance Activity (MA) JCNs**

Step	A	B
	For	Maintenance Control, Munitions, Control, or Activities Block, of JCNs Will
1	the removal and replacement of serially-controlled items or time change items	Assign an individual unique JCN
2	engine changes	
3	equipment discrepancies (failure defects, damage or similar conditions)	
4	TCTO actions on end items or commodity TCTOs on installed items	
5	cannibalization actions*	
6	hourly or calendar phase inspections	
7	periodic, hourly postflight, major isochronal, minor isochronal, home station checks, or ground C-E inspections **	
8	special inspections, when not accomplished during the scheduled inspections identified in steps 6 and 7	
9	each major discrepancy written up during the inspections identified in steps 6, 7, or 8 which is corrected, or for any discrepancy that is carried forward because it is not corrected, or for any discrepancy that requires ordering items from supply	

**Table 4-1. Assignment of Maintenance Activity (MA) JCNs - Continued**

<b>Step</b>	<b>A</b>	<b>B</b>
	<b>For</b>	<b>Maintenance Control, Munitions, Control, or Activities Block, of JCNs Will</b>
10	the accomplishment of support general work other than inspections	Assign either an individual unique or grouped JCN (local option)
11	the accomplishment of daily preflight, basic postflight, thruflight, shift verification, scheduled storage and ground C-E	
12	the accomplishment of commodity TCTOs and spare items that were not removed for end items for modifications and reinstallation	Assign a grouped JCN
13	the functional check of items withdrawn from supply	
<p>For maintenance actions which are the result of any inspection identified in steps 6, 7, or 11, the JCN will be the same as that assigned to the inspection, except for those maintenance actions addressed in step 9.</p> <p>* The same JCN will be used for both the "T" and "U" action.</p> <p>** See <a href="#">Table 4-3</a> for unique sixth digit requirements.</p>		

Table 4-2. Phase Inspections

Phase or Package**	Sixth Position JCN Entry	Phase	Sixth Position JCN Entry
1	A	14	P
2	B	15	Q
3	C	16	R
4	D	17	S
5	E	18	T
6	F	19	U
7	G	20	V
8	H	21	W

\*\* Each specific inspection package in an inspection cycle (-6 requirements) will be identified by JCN sixth position alpha sequence (e.g., for F-15: HP01=A, HP01=C...PEZ+M; A-1=A, A-2=B, A-3=C...C-3=M)

Table 4-3. Sixth and Seventh Position JCN Entries

Inspection	Sixth Position JCN Entry
*Periodic calendar inspections with an interval of seven days or greater, and C-E inspection of any interval	A
Minor isochronal inspections	B
Major isochronal inspections	C
Hourly post-flight inspections	D
**Home stations checks	E

**NOTE**

These JCNs will not duplicate the phased inspection JCNs because the same workcenter would not accomplish different types of major inspections on the same MDS equipment on the same day.

\* C-E calendar inspections may also have any alpha-character except "O" and "I" in the seventh position.

\*\* When home station check is accomplished in conjunction with major isochronal inspection, code the sixth position JCN entry in accordance with the respective major or minor sixth position JCN entry.

## CHAPTER 5

# REPORTING REQUIREMENTS FOR CANNIBALIZATION ACTIONS

### 5.1 GENERAL.

This chapter prescribes rules in [Table 5-1](#) for documenting and reporting cannibalization actions. AFTO Form 349 or AF Form 2414, VERIFICATION WORKSHEET, (or an automated system) will be used to document cannibalization.

#### NOTE

Cannibalization may result in expenditure of maintenance resources above what is normally authorized to accomplish mission requirements. Maintenance managers will resort to cannibalization of equipment only in unusual situations and after consideration of manhour availability and risk of damaging serviceable equipment. Since cannibalization may be indicative of support problems, maintenance managers also are responsible for identifying the causes of cannibalization and taking appropriate action. Fluctuations in the cannibalization rate should, therefore, be investigated.

### 5.2 DEFINITION.

Cannibalization is the authorized removal of a specific assembly, subassembly or part from one weapon system, system, support system or equipment end item for installation on another end item to satisfy an existing supply requisition and to meet priority mission requirements with an obligation to replace the removed item.

#### NOTE

Weapon system, support systems, or equipment end items include aircraft, missiles, drones, Unmanned Aerial Vehicles (UAVs), uninstalled engines, uninstalled engine modules, aircrew and/or launch crew training devices, C-E equipment, AGE, TMDE, automatic test equipment, serviceable uninstalled pods, and guns.

5.2.1 The following maintenance actions to obtain assemblies, subassemblies, or parts require cannibalization documentation:

5.2.1.1 Cannibalization of assemblies, subassemblies, or parts for "on-equipment" repair. This includes in-shop exchange of engine components.

5.2.1.2 Cannibalization of items to satisfy a MICAP condition for either "on" or "off" equipment repair to include AWP status for off equipment.

5.2.1.3 Cannibalization of items to support deployment kits.

5.2.2 The following maintenance actions to obtain assemblies, subassemblies, or parts are considered transfers and will not be treated as cannibalization actions:

5.2.2.1 Assemblies, subassemblies, or parts obtained from spare C-E equipment, major assemblies, and Quick Engine Change (QEC) kits for off-equipment repair.

5.2.2.2 When missions dictate installation of an item due out, released or issued for one weapon system, or end item to satisfy a higher priority requirement on another weapon system, system, or end item.

5.2.3 Cannibalization data provides information to logistics decision makers. It is used to evaluate supply and repair shortages. Cannibalization manhours are often used to help justify repair actions and spares procurement.

5.2.4 Cannibalizations from depot possessed weapon systems will not be accomplished without the written approval of the PM.

**5.3 DOCUMENTATION.**

When documenting a cannibalization action, use the specific WUC/LCN of the assembly, subassembly, or part that is being cannibalized. If the assembly, subassembly, or part being cannibalized does not have a specific WUC, the appropriate "NOC" WUC from the system and/or subsystem being worked will be used. When documenting a cannibalization, use a single JCN.

**NOTE**

If a part being cannibalized is repairable and does not have a specific WUC and the NOC WUC is used, the technician will submit an AFTO Form 22 requesting a WUC be issued for the assembly, subassembly, or part.

5.3.1 ATC "T" will be used to document the removal of the serviceable item. This is a mandatory entry and will be documented as soon as practical after the removal action is completed.

5.3.2 ATC "U" will be used to document the installation of the serviceable item replacing the one cannibalized. This is a mandatory entry and will be documented following completion of the installation.

**Table 5-1. Preparation of AFTO Form 349 and AF Form 2414 when automated systems are not available**

Step	A For cannibalization	B Take these steps***
1  2  3  4  5	Maintenance control function	On the AFTO Form 349, initiate one (1) JCN with two (2) work center events; one for removal, the other for replacement of cannibalized components.  Document items 1, 2**, 3, (4 - 5 when applicable), and columns A, C, D, E, and F on both records.  Document the removal records with a "T" ATC in column D, HOW MAL code 875 in column F, a check (✓) in block 28 and a statement * in block 26.  Document the replacement record with a "U" ATC in column D, 875 in column F, a check (✓) in block 28, and a statement * in block 26.  Ensure that the cannibalization action is approved by the maintenance control supervisor or his designated representative(s). (For ICBM maintenance units, the chief of maintenance must approve cannibalization actions.)
6	Maintenance supply liaison function will	Document blocks 23 through 37 on the AF Form 2414.
<p>* Item 26 will include a statement identifying the equipment serial number from which the end item was removed and the equipment serial number on which the end item is to be installed.</p> <p>** Item 2 need not be documented by maintenance control function when a maintenance shop has two or more work centers which perform the same function (e.g., active and reserve). In this situation, block 2 entry will be documented by the performing work center. Item 14 may be used by maintenance control function to indicate the appropriate shop by using an abbreviated method, e.g., AR, SM, ENG.</p> <p>*** Units using automated systems will use the appropriate cannibalization screens.</p>		

**NOTE**

When a unit has geographically separated detachment, the chief of maintenance has the option to develop local procedures to ensure the reporting requirement outlined in steps 3 and 4 are accomplished.

## CHAPTER 6

# DOCUMENTATION OF SUPPORT GENERAL AND CONSOLIDATED MAINTENANCE EVENTS

### 6.1 CONSOLIDATED MAINTENANCE DATA COLLECTION PROCESS/EVENT CONSOLIDATION.

6.1.1 Purpose. Event consolidation provides a method to collect maintenance data while reducing keyboard time for the maintainer and the number of records stored in the MDD system. This is done by reporting all time expended toward a maintenance event as a single entry, rather than reporting time for each individual task.

6.1.2 Application. For example, a maintainer is dispatched to replace a part or LRU. He/she may expend time performing troubleshooting, inspecting, removals, and replacements to Facilitate Other Maintenance (FOM), operational checks, and other tasks related to the replacement of the part itself. Rather than report each of these actions individually, all the time will be reported against the replacement action.

6.1.2.1 Time expended by assisting workcenters may not be consolidated by the primary workcenter, but may be consolidated within itself.

6.1.2.2 Major commands hold the option to implement event consolidation for on- and off-equipment maintenance. They may also elect to collect detailed data as circumstances require. Details should be contained in major command instructions.

6.1.3 Exceptions. Time expended troubleshooting C-E equipment will not be consolidated.

6.1.4 Support General Documentation. Support General Documentation records are those maintenance actions that are considered routine in the day-to-day support of the weapon system operation. Support General includes parking, fueling, cleaning, documentation, unpacking, scheduled and unscheduled inspections, etc. (i.e. WUC 01000 Ground Handling, Servicing and Related Tasks or LCN 1200100 for Servicing).

6.1.4.1 Major Phase Support General documentation (WUC/LCNs incorporating codes using 033 (phase), 034 (periodic), 037 (isochronal)) are restricted to On-Equipment End Item use only. Aircraft, engines, and missiles will document these WUCs using the package credit edit in Appendix D.

6.1.4.2 Scheduled and unscheduled inspections will be recorded and maintained in paper (as required by MAJCOM) and electronic formats so maintenance schedules can be updated correctly. Reasons for this include: Maintenance scheduling effectiveness, accurate inspection history, and ease of maintenance reviews.

6.1.4.3 Fabrication 09000 is in direct support of the system and should be reported.

6.1.4.4 Other normal Support General actions will be recorded in the MIS properly except as noted below:

6.1.4.4.1 Special data studies may be initiated at the request of the Single Manager with the agreement of the MAJCOMs involved. Such studies should have defined objectives.

6.1.4.5 MAJCOMs should define Support General documentation policy in appropriate directives.

6.1.4.6 The AFTO Form 781P, *Support General Documentation Record*, may be used to record support general actions when an automated system is unavailable.

### 6.2 SUPPORT GENERAL DOCUMENTATION PROCEDURES.

Support General documentation procedures for Special and Scheduled Inspections. Special inspections are based on an event (i.e. lightning strikes, hard landings), but can also have recurring frequencies (i.e. aircraft wash, NDI inspection). Scheduled inspections are based on the passage of hours, days, cycles, etc.

6.2.1 Special Inspections use only WUC/LCN's 04 (such as 0413C for standard AF aircraft intake inspection) and TMC "S". One exception is for Transient Aircraft and Engine maintenance documentation, which will use TMC "Y".

6.2.2 **Phase Package Reporting (Scheduled Inspections).** Phase or Isochronal Package Reporting is reserved for aircraft, engines, and missiles whose Support General WUC/LCN's incorporate code numeric of 033-, 034-, or 037-. LCNs equivalents will begin with 132 and then the applicable 033-, 034-, or 037- WUC.

6.2.2.1 Work card number 1 is used as the primary Phase Package card and will be last card or workcenter event documented to show completion of the Phase Package. Documentation criteria for this work card are:

- TMC will be either "E", "H", or "P"
- Units Produced will be "1". A zero indicates this workcenter is not the prime workcenter responsible for completion of this maintenance action
- Start and Stop Times will be blank
- Crew Size is blank
- Category Labor is selectable (options 1-6)
- Required USERID's dependant upon Inspection and Symbol used
- Associated narrative inputs

6.2.2.2 All other associated work cards or workcenter events will be documented using the following inputs:

- Type Maintenance Code will be either "E", "H", or "P"
- Units Produced will be "zero"
- Crew Size will be 1 through 9
- Start and Stop times must be input
- Category Labor is selectable (options 1-6)
- Required USERID's dependant upon Inspection and Symbol used
- Associated narrative inputs

6.2.3 Standard support general documentation consists of those activities considered as normal, everyday or routine (fuel servicing, towing, parking, etc.). These activities can be documented as "after the fact maintenance" or by using the AFTO Form 781P.

### **6.3 MASTER JOB STANDARD NUMBER (MJSN) PROCEDURES.**

The purpose of these procedures is to provide management oversight and guidance for developing and maintaining MJSN tables. MJSN tables allow global management of -6 TO inspections and time change items at all levels. The master MJSN tables are maintained in REMIS and transmitted to the field for use in editing data. As in WUC tables, data accuracy must be of primary concern, since global links to local JCNs are only maintained via this table.

6.3.1 Job Standard Numbers (JSNs) are used in Air Force standard maintenance information systems today. These JSNs are not standardized and do not relate between locations and installations. G081 does not use JSNs, however, Master -6 TO requirements are managed by the specific MDS.

6.3.2 MJSN tables will contain data pertaining to the tasks as defined in the applicable weapon system -6 TO or equivalent technical guidance containing inspections/time change requirements. The table will be used by maintenance users in the management of the inspection and time change subsystems in REMIS, IMDS CDB, and IMDS for Mobility (G081).

6.3.3 MJSNs are used to manage inspections and time change items at all levels. In addition, MJSNs establish standards used to facilitate the automated transfer of weapon system time change (recurring maintenance) and inspection data between Air Force Bases, Air Logistics Complex (ALC) Depots, military services, and Contract Logistics Support (CLS) facilities performing maintenance. Additionally, MJSNs assist in mishap investigations by standardizing the data and enhancing data integrity. MJSNs will also increase accuracy and validity, save labor, and allow a smoother conversion to the final IMDS CDB product.

### **6.4 MASTER JOB STANDARD NUMBER (MJSN) RESPONSIBILITIES.**

6.4.1 PMs build and maintain MJSN tables for their unique weapon system requirements. See [Figure 6-1](#) and [Figure 6-2](#) for MJSN Process Flow Diagram Build and Changes.

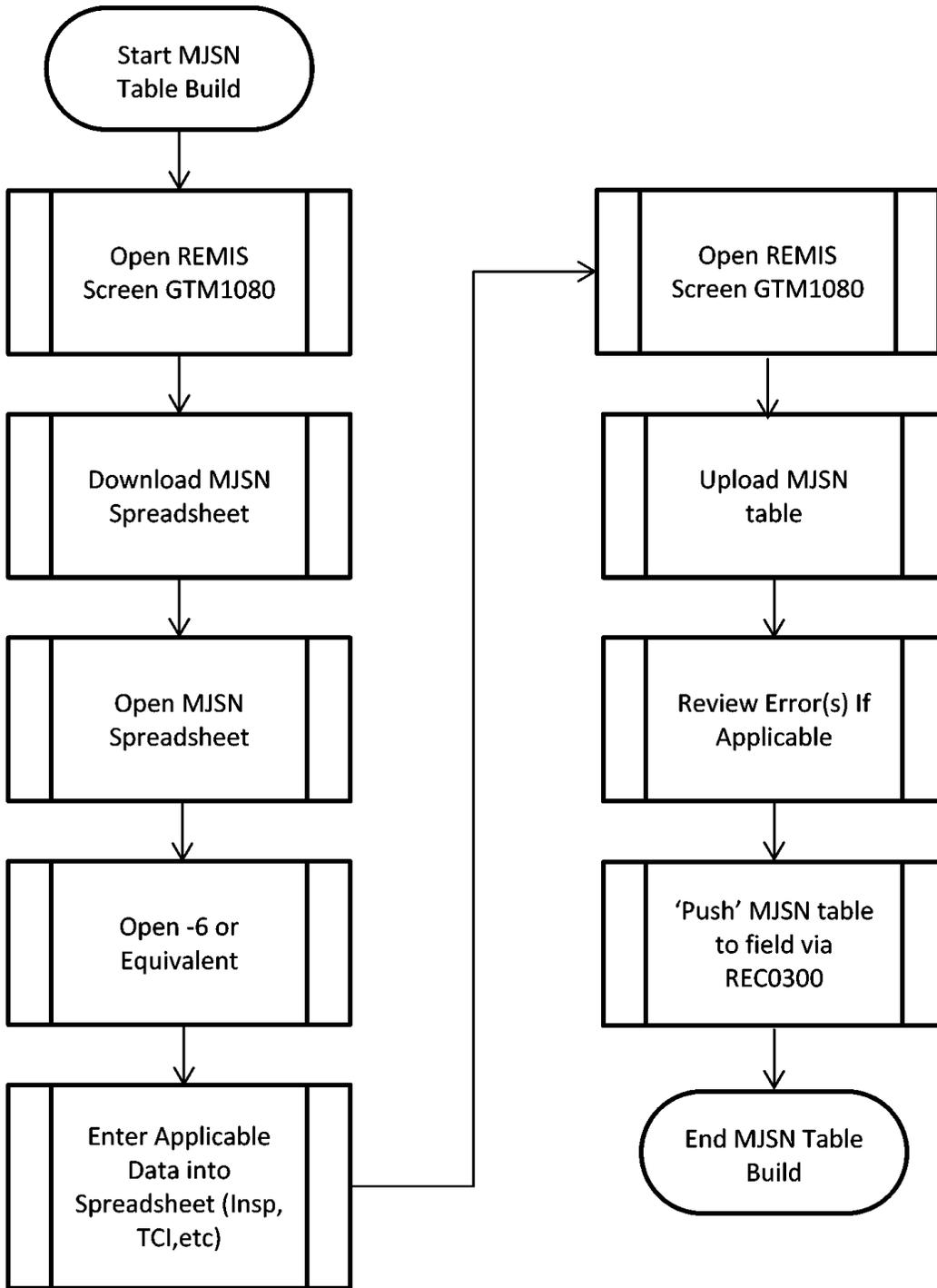
6.4.2 Upon completion of MJSN table, the PM will review and forward to the appropriate lead command for table validation and approval. After validation and approval, the PM will upload the MJSN table into REMIS.

**NOTE**

PMs should work with lead commands or delegated working groups during MJSN table build for consistency and base level experience with current Job Standard uses.

6.4.3 MJSN tables are maintained in REMIS using screen GTM1080. To maintain MJSNs in REMIS, individuals must have Group 8 on their REMIS access application form.

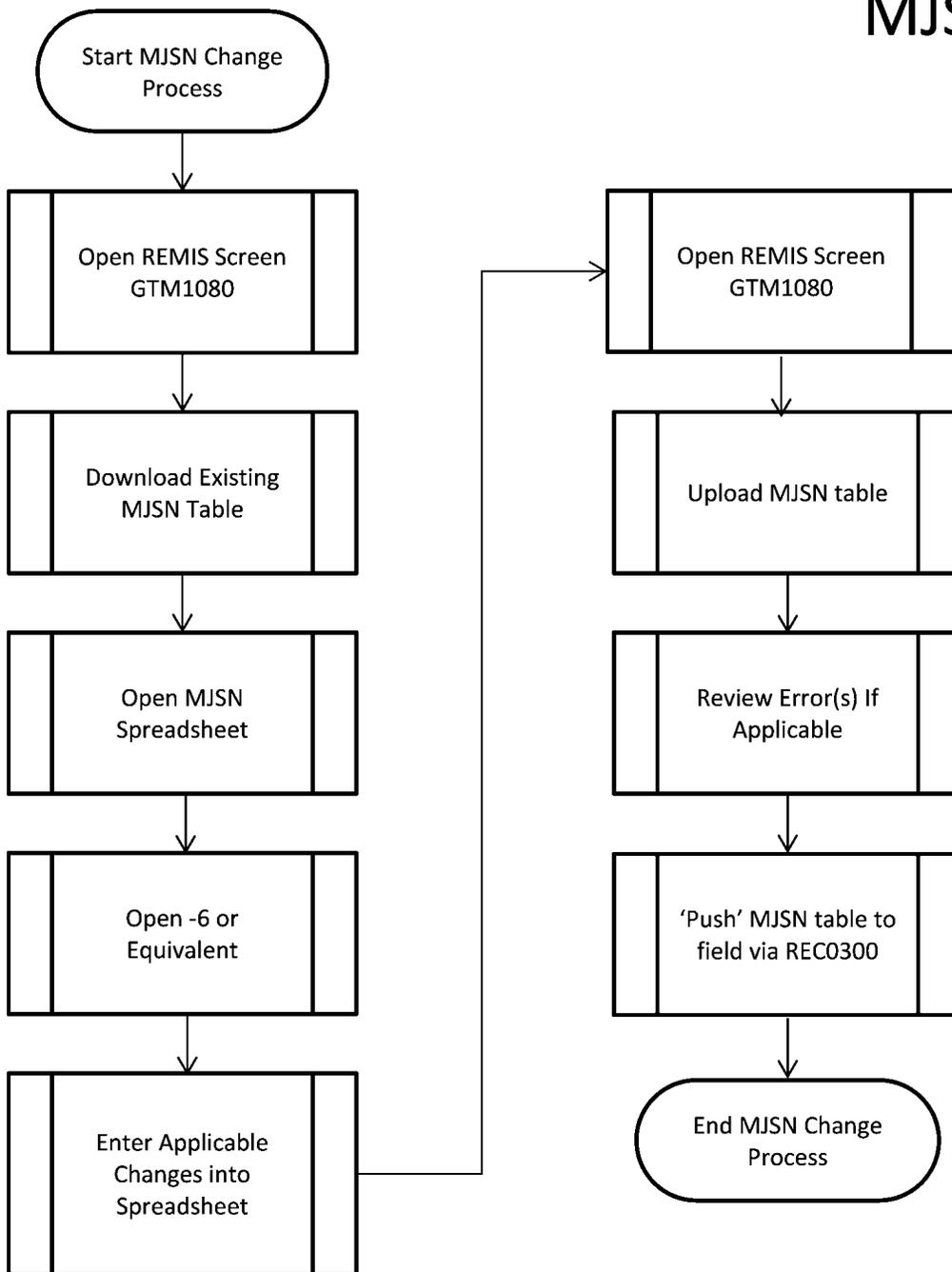
# MJSN Build



H1501562

Figure 6-1. MJSN Process Flow Diagrams - Build

# MJSN Changes



H1501563

Figure 6-2. MJSN Process Flow Diagrams - Changes

6.4.4 PMs will review/validate MJSN table annually, ensuring current information is available to AF maintenance users. MJSN tables will be updated and modified whenever new requirements are identified.

6.4.5 PMs will input updates into REMIS with a future stop date for the old data (at least 5 days in the future) and a future start date for the new data (at least one-day after the stop date).

6.4.6 Recurring TCI/INSPs driven by TCTO requirements must have a MJSN assigned and loaded to the MJSN table upon issuance of TCTO.

6.4.7 Changes to the -6 TO or equivalent are made using AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, or AFTO Form 252, *Technical Order Publication Change Request*. If necessary, an Interim Operational Supplement (IOS) may be issued for Emergency and Urgent situations IAW TO 00-5-1.

6.4.8 When a change or an IOS is issued to the -6 TO or equivalent, the PM will upload a new MJSN and its applicable data elements to REMIS.

6.4.9 PMs will push the change to the field using REC0300.

6.4.10 The IOS is sent to the field with the appropriate changed, added, or deleted data addressed using the same format contained in the REMIS MJSN table maintenance screen(s).

**NOTE**

If REMIS is unavailable, contact the System Management Center (SMC) at REMIS and the local communication squadron to work the issue. Manually assign a MJSN for the IOS and update REMIS when connectivity is restored.

6.4.11 PMs will build tables for centrally managed items for their respective categories (i.e., CAD/PAD, egress, wash, Life Support and guns).

**NOTE**

If more than one part number from a category MJSN table exists for an individual WUC, then a single MJSN must be assigned to encompass all part numbers instead of using the assigned category MJSN. For example: Lower Riser Line Cutter, WUC 97AB0. Part numbers for installation can consist of 0113-226-3 or 0113-226-4. Both part numbers are interchangeable for WUC 97AB0.

**6.5 BASE-LEVEL RESPONSIBILITIES.**

6.5.1 Maintenance Operations (MO) Plans, Scheduling, & Documentation (PS&D), Job Control (C-E), or equivalent ensures that the appropriate MJSN is assigned to each local JSN, when MJSNs are available, for applicable weapons system or equipment.

6.5.2 The MO Analysis will process REMIS MJSN files into IMDS CDB in accordance with Host-Tenant Agreements. For G081 units, the REMIS MJSN file will be maintained by the HQ AMC Program Office (PO) using applicable -6 TO screens.

**NOTE**

Use TO references and other pertinent data elements (i.e., frequency, WUC, intervals, Date of Manufacture (DOM)/Date of Installation (DOI) indicator, catalog number, and narrative) to verify the IMDS local JSNs and G081 local -6 TO requirements are matched to the correct MJSNs.

6.5.3 IMDS and G081 receives the MJSN Tables and will use a conversion program to programmatically link MJSN table TCIs to IMDS and G081 local JSNs to MJSNs. The remainder of the local JSNs must be manually linked by MO PS&D, Job Control (C-E), or equivalent.

**NOTE**

Base-level units must ensure, after the initialization process, MJSNs, WUCs, and local JSN WUCs match. Contact IMDS PO for procedures when MJSN tables are initially pushed to IMDS.

#### 6.5.4 IOS Procedures.

6.5.5 IMDS and G081 users will ensure the appropriate changes have been updated based on the IOS.

6.5.6 If user receives an IOS that does not have a MJSN in IMDS, do not input data into the MJSN field until receipt of that MJSN from REMIS. Upon receipt of MJSN table update, input the new MJSN into the MJSN field and link the new MJSN to the local JSN.

#### **NOTE**

Under emergency conditions, if new MJSN table update has not been received within two hours, contact REMIS SMC for further guidance.

6.5.7 MO PS&D, Job Control (C-E), or equivalent will notify applicable work centers that new MJSNs have been established. Work centers, in turn, will load the new MJSNs to applicable equipment.

6.5.8 MO PS&D, Job Control (C-E), or equivalent will monitor IMDS and G081 for new or changed MJSN tables.

6.5.9 Units will ensure weapons system or equipment validations are in compliance with AFI 21-101, AFI 33-150, and MAJCOM guidance.

6.5.10 Units will use the start date defined within the MJSN table as the effective date for the task. When technical guidance has not been received by the start date of the MJSN, follow MAJCOM guidance.

#### **6.6 TEMPLATE FOR MJSN TABLE MAINTENANCE.**

6.6.1 The following are instructions to build a MJSN table for uploading into the REMIS. Use this template, along with the MJSN procedures contained in paragraph 6.2 through paragraph 6.4 to build, validate, upload, and maintain a MJSN table.

6.6.2 The following elements must be considered in developing a MJSN table.

6.6.3 Determine Type Equipment, see [Table 6-1](#):

**Table 6-1. Type Equipment Codes**

<b>Type Equipment Code</b>	<b>Nomenclature</b>
A	Aircraft
B	Test equipment
C/R	C-E
E	Engines
G	Support Equipment (SE)
H	PMEL
M	Missiles
T	Trainers
W	Munitions

#### 6.6.4 Master Equipment Designator (MED).

6.6.5 The MED is a 15 alphanumeric character field that encompasses all equipment identified by a MDS, TMS, TMSM, and End Item Work Unit Code (EIWUC).

6.6.6 TMS and TMSM should not be confused as the same type of equipment. TMS equipment identifies all Joint Electronic Type Designator (JETD) equipment as outlined in MIL-STD-196E. TMSM equipment identifies all engines and propulsion equipment.

6.6.7 TMS and MDS equipment designators are constructed using the same format.

6.6.8 The use of wildcards ( \_ or % ) in the MED field is recommended to be used when the MJSN will apply to the same frequency, WUC, and interval across an entire MD or piece of equipment. (Example: When a 30 day inspection for WUC 03412 goes across all F015's, the format of the input in this field would be: (underscore) (underscore) F015%. When the MJSN, (of similar narrative), does not have the same WUC, frequency, or interval and/or does not apply to all models, (TMSM), or series of the MD, then the specific MDS or TMSM must be used for each version of that type of equipment) (Example: 30 day inspection for F015C has WUC 03412 and for an F015D the same inspection has a 45 day requirement then two different line entries will be made).

6.6.8.1 Wildcards are based on the following REMIS conventions:

6.6.8.1.1 Wildcard convention example for an MD is: UnderscoreUnderscoreF015% ( \_F015%) for all F-15 aircraft

6.6.8.2 For TMSM, the conventions are:

6.6.8.2.1 UnderscoreF0100% ( \_F0100%) for all F100 engines.

6.6.8.2.2 UnderscoreF0200100% ( \_F0200100%) for all F200100 engines.

6.6.8.2.3 There are no other wildcards allowed.

6.6.8.3 When not using the wildcard in front of an MDS or TMSM, input leading space(s) (Examples: space space F015C (F015C) or space F0200100A (F0200100A)). Reference: AFCSM 25-524, REMIS User Manual.

**6.7 NUMBERING SCHEME DEVELOPMENT.**

6.7.1 All MJSNs for Equipment Designator tasks that are not referenced in one of the separate categories identified in Table 6-2 must start with a valid numerical character (i.e. 000001).

6.7.1.1 A recommended methodology, with the exception of the categories identified in Table 6-2, is to use the 2-position system level WUC number for each job standard as applicable (Example: INSP Landing Gear Strut; WUC 04xxx (support general); associated MJSN might be 13xxx to reflect a system level WUC).

6.7.2 Each MJSN must be unique for the combination of:

6.7.2.1 WUC, Frequency, and Interval

6.7.2.2 MJSN Categories

6.7.3 Categories are tasks that the Equipment Designator -6 TO or equivalent technical guidance identifies in a secondary centrally managed TO (i.e. TO 00-20-9 or TO 14D3-10-1). Category MJSNs start with one of the following alpha characters in Table 6-2.

**Table 6-2. Category MJSNs**

E	Egress	(i.e. E00001)
L	Life Support 7 Survival	(i.e. L00001)
C	CAD/PAD	(i.e. C00001)
W	Wash	(i.e. W00001)
G	Guns	(i.e. G00001)

- 6.7.4 Master Start Date. Assign a master start date which is the effective date for the use of the MJSN.
- 6.7.5 Master Stop Date. Assign a stop date when applicable. The MJSN will not be useable after the Stop Date.
- 6.7.6 Multi Block Indicator (if applicable). System driven. See GTM1080 screen help in REMIS for values.
- 6.7.7 End Item Equipment Designator (used for "Change" or "Stop" processes only). When retrieving a record that was originally wildcarded against a MD or TMS, enter the MDS or TMSM that will be changed or stopped using this process (for IMDS users).
- 6.8 END ITEM EQUIPMENT DESIGNATOR BLOCK NUMBER (EIEDBN).**
- 6.8.1 The EIEDBN is a 3 alphanumeric character field, used to identify aircraft grouped together at a lower level than MDS.
- 6.8.2 REMIS wildcard conventions will be used for this field when applicable ("%", [percent sign]), in the left-most position or spaces in all positions, reflect the REMIS wildcard convention indicating ALL blocks.
- 6.8.3 The only other authorized value is a valid 3-position block number, prefixed with zeroes.
- 6.8.4 End Item Start Date/Time. This field is used only in conjunction with the EIEDBN field.
- 6.8.5 End Item Stop Date/Time. This field is used only in conjunction with EIEDBN field.
- 6.8.6 Part Number. Not applicable at this time - reserved for future use.
- 6.8.7 Cage Code. Not applicable at this time - reserved for future use.
- 6.8.8 Part Number Start Date. Not applicable at this time - reserved for future use.
- 6.8.9 Part Number Stop Date. Not applicable at this time - reserved for future use.
- 6.8.10 Title/Narrative. A specific task as identified in the -6 TO or equivalent technical guidance. It cannot be as generic as "90-day Inspection" when the 90-day inspection applies to the main landing gear, left hand (Example: INSP MLG, L/H, every 90 days).
- 6.8.11 Frequency. Determined by how often the job needs to be done; may input zeros for Type Interval B, but blanks are recommended.

#### NOTE

Field must be whole number only. Right justified and pre-fixed with zeroes.

- 6.8.12 Type Interval. Valid values in [Table 6-3](#).

**Table 6-3. Type Intervals**

Type Interval Code	Interval Narratives
B	No Interval
C	Cycles
D	Days
H	Hours
M	Months
S	Starts
7	Multiple Tracked (For Engines Only)
L	Landings

**NOTE**

"B" is used for MJSNs such as Over-G, bird strike, or any item with no recurring interval.

6.8.13 WUC/LCN. For Time Change Items the WUC must be the full five position component WUC (i.e. 12ABC not 12000).

6.8.13.1 WUC is a 5 character alphanumeric field that identifies the specific item within the system, subsystem, and component. The WUC can be found in the applicable -6 TO, -06 TO, or equivalent technical guidance for the equipment this table is being built. This field's data must be left-justified. Support general WUCs must contain a leading zero.

**NOTE**

For category tables, this field should be blank. The Equipment Designator WUC used by the Weapon System Table OPR identifies the item.

6.8.13.2 LCN is a 15 character alphanumeric field that identifies the specific item within the system, subsystem, component, and position.

**NOTE**

This field must have a complete 5-character WUC or an 8-character LCN for all items.

6.8.13.3 For time change items, this field must have the WUC/LCN of the tracked component (i.e., 12ABC not 12000, or 04112, which is a support general WUC).

6.8.13.4 For support general WUCs, Appendix I, will be used exclusively for MJSN table inspections. When a support general WUC does not exist but the task is to be input into the MJSN table, contact AFMC/A4FI for assignment of a new support general WUC.

**NOTE**

For inspections, this field MUST contain the support general WUC/LCN. Support general WUCs begin with zero. LCNs have a specific construction identifying support general numbers which does not follow the "begin with zero" rule. Refer to applicable weapon systems requirement's document for valid LCNs.

6.8.14 Type Inspection Code. [Table 6-4](#) identifies acceptable Type Inspection codes for all equipment.

**Table 6-4. Type Inspection Codes**

Type inspection Code	Inspection Code Narrative
A	Local hourly
B	Local
D	Calendar
F	Phase
H	HPO
I	Isochronal
L	Last Phase
P	Periodic Inspection
	Blank

**NOTE**

Profile style MJSNs (Hard Landing, Over-G, etc.) have no recurring tracking method so this entry will be blank.

**6.9 TIME CHANGE INSPECTION FORMAT.**

6.9.1 [Table 6-5](#) identifies acceptable time change inspection formats.

**Table 6-5. TCI Formats**

TCI Format Code	TCI Format Narratives
1	Inspection on the End Item
2	Inspection on Parts
3	Inspection on Engines
4	Time Change for Parts

**NOTE**

If Type Inspection format is 1, 2 or 3, it must have a WUC/LCN for support general work. If Type Inspection format is 4, the WUC/LCN must be valid component-level (not Support General) and identified as a TCI.

**6.10 DATE OF MANUFACTURE (DOM)/DATE OF INSTALLATION (DOI) INDICATOR.**

6.10.1 [Table 6-6](#) identifies appropriate DOM/DOI indicators.

**Table 6-6. DOM/DOI Indicators**

DOM/DOI Indicator	DOM/DOI Indicator Narrative
I	Date of Installation
M	Date of Manufacturer
R	Date of Refurbishment/Overhaul
	Blank

**NOTE**

This field will be blank for inspections and must have an entry of either "I", "M", or "R", for items that are tracked based on a DOM, DOI, or DOR.

**6.11 CATALOG NUMBER.**

6.11.1 Tracking method used for engines. (Reference: TO 00-25-254-1 for values)

**NOTE**

This field will be blank for all MJSNs except those for Type Interval 7.

6.11.2 The PM uses this field to identify the specific section of the -6 TO or equivalent technical guidance that is applicable for the MJSN. Additionally, this field identifies the secondary references from the -6 TO or equivalent technical guidance. This field is primarily used to assist base level users during match-up of MJSN to local JSNs.

6.11.3 Category table managers use this field to identify the specific technical guidance for the MJSN to be used by PMs for population of their TO reference field.

**NOTE**

The TO Reference field must be left justified.

**6.11.4 Due Time Calculation.** The due time calculation is a 1-alphanumeric character field with valid values of "C" or "D". The value "C" is used to calculate the next due time based on the completion date of the inspection. The value "D" is used to calculate the next due time based on the existing due time.

## CHAPTER 7

# DOCUMENTATION OF MAINTENANCE ACTIONS ON WEAPON SYSTEMS, END ITEMS, ASSEMBLIES, SUBASSEMBLIES, AND PARTS

### 7.1 PURPOSE.

The purpose of this chapter is to prescribe the policy and rules for documenting maintenance performed on weapon systems, support systems, and equipment.

### 7.2 GENERAL DOCUMENTING RULES.

7.2.1 General. The peculiar entries required on maintenance records for documenting maintenance actions involving TCTO, serially-controlled items, warranty tracked items and TCI are identified in this chapter.

7.2.1.1 The documenting rules in this chapter prescribe specific entries or codes to be entered. To simplify these instructions, only the peculiar block entry requirements are specified in this chapter, the instructions in paragraph 9.3 will be used to complete all other form entries.

7.2.1.2 The peculiar documenting rules prescribed by this chapter require additional or unique data input actions. Therefore, other maintenance actions will not be reported on the same maintenance record that is used to report these actions unless specified in this chapter.

### 7.3 DOCUMENTATION RULES FOR TCTO ACTIONS.

7.3.1 Documenting rules for off-equipment TCTO actions are contained in this paragraph and must be used in conjunction with the TCTO documenting rules for on-equipment maintenance applicable to the type of equipment in which the component is used (7-2 for aircraft, 7-4 for ICBM components, etc.). The reporting of TCTO actions is monitored by documentation rules outlined in TO 00-5-15 and AFI 21-101. The reporting of TCTO actions must be compatible with the monitoring method used. When a commodity item is removed to accomplish a TCTO in the shop and there is no system or end item TCTO for removal of unmodified and/or installation of the modified item, the action will be reported as a normal removal or replacement. No TCTO compliance will be reported against the weapon system, support system, or equipment end item since modification will be reported by the shop personnel as prescribed in paragraph 7.8. For these occasions, HMC804, no defect removed for scheduled maintenance, should be used.

7.3.2 Documenting rules for off-equipment TCTO actions depend on the type of equipment on which the component will be used. Therefore the instructions for documenting off-equipment TCTO actions contained in this paragraph must be used in conjunction with the TCTO documenting rules contained earlier in this TO. Basically, an off-equipment TCTO action is documented on the AFTO Form 349 or automated workorder with entries in blocks 1, 2, 5, 19, 20, (and block 21, when applicable); and columns A through N.

7.3.3 If a commodity category TCTO action is accomplished on a spare component that is withdrawn from supply for modification prior to installation on a weapon system, support system, or equipment end item, the maintenance record will be completed with entries in blocks 1, 2, 5, 19, 20, (and 21 when applicable), and columns A through N.

7.3.4 Pass Fail TCTOS. The PASS/FAIL Indicator will be used for "Inspection Type TCTOs". These are TCTOs that are annotated with a "P" for passed inspection or "F" for failed inspection upon completion of the TCTO (documentation of the HMC 801 transaction). Inspection Type TCTOs are identified with a "TCTO TYPE" equal to A, B, F, or G.

- A = IMMEDIATE ACTION INSPECTION
- B = URGENT ACTION INSPECTION
- F = ROUTINE ACTION INSPECTION
- G = EVENT TYPE INSPECTION

**NOTE**

IMDS users will use Screen 421 to place TCTOs into a Completed status of 02 or 03. When the TCTO TYPE is equal to that of an Inspection Type (A, B, F, or G) and the status is Loaded or Changed to 02 or 03 either a "P" must be entered to reflect "Passed the inspection" or an "F" must be entered to reflect "Failed the inspection". Loads or Changes to an un-completed status or when the TCTO TYPE is equal to 1, 2, 3, 7, or 8, this field must remain blank. Screen 069 and Screen 070 (JDD) will display the Pass/Fail field when the TCTO TYPE is equal to that of an Inspection Type (A, B, F, or G). Either a "P" must be entered to reflect "Passed the inspection" or an "F" must be entered to reflect "Failed the inspection". If the TCTO TYPE is equal to 1, 2, 3, 7, or 8, this field will not appear on screen 069 or screen 070.

**7.4 DOCUMENTATION RULES FOR SERIALLY CONTROLLED, WARRANTY TRACKED ITEMS AND TIME-CHANGE ITEMS.**

7.4.1 Documenting off-equipment maintenance actions involving-serially-controlled items and warranty tracked items requires special rules for reporting removal, replacement, initial installation of serially-tracked subassemblies in a serially-controlled assembly, and serially tracked (non-configuration managed) subassemblies that removed for repair from a serially tracked (configuration managed) assembly. These subassemblies are identified by an asterisk in the WUC/LCN manual. To document actions involving serially-controlled/serially tracked subassemblies and warranty tracked items, one maintenance record is required for each removal and replacement of a serially-controlled/serially tracked and warranty tracked items subassembly in addition to the record that is required to document the maintenance action for the assembly. The record used to record the maintenance action for the assembly will be completed using normal off-equipment documenting procedures.

7.4.2 To document the removal and/or replacement of serially-controlled/serially tracked subassemblies from their next higher assembly, ATCs, A, P, Q, R, S, T, or U will be used, as applicable. These codes are normally restricted to use in documenting on-equipment maintenance actions; however, these codes are authorized for in-shop use in this case. The following paragraphs specify form entry requirements for the record when documenting the removal and/or installation of serially-controlled/serially tracked subassemblies from their next higher assemblies.

**NOTE**

If the removal and replacement actions for serially-controlled/serially tracked subassemblies are not accomplished concurrently, the form that is used to document the removal action with a line entry completed using a "P" ATC will be retained as a suspense document for the subsequent installation action and the completion of another line entry with an ATC "Q". Since the AFTO Form 349 for the assembly will reflect the applicable units and manhour entries, this suspense form may be held for the time specified in [Chapter 3](#) of this TO.

7.4.3 For off-equipment documentation, ATC "E" will be used only for initial installation of serially-controlled/serially tracked subassemblies for parts identified by an asterisk in the WUC/LCN manual for weapon or support systems. Initial installation refers to "ship short" components, new components installed as a result of a modification, or items that are being installed for which the removal document is not available. If the next higher assembly is not the aerospace vehicle or engine; the FSC, part number, and serial number of the next higher assembly will be recorded to identify the assembly in which the item identified is being installed. This procedure is required to provide the identity of the next higher assembly, as well as the identification of the item being installed. Each action involving ATC "E" must be documented using a separate record. Documentation of an ATC "E" maintenance action requires a separate JCN.

7.4.4 A separate record will be required for each serially-controlled/serially tracked subassembly that is removed from an assembly and shop processed separately. The tag number from the AFTO Form 350 that is prepared for the removed item will be entered.

7.4.5 When serially-controlled/serially tracked subassemblies are removed from one assembly for installation in another assembly, the recording procedures prescribed above will be applied for each assembly involved. For example, if serially-controlled/serially tracked subassemblies are interchanged between two unserviceable assemblies to make one of the assemblies serviceable, records are required to document the removal and installation actions for each subassembly involved. When documenting actions involving the interchange of serially-controlled/serially tracked subassemblies, particular care must be exercised to ensure that the applicable JCN and tag number are used as specified above.

## NOTE

If removal of a serially-tracked subassembly for installation in another assembly is to meet a MICAP requirement, cannibalization procedures in [Chapter 6](#) of this TO apply.

7.4.6 Off-equipment removal and replacement of time-change subassemblies, identified by a "T" in the WUC table requires special entries on the maintenance record. Removal and replacement of time-change subassemblies from assemblies removed from weapon systems, support systems, or equipment end items are documented with normal entries on the record. This off-equipment document will identify the repair action on the assembly using the applicable repair ATC.

7.4.7 ATC "E" (initial installation) will be used for reporting initial installation of components. Initial installation applies to "ship short" components, new components installed as a result of modification.

### **7.5 DOCUMENTATION OF TRAINING EQUIPMENT MAINTENANCE.**

Maintenance documentation for configuration managed training equipment which makes up, or is a part of Mobile Training Set (MTS) or Resident Training Equipment (RTE) will be accomplished in a manner prescribed for operational equipment of the same type. Specific instructions are included in this TO, where applicable.

### **7.6 ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR AIRCRAFT, AIR LAUNCHED MISSILES, DRONES, AND RELATED TRAINING EQUIPMENT.**

7.6.1 Weapon System, Engine, and Equipment Identification: An ID number will be assigned to all base assigned equipment on which maintenance may be performed. Transient aircraft, shop support for base supply and conventional munitions will not require an ID number. Also, SE or C-E being repaired by a central repair facility, for other activities, will not require an ID number. Procedures for the local assignment of serial numbers to equipment for which an AF serial number has not been assigned are contained in AFM 23-101, *Air Force Materiel Management*. When SRD codes indicate non-AF, "non-AF" must be entered in place of the ID number. See paragraph 4.4 for more information.

7.6.1.1 The removal and/or installation of aircraft items having unique SRD codes assigned requires individual item ID information in addition to the weapon system ID. This category of items includes missiles, drones, engines, guns, and pod systems. When in-shop, on-equipment work is performed or a 2- or 35- category TCTO completed on either installed or removed items, the individual item ID number will be used. Maintenance action performed on installed systems will be identified to the installed system. Compliance with this paragraph is dependent on the capability of the data system in use.

7.6.1.2 Life support (personal) equipment maintenance performed in an on-equipment environment will be documented utilizing the applicable aircraft SRD code and WUC/LCN for the item as contained in the aircraft WUC/LCN manual and/or REMIS table. Emergency radio equipment, installed in the aircraft, that is not life support equipment will be documented using the aircraft SRD code and the applicable WUC/LCNs.

7.6.1.3 Maintenance actions for uploading or downloading weapons release or launch equipment from aircraft or drones for either mission configuration or failures will be documented using the aircraft or drone ID. Removal of weapons release or launch equipment due to failures or maintenance discrepancies will be documented using the weapons release or launch equipment WUC/LCN from the aircraft code table with the applicable action taken, when discovered and how malfunctioned codes. Shop work on weapons release and launcher equipment will be documented as off-equipment maintenance.

7.6.2 ECM Pods, Communications Security (COMSEC) and (Cryptologic Documenting Procedures: Management requirements for Pods and cryptologic equipment also dictate unique documentation procedures. If the Pod is being removed due to pod failure, the removal should be documented using the appropriate Pod WUC from system "76" of the aircraft WUC table (for example, "76CE0" for the AN/ALQ 131) and the ID number assigned to the aircraft. All work performed on a Pod in the shop or while on the parent weapon system will be documented utilizing the on-equipment concept. On-equipment maintenance performed on installed COMSEC and cryptological equipment will be documented using the ID number of the aircraft and applicable WUC from the aircraft -06 code table and/or applicable WUC manual. Maintenance performed on COMSEC and cryptological equipment end items removed from the aircraft will be documented in accordance with TO 00-70-2-8 with COMSEC and/or cryptological equipment ID number and WUC from the AFLMM 504 table. The above process is dependent on the capability of the information system to accept the data inputs.

## **7.7 MAINTENANCE DOCUMENTATION FOR NUCLEAR WEAPONS-RELATED MATERIEL (NWRM).**

7.7.1 NWRM-unique MDD procedures and documentation rules are contained in this paragraph. If a particular situation is not discussed here, refer to the standard documentation rules found in [Chapter 4](#).

7.7.2 Ensure serial number tracking and accountability is maintained for all NWRM through the entire maintenance process from the time it is accepted from supply/stock until it is either expended in-use or returned to supply/stock. See AFI 20-110, *Nuclear Weapons-Related Materiel Management*, for specifics requirements.

## **7.8 ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR NOCM MATERIEL, RV/RS, AND RELATED TEST AND HANDLING EQUIPMENT (EXCLUDING NUCLEAR WEAPONS).**

7.8.1 Peculiar Documenting Requirements for RVs/RSs. The following paragraphs specify peculiar documenting requirements for re-entry system.

7.8.1.1 When a serially-controlled subassembly is installed in an assembly prior to installation in a re-entry system and buildup of a re-entry system is not involved, the action will be documented. Documentation will contain the assembly serial number, the WUC (suffixed by two zeros), the SRD, the subassembly part number, the subassembly serial number, and the previous operating time of the subassembly, if any. The appropriate data field will always reflect ATC "E". The subassembly WUC will be entered and other appropriate entries will be made.

7.8.1.2 The re-entry system buildup will be recorded to contain the re-entry system serial number, the WUC (suffixed by two zeros), the SRD, the buildup support general code, and other appropriate entries. All manhours associated with the buildup will be documented. The installation of individual serially-controlled items, marked with an asterisk in the WUC manual, are not documented during the re-entry system buildup.

7.8.1.3 Upon receipt of a re-entry system in the munitions shop, make data entries from the AFTO Form 350, except for the ID and/or serial number entry and the TMC entry, that accompanies the re-entry system. The re-entry system ID number and munitions type maintenance codes will be used on all entries initiated in the munitions shop. This action will be held open until processing is completed; and will have a unit count of "1" (one) and "0" (zero) crew size entered when it is closed out. Re-entry systems removed for a scheduled inspection will be reported using an "X" (test-inspect-service) ATC, the appropriate when discovered code, and how malfunctioned code "804". Re-entry system components that are declared NRTS or condemned will contain ATC "1" through "9" as appropriate, regardless of the reason for which it was removed.

7.8.1.4 When a re-entry system, spacer, or penetration aids spacer is disassembled and packaged for storage or shipment with no intention of future assembly in the same serially numbered configuration, the disassembly will be reported by message to the directorate of nuclear weapons the nuclear capabilities directorate AFNWC/NCL. This message will include the serial number of the re-entry system, spacer, or penetration aids spacer and the date it was disassembled. A separate entry and AFTO Form 350 will not be required for each serviceable serially-controlled item that is removed for separate processing. Unserviceable or repairable items will require preparation of an AFTO Form 350. Documentation of maintenance actions on these unserviceable or repairable items will be in accordance with [Chapter 8](#).

7.8.2 Support General Recording. Support general work and the "look" phase of inspections accomplished on NOCM, re-entry systems and associated test and handling equipment will be reported to identify the end item on which work is being performed. If one end item is being worked on, the ID number, or the end item serial number, the WUC, and the SRD will be entered, with a unit entry of "1", once the action is complete. If the same support general actions, other than re-entry system buildup, are completed on more than one of the same type end item, the ID number of the first item worked on and the total number of units will be entered.

7.8.3 Reporting Weapon Conversions. When an end item WUC, serial number, or equipment classification code change is involved as a result of weapon conversion, the manhours expended will be documented under the appropriate support general code, and the serial number of the warhead or basic assembly will be entered. Entries will contain the initial configuration WUC, and the SRD. After conversion, the master ID file will be updated to reflect the new end item WUC, serial number, or equipment classification code. All future maintenance will be reported against the updated ID number. When no change to the master ID file is involved, standard documenting rules apply. Association of major assemblies for weapon conversions will be reported in accordance with TO 11N-35-50.

## **7.9 ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR SE, AGE, AND ATE.**

7.9.1 Documentation for TMDE. Maintenance actions (not involving calibration) which are performed on SE, that has installed TMDE items, by workcenters not assigned calibration responsibility for the equipment will be documented in accordance with instructions in this TO. Calibration and maintenance actions performed by workcenters that are assigned, the calibration responsibility for TMDE will be documented as prescribed in paragraph 7.8.

7.9.2 Documenting Engine Removal and/or Installation. All work performed on installed gas turbine engines will be identified to the SE end item. Reciprocating engines for SE will be treated as components for documentation of all maintenance and TCTO actions.

7.9.3 Documentation for AGE. Normal documentation rules apply for AGE.

## **7.10 ON-EQUIPMENT MAINTENANCE DOCUMENTATION FOR C-E AND CEM EQUIPMENT AND COMSEC.**

7.10.1 The AFTO Form 349 or an automated MDD system will be used for documenting on-equipment maintenance actions. The AFTO Form 349 will contain the end item ID number or serial number in block 3. When an ID number is entered in block 3, no entries are required in blocks 4 and 5, and column L since the ID number provides this information during data processing. In cases where the equipment has not been assigned an ID number, the serial number will be entered in block 3, the Joint Electronic Type Designator (JETD) (or the end item WUC for equipment that has not been assigned a JETD) in block 4, the SRD in block 5, and the owning command code in column L. The complete rules for formulations of ID numbers are included in paragraph 4.4 of this TO. Rules for local assignment of serial numbers to equipment for which an AF serial number has not been assigned are contained in AFI 23-101.

7.10.1.1 End items with an SRD code assigned will be given an ID number, even though they may be installed in a larger system. Maintenance actions will be documented against the installed end item ID as opposed to the larger system ID.

7.10.1.2 For documentation purposes, non-JETD equipment, training equipment, and all COMSEC identified under National Security Agency (NSA) Telecommunications Security (TSEC) nomenclature system (i.e., TSEC/KY-57) and cryptologic equipment that does not have an ID number assigned will be identified by entering the end item WUC in block 4 of the AFTO Form 349 or equivalent data field.

7.10.1.3 Local and MAJCOM procured ground C-E equipment will be assigned SRDs beginning with "L". The last two characters will be provided by MAJCOM supplements to AFI 23-106.

7.10.2 Documentation for Software Failures. When an equipment item fails to function properly because of a failure of the related software, the software failure will be documented in the same manner as a hardware component failure. The WUC assigned to the application software or equipment will be used along with the proper HMC that relates to the software failure.

7.10.3 Documenting Rules for TCTO Actions. The documenting rules outlined in this chapter usually relate to maintenance actions that affect equipment historical records or the base-level documentation activity as specified in AFI 21-101 and AFI 33-150. Supervisors (assigned labor code 300) performing or assisting in direct labor production will document their actions.

7.10.3.1 When kits, parts, or special tools are required for TCTO accomplishment, documentation activity personnel will follow the rules as specified in AFI 21-101 and AFI 33-150 to order the needed items and prepare documentation after notification from Maintenance Supply Liaison (MSL) that the items are available. This will contain zero (0) units and HMC "793". The date entry in the stop column will be the Julian date on which the kits, parts, or special tools are received by base supply. The start and stop times should be zeros (0000). The crew size will always be zero (0), and the applicable category of labor code will be entered.

7.10.3.2 When using HMC "796", "797", or "911", entries in the units column will be zero (0) units, the crew size column will be zero (0), and the start and/or stop time will be zeros (0000).

7.10.4 General On-Equipment Documentation Rules for C-E Equipment.

7.10.4.1 **TMC Entries:** The TMC consists of one alphabetical character and is used to identify the type of work that was accomplished. Special inspections (04 series support general WUCs) and maintenance performed during special inspection will be documented using TMC "S". TMC "T" will only be used for actions directly associated with TCTOs. TMCs are listed in the applicable WUC manual, REMIS, and Appendix F to this TO.

**7.10.4.2 WUC Entries:** The WUC entry identifies either the support general work being performed or the item or component on which the work is being performed. This five-digit code will always relate to the equipment identified by and for which the JCN was issued and the WUC will be obtained from the WUC manual and/or table that pertains to that equipment.

7.10.4.2.1 Always use the lowest-level WUC possible when documenting maintenance. When work cannot be related to an individual component, use the WUC of the subsystem that is being worked.

7.10.4.2.2 The listing of a "9" in the fifth position, or "99" in the last two positions of the WUC indicates the reparable item or component on which work was performed is not otherwise coded (NOC). A NOC entry will relate to the subsystem or end item and will be used only when a component of the subsystem or end item is not work-unit coded. An AFTO Form 22 will be submitted when a "99" NOC code is used due to lack of a WUC for a reparable item.

**7.10.4.3 ATC Entries:** The ATC identifies the action taken on the item identified by the WUC entry. ATCs are listed in the applicable WUC manual, REMIS, and in Appendix E. ATCs "A", "D", "M", "N", "O", and "3" through "9" are restricted for use in off-equipment documentation.

#### NOTE

Use of ATC "A" and "B" for on-equipment is restricted to engine reporting IAW Appendix E.

7.10.4.3.1 For on-equipment work, ATC "H" will be used only when an operational check reveals that an operator's reported discrepancy does not exist or cannot be duplicated, or when the apparent malfunction of an item is attributed to a failure of associated equipment. If the reported deficiency does not exist or cannot be duplicated, HMC "799" (no defect) will be used rather than the HMC which describes the reported deficiency. HMC "812" (no defect - indicated defect caused by associated equipment malfunction) will be used when the apparent malfunction of an item is attributed to a failure of associated equipment.

7.10.4.3.2 When ATC "G" (repair and/or replacement of minor parts hardware, and soft goods) is used, the WUC, entry will be that of the affected assembly or most directly related assembly to the parts being repaired or replaced. For example, if a retaining clamp on a work-unit-coded cable was being replaced, the WUC of the cable would be used. If the cable was not work-unit coded, the WUC would then identify the item to which the cable was connected. When using ATC "G", never use a NOC WUC.

7.10.4.3.3 ATC "Y" (troubleshooting) will be used when the troubleshooting is being reported separately from the repair action. WUC entries will be restricted to the defective system or subsystem that required the troubleshooting. Do not use item and/or component WUCs. When all troubleshooting action has been completed the line entry that is completed to report troubleshooting action will show one (1) unit produced. When ATC "Y" is used the how malfunction code cannot be "799" (no defect).

7.10.4.3.4 For on-equipment maintenance ATC "X" will be used to document operational checks performed following a repair action when the operational check is being reported separately from the repair action. These deferred operational checks will always be reported using the original discrepancy JCN.

**7.10.4.4 HMC Entries:** The HMC identifies the nature of the defect reported on the system, subsystem, or component identified by the WUC. HMCs are listed in the applicable WUC manual, REMIS, and Appendix G.

7.10.4.4.1 The number of HMC is maintained at a minimum to simplify reporting. The codes do not, therefore, specifically describe all conditions that may be encountered during maintenance. If there is not a specific HMC listed in the WUC table and/or REMIS manual that describes the condition, the code that most nearly identifies the nature of the defect will be used.

7.10.4.4.2 The listing of HMC also contains some no-defect codes to identify certain actions that can occur on items when a failure has not occurred or a defect does not exist, or to report accomplishment of TCTO actions.

7.10.4.4.3 A single HMC will be used to report failure or malfunction of an item. If more than one defect exists on the same work-unit-coded item at the same time, only the most predominant defect will be reported against the item. Other defects will be corrected at the same time, and manhour expenditures for all work required will be reported on the line entry pertaining to the predominant failure or malfunction. This rule does not apply when defects are discovered on other work-unit-coded items within the same system or subsystem. In these cases, separate line entries will be required to identify each of these defects.

7.10.4.4.4 HMC for high power tubes and computer or program equipment are grouped separately from other codes only to facilitate their use and permit technicians to find them rapidly. If it can definitely be determined that these codes best describe the nature of the defect for other equipment, these codes may be used.

7.10.4.4.5 HMC "553" (does not meet specification, drawing, or other conformance requirements) will be used to identify improper manufacture or overhaul of components or parts that have been issued from supply stock. This code will not be used in conjunction with the reporting of repair actions on failed items. This code is used only with when discovered code "W" (upon receipt or withdrawal from supply stocks). When HMC "553" and when discovered code "Y" are used, a Category II Deficiency Report (DR) should be submitted under the provisions of TO 00-35D-54.

7.10.4.4.6 HMC "230" (dirty, contaminated, or saturated by foreign materiel) will be used in conjunction with system or subsystem WUCs only when it can be determined this condition exists in the system or subsystem. When it cannot be determined that this condition exists in the system or subsystem, the WUC of the individual item that is dirty, contaminated, or saturated by foreign materiel and HMC "230" will be used.

7.10.4.4.7 HMC "800" (no defect - component removed and/or reinstalled to facilitate other maintenance) will be used whenever a job involves removal and/or reinstallation of a work-unit-coded component to gain access to an item or area. The removal and/or replacement of separately-work-unit-coded access panels or subassemblies that are related to the repair action will be treated as part of the repair action.

## **7.11 OFF-EQUIPMENT MAINTENANCE DOCUMENTATION FOR SHOPWORK AND TMDE.**

7.11.1 Documenting Disposition of Reparable Items. The off-equipment disposition of reparable items removed from weapon systems, support systems, equipment end items, or items withdrawn from supply stocks for in-shop maintenance actions must be documented to provide complete information for the MDD process. Therefore, each repair cycle asset item that is removed from a weapon system, support system, equipment end item, or that is withdrawn from supply stock will be documented by using the applicable ATC to indicate bench check, repair, NRTS, TCTO, or condemnation action, as applicable. This includes items that are normally reparable but are damaged to the extent that NRTS or condemnation action will obviously be taken, and items for which base-level repair is not authorized (NRTS code 1). In all cases, the field entry that reflects the applicable ATC must be completed for input to the MDD process at the time the Part II of the AFTO Form 350 is completed and the item is processed to the supply activity (TO 00-20-3). Note: IMDS users will complete the off equipment WCE generated by the removal of the item from the higher assembly to document the disposition of reparable items.

### **NOTE**

IMDS CDB users will complete the off equipment WCE generated by the removal of the item from the higher assembly to document the disposition of reparable items.

7.11.2 Shop Processing of Subassemblies. The removal and replacement of subassemblies or reparable parts that require separate shop processing requires documenting a separate AFTO Form 350 for each subassembly or reparable part removed from the assembly or component being repaired. However, if the items are processed together and have the same JCN, WUC, FSC, and part number, a single AFTO Form 350 may be used with a quantity of more than one entered in block 9.

7.11.2.1 The removal and replacement of the subassembly or part from the complete assembly will be reported against the WUC of the part or subassembly. When the replacement of parts is recorded, the AFTO Form 350 tag number that was attached to the assembly or component when it was received in the shop will be documented to reflect the repair action on the item.

7.11.3 Subassembly Repair Actions. When an assembly that contains reparable subassemblies or parts is made serviceable by repairing a recoverable (XD or XF) subassembly without removing it from the assembly, the repair cycle data for both the assembly and the subassembly are essential. This information is necessary to provide repair cycle data to the supply system for both the assembly and the reparable subassembly. This information is used to determine stock-level requirements for both items. To accurately reflect this information, the following documenting rules will be used:

7.11.3.1 If the assembly is repaired by the removal and replacement of the reparable subassembly, the subassembly will require an AFTO Form 350 for use in documenting the subsequent repair action as prescribed in paragraph 7.11.3 above. The data field entry is completed to record the repair action for the assembly and will be used to document the removal and replacement of the reparable subassembly.

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7.11.3.2 If the assembly is made serviceable by repairing a recoverable (XD or XF) subassembly without removing it from the assembly or by the removal, repair, and reinstallation of the subassembly; two AFTO Forms 350 must be provided to the supply activity through the reparable processing activity. One AFTO Form 350 for the assembly and one for the subassembly is required. Shop personnel will initiate Part II of an AFTO Form 350 for each recoverable (XD or XF) subassembly that is repaired. They will complete blocks 17, 18, 19, 20, and 21 on Part II of these AFTO Forms 350. Part I will remain with the removed subassembly to provide identification and association with its major assembly. This will be accomplished by entering the same supply document number in block 13 of the AFTO Form 350 for both the major assembly and any removed subassemblies. Part I may be destroyed upon reinstallation. Part II of the AFTO Form 350 for the subassemblies will be completed and forwarded to the production scheduler. The production scheduler will forward the AFTO Form 350, Part II for the subassembly with the Part II for the assembly to base supply for input of repair cycle information to the supply system. The Part II for the subassembly will not contain a document number entry since no demand was made for a subassembly, and the action will be processed as a Maintenance Turnaround (TRN) Transaction as described in AFI 21-101 and TO 00-20-3. The data field entries completed by the shop personnel to record the repair of the assembly will include entries in block 29 for the subassemblies that were repaired in addition to the data for the parts replaced during the repair of the subassemblies.

7.11.4 **Maintenance Processing.** An AFTO Form 350 will be initiated for all reparable items that are removed from equipment end items for shop processing. This includes items that are removed for in-shop inspection or repair action when no demand has been made on the supply systems. The removed item will be processed through the production scheduling activity as prescribed by AFI 21-101 and TO 00-20-3. The attached AFTO Form 350 will be processed using normal procedures with the exception of the supply document number entries. If the item is serviceable, a status entry will be made in block 15 of the AFTO Form 350 by the shop personnel and the item returned for reinstallation. In this case, the production scheduler will destroy Part II of the AFTO Form 350 if the item did not require repair action. If the item required repair in the shop or was determined to be NRTS or condemned, the Part II of the AFTO Form 350 will be updated to reflect the shop action and forwarded to base supply for input of repair cycle data into the supply system. This provides data for the Repaired This Station (RTS), NRTS, and condemnation actions that are used in base stock-level computations for the item. Part I of the AFTO Form 350 will be removed from the item and destroyed at the time of installation. When items are processed through the shops for inspection and/or repair and returned for reinstallation, the DO Forms prescribed for use as condition status tags and labels are not required.

7.11.5 **Documenting Rules for COMSEC and Cryptologic Equipment.** When COMSEC and cryptologic end items are shop processed, the work performed will be documented as on-equipment maintenance in accordance with paragraph 7.10. All work performed on assemblies, subassemblies, and components removed from COMSEC and cryptologic equipment will be documented as normal off-equipment maintenance.

7.11.5.1 Off-equipment maintenance documentation for COMSEC and cryptologic equipment must use locally assigned ID numbers. If there is no ID number assigned, the SRD of the equipment end item will be used.

7.11.5.2 The WUC and SRD must be obtained from the appropriate AFKAM-504(). The aircraft WUC table will not be used. This does not prevent use of codes in the aircraft WUC table or use of the aircraft ID number for the purpose of documenting removals and/or installations on the aircraft or for the Equipment Status Reporting (ESR) system.

## 7.12 MISCELLANEOUS MDD ACTIONS.

7.12.1 **Shop Documenting of Maintenance for Non-USAF Aircraft.** In addition to standard documentation requirements for transient USAF aircraft, maintenance actions for removed components and oil analysis concerning non-USAF transient aircraft will be documented. Standard off-equipment documentation requirements apply, except that SRD "AHX" will be used.

### NOTE

Refer to [Chapter 3](#) for general instructions for documentation.

7.12.2 **Accessories Involved in Accidents.** Items will not be removed from a weapon system, support system, or equipment involved in a mishap until investigation personnel authorize such removals. Reuse of parts or accessories from wrecked or damaged aerospace vehicles or equipment requires extreme caution. Using the appropriate TOs, thorough testing and/or inspection of items that may have been damaged will be conducted before they are used. Although the external appearance may indicate that the item was not damaged, hidden flaws may exist due to stress, strain, or other forces that can only be detected by testing and inspection. Items routed for test and/or inspection will include notation on the AFTO Form

350 that the item was removed from a wrecked or damaged weapon system, support system or equipment. In the absence of appropriate TOs the PM and/or Equipment Specialist (ES) will be contacted through the major command for guidance.

**7.12.3 Life Limited Components.** The IMDS CDB Component History Printout (EHRAC) will be attached to the DD Form 1577-2, *Serviceable (Repairable) Tag Materiel*, or DD Form 1574, *Serviceable Tag - Materiel*, when an engine life limited component is turned into supply. When aircraft are deployed to a base that does not have IMDS CDB capability, life limited components may be returned to the depot or contractor without the EHRAC printout information. The repair facility will request the latest data from the prime IM division and/or central data bank. This data will be recorded on the back side of the DD Form 1574 so that the receiving unit can upload the IMDS CDB and G081 history file. Additional information can be found in TO 00-20-5-1.

**7.12.4 Nondestructive Inspections Documentation (NID).** Separate data entries will be used to document nondestructive inspections. The when discovered codes for each type of NID can be found in the WUC tables and this TO. The NID when discovered codes assigned when the discrepancy was discovered will be used for follow on repair actions.

**7.12.5 MDD Equipment Scheduling.** Implementation and use of the calendar Preventive Maintenance Inspection (PMI) program is at the option of the deputy or chief of maintenance. Use of this MDD system for PMI items is mandatory as outlined in this TO. If the system is implemented and used for other equipment items, implementation of the master schedules will be in accordance with applicable AF directives. The mechanized PMI scheduling rules for bases supported by Standard Base Level Computer (SBLC) are outlined in this paragraph.

**7.12.5.1** Discrepancies discovered during the inspection that require maintenance repair actions will be documented separately if a unique JCN is required as outlined in [Table 4-1](#) of this TO.

**7.12.5.2** Grouping and reporting like inspections on like equipment by personnel of the same workcenter is authorized. This is accomplished by reporting the number of inspections completed (units) on a single entry. When this procedure is used, the ID number and/or serial number of one of the items completed will be used. For control purposes each serial number in the group may be entered. If units are utilizing the event connected MDD procedures, the guidelines in [Chapter 4](#) of this TO apply.

**7.12.6** When documenting functional checks, maintenance, or processing for compliance with shelf-life inspection requirements for items withdrawn from supply, use WUC "ZZ990", ATC "X", WDC "Y", HMC "799", TMC "A", and SRD "RSA".

**7.12.6.1** After returning to home station, it's the crew chief's responsibility to notify Plans and Scheduling that a serial controlled or time-change component was changed while off station. Plans and Scheduling is responsible to update the serial or time-change components in IMDS.

**7.12.7 Part Number.** This will never be left blank for shop work and will normally contain the part number of the item(s) being processed. Special care must be given to part number recording because omission or improper positioning of required dashes or slashes, improper inclusion of dashes or slashes when not applicable, incorrect recording of digits and omissions of assigned modification dash numbers causes an unwarranted shred out of data for like items in AFMC products. Exceptions to part number reporting and specific instructions for entries required in this block are as follows:

**7.12.7.1** For mechanical, electrical, hydraulic, and other items that fall in this general category, the first preference for the block 20 entry is the manufacturer's part number for the component or complete assembly as it appears on the data plate, or as stamped, cast or etched on the component or assembly. If the part number is not marked on the component or assembly, the part number will be obtained from the parts data log. If the item does not have a data plate, the part number will be obtained from the parts catalog.

**7.12.7.2** Recording of the part number will include all dashes and slashes as they appear on the item or in the parts catalog. Periodic checks of the identification will be made to assure that the part number and FSC, if included, are correct to assure maximum accuracy in part number reporting.

**7.12.7.3** If a complete assembly consists of subassemblies which have separate data plates, or other separate identification, the block 20 entry will be the part number for the complete assembly as indicated on the complete assembly or from the part catalog.

**7.12.7.4** For items that do not have a part number, the National Item Identification Number (NIIN), number (last nine digits of the NSNs), including the dashes as indicated, will be used for the block 20 entry.

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7.12.7.5 For local manufacture of items that are Not Stock Listed (NSL), enter NSL.

7.12.7.6 For C-E equipment, the type designator as it appears on the data plate excluding the AN prefix (e.g., HD-450/FPN16 or PP-992/FSA-4) is the first preference. The second preference is the part number, and the NIIN is the last preference. For airborne electronic equipment, the part number is the first preference and the type designator is the second preference for the block 20 entry.

### NOTE

The type designator of the item being worked on is entered in block 20. Do not use the end item or assembly code in block 20 when working on a specific item of an end item or assembly.

7.12.7.7 For aircraft tires, enter the NIIN since tires do not have part numbers assigned. TO 4T-1-4 contains the correct NIIN for tires.

7.12.7.8 For aircraft wheels, the manufacturer's assembly part number will always be used and is identified on the data plate as "ASSEMBLY NUMBER". The data for this entry will be obtained from the inboard wheel half. The inboard wheel half is defined as that wheel half away from the axle nut.

7.12.7.9 For conventional munition commodity items (e.g., ammunition, bombs, signals and/or flares, rockets, aiming wires, Cluster Bomb Unit (CBU) components, grenades, or mines), block 20 will contain the part number of the item as it is listed in TO 11A-1-06, *Work Unit Code Manual - Airmunitions*. For explosive egress and jettison devices, block 20 will contain the part number of the item as is listed in the applicable weapon system WUC table. For conventional missile munition items (e.g., propulsion units, igniters, warheads, fuses, squibs, or primers), block 20 will contain the part number of the item as is listed in the applicable missile WUC book. As an aid for these reporting requirements, forthcoming revisions to the Munition Code Table (TO 11A-1-06), and the weapon system -06 WUC tables will contain part numbers with munition item nomenclature. This will eliminate research for munition item part number identity on munition items that do not have a data plate or part number stamped on them.

7.12.7.10 For standard family, rigid wall, tactical shelters, enter the designator of the shelter as it appears on the data plate excluding the AN prefix. For example: (S-521/TPN-25).

## CHAPTER 8

### AFTO FORM 350 ENTRIES

#### 8.1 GENERAL.

The AFTO Form 350 is a two part form required on items removed for maintenance shop processing. These items include removed engines, removed end items, components removed from end items, and subassemblies removed from assemblies. A completed AFTO Form 350 serves to identify the origin of an item and contains key data elements needed to document shop actions. Part I of the form is the repair cycle processing tag. Part II serves as the production scheduling document. Additional rules regarding the use of this form for production scheduling and control of items are contained in TO 00-20-3 and AFI 23-101. All workcenters that repair XD2 components that are then returned to service (Action Taken codes A, F, G, K, L, or Z) need to ensure that the procedures in TO 00-20-3 governing maintenance turnarounds (TRNs) are followed. The maintenance JCN must be documented on the AFTO 350 prior to any maintenance action.

#### 8.2 CONDITION STATUS TAGS.

In addition to the requirement for the use of AFTO Form 350 for maintenance processing of items that require off-equipment or shop action, DD Forms are required to indicate the condition status of items that are processed to supply activities for return to serviceable stock, for forwarding to off-base repair activities, or for other disposition action.

8.2.1 For all items returned to supply, the maintenance activity responsible for condition status determination will prepare the applicable DD Forms that are used as tags and labels to identify item condition (TO 00-20-3). Any item being returned to supply as a serviceable item will have the DD Form 1574 or DD Form 1574-1, annotated in the remarks block to reflect any TCTO that was performed to make the item serviceable. This will be accomplished by both depot and field activities. These forms are:

1. DD FORM 1574, SERVICEABLE TAG MATERIEL
2. DD FORM 1574-1, SERVICEABLE LABEL MATERIEL
3. DD FORM 1575, SUSPENDED TAG - MATERIEL
4. DD FORM 1575-1, SUSPENDED LABEL - MATERIEL
5. DD FORM 1576, TEST/MODIFICATION TAG - MATERIEL
6. DD FORM 1576-1, TEST/MODIFICATION LABEL - MATERIEL
7. DD FORM 1577, UNSERVICEABLE (CONDEMNED) TAG - MATERIEL
8. DD FORM 1577-1, UNSERVICEABLE (CONDEMNED) LABEL - MATERIEL
9. DD FORM 1577-2, UNSERVICEABLE (REPAIRABLE) TAG - MATERIEL
10. DD FORM 1577-3, UNSERVICEABLE (REPAIRABLE) LABEL - MATERIEL

8.2.2 Unpacked items that are returned to the reparable processing activity after shop repair, NRTS, or condemnation action will have the applicable condition status tag or label attached to the item.

8.2.3 Part I of the AFTO Form 350 will always be left attached to items that are determined to be reparable and are being forwarded to other activities for repair. When reparable items are packaged by the shop, a DD Form 1577-2 or DD Form 1577-3 will be prepared and attached to the item in addition to the AFTO Form 350. The package or container will be labeled with a DD Form 1577-2 or 1577-3.

8.2.4 For serviceable and condemned items, Part I of the AFTO Form 350 will be removed from the item after shop processing of the item and Part II of the form will be updated for forwarding to supply.

#### NOTE

Part II processing is not required for IMDS CDB users. When the shop packages serviceable or condemned items, the AFTO Form 350 will be removed from the item before packaging. The packaging or container will be labeled with a DD Form 1574-1 or 1577-1, as applicable. The removed AFTO Form 350 will be forwarded with the item to the reparable processing activity.

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8.2.5 For removed munitions or explosive type items, the applicable condition status tags or labels will be prepared by the munitions activity that is responsible for this determination. In this case, AFTO Form 350 may be used to indicate the reason for removal until the status of the item is determined by the munitions activity or the munitions supply activity. Condition status tags are required as specified in AFI 23-101.

### 8.3 FRONT SIDE, PART I.

Blocks 1 through 14 and 15A will be completed by the individual initiating the form. Entries for blocks 1 through 12, 14, and 15A will be completed at the time of the removal action. The supply document number (block 13) will be obtained from the supply activity when a demand is made for a replacement item. Block entries are as follows:

8.3.1 Block 1, JCN. Enter the JCN, as documented in the IMDS CDB/G081 maintenance data record which reflect the JCN for the applicable repairable item. If more than one repairable component requiring an AFTO Form 350 is removed under the same JCN, each AFTO Form 350 that is initiated will have the same JCN entered in block 1.

8.3.2 Block 2, Serial Number. Enter the serial number of the end item or weapon system exactly as listed on the data plate (to include all alpha characters, special characters, and zeroes).

8.3.3 Block 3, TM. Enter the type maintenance code.

8.3.4 Block 3A, SRD. Enter the SRD or the applicable code obtained from the REMIS SRD table in IMDS CDB or REMIS. For AFTO Forms 350 prepared for engine items, enter the applicable engine SRD.

8.3.5 Block 4, When Disc. Enter the when discovered code.

8.3.6 Block 5, How Malfunction. Enter the how malfunctioned code.

8.3.7 Block 6, MDS. Enter the MDS, JETD, or end item WUC.

8.3.8 Block 7, WUC. Enter the WUC of the item to which the form is to be attached. If the item is a repairable subassembly which does not have a WUC, enter the WUC of the assembly from which the item (subassembly) was removed.

8.3.9 Block 8, Item Operating Time. If the item is a tracked item in the WUC table for which time records are maintained, enter the calendar time or accrued operating time of the item. Calendar time will be entered to the nearest whole month and operating time will be entered to the nearest whole hour. For recoverable engine items listed in TO 2R-1-16 and TO 2J-1-24, the accrued time will be computed from the AFTO Form 781E, *Accessory Replacement Document*. For recoverable subassemblies under the RIW program enter the ETI reading, if available, of the assembly.

8.3.10 Block 9, Qty. Enter the number of like items being forwarded for shop processing.

#### NOTE

The AFTO Form 350 prepared for components may have a quantity of more than one only if the JCN, WUC, FSC, and part number are the same and the components can be packaged or transported together for shop processing. Items identified by a tracked indicator in the WUC table require an individual AFTO Form 350.

8.3.11 Block 10 FSC. Enter the FSC code (first four numbers of the NSN) of the removed item.

8.3.12 Block 11, Part Number. Enter the part number of the removed item, including dashes and slashes. First preference is the part number or complete identification as it appears on the data plate. For items that do not have a part number, enter the NIIN, including the dashes. The NIIN is the last nine characters of the NSN. For ground C-E equipment, enter the component type designator as it appears on the data plate, excluding the AN/prefix. For conventional munition items, enter the part number of the item as it is listed in the applicable For aircraft tires, enter the NIIN since aircraft tires do not have part numbers assigned. TO 4T-1-6 contains the correct NIIN for tires.

8.3.13 Block 12, Serial Number. For time-change, RIW, serially-controlled items, and warranty tracked items identified by T, W, and S in the WUC manual, enter the serial number of the removed item, including any alpha, numeric, or special characters as it appears on the data plate. If the serial number exceeds 10 characters, enter only the last 10 characters. Communications-Electronic (C-E) equipment use 15-character serial numbers. If more, enter the last 15-characters of the serial number.

8.3.14 Block 13, Supply Document Number. When a demand has been placed on the supply system, enter the supply document number for the replacement item.

8.3.15 Block 14, Discrepancy. Enter a brief but specific description of the malfunction that caused the removal or the reason for removal. If the item was removed for off-equipment TCTO compliance, enter the TCTO number.

8.3.15.1 For electronic items that have sequential test procedures, also enter the TO reference step, and sequence number where the item failed to pass the test. If the item is processed on ATE, enter the test failure message.

8.3.15.2 For FSC 1377, (escape system devices only) and for warranty items, also enter the date of installation and the date of removal. The installation date of the item will be obtained from the applicable equipment document.

8.3.15.3 For items removed from equipment involved in accidents, enter the words "INVOLVED IN ACCIDENT".

8.3.15.4 Place the Geographic Location Code (GEOLOC) of the base originating the AFTO Form 350, in the lower right corner of this block.

8.3.16 Block 15, Shop Use Only. If the item was made serviceable, enter a brief description of the work accomplished. An entry will not be made if the entry would reveal classified information. When shelf-life inspection requirements are accomplished, include in the description the applicable TO number, TO date, the last inspection due date, and the inspecting activity identification. The date that is entered in block 26 when the item is made serviceable will establish the due date of the next inspection. When a warranty item that is identified by a warranty sticker, decal, stencil, or tag is determined to be unserviceable, the following entries will be made in this block: "Warranty item - Warranty expires; Contract number; accumulated operating hours and/or time" (as applicable). This information is not required for RIW items, however, if the NRTS item is a subassembly, enter the serial number of the assembly. Applicable entries will be made to complete the information for the item. If the warranty period has expired, the warranty entries are not required. If the item is determined to be NRTS, print or stamp "NRTS" along with the applicable NRTS code in this block. If NRTS code "D" is used, give the authority for this determination. Additionally, when an item is determined to be NRTS or ATC "1" is used as a result of a functional test or bench check prescribed by the TO repair instructions, the TO number and a reference to the test failed will be entered along with a brief description of the discrepancy, if applicable. This information will permit the specialized repair activity or agency making the repair to verify the failure condition and to accomplish the repair without excessive troubleshooting or diagnostic time being expended.

8.3.17 Block 15A, CMD/ACT ID. If no ID number is entered in block 2, for cryptologic equipment removed from an aircraft for shop processing, enter the owning command code (two position).

8.3.18 Block 15B, Shop Action Taken. The shop technician will enter the final ATC in block 15B prior to returning the item to the scheduler when the work is completed, or when the item is declared NRTS or condemned.

## **8.4 FRONT SIDE, PART II.**

This part will be completed by the production scheduler, detached, and retained as a suspense document until the item is returned from the shop or is made serviceable. When an item is not sent to the reparable processing activity because of size or other reasons, blocks 16, 17, and 18 will be completed by the originator and Part II will be detached and forwarded to the production scheduler. Block entries are as follows:

8.4.1 Block 16, Supply Document Number. Enter the supply document number from block 13 of Part I.

8.4.2 Block 17 Nomenclature. Enter the nomenclature of the item.

8.4.3 Block 18, Part Number. Enter the identification of the item from block 11 of Part I.

8.4.4 Block 18A, WUC. Enter the WUC/LCN of the item when the item is declared NRTS or condemned (ATCs 0 through 9).

8.4.5 Block 19, NSN. Enter the NSN of the item.

8.4.6 Block 20, Action Taken. Transcribe the ATC from block 15B of the AFTO Form 350, Part I, that is forwarded with the item when the work is completed or when the item is declared NRTS or condemned.

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8.4.7 Block 21, Qty. Enter the quantity from block 9 of Part I.

8.4.8 Block 22, Reparable Processing Center (RPC) Use Only. This block may be used as necessary by the RPC.

### 8.5 REVERSE SIDE, PART I.

Entries on this portion of the form are made by the RPC, base supply or by the activity responsible for determining the status of the equipment, as applicable. Entries are made as follows:

8.5.1 Block 23, NSN. Enter the NSN of the item. This block will be completed by the supply activity.

8.5.2 Block 24, Stock Record Account Number (SRAN) Code. When a NRTS determination is made, the base SRAN code will be entered in this block. This entry will be completed by the shop or the reparable processing activity.

#### NOTE

Every NRTS item (ATCs 0 through 8) must have a completed AFTO Form 350 attached. The minimum blocks that must be completed are 1, 2, 3, 3A, 4, 6, 7, 8 (if applicable), 9, 10, 11, 12, 14, 15, 23, and 24. Completing these blocks will enable the depot to contact the submitting base or activity to resolve any Cannot Duplicate (CND) or Retested OK (RTOK) problems encountered by the repair facility.

8.5.3 Block 25, Transportation Control Number (TCN). This block is for supply use only.

8.5.4 Block 26, Serviceable. This block will be completed by the activity responsible for returning the item to a serviceable status. An entry is not required if a DD Form 1574 is initiated and attached to the item at the time the item is made serviceable and it is to be returned to supply. When an entry is required, an inspection stamp in accordance with TO 00-20-3 or a signature and date is acceptable.

8.5.5 Block 27, Condemned. An entry is not required. The item will be tagged with either the DD Form 1577 or the DD Form 1577-1, in accordance with the instructions in TO 00-20-3 by the activity responsible for determining the condition of the item.

8.5.6 Block 28 Supply Inspector's Stamp. This block is for supply use only.

### 8.6 REVERSE SIDE, PART II.

The initiator of the AFTO Form 350 is responsible for entering the date the item was removed. The production scheduler is responsible for completing the remainder of the block.

### 8.7 MARKING OF CLASSIFIED COMPONENTS.

Marking of classified documents should be done in accordance with AFKAG-1, *Air Force Communication Security (COMSEC) Operations*, or AFI 10-701, *Operations Security (OPSEC)*.

### 8.8 AUTOMATED AFTO FORM 350.

Automated AFTO Forms 350 are authorized for use when produced by the automated MDD systems. Additional MDD data elements and discrepancy narratives may be included when such information may be helpful to the next repair activity. Equivalent AFTO Form 350 data may be used when shipping items to depot for repair. An example of equivalent would be a screen print of screen 122 in IMDS CDB. A printable Portable Document Format (PDF) version of the AFTO Form 350 tag is available at: <http://www.e-publishing.af.mil> or via the AF PORTAL <https://www.my.af.mil/faf/FAF/fafHome.jsp>

## CHAPTER 9

### TCTO STATUS REPORTING

#### 9.1 PURPOSE.

The purpose of this chapter is to:

- Prescribe the table procedures for documenting TCTO status information when a automated MDD system isn't available.
- Identify how to obtain TCTO reports.
- Prescribe validation procedures for TCTO status reports by commands and units using the automated MDD system.

#### 9.2 SCOPE.

This chapter applies to all USAF organizations performing equipment maintenance IAW AFD 21-1, *Air and Space Maintenance*. Experimental weapon and support systems having an "X" designation are exempt from this TO. Also, the provisions of this TO are waived for operational equipment used for training, provided it is certain the equipment will not be returned to operational inventory and an AFTO Form 95, *Significant Historical Data*, is not maintained for the equipment.

9.2.1 Modification of training equipment and equipment temporarily removed from the operational inventory for training purposes are documented as specified under this TO. The TCTO status of all other equipment, including items in storage, are documented under either the automated or table reporting system as prescribed in this TO.

9.2.2 The reporting methods for the base-level automated systems are prescribed in the system user's manual. Units on isolated sites can be relieved from the provisions of automated systems, and permitted to use the manual reporting and documentation system prescribed in this TO. Major commands should ask for waivers from HAF/A4/7 citing this paragraph, with an information copy to HQ AFMC/A4FI.

#### 9.3 STATUS ACCOUNTING SYSTEMS.

TCTO status accounting systems are set up to meet Air Force status accounting needs. These systems use data stemming from the MDD system to provide a central data bank on the TCTO status of equipment. Reports are prepared from this data for use by base-level managers, AFMC system program directors (SPDs), product group managers (PGMs), material group managers (MGMs), and item managers (IMs) when prescribed in this TO. Status accounting reports are also used by HQ USAF, HQ AFMC, and major commands as a management aid. The TCTO status systems are:

9.3.1 REMIS. Maintains THE UNCLASSIFIED TCTO master records, and compliance records for Aerospace equipment.

9.3.2 CEMS. Maintains records for engines.

9.3.3 Exemptions. All exemptions must be approved by the Maintenance Management Information Systems Steering Group or HAF/A4/7.

#### 9.4 DOCUMENTATION OF TCTO KIT PROOF TESTING.

Documentation of TCTO kit proof testing is the same as for standard TCTOs (TO 00-5-15). When an updated TCTO is accomplished with the proof testing of a modification, the modification is recorded as prescribed in this TO.

#### 9.5 SECURITY ASSISTANCE PROGRAM (SAP) TCTO REPORTING.

Reporting of TCTOs by SAP countries to AFMC can be accomplished when considered essential to support such countries and when this requirement is included in the country-to-country agreement. Reporting procedures using the AFTO Form 349 should be under the applicable chapters of this TO and/or under reports outlined in this TO. Data element and formats must be provided to the country by the SPD with adequate instructions for producing input to meet REMIS reporting requirements. As an alternative, the SPD can negotiate an agreement to use the AFTO Form 349 provided by the country and keep manual records, or to update machine reports manually. If TCTO status information is submitted to the central REMIS data bank, the SAP country should use a command code and base codes that are assigned to the country and the reporting bases prior to data submission, in order to permit separation of country TCTO data from USAF data and for the preparation of separate reports.

## **9.6 TRANSFERRING EQUIPMENT.**

When a weapon system or equipment item is transferred, the historical documents containing the TCTO status are forwarded with the weapon system or equipment under TO 00-20-1. If the transfer is between activities that are interfaced to the master TCTO records in REMIS, a manual transfer of records is not required. If the transfer is outside these automated systems, a manual transfer such as an AFTO Form 95, printout, or digital data transfer is acceptable.

## **9.7 ERROR CORRECTION.**

The TCTO information provided via the MDD system is used in the management decision making process which results in better logistics support, especially to maintenance. Because of the many support decisions made from this information, it's essential data submitted be both accurate and complete. TCTO status inputs demand 100 percent accuracy and completeness to gain full visibility for management decisions. TCTO completion must be input into base-level MISs system by unit performing TCTO immediately following completion of each TCTO. "Immediately" means during the shift the TCTO was performed on. Failure to document completion results in inaccurate status reporting of aircraft and equipment. The base-level maintenance activity will correct aircraft and support equipment configuration TCTO status mismatches between base-level MISs and REMIS. Plans, Scheduling, and Documentation (PS&D) reviews MIS products weekly to ensure proper documentation and management by owning and managing TCTO agencies. When an error is detected, PS&D advises affected work centers and provides assistance when necessary to correct the discrepancy. Annual TCTO status reviews will be accomplished annually using a REMIS Master TCTO report and before deleting TCTO records from IMDS/G081. IAW AFI 21-101, all units are required to perform annual TCTO status reviews using a REMIS Master TCTO report and before deleting TCTO records from IMDS CDB/G081. All units are required to accurately document and ensure documentation is correct within the base-level MISs they input their TCTO data completion into. Accurately reflected status completion on aircraft and equipment ensures fleet availability and support equipment maintainability and reliability.

## **9.8 ADMINISTRATIVE TCTO SUPPLEMENTS.**

When a supplement to a basic TCTO is issued to correct administrative problems, the supplement is not entered into the TCTO management system. This case pertains to those supplements not authorizing additional work to accomplish the TCTO's intent. Consequently, don't report TCTO compliance on administrative TCTO supplements.

## **9.9 MANUAL REPORTING.**

The AFTO Form 95 is used to document TCTO status when a automated system is not available or used. TCTO status and other historical information entered on the AFTO Form 95 is used to identify the equipment's TCTO, to plan required follow-on maintenance, determine materiel support needs, and to alert maintenance planning personnel to conditions which demand management attention.

## **9.10 APPLICABILITY.**

If automated reports are used, they serve as the TCTO historical document for the equipment and are updated as prescribed in MDD system users manuals and the applicable chapter of this TO. Entries regarding TCTO status are not required on an AFTO Form 95 for those TCTOs included in an automated report.

9.10.1 For C-E equipment, TCTO status is maintained on each system or set for which a TCTO is written. This can include major subsystems and operating assembly (OA) groups. For large complex radar and communication systems involving many components which are modified, a separate form is started for each major subsystem or OA group. For smaller equipment end items or sets, the AFTO Form 95 is maintained for the end item or set.

## **9.11 PROCEDURES FOR RECORDING AND DETERMINING TCTO COMPLIANCE.**

9.11.1 External marking instructions under existing military specifications and directives require TCTOs for commodity equipment to contain instructions for the external item marking when a TCTO compliance is not apparent from visual inspection. This procedure was set up to eliminate the need for initiating and maintaining AFTO Form 95 TCTO documentation on commodity items subject to infrequent modification. When TCTOs are received without the needed marking instructions, or when existing TCTOs do not contain marking instructions, the issuing agency is contacted to obtain the external marking instructions. This applies when either manual or automated information systems are used for reporting.

9.11.2 Configuration changes require at least two entries on the AFTO Form 95 when either form is used as a status document. An entry is made at the time of TCTO receipt and another entry is made to indicate TCTO compliance. When parts of TCTO kits are needed, an additional entry is made to indicate their receipt.

9.11.3 TCTOs which direct a non-TCTO action also require two entries on the applicable AFTO Form 95 when either form is used as a status document. An entry made at the time of TCTO receipt and another entry made to indicate compliance.

9.11.4 Immediately upon receipt of a TCTO, documentation activity personnel make sure appropriate entries are made on the applicable forms or MIS. All TCTO supplements needing additional work are entered separately. Those supplements not needing additional work do not need a form entry. For a TCTO which pertains to an assigned weapon system or equipment item, but does not specify the equipment serial numbers involved, the documentation supervisor ensures a proper entry is made on the applicable AFTO Form 95 information system, for the equipment affected. If inspection reveals this entry is not applicable, appropriate entries are made. The TCTO documentation is accomplished under this TO.

9.11.4.1 Temporary modifications, whether for a mission or specific test program, will be appropriately documented in the equipment status forms (AFTO 781-series or 244-series) and appropriate historical records (AFTO Form 95). Annotation will be in the active portion (the AFTO Form 781A for instance) of the records. The temporary modification annotation will remain there and active until the equipment is returned to the original configuration.

9.11.4.2 Permanent modifications which are not accounted for in TCTO reporting systems are recorded on the AFTO Form 95 in the same manner as TCTOs.

9.11.4.3 Base-level personnel are not obligated to make entries on the AFTO Form 95 for TCTOs specifying depot-level work. Depot-level teams/personnel will ensure completed depot- or field-level TCTOs are entered into REMIS, as completed. Depot-level TCTOs which previously have been entered, but not complied with, must have rationale for noncompliance documented on the AFTO Form 95.

9.11.4.4 To furnish a means of flagging the type of TCTO listed on an AFTO Form 95, the following codes are used; immediate action "I," urgent action "U," routine action "R," and safety "S." The appropriate code letters are entered on the AFTO Form 95 following the title of each individual TCTO listed in column B. REMARKS.

9.11.4.5 The required TCTO information is normally entered on the AFTO Form 95 in the sequence in which the TCTOs are received. Base-level activities can establish local sequencing procedures if needed.

9.11.4.6 AFTO Form 95 entry instructions are found in TO 00-20-1.

## **9.12 AFTO FORM 95 TCTO ENTRIES.**

9.12.1 Page of Pages. Enter the page number and number of pages.

9.12.2 Block 1, Mission Design Series/Type Model And Series. Enter applicable data. Enter the term "QEC" for quick-engine change kits.

9.12.3 Block 2, Manufacturer. Enter the name of the equipment's manufacturer.

9.12.4 Block 3, Serial Number. Enter the serial number or registration number of the item identified in block 1.

9.12.5 Block 4, Acceptance Date. Enter the date the equipment was accepted by the Air Force. If unknown, enter "unknown."

9.12.6 Column A, Date. Record the date of the entry.

9.12.7 Column B, Remarks. Enter the TCTO number and date, short title, type TCTO code letter, and TCTO data code number. When the AFTO Form 349 identifies the TCTO is complied with, enter "COO" and the compliance date. If the title to a modification for cryptologic equipment is not classified, it is entered in this column. If the title is classified, enter a remark to indicate the title is classified and to see the instructions for identification. (Example: Title is classified, see KAB-150A for identification).

9.12.7.1 If REMIS rejects record due to data code duplication, determine if TCTO number of duplicate datacode is loaded to ETIMS.

9.12.7.1.1 If TCTO number of duplicate datacode is in ETIMS and both TCTO numbers have same datacode, request new datacode through Site Functional Office (see <https://cs3.eis.af.mil/sites/21298/default.aspx>).

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9.12.7.1.2 If TCTO number of duplicate datacode is in ETIMS with different datacode, submit help request through REMIS helpdesk to have datacode corrected on other TCTO number.

9.12.7.1.3 If TCTO number of duplicate datacode is not in ETIMS, submit help request through REMIS helpdesk to have datacode record deleted.

9.12.8 Column C, Organization. Enter the designation of the organization accomplishing the TCTO.

### **9.13 MAINTAINING TCTO ENTRIES.**

9.13.1 Upon receipt of a non-administrative TCTO which changes or replaces an existing TCTO, the following actions are taken and appropriate entries made on the AFTO Form 95 regardless of whether the TCTO being changed or replaced has or has not been complied with:

9.13.1.1 Compare the TCTO replaced with the new TCTO to determine if additional work is needed.

9.13.1.2 If the new TCTO needs no additional work, line out the changed portions of the TCTO entry on the AFTO Form 95 or AFMC Form 253, and enter the new TCTO number and date on a new line entry. If the replaced TCTO has been previously complied with, an entry for the new TCTO is made in column B to show compliance. When a replaced TCTO has not been previously complied with, an entry is made in columns B and C to identify the new TCTO workload.

9.13.1.3 If additional work is required by the new TCTO, line out the replaced TCTO and enter the new TCTO number and date, short title, type TCTO code letter, and data code on the next open line.

9.13.2 When a TCTO which has not been complied with is rescinded, line out the entry and enter (RESC) rescinded and the rescission date. Contact the PM or ES for directions in accordance with TO 00-5-15 and add a line entry with the manager's name, the date, and instructions to either comply with the TCTO or disposition instructions.

9.13.3 When an entry was made for a TCTO which is not applicable to the weapon system or equipment, line out the entry and enter "NA" (not applicable) followed by the date of this determination.

9.13.4 When a TCTO has been previously complied with but not signed off, enter "PCW" (previously complied with) followed by the date of this determination.

9.13.5 When a TCTO was entered in duplicate, line out the entry and enter the word "Duplicate" followed by the date of this determination.

9.13.6 Upon receipt of an interim TCTO specifying accomplishment and needing an entry on the AFTO Form 95, the procedures for TCTO entries in this chapter are applied. Application of these procedures typically eliminates any need for additional entries when the TCTO is received.

9.13.7 When a TCTO is no longer compliant, line out the entry recording original TCTO compliance. Then enter "decompliance" above the line out, along with the date of decompliance, and the decomplying activity.

9.13.8 Those entries for engineering change proposals which were incorporated into the equipment during production are lined out.

### **9.14 TCTO STATUS REPORTS.**

9.14.1 TCTO status reports may be obtained on-line from the information systems listed in paragraph 9.3.

### **9.15 ANNUAL TCTO STATUS REVIEW.**

9.15.1 All units possessing a weapon system will obtain a status list from one of the automated systems listed in paragraph 9.3 and reconcile it against records maintained at base level. Discrepancies that can't be corrected at the base level should be forwarded to the Single Manager - TCTO monitor for correction in the central database. Engine TCTOs are reviewed quarterly, IAW TO 00-25-254-1.

9.15.2 IMDS will process TCTO synchronization programs at the end of each month to retransmit status records that did not successfully process into REMIS. Transactions that do not pass edits will be returned to the sending unit for correction and placed in Error Suspense at REMIS for review by the PM.

## CHAPTER 10

### AFMC ACTIONS IN SUPPORT OF MDD

#### 10.1 GENERAL.

This chapter provides guidance for establishing and maintaining master validation tables (e.g. WUC tables) in REMIS, establishes Time-Compliance Technical Order (TCTO) responsibilities, and assigns responsibilities to the Air Force Sustainment Center (AFSC), Air Logistics Complexes (ALCs), Program Managers (PMs), and AFMETCAL for collecting and reporting depot maintenance data.

#### 10.2 PROGRAM MANAGER RESPONSIBILITIES.

10.2.1 The overall responsibility for the performance of the weapon system/equipment and its components rests with the PM. This responsibility includes monitoring the Reliability and Maintainability (R&M) of the component parts of the system. This oversight requires accurate data be available on the performance of the system and its component parts whether managed by a PM or by a separate commodity manager. To ensure R&M data is accurate requires constant vigilance over the completeness of the edit tables in the AF Maintenance Data Documentation (MDD) systems. The following delineates those specific responsibilities:

10.2.1.1 Ensure that organic and non-organic work authorization documents, contracts, work specifications, project directives, etc., for MDD-reportable equipment, specify MDD reporting IAW this chapter.

10.2.1.2 When acquiring a new weapon system/equipment, coordinate MDD requirements with all affected logistics agencies (i.e., ALCs, MAJCOMs, Commands, PGM, SPOs, Lead Commands, etc.) to ensure submission and control of maintenance data inputted into standard MIS (i.e. REMIS, IMDS, G081, CEMS, etc.) by ALCs and contractors.

10.2.1.3 Provide guidance or assistance to ALCs and contractors to resolve MDD reporting problems.

10.2.1.4 Ensure maintenance communities MDD input from contractor is processed directly into REMIS or through applicable MIS into REMIS. Proprietary or non-standard system usage does not relieve this requirement. (Refer to paragraph 3.7)

10.2.1.5 Ensure that organic and non-organic work authorization documents, contracts, work specifications, project directives, etc., specifically state the need of a user-id/password to access REMIS and other MIS IAW applicable AF security directives.

10.2.1.6 Notify applicable Contract Administration Office if contractor does not submit required MDD or if quality of contractor MDD is deficient.

10.2.2 Program Manager Duties. The Program Manager shall:

10.2.2.1 Ensure that DI-MISC-81371 and DI-MISC-81372 are listed on DD Form 1423, *Contract Data Requirements List* submitted to the Data Management Officer (DMO) in response to the data call. If the contract involves engines, DI-MGMT-81325 must also be listed on the DD Form 1423.

10.2.2.2 Coordinate MDD requirements with other ALC directorates to help ensure submission and control and input of AFSC and contractor maintenance data.

10.2.2.3 Provide guidance or assistance to ALC and contractors to resolve MDD reporting problems.

10.2.2.4 Issue local operating instructions (OIs) as required to supplement MDD regulations.

10.2.2.5 Receive depot-level MDD input from contractor in the form of IMDS/REMIS digital format, and ensures the data is processed into REMIS.

10.2.2.6 Arrange for contractor password and ID when data is input directly to a data system as part of a contract.

10.2.2.7 Notify applicable Contract Administration Office:

10.2.2.7.1 If contractor does not submit required MDD.

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10.2.2.7.2 If quality of contractor MDD is deficient.

10.2.3 Work Unit Code (WUC)/Logistics Control Number (LCN) Tables. WUC/LCN Tables provide the hierarchical breakdown of the systems and subsystems for MDD reporting. The master WUC tables are maintained in REMIS and transmitted to the field for use in editing data. Table accuracy must be of primary concern, since maintenance actions cannot be reported from field or depot level without accurate tables.

10.2.3.1 The WCN/LCN tables will be developed, established in REMIS and transmitted to the appropriate data system prior to deployment of the weapon system. Procedures for maintaining the tables in REMIS and transmitting updates to field offices are in the REMIS user manual.

10.2.3.2 Establishing WUCs/LCNs for commodities installed on a weapons system must be coordinated by the PM.

10.2.3.3 Serial-tracked/time-change indicators must be set when required, otherwise time-change data is not recorded. Serial tracking may be selected when required but judicious use must be made of this capability because it causes added work for the field maintenance personnel. XB3 (base-level non-recoverable items normally managed with the stock fund program) time-change items that do not have a manufacturer's serial number will not be coded as serial tracked in REMIS or MIS. Only configure XB3 items as time change.

10.2.3.4 Block numbers must be added to the WUC/LCN tables as applicable.

10.2.3.5 When a weapon-system-on-weapon-system relationship exists, the relationship will be established via SRD table records. Subordinate system WUC/LCN will be loaded to their own equipment WUC/LCN table. If tracked using ID-on-ID, subordinate end-item equipment WUCs/LCNs are no longer required to be included in the higher end-item WUC/LCN table. The following procedures apply:

10.2.3.5.1 The WUC manager for the subordinate system shall maintain the WUC/LCN table for the subordinate system. The WUC manager is responsible for making changes and transmitting them to the users.

10.2.3.5.2 The subordinate system WUC manager shall notify the primary system WUC manager by phone, FAX, or electronic-mail of any WUC/LCN changes to be accomplished on the primary system WUC/LCN table. This notification shall be followed by an AFTO Form 22. When a subordinate system has primary system WUC-managed components installed on it, (i.e., propeller installed on an engine), the subordinate system WUC manager is responsible to ensure these WUCs are loaded to the subordinate system.

10.2.3.5.3 The primary system WUC manager shall make the changes to the WUC/LCN table for the primary system and transmit them to the users.

10.2.4 Time-Compliance Technical Orders (TCTOs). TCTOs are issued against a weapon system to modify the system or to perform a critical inspection. In either case, it is critical that compliance be closely monitored.

10.2.4.1 Master TCTO Record. TCTO master records must be entered in REMIS immediately following assignment of TCTO number, data code, and revision date so that compliance may be recorded. REMIS passes the data to all affected MISs so that consistent reporting can take place.

10.2.4.2 When a master TCTO record is added to REMIS, the PM must ensure that the old and new part numbers are in the D043 and REMIS master part number table. Procedures for managing TCTO records and Part Numbers (P/N) in REMIS are in the REMIS user's manual.

10.2.5 Depot MDD. The single manager is responsible for the collection of depot-level maintenance data IAW this TO , unless waived as specified in paragraph 3.6 of this manual. This applies to all repairs (programmed, non-programmed, scheduled, and unscheduled).

10.2.5.1 The method of input of organic depot MDD is left to the discretion of each repair center. Centralized input of MDD data is acceptable. However, it is advisable that each repair activity input its own records so errors can be identified and corrected at the source.

10.2.5.2 For contractor-repaired items, the single manager has the option to require the repairing activity to provide hard copy MDD records to be input to REMIS as designated by the single manager or, where deemed economically feasible, to require direct reporting into REMIS by the contractor. Reference paragraph 3.7.

### **10.3 AIR LOGISTICS COMPLEXES (ALCS) AND CONTRACTOR MAINTENANCE DATA DOCUMENTATION RESPONSIBILITY.**

This chapter assigns responsibility to the ALCs for organic depot and contractor MDD. MDD for depot-level maintenance and TCTOs compliance is essential for the accomplishment of maintenance engineering and materiel management functions. The submission and control of MDD is outlined in this chapter and fully described in Instructions, Technical Orders, and Data Item Descriptions (DIDs).

**10.3.1 Policy.** Depot-level maintenance, two-level maintenance, TCTO compliance and configuration data will be reported by the ALC's contractors to REMIS. Engine-related data will be reported in CEMS. Time Changes, Inspections, and repair actions conducted while the system is in AFMC possession will also be reported. Type IIA PMELs will report MDD according to AFMCM 21-303, Vol. 2. The ALCs will evaluate and audit organic and non-organic depot-level MDD as explained in this chapter.

**10.3.2 Waivers.** The PM may grant a waiver from MDD requirements. The waiver must be signed at directorate level and a copy provided to HQ AFMC/A4FI. Include the following information in all waiver requests:

- Purchase Request number or Project Order number
- Weapon System or end item
- NSN
- P/N
- Noun
- WUC/LCN
- Number of items to be repaired
- Latest Mean Time Between Maintenance (MTBM)
- Statement of justification
- Name, office symbol, and telephone number of PM
- Name, office symbol, and telephone number of POC

#### **NOTE**

TCTO and configuration reporting will not be waived.

### **10.3.3 Complex Responsibilities.**

**10.3.3.1** Establish a POC for MDD at the center.

**10.3.3.1.1** Distribute information and provide guidance or assistance as necessary to other directorates and contractors.

**10.3.3.1.2** Issue local instructions as required to supplement MDD instructions.

**10.3.3.1.3** Take action as necessary to ensure compliance with MDD regulations.

**10.3.3.2** The Production Areas will:

**10.3.3.2.1** Report maintenance data IAW procedures outlined in this TO.

### **10.4 AFMC/A4FI RESPONSIBILITIES.**

HQ AFMC/A4FI is the Air Force OPR for MDD policy that includes collection of maintenance data from field, depot, and contractor activities.

**10.4.1 Standard Codes.** HQ AFMC/A4FI is responsible for assignment of How Malfunction, Action Taken, When Discovered, and Type Maintenance Codes in REMIS.

### **10.5 CONFIGURATION MANAGEMENT/TCTO AND TCI REPORTING.**

**10.5.1 Configuration Management.** Configuration management is a discipline comprised of three major areas of effort. The first is identification, which is the process of establishing and describing the contractual baseline.

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10.5.1.1 Identification is the process of establishing and describing the weapon system/equipment baseline. The description of the baseline is accomplished in technical documentation (specifications and drawings).

10.5.1.2 Configuration Control is the process of maintaining the baseline identification, once established, and regulating all changes to that baseline.

10.5.1.3 Configuration Accounting is the process of recording status of all changes to the baseline configuration. Accounting for modifications to equipment is covered in this TO.

10.5.1.4 Configuration Status is the process of recording time change, serially-tracked items, significant maintenance actions IAW TO 00-20-1, [Chapter 10](#), inspections, and mission equipment installed on the system.

10.5.1.5 **TCTO Reporting:** REMIS is the master repository for all Air Force TCTO records and reports, except classified programs.

10.5.1.6 Standard maintenance data is not always obtained for equipment being used for research or testing. TCTO master records for equipment in this status will not be input to the configuration-management systems. This policy must be rigidly followed to preclude unaccomplished TCTO manhours appearing on the configuration-management system reports. When equipment is no longer required for research or testing and is to be transferred to the operational inventory, the equipment is updated to the latest configuration. At this time, master records shall be initiated for the equipment, and normal reporting procedures shall be instituted.

10.5.1.7 TCTO master records in REMIS must be correct. The PM is responsible for extending the rescission date of TCTOs. Sixty days after the rescission date for each TCTO that has expired, open records will be updated. The 60-day interval is to ensure applicable maintenance data has processed through the various information systems. In those cases where the PM does not extend the rescission date of a TCTO and compliance may be accomplished at a later date, (crash-damaged, bailed, leased, or loaned, aircraft/system, etc.), do not close out the open record status.

10.5.1.8 TCTO Managers are responsible for building and maintaining the TCTO master records in REMIS and pushing the records to the field.

10.5.1.9 Instructions for maintaining TCTO records and status reports are contained in the REMIS user manual.

### 10.5.2 Configuration Tables.

10.5.2.1 Approved configuration tables are used by selected weapon systems to control part numbers installed on those systems. The Single Manager is responsible for the accuracy of these tables in the REMIS data base and pushing the tables to the field.

10.5.2.2 The IMDS CDB will require Logical Configuration Tables to be built and maintained by the PM. The PM and the using commands will jointly determine the extent of the table. As a minimum, the table will contain the serially tracked warranted, inspected and time change part numbers.

10.5.2.3 Recommended changes for tracking purposes will be routed through the MAJCOM Functional for that system, to the lead command if different, then to the weapon system configuration table manager for final approval and inclusion to the table.

## 10.6 DEPOT MAINTENANCE DOCUMENTATION.

10.6.1 Depot Maintenance Actions to be Documented. The primary intent of contract and depot data collection is to obtain information on repair or fix actions incident to correction of malfunctions and for configuration status. The term "depot" in this TO refers to both organic and contract depot maintenance. Reporting will be accomplished on the following in accordance with authorized directives:

10.6.1.1 All TCTO, TCI (to include CAD/PAD), serially-controlled items and -6 (or equivalent manual) inspection actions.

10.6.1.2 All engine repairs identifying the reason the engine was sent to the depot or reason for failure.

10.6.1.3 All depot programmed repair, modifications and/or routed-item repairs including checked and found serviceable, NRTS, and condemned.

10.6.1.4 All NRTS actions (Specialized Repair Activity (SRA) or depot modification and/or PDM to distant SRA).

10.6.1.5 All Management of Items Subject to Repair (MISTR) actions including NRTS, bench check, primary reason for repair, and condemnations.

10.6.1.5.1 All temporary workload (AFMC IMT Form 206, *Temporary Work Request*) actions including NRTS, bench check, primary reason for repair, and condemnations.

10.6.1.6 Bit and piece data. Only report the part or parts that caused the actual discrepancy.

10.6.1.7 All two-level maintenance actions.

10.6.1.8 All depot maintenance actions that are "over and above (O&A)" or "unscheduled".

10.6.1.9 Document Remove and Replace, (to include Remove and Re-Install) of weapon system/equipment components.

10.6.1.10 All significant maintenance actions IAW TO 00-20-1, [Chapter 10](#).

#### NOTE

Support General Code 03900, Depot Programmed Maintenance, will be used when a system, or a system components are returned to the depot for scheduled maintenance when a MJSN is not assigned for that system. The code will be used by the depot to record that an item or system was overhauled due to time expiration or schedule, rather than because of a specific failure. If a failure is discovered during overhaul, or maintenance is required beyond what is scheduled, then additional actions will be recorded in addition to the 03900/MJSN record.



## APPENDIX A WORKCENTER CODES

### A.1 PURPOSE.

A.1.1 Workcenter codes (WCC) are used to identify organizational elements to which maintenance personnel are assigned. These codes are designed for use in the MDD to identify functional elements accomplishing maintenance and the manhours expended by maintenance personnel. The purpose of this section is to provide an authoritative source that is readily available to each workcenter and to define the requirement for assigning workcenter codes.

#### NOTE

Air Force bases currently using G081 will use the G081 Master Workcenter code lists as dictated by HQ AMC.

A.1.2 The IMDS CDB codes shown in this appendix are for reference only. The numbers that are missing from the previous appendix may continue to be used until such time as the unit has an organizational change or is converted to IMDS CDB.

### A.2 PROCEDURES.

Workcenter codes consist of five characters and are constructed as outlined in succeeding paragraphs. Standard workcenter codes provide the capability to correlate or summarize maintenance, scheduling, and/or manhour data by workcenter. This information is essential to the management of maintenance resources. The standard workcenter codes will be used by all organizations engaged in the maintenance functions. Only those workcenter codes that are necessary will be assigned. For example, in small units a single workcenter code such as 21220 may be adequate for the plans and scheduling and documentation function. In larger units, it may be beneficial to use two workcenter codes as 21221 for plans and scheduling, and 21222 for the documentation function. When subfunctions are combined into the workcenter, the lowest numbered workcenter code will be used. For instance, if workcenters 21030 and 21040 are combined, workcenter code 21030 will be used. When major staff elements are combined, the workcenter codes of the larger predominant function will be used. This does not include major functions which must maintain the workcenter structure as outlined.

### A.3 ASSIGNMENT OF WORKCENTER CODES.

Characters for each of the five positions of workcenter codes will be assigned as follows:

A.3.1 The first position of the workcenter code can be either an alpha or numeric character. It is used to identify divisions, wings, separate squadrons, or commands located on a base.

A.3.2 The fifth position of the workcenter code can be either an alpha or numeric character. Characters for the fifth position of the workcenter code are locally assigned.

A.3.3 A dash is used in each position of the workcenter codes in the following list to indicate that the characters to be used are not specified and are to be assigned by the unit or major command as indicated in the TO. When recording maintenance, zeros should be used in the fourth and fifth position of the workcenter codes shown with a dash if no further breakout is required, such as -1000 or -6000 for the chief-of-maintenance workcenter.

WCC	WCC DESCRIPTION
-100-	Commander
-101-	Analysis
-102-	Training
-103-	Administration
-104-	Mobility
-110-	Quality Assurance
-113-	Stand/Eval
-116-	Tech Orders
-117-	Flight Test
-120-	Maintenance

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-121-	Job Control
-122-	Plans and Scheduling
-123-	Material Control
-160-	Management
-161-	Analysis
-21--	Flight Line
-23--	AGE (Auxiliary Power Units, etc.)
-31--	Support Equipment (i.e. compressors, generators, etc.)
-250-	Base Flight
-252-	Transient Maint
-310-	Fabrication
-311-	Machine Shop
-312-	Metal Processing
-313-	Structural Repair
-314-	Corrosion Control
-315-	Life Support
-317-	NDI
-320-	Propulsion
-321-	Recip Engine
-322-	Propeller
-323-	Jet Engine
-332-	Fuel Systems
-333-	Electrical Systems
-334-	Pneudraulics
-336-	Environmental Sys
-339-	Egress
-340-	Supervision
-343-	Support Equipment
-410-	Comm/Nav
-413-	Electronic Warfare
-415-	Auto Flight Cont
-431-	Bomb/Nav
-432-	Weapons Control
-434-	Photo/Reccon
-435-	Sensor
-511-	Weapons Loading
-513-	Gun Systems
-520-	Muni Store and Maint
-521-	Nuclear Maint
-523-	Convent Maint
-524-	Re-entry Systems
-530-	EOD
-632-	Nav Aids Terminal
-633-	Nav Aids En route
-635-	Meteorological
-636-	Airfield WX
-637-	Regional WX

-638-	Global WX
-639-	Solar Observation
-640-	Ground Radar
-641-	Flight Facilit Radar
-642-	Ground Radar
-644-	Satellite C-E Fixed Ground Stations
-645-	Satellite C-E Mobile Ground Stations
-650-	Ground Comm Sys
-652-	COMSEC Sys
-653-	Auto Switch Equip
-654-	Inside Plant Tele
-655-	Telephone System
-656-	Cable System
-658-	Space Comm Sys
-659-	Wideband Sys
-65A-	Ground Radio
-65B-	Intra-Base Radio
Tactical Missiles	
-840-	Management
-8401	Munitions Supply
Missile Section	
-842-	Munitions Branch
-8421	Nuc Missile Maint
-8422	Conv Missile Maint
(Minuteman)	
-8601	Administration
-8602	Maintenance Supervision
-861-	Shop Maintenance
-8611	Mechanical
-8612	Electronics Laboratory
-8613	Power, Refrigeration and Electrical (PREL)
-862-	Facility Maintenance
-8621	Periodic Maintenance Teams
-8623	Facility Maintenance Teams
-8624	Pneudraulics
-8625	Corrosion Control
-863-	Destruct Ordinance
-864-	Vehicle and Equipment Control
-8641	Vehicle Control
-8642	Equipment and Configuration Control
-865-	Re-entry Vehicles
-8651	Munitions Production Control
-8652	Re-entry Vehicle Maintenance
-888-	Aerospace Ground Equipment (when authorized)
-880-	Missile Systems Maintenance-Other
-881-	Refurbishment and Corrosion control (VAFB only)

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-8812	Corrosion Control (VAFB only)
-8813	Refurbishment Equipment (VAFB only)
-883-	Facility Maintenance Management (VAFB only)
-884-	Mechanical-Electronic Maintenance (VAFB only)
-885-	Munitions Branch (VAFB only)

**DEPOT**

-900-	Orderly Room
-901-	Operations
-902-	Flight Surgeon
-903-	Intel
-904-	Historian
-905-	Public Affairs
-906-	Comptroller
-907-	Personnel
-908-	POL
-909-	Debrief
-910-	Aircrew
-911-	Vehicle Liaison
-912-	Avionics Intern
-913-	Security Forces
-914-	Services
DEPOT"	DEPOT

**NOTE**

Minuteman (applicable to wings I, III, V, VI, and VII): Missile Alert Facility (MAF) and Launch Facility (LF) workcenter configuration.

**Squadron "A"**

"A" Flight	"B" Flight	"C" Flight	"D" Flight	"E" Flight
-SA01 (MAF)	-SB01 (MAF)	-SC01 (MAF)	-SD01 (MAF)	-SE01 (MAF)
-SA02 (LF)	-SB02 (LF)	-SC02 (LF)	-SD02 (LF)	-SE02 (LF)
-SA03 (LF)	-SB03 (LF)	-SC03 (LF)	-SD03 (LF)	-SE03 (LF)
-SA04 (LF)	-SB04 (LF)	-SC04 (LF)	-SD04 (LF)	-SE04 (LF)
-SA05 (LF)	-SB05 (LF)	-SC05 (LF)	-SD05 (LF)	-SE05 (LF)
-SA06 (LF)	-SB06 (LF)	-SC06 (LF)	-SD06 (LF)	-SE06 (LF)
-SA07 (LF)	-SB07 (LF)	-SC07 (LF)	-SD07 (LF)	-SE07 (LF)
-SA08 (LF)	-SB08 (LF)	-SC08 (LF)	-SD08 (LF)	-SE08 (LF)
-SA09 (LF)	-SB09 (LF)	-SC09 (LF)	-SD09 (LF)	-SE09 (LF)
-SA10 (LF)	-SB10 (LF)	-SC10 (LF)	-SD10 (LF)	-SE10 (LF)
-SA11 (LF)	-SB11 (LF)	-SC11 (LF)	-SD11 (LF)	-SE11 (LF)

**NOTE**

- Additional flights will be the same except for the third position. Wing I fourth squadron will be the same as wing VI configuration using LCF designators - SPP, -SQQQ, -SRRR, -SSSS, and -STTT.
- Minuteman (applicable to wing VI): Missile alert facility and LF workcenter configuration.

-SAAA (MA)	-SBBB (MA)	-SCCC (MA)	-SDDD (MA)	-SEEE (MA)
-SA01 (LF-01)	-SB11 (LF-11)	-SC21 (LF-21)	-SD31 (LF-31)	-SE41 (LF-41)
-SA02 (LF-02)	-SB12 (LF-12)	-SC22 (LF-22)	-SD32 (LF-32)	-SE42 (LF-42)
-SA03 (LF-03)	-SB13 (LF-13)	-SC23 (LF-23)	-SD33 (LF-33)	-SE43 (LF-43)
-SA04 (LF-04)	-SB14 (LF-14)	-SC24 (LF-24)	-SD34 (LF-34)	-SE44 (LF-44)
-SA05 (LF-05)	-SB15 (LF-15)	-SC25 (LF-25)	-SD35 (LF-35)	-SE45 (LF-45)
-SA06 (LF-06)	-SB16 (LF-16)	-SC26 (LF-26)	-SE36 (LF-36)	-SE46 (LF-46)
-SA07 (LF-07)	-SB17 (LF-17)	-SC27 (LF-27)	-SD37 (LF-37)	-SE47 (LF-47)
-SA08 (LF-08)	-SB18 (LF-18)	-SC28 (LF-28)	-SD38 (LF-38)	-SE48 (LF-48)
-SA09 (LF-09)	-SB19 (LF-19)	-SC29 (LF-29)	-SD39 (LF-39)	-SE49 (LF-49)
-SA10 (LF-10)	-SB20 (LF-20)	-SC30 (LF-30)	-SD40 (LF-40)	-SE50 (LF-50)

**NOTE**

Additional squadrons will be the same except for third position, which will be the flight alpha designators as applicable. Designators for MAP's second, third and fourth squadrons will be:

-SFFF	-SGGG	<b>Squadron "B"</b> -SHHH	-SIII	-SJJJ
-SKKK	-LLLL	<b>Squadron "C"</b> -SMMM	-SNNN	-SOOO
-SPPP	-SQQQ	<b>Squadron "D"</b> -SRRR	-SSSS	-STTT

<b>WCC</b>	<b>Sub Function</b>	<b>WCC DESCRIPTION</b>
-S9--	ICBM Non-Reporting Workcenters (Minuteman and for other staff agencies and missile combat crews. Does not include maintenance staff)	
-S9--	Missile Combat Crews	
Civil Engineering		
-M400	Management-Base Civil Engineering	
ICBM Maintenance		
-M401	Administration/Training	
-M411	Program Development	
-M412	Planning	

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-M413	Real Estate
-M414	Cost Accounting
-M415	Materiel Control
-M420	Management-Missile Engineering
-M421	Engineering-Tech/Design
-M43-	Management-Operations/Maintenance
-M431	Work Control
-M441	Equipment Operations
-M442	Pavements
-M443	Grounds Maintenance
-M451	Structural
-M452	Protective Coating
-M453	Plumbing
-M454	Metal Working
-M455	Masonry
-M457	Structural Maintenance Repair Team (SMART)
-M461	Refrigeration/Air Conditioning
-M462	Liquid Fuels
-M463	Heating Systems
-M468	Instrument Controls
-M469	Electronic Controls
ICBM Maintenance	
-M471	Interior Electric
-M472	Exterior Electric
-M480	Power Production
-M491	Water/Waste
-M493	Entomology

DEPOT WORKCENTERS/RCCs

PROPULSION MANAGEMENT DIRECTORATE (OC-ALC/LP) ORGANIZATION

STRUCTURE/ACCOUNTING ORGANIZATION CODES AMENDMENT 4

	<b>Org Symbol</b>
• PLATING UNIT	LPPPC
• HEAT TREAT/PLASMA/BLAST AND PAINT UNIT	LPPPC
• CLEANING/BIASING AND WORK CONTROL DOCUMENT UNIT	LPPPC
• DISASSEMBLY UNIT	LPPPC
• PRATT AND WHITNEY ENGINE SEC- TION	LPPPE
• TF30 ASSEMBLY UNIT	LPPPE
• TF33/J57 ASSEMBLY UNIT	LPPPE
• STACK UNIT	LPPPE

- GENERAL ELECTRIC AND ALLISON ENGINE SECTION LPPPF
  - J79/TF41 AFTERBURNER ASSEMBLY UNIT LPPPF
  - F101/F108/F110/F118 ROTOR UNIT LPPPF
  - F101/F108/F110/F118 ENGINE REPAIR UNIT LPPPF
- CLSS ENGINE SECTION LPPPL
  - CLSS ENGINE SQUADRON LPPPL
- CASE REPAIR SECTION LPPPM
  - INLET GUIDE VANE/COMPRESSOR CASE/NDI/COMBUSTION CAN UNIT LPPPM
  - BEARING HSNGL HOUR GLASSI TOOLING REPAIR/PME UNIT LPPPM
  - GEARBOX REPAIR AND ASSEMBLY UNIT LPPPM
  - CASE FRAME REPAIR UNIT LPPPM
- ROTATING COMPONENT SECTION LPPPN
  - WELDING/GRINDING REPAIR UNIT LPPPN
  - TURBINE/COMPRESSOR MANCHIN-ING/WELDING UNIT LPPPN
  - CLEANING/INSPECTION/SURFACE ENHANCEMENT UNIT LPPPN
  - NDI/KITTING UNIT LPPPN
- ENGINE TEST AND VERIFICATION SECTION LPPPT
  - ENGINE TEST UNIT LPPPT
  - ENGINE VERIFICATION UNIT LPPPT
  - 2ND WING ENGINE SHOP (PSEUDO) LPPPT

## AIRCRAFT MANAGEMENT DIRECTORATE (OC-ALC/LA)

## ORGANIZATION STRUCTURE/ACCOUNTING ORGANIZATION CODES AMENDMENT 7

- 135 AIRCRAFT SECTION LAPP
  - 135 MOVING LINE UNIT 1 LAPP
  - 135 MOVING LINE UNIT 2 LAPP
  - 135 PRE- AND POST-DOCK UNIT LAPP
  - EXAMINATION, INVENTORY, AND TOOL CRIB UNIT LAPP
  - 135 OVERFLOW UNIT LAPP
  - 135 SPECIAL PURPOSE UNIT LAPP
- B-1B BOMBER AIRCRAFT SECTION LAPPB
  - DOCK UNIT LAPPB
  - STRUCTURAL UNIT LAPPB
  - PRE- AND POST-DOCK UNIT LAPPB
  - ELECTRONICS UNIT LAPPB
- SERVICES SECTION LAPPC
  - DISASSEMBLY AND CLEANING UNIT LAPPC
  - PAINT UNIT LAPPC
  - SERVICING UNIT LAPPC

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- E-3 AIRCRAFT SECTION LAPPE
- E-3 AIRCRAFT UNIT LAPPE
- E-3 ELECTRONICS UNIT LAPPE
- E-3/KE-3 ROYAL SAUDI AIR FORCE UNIT LAPPE
- BOMBER A/C MODIFICATION SECTION LAPPF
- B-52 AIRCRAFT UNIT LAPPF
- STRUCTURAL UNIT LAPPF
- EGRESS UNIT LAPPF
- ELECTRONICS UNIT LAPPF
- NONDESTRUCTIVE INSPECTION LAPPI

COMMODITIES MANAGEMENT DIRECTORATE (OC-ALC/LI)

- AIR ACCESSORIES SECTION LIPPA
- AIR ACCESSORIES UNIT LIPPA
- CRUISE MISSILE ENGINE UNIT LIPPA
- TEXTILE AND LIFE SUPPORT UNIT LIPPA
- OXYGEN AND ASSOC EQUIPMENT UNIT LIPPA
- COMMODITIES COMPOSITE AND CSD PRODUCTION SECTION LIPPB
- -135 CSD UNIT (PSEUDO)
- WOOD AND COMPOSITE MANUFACTURE AND REPAIR UNIT LIPPB
- MISTR SHEETMETAL UNIT LIPPB
- F4 CSD UNIT (PSEUDO)
- -141 CSD UNIT (PSEUDO)
- CONSTANT SPEED DRIVE UNIT LIPPB
- AIRCRAFT STRUCTURAL SUPPORT UNIT LIPPB
- FUEL ACCESSORIES SECTION LIPPC
- ELECTRICAL ASSYS OVERHAUL UNIT LIPPC
- FUEL AND GOVERNOR ASSYS OVERHAUL UNIT LIPPC
- FUEL CNTRL OVERHAUL AND BEARING UNIT LIPPC
- FUEL CONTROL AND ASSYS TEST UNIT LIPPC
- COMMODITIES ELECTRONIC SECTION LIPPF
- AVIONICS/ELECTRONICS COMPACT RANGE UNIT LIPPF
- CABLE MANUFACTURE AND REPAIR UNIT LIPPF
- ELECTRONIC/FLIGHT CONTROL UNIT LIPPF
- MANUFACTURE AND REPAIR SECTION LIPPM
- NUMERICAL CONTROL MANUFACTURE, MODIFICATION

- REPAIR UNIT LIPPM
- SHEETMETAL, TUBING, AND CABLE UNIT LIPPM
- TOOLING AND MACHINING UNIT LIPPM
- WELDING UNIT LIPPM
- BOMBER/TANKER AVIONICS SECTION LIPPT

## VALID RCCs

### AIRCRAFT DIRECTORATE (OO-ALC/LA)

MABSBZ TRANSPORTATION  
 MABSDZ MANAGEMENT INFORMATION  
 MABWHZ MANAGEMENT INFORMATION  
 MABWXX RESOURCE MANAGEMENT DIVISION  
 MABWQZ QUALITY SUPPORT  
 MABWWZ WORKLOADING AND FUNDS MANAGEMENT  
 MABXXX AIRCRAFT DIRECTORATE  
 MABXXY AIRCRAFT DIRECTORATE

### LAO OPERATIONS

MABMMA 649TH CLSS (OFF-BASE)  
 MABMMB 649TH CLSS (ON-BASE)  
 MABPBC F-16 ORGANIC/SHEETMETAL  
 MABPBD F-16 MODIFICATION  
 MABPBS F-16 RGC B  
 MABPBX F-16 PRODUCTION BRANCH  
 MABPCX PROCESS ENGINEERING BRANCH  
 MABPDA PREP FOR FLIGHT SECTION  
 MABPDB AVIONICS SECTION  
 MABPDC FLIGHT TEST TDY/RGC B  
 MABPDX FLIGHT TEST BRANCH  
 MABPEA F-16 BLOCK 40/42  
 MABPGA F-16 BLOCK 25/30/32  
 MABPJA F-16 NVIS  
 MABPLB C-130 WORK CENTER  
 MABPLB C-130 WORK CENTER; SHEET METAL  
 MABPLS C-130 RGC B  
 MABPLX C-130 SYSTEM MANAGEMENT BRANCH  
 MABPOX ADMINISTRATION BRANCH  
 MABPOY TRAINING SECTION  
 MABPPX PLANNING BRANCH  
 MABPPY F-16/C-130 PLANNING SECTION  
 MABPPZ F-16/C-130 PLANNING SUPPORT SECTION  
 MABPQX DEPOT MAINTENANCE INVENTORY CENTER  
 MABPSB PREP AND PAINT SECTION  
 MABPSC PREP AND PAINT SECTION  
 MABPSD SERVICES RGC B

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MABPSK	PRODUCTION SUPPORT SECTION (STATION 99)
MABPSP	ECO
MABPSS	PRODUCTION SUPPORT SECTION (E&I)
MABPSX	PRODUCTION SUPPORT BRANCH (SERVICES)
MABPSY	PRODUCTION SUPPORT SECTION (TOOL CRIB)
MABPSZ	PRODUCTION SUPPORT BRANCH
MABPWX	MASTER SCHEDULING BRANCH
MABPXX	AIRCRAFT DIVISION
MABPXY	AIRCRAFT DIVISION
MABCMP	DET 1 CLSS (KADENA)
MABCPC	INDUSTRIAL SECTION (KADENA)
MABCPE	AVIONICS SECTION (KADENA)
MABCPN	TWO LEVEL MAINTENANCE (KADENA)
MABCXX	DET 35 (KADENA)
MABRBX	LGS BB DMSC
MABRCX	COMPOSITE BRANCH
MABRCA	PLASTIC MANUFACTURING AND REPAIR
MABRCB	COMPOSITE AND BONDING
MABRCC	CANOPY/HYDRO/RADOME
MABRCD	RUBBER/PARACHUTE/TEXTILE REPAIR
MABRCE	SHEET METAL/MYLAR MANUFACTURE
MABRDX	LGS DD DMSC
MABREA	F-100 ENGINE
MABREB	T-56 ENGINE
MABREC	TUBING AND SHEETMETAL
MABRED	TWO LEVEL MAINTENANCE T56 (JEIM)
MABREE	TWO LEVEL MAINTENANCE F-100
MABREF	T-56/F100 TEST CELL
MABREG	TWO LEVEL MAINTENANCE T56
MABREX	ENGINE BRANCH
MABRJX	LGS JJ DMSC
MABRKA	F-16 SRU DIGITAL/ANALOG
MABRKB	F-16 LRU AVIONICS/RADIO FREQUENCY
MABRKC	F-18 COMPUTER INERT SYSTEM
MABRMX	LGS EE DMSC
MABRNB	F-4 RADAR
MABRNC	F-16 PROCESS PNEUMATIC
MABRNR	F-16/B1 RADAR
MABRNS	F-15 DISPLAY INDICATOR
MABRSA	PAINT/BEAD BLAST
MABRSB	STRUCTURAL WING REPAIR
MABRSC	C-130 FLIGHT CONTROL, F-16 RUDDER
MABRSF	SHEET METAL MISCELLANEOUS REPAIR
MABRSX	SHEETMETAL STRUCTURE SUPERVISION BRANCH
MABRTX	BRANCH PLANNING/SCHEDULING
MABRTY	FACILITIES, ADMIN, SAFETY, TRAINING

MABRTZ	PLANNING/SCHEDULING FOR STRUCTURES, ENG AND COMPOSITS
MABRXX	TECHNICAL REPAIR DIVISION
MABRXY	SCHEDULE/PLANNING FOR AVIONICS
MABRXZ	AIRCRAFT AVIONICS SUPERVISION BRANCH
MANAAG	GUNS UNIT
MANAAT	TANKS, RACKS, ADAPTERS, PYLONS, SEATS (TRAPS)
MANAEX	PLANNING/SCHEDULING
MANAMX	LGS MM DMSC
MANAXX	ARMAMENT BRANCH
MANCCH	PNEUDRAULICS
MANCCN	EPU
MANCCT	PHYSIOLOGICAL TRAINERS
MANCEX	PLANNING
MANCSX	SCHEDULING
MANCQX	LGS QQ DMSC
MANCWX	LGS WW DMSC
MANCXX	COMMODITIES BRANCH
MANIAC	COMPASS/CABLES
MANIAI	INSTRUMENTS
MANIAP	PHOTONICS
MANIAX	ELECTRONICS SECTION
MANIBA	LAUNCH/GBU
MANIBB	AGM65/ACM/ALCM
MANIBX	ELECTRONICS SECTION
MANIEX	PLANNING
MANISX	SCHEDULING
MANIXX	ELECTRONICS BRANCH
MANOTX	FACILITY ENGINEERING BRANCH
MANOTZ	SUPPORT MANAGEMENT DIVISION
MANPBG	GRINDING UNIT
MANPBP	PLATING UNIT
MANPBX	METAL PROCESSING UNIT
MANPEX	PLANNING UNIT
MANPEY	SCHEDULING UNIT
MANPKX	LGS KK DMSC
MANPNA	CONTRACT WHEELS
MANPND	CONTRACT WHEELS
MANPNE	CONTRACT WHEELS
MANPNF	CONTRACT WHEELS
MANPNG	CONTRACT WHEELS
MANPNM	CONTRACT WHEELS
MANPNT	CONTRACT WHEELS
MANPNX	CONTRACT WHEELS SECTION
MANPSA	STRUT ASSEMBLY
MANPSC	C5/B1B ASSEMBLY UNIT
MANPSE	E&STRIP/BLAST UNIT
MANPSH	C5/FTR MACHINING UNIT

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MANPSM HW MACHINING UNIT  
MANPSX LANDING GEAR SECTION  
MANPWB BRAKE ASSEMBLY UNIT  
MANPWC WHEELS AND BRAKES MACHINING UNIT  
MANPWD WHEEL ASSEMBLY  
MANPWF WELDING UNIT  
MANPWX WHEELS AND BRAKES SECTION  
MANPXZ LANDING GEAR BRANCH  
MANSAX ADMINISTRATIVE  
MANSFX FINANCIAL  
MANSXX INDUSTRIAL SUPPORT BRANCH  
MANWAT 649TH MUNITIONS PRODUCTION  
MANWAX 649TH MUNITIONS ADMINISTRATIVE  
MANXXX COMMODITIES DIRECTORATE  
MANXXZ INDUSTRIAL OPERATIONS DIVISION

**LM ICBM/MISSILES**

MAKDXX SYSTEMS DIVISION  
MAKEXX SAFETY OFFICE  
MAKPAA MISSILE MAINTENANCE  
MAKPAB CABLE/NCU  
MAKPAC PROPULSION SYS ROCKET  
MAKPAD REENTRY SYSTEM LAUNCH PROGRAM  
MAKPAX MISSILE MAINTENANCE BRANCH  
MAKPEB GROUND MECHANICAL (BLDG 847)  
MAKPEC ELECTRONICS (BLDG 100)  
MAKPEX MATERIAL  
MAKPEY OVERHEAD  
MAKPGB SMIC  
MAKPGD PROPELLENT LAB  
MAKPGX MISSILE INTEGRATION FACILITY BRANCH  
MAKPGY SMIC OVERHEAD  
MAKPGZ OVERHEAD - PROPELLENT LAB  
MAKPMD TRANSPORTATION AND STORAGE  
MAKPMX TRANSPORTATION MANAGEMENT  
MAKPMY MISSILE MAINTENANCE SUPPORT BRANCH  
MAKPTC RANGE OPERATIONS  
MAKPTX MISSILE OPERATIONS/RANGE OVHD/DEACT BRANCH  
MAKPVA VANDENBURG  
MAKPWA WING I - MALSTROM AFB  
MAKPWC WING III - MINOT AFB  
MAKPWE WING V - FE WARREN  
MAKPWF WING VI - GRAND FORKS  
MAKPWX RIVET MILE OVERHEAD  
MAKPXX MAINTENANCE DIVISION  
MAKPXY ALERT CENTER  
MAKSHX LGS HH DMSC  
MAKSLX LGS LL DMSC

MAKSOX INDUSTRIAL SUPPORT BRANCH  
 MAKXXX ICBM DIRECTORATE  
**TI TECHNOLOGY AND INDUSTRIAL SUPPORT**  
 MADEAA FUNCTIONAL TRAINING - DIRECT LABOR  
 MADEAX FUNCTIONAL TRAINING MANAGEMENT  
 MADEBX TECHNICAL TRAINING  
 MADECX LOGISTICS/QUALITY TRAINING  
 MADEXY LA HOLDING POOL - TEAM LEADS  
 MADEXX TECHNICAL AND INDUSTRIAL SKILLS DIVISION  
 MADORX RESOURCES MANAGEMENT BRANCH  
 MADORY ADMINISTRATION ANALYSIS BRANCH  
 MADOSY TI ACCRUAL/EXPENSE ACCOUNT  
 MADOXX PROGRAM CONTROL DIVISION  
 MADPEX ENGINEERING AND PLANNING BRANCH  
 MADPEY ENGINEERING SECTION  
 MADPEZ CONTRACTING SECTION  
 MADPLA ELECTRONIC MECHANICAL/OPTICAL DIMENSIONAL  
 MADPLB AUTO TEST EQUIPMENT (ATE) AND RADIAC REPAIR  
 MADPLC TEST SYSTEMS WEST  
 MADPLD MISSILE AND MICROWAVE RADAR ATE  
 MADPLG SMALL MISSILE TEST EQUIPMENT  
 MADPLJ AUTOMATED SYSTEMS ELECTRICAL REPAIR  
 MADPMC WOODMILL AND INVESTMENT CASTING  
 MADPMD KC-130 MODEL SUPPORT  
 MADPME ELECTRONIC SUPPORT SECTION  
 MADPMJ BATTERY SHOP  
 MADPMN NUMERICAL CONTROL  
 MADPMR RAPID RESPONSE  
 MADPMT TOOL AND DIE  
 MADPMX INSTALLATION SUPPORT BRANCH (OVRHD)  
 MADPMY EQUIPMENT MAINTENANCE  
 MADPMZ MECHANICAL SUPPORT  
 MADPRX MATERIAL CONTROL SECTION  
 MADPTY TOOL MANAGEMENT SECTION  
 MADPXX PLANT MANAGEMENT DIVISION  
 MADSAA AIRCRAFT SOFTWARE DEVELOPMENT SECTION  
 MADSAB F-16 AVIONICS INTERMEDIATE (AIS) SHOP SECTION  
 MADSAC AIRBORNE SOFTWARE ENGINEERING SECTION  
 MADSAD AIRBORNE SOFTWARE DEVELOPMENT SECTION  
 MADSAX AIRBORNE SOFTWARE DEVELOPMENT BRANCH  
 MADSEA SOFTWARE ENGINEERING ENVIRONMENT SECTION  
 MADSEB SOFTWARE INFORMATION REPOSITORY SECTION  
 MADSEC CUSTOMER SERVICE SECTION  
 MADSED SOFTWARE TECHNOLOGY CONFERENCE  
 MADSEX SOFTWARE TECHNOLOGY SUPPORT BRANCH  
 MADSFA OPERATIONAL FLIGHT PROGRAM SECTION  
 MADSFB OPERATIONAL FLIGHT PROGRAM SECTION

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MADSFC	OPERATIONAL FLIGHT PROGRAM SECTION
MADSFJ	OPERATIONAL FLIGHT PROGRAM SECTION
MADSFY	OPERATIONAL FLIGHT PROGRAM DEVELOPMENT BRANCH
MADSHX	OPERATIONAL FLIGHT PROGRAM DEVELOPMENT
MADSHA	OPERATIONAL FLIGHT PROGRAM SECTION
MADSHB	OPERATIONAL FLIGHT PROGRAM SECTION
MADSHC	OPERATIONAL FLIGHT PROGRAM SECTION
MADSHD	OPERATIONAL FLIGHT PROGRAM SECTION
MADSHX	OPERATIONAL FLIGHT PROGRAM SUPPORT BRANCH
MADSMB	ATE DEVELOPMENT/MAINTENANCE SECTION
MADSMC	SOFTWARE DEVELOPMENT/INTEGRATION SECTION
MADSMJ	ATE AND WEAPON SYSTEM INTERFACE ENGINEERING
MADSMK	ENGINEERING PROTOTYPE AND TEST SECTION
MADSMN	ENGINEERING PROTOTYPE AND TEST SECTION
MADSMO	WEAPON SYSTEM SOFTWARE ENGINEERING BRANCH
MADSMY	WEAPON SYSTEM SOFTWARE ENGINEERING (DEPREC.)
MADSMZ	HARDWARE TECHNOLOGY (DEPRECIATION)
MADSSA	SOFTWARE CONTROL CENTER (SCC)
MADSTX	SUPPORT BRANCH
MADSTY	SOFTWARE ENGINEERING DIVISION
MADVLC	CHEMICAL SCIENCES LABORATORY SECTION
MADVLE	ELECTRONIC LABORATORY AND ENGINEERING SERVICES
MADVLM	MATERIAL SCIENCE AND ENGINEERING LABORATORY
MADVLV	VERIFICATION LABORATORY SECTION
MADVLY	SCIENCE AND ENGINEERING LABORATORY
MADVNA	SCIENCE AND ENGINEERING LABORATORY
MADVNB	AIRCRAFT X-RAY AND NDI SECTION
MADVNC	ULTRASONIC AND EDDY CURRENT SECTION
MADVND	MISSILE X-RAY AND COMPUTED TOMOGRAPHY
MADVNE	NDI - COMPUTED TOMOGRAPHY (CT)
MADVNF	NDI WHEEL CONTRACT WORKLOAD
MADVNG	NON-DESTRUCTIVE TEST INSPECTION
MADVNH	AIRCRAFT X-RAY AND NON-DESTRUCTIVE TEST INSPECTION
MADVNI	SCIENCE AND ENGINEERING SUPPORT
MADVNJ	MONTHLY EXPENSES/ACCRUAL ACCOUNT
MADVNX	TECHNOLOGY AND INDUSTRIAL SUPPORT DIRECTORATE

**TECHNOLOGY AND INDUSTRIAL SUPPORT DIRECTORATE (WR-ALC/TI)**

MDEAA-	MISCELLANEOUS TRAINING
MDLBB-	BATTERY SHOP TEAM
MDLLA-	ELECTRONIC MECHANICAL DIMENSION UNIT
MDLLB-	INSTRUMENT PHOTO AVIONICS TEAM
MDLLC-	MISSILE TEST EQUIPMENT WEST TEAM
MDLLD-	MISSILE TEST EQUIPMENT EAST TEAM
MDLLE-	AUTOMATED TEST EQUIPMENT (ATE)/INSTRUMENT FAB TEAM

MDLLF- ATE AND RADIO REPAIR TEAM  
 MDLLG- SMALL MISSILE TEST EQUIPMENT TEAM  
 MDLLH- ATE INSTRUMENT FABRICATION  
 MDLLJ- E-35 WORKLOAD  
 MDLMB- HARDWARE TECHNOLOGY TEAM  
 MDLNA- LANDING GEAR PLATING AND X-RAY TEAM  
 MDLNB- ULTRASONIC/EDDY CURRENT TEAM  
 MDLND- MISSILE X-RAY COMPUTED TOMOGRAPHY TEAM  
 MDLNK- NONDESTRUCTIVE TEST INSPECTION  
 MDLPP- PARACHUTE/TEXTILE TEAM  
 MDLRR- RUBBER REPAIR TEAM  
 MDOSA- SMALL COMPUTERS  
 MDPMB- EQUIPMENT MAINTENANCE  
 MDPMC- CARPENTRY SUPPORT  
 MDPMD- DLA SUPPORT  
 MDPME- ELECTRONIC REPAIR TEAM  
 MDRIC- INDUSTRIAL PRODUCTS (METAL)  
 MDRMP- SUPPORT CENTER PACIFIC (KADENA)  
 MDRPM- SPECIAL PROJECTS  
 MDRPC- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT  
 MDRPE- AVIONICS/ELECTRONIC  
 MDRPF- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT  
 MDRPN- AVIONICS ELECTRONIC AND INDUSTRIAL PRODUCT  
 MDSAA- AIRCRAFT SOFTWARE DEVELOPMENT  
 MDSAB- F-16 AVIONICS IMMEDIATE SHOP  
 MDSAC- SOFTWARE TECHNOLOGY TEAM  
 MDSAD- NEUTRAL ENGINEER RESEARCH AND DEVELOPMENT  
 MDSFA- OPERATIONAL FLIGHT PROGRAM  
 MDSFB- OPERATIONAL FLIGHT PROGRAM  
 MDSFC- OPERATIONAL FLIGHT PROGRAM  
 MDSFD- OPERATIONAL FLIGHT PROGRAM  
 MDSHA- AVIONICS SOFTWARE TEST TEAM  
 MDSHB- OPERATIONAL FLIGHT PROGRAM TEAM  
 MDSHC- OPERATIONAL FLIGHT PROGRAM TEST STAND DEVELOPMENT  
 MDSHD- OPERATIONAL FLIGHT PROGRAM SUPPORT  
 MDSMA- MISSILE SYSTEM E35/ATE SOFTWARE  
 MDSMB- ELECTRONIC DEVICES DEVELOPMENT  
 MDSMC- MISSILE OPERATIONAL SOFTWARE  
 MDSSA- SOFTWARE ENGINEERING SUPPORT  
 MDVLC- CHEMICALS SCIENCE LAB TEAM  
 MDVLM- MATERIALS SCIENCE LAB TEAM  
 MDVLV- MATERIALS SCIENCE LABORATORY  
 MDVVH- HAZARDOUS WASTE TEAM

**C-130 PRODUCTION DIVISION (WR-ALC)**

**Organization**

**Org Symbol**

C-130 Production Branch

560 AMXS

**F-15 PRODUCTION DIVISION (WR-ALC)**

Production Branch - A	LFPA
Production Branch - B	LFPB
Production Branch - C	LFPC
Production Support Branch	LFPS
Functional Test Team	LFPSF
Impact Team	LFPSI
Miscellaneous Prod Team	LFPSM

**ELECTRONIC WARFARE PRODUCTION DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
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Strategic Production Branch	LNPA
Strategic Production Team - A	LNPA A
Strategic Production Team - B	LNPA B
Strategic Production Team - C	LNPA C
Strategic Production Team - D	LNPA D
Strategic Production Team - E	LNPA E
Strategic Production Team - F	LNPA F
Tactical Production Branch	LNPB
Tactical Production Team - A	LNPBA
Tactical Production Team - B	LNPBB
Tactical Production Team - C	LNPBC
Tactical Production Team - D	LNPBD
Tactical Production Team - E	LNPBE
Tactical Production Team - F	LNPBF
Software Production Branch	LNPC
Software Production Team - A	LNPCA
Software Production Team - B	LNPCB
Software Production Team - C	LNPC C
Software Production Team - D	LNPCD
Production Services Branch	LNPD
Strategic Services Team	LNPDA
Special Program Services Team	LNPDC
Tactical Services Team	LNPDC
Management Services Team	LNPDD

**AVIONICS PRODUCTION DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
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Software Production Branch - A	LYPA
Software Production Branch - B	LYPB
Software Production Branch - C	LYPC
Hardware Production Branch - A	LYPD
Hardware Production Branch - B	LYPE
Hardware Production Branch - C	LYPF
Hardware Production Branch - D	LYPG
Manufacturing Branch	LYPM
Production Processes Branch	LYPR
LANTIRN Nav/Tgt Pod/Depot Prod	LY-1

**SPECIAL SYSTEM REPAIR DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
ATE/Gyro Team	TIAEA
F-15 Pylon	TIAEB
Indicator/Gyro Team 2B	TIAEC
Electrical Team	TIAED
Gyro Elect Overhead Support	TIAES
Gyro Team 1A	TIAGA
Gyro Team 1B	TIAGB
Gyro Team 1C	TIAGC
Gyro Team 1D	TIAGE
Gyro Overhead Support	TIAGE
Prop Team - A	TIAPA
Prop Team - B	TIAPB
Prop Team - C	TIAPC
Hydrostat Team	TIAPD
Propeller Overhead Support	TIAPS

**COMPONENT PROCESSING DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
F-15 Plastic Team	TIBPA
C-130 Plastic Team	TIBPC
Fabric Shop	TIBPD
Overhead Support	TIBPS
Paint Team	TIBSA
Electroplate Team - A	TIBSB
Electroplate Team - B	TIBSC
Electroplate Team - C	TIBSD
Welding Heat/Treat Team	TIBSE
Wet Clean Team	TIBSF
Overhead Support	TIBSS

**TECHNOLOGY AND ENGINEERING SCIENCE DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
PME System Team - A	TIEBA
PME System Team - B	TIEBB
PME System Team - C	TIEBC
PME Overhead Support Team	TIEBS
Dimensional Verification Team	TIECD
Electronic Testing Team	TIECE
Gun Test Range	TIECM
Mechanical Testing Team	TIECM
Vehicle Testing	TIECM
Productivity Tools Team	TIECP

**COMPONENT REPAIR DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
Bond Team - A	TIKBA
Bond Team - B	TIKBB
Bond Team - C	TIKBC

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Bond Team - D	TIKBD
Bond Team - E	TIKBE
Repair Team - 1A	TIKCA
Repair Team - 1B	TIKCA
Repair Team - 1C	TIKCC
Repair Team - 1D	TIKCD
Repair Team - 1E	TIKCE
Repair Team - 1F	TIKCF
Repair Team - 2A	TIKPA
Repair Team - 2B	TIKPB
Repair Team - 2C	TIKPC
Repair Team - 2D	TIKPD
Repair Team - 2E	TIKPE
Overhead Support	TIKPS

**STRUCTURAL REPAIR DIVISION (WR-ALC)**

<b>Organization</b>	<b>Org Symbol</b>
Overhead Support	TIRAS
Overhead Support	TIRBS
Overhead Support	TIRCS
Overhead Support	TIRNS

## APPENDIX B

### COMMAND CODES

**B.1** The data codes listed in this appendix are used to identify the owning command and/or activity of equipment contained for MDD documentation on equipment without an assigned ID number.

<b>Major Command</b>	<b>Command Code</b>	<b>Nomenclature</b>
ACC	1C	AIR COMBAT COMMAND
AET	0J	AIR EDUCATION AND TRAINING COMMAND
AFA	0B	USAF ACADEMY
AFE	0D	USAF IN EUROPE
AFM	5A	AIR FORCE MUSEUM
AFR	0M	AIR FORCE RESERVE
AMC	1L	AIR MOBILITY COMMAND
ANG	4Z	AIR NATIONAL GUARD
AUN	0K	AIR UNIVERSITY
BAF	4D	BELGIAN AIR FORCE
BDA	2V	AIR FORCE BASE DISPOSAL AGENCY
CAC	47	COMMERCIAL AIRCRAFT
CAP	5B	CIVIL AIR PATROL
CMZ	04	AIR FORCE COMMUNICATIONS AGENCY
CON	4N	CONTRACTOR SUPPORT
DOD	49	DEPARTMENT OF DEFENSE
ELC	0U	AIR FORCE INTELLIGENCE AGENCY
EPG	4H	EUROPEAN GROUP
ESC	1W	AF ENGINEERING AND SERVICE CENTER
FAA	4B	FEDERAL AVIATION AGENCY
FMS	0X	FOREIGN MILITARY SALES
GBS	GS	AF GLOBAL STRIKE COMMAND
HAF	0N	HEADQUARTERS AIR FORCE
HQC	0P	HEADQUARTERS COMMAND, AF HISTORICAL
LAN	3N	AFELM US ATLANTIC COMMAND
MTC	1M	AIR FORCE MATERIEL COMMAND
NAP	4I	NATO AWACS PROGRAM
NGM	34	ANG UNITS - MOBILIZATION
NOR	2S	HQ NORAD
OAF	4A	OTHER US AIR FORCE ACTIVITIES
OFG	46	OTHER FOREIGN GOVERNMENT
OGA	4C	OTHER US GOVERNMENT AGENCY
ONA	5C	OTHER NATIONAL AGENCY
PAF	0R	PACIFIC AIR FORCE
PCO	30	AFELM US PACIFIC COMMAND
RAF	43	ROYAL AIR FORCE, UNITED KINGDOM
RCA	42	ROYAL CANADIAN AIR FORCE
RDA	4E	ROYAL DANISH AIR FORCE
RDF	3X	RAPID DEPLOYMENT FORCE

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RNL	4F	ROYAL NETHERLANDS AIR FORCE
RNO	4G	ROYAL NORWEGIAN AIR FORCE
SAJ	3Q	AFELM US STRATEGIC COMMAND
SOC	0V	AF SPECIAL OPERATION COMMAND
SAP	40	SECURITY ASSISTANCE PROGRAM
SPC	1S	AIR FORCE SPACE COMMAND
SSE	3Z	JOINT SVCS SERE AGENCY
SUC	3M	AFELM US SOUTHERN COMMAND
USA	5D	U.S. ARMY
USN	5E	U.S. NAVY
WGR	45	GERMAN AIR FORCE

## APPENDIX C CATEGORY OF LABOR CODES

### C.1 DATA CODES.

The following data codes are to be used for differentiating the various types of maintenance resources used to support the USAF equipment maintenance program. These codes are mandatory for all units under the MDD process.

<b>Data Items</b>	<b>Data Codes</b>
Military, Regular Duty Hours	1
Military, Overtime Hours	2
Federal Service Employee-Regular Duty Hours	3
Federal Service Employee-Overtime Hours	4
Local National Employee Hours	5
Contractor Labor Hours	6

### C.2 DATA ENTRY SCREEN.

The applicable code will be entered on the appropriate G081/IMDS CDB/REMIS data entry screen as outlined in this TO. ■



## APPENDIX D COMPATIBILITY EDITS

### D.1 PURPOSE.

Compatibility codes are used to edit the maintenance records being input to any MDC system. The edits are used to maintain the accuracy of the data collected. Edits are also used to control exceptions to the normal data inputs. The attached edits are applicable to all automated MDC systems and manual collection when the automated system is not available.

### D.2 MAINTENANCE TRANSACTION TYPE RECORDS.

Type 1 = On-Equipment

Type 2 = Complete Engine Bench Check and/or Test and/or Repair

Type 3 = Off-Equipment (includes transactions using a master ID number for TMDE and/or AGE)

Type 4 = Indirect Labor (not currently used)

Type 5 = Bit and Piece

Type 6 = Removal or Installation of a Time-Change or Serially-Controlled Item

Type 7 = Engine Removal or Installation

D.2.1 Edits. The following edits apply to all types.

D.2.1.1 **BLOCK 1, JOB CONTROL NUMBER.** First five positions must be 00001-99366, indicating the Julian date; the last four positions can be alpha numeric (excluding alpha I or O), with only positions 6-7 allowing alpha characters, as defined in Tables 4-2 and 4-3.

D.2.1.2 **BLOCK 2, WORKCENTER.** Must be valid workcenter mnemonic or workcenter code for the workcenter performing the work. IMDS CDB units provide workcenter mnemonic; First position must be assigned unit-ID. G081 units may use either workcenter code or mnemonic.

D.2.1.3 **BLOCK 3, ID/SERIAL NUMBER.** If ID, must match valid assigned unit-ID contained in current equipment listing; Type Equipment (first position); last four positions must be alpha-numeric. For non-ID (on-equipment) serial number must be ten-position numeric, or alpha-numeric for SRD "AHX".

D.2.1.4 **BLOCK 4, MDS.** Must be blank when equipment ID is used in block 3. MDS must match the format in the REMIS tables and codes for the particular SRD code. MDS field contains eight spaces. Input is as follows:

Data	Spaces	Field
Mission	1-3	prefix with spaces alpha
Design	4-6	prefix with zeros numeric
Series	7	alpha

IMDS only: MDS will be input with a trailing space (after the series). Non-AF must be input with three trailing spaces.

D.2.1.5 **BLOCK 5, SRD.** The SRD is used by both maintenance and supply. When no ID number is used in block 3, this block must contain a valid SRD.

D.2.1.6 **BLOCK 6, TIME.** May be blank. For certain recording requirements, this field must contain end item operating time, prefixed with zeros (five positions). For TMDE equipment, must be next date due or left blank.

D.2.1.7 **BLOCK 8, SORTIES.** May be blank or must contain three numerics.

D.2.1.8 **BLOCKS 10 AND 12, REMOVED AND/OR INSTALLED ENGINE TIME.** Type seven record must contain five numerics.

D.2.1.9 **BLOCKS 11 AND 13, ENGINE ID.** Type seven record must contain a valid engine ID number for removed or installed engines (or modules).

D.2.1.10 **BLOCK 18, MASTER JOB STANDARD NUMBER.** If entered, the MJSN must be valid for the Equipment Designator.

D.2.1.10.1 **BLOCK 19, FSC.** For Type 3, 5, and 6 records, must be four numerics and cannot be 0000.

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D.2.1.11 BLOCK 20, PART NUMBER. Type 3, 5, and 6 records must contain from one to 15 alpha-numeric characters with no embedded spaces. Slashes or dashes may not be first or last character.

D.2.1.12 BLOCK 21, SERIAL NUMBER AND/OR TIMES. Type six record must contain 15 alpha-numeric characters for the serial number of removed components with an asterisk in the -06 WUC manual. For off-equipment type three records, this block must contain the serial number of components being modified by commodity TCTO or the operating time (five positions) for in-shop repair of time-change or time-sensitive components. May be blank on type three records.

D.2.1.13 BLOCK 22, TAG NUMBER. May be blank or six numerics for Type 1, 3, and 5 records. Must be six numerics for type 2, 6, and 7 records.

D.2.1.14 BLOCK 23 THROUGH 24, INSTALLED SERIALLY-CONTROLLED COMPONENT. Same edits as blocks 20-21 for removed component type six record.

D.2.1.15 BLOCK 25, OPERATING TIME AND/OR CYCLES. Must contain five numerics for installed serially controlled components.

D.2.2 Column A, Type Maintenance, Column E. When Discovered.

D.2.2.1 If the SRD is "B," "C," "E," "F," "J," "K," "L," "Q," "U," or "I" through "8," TM group table 7 and WD group table 24 (C-E equipment).

D.2.2.2 If the SRD is "X-," "S- -" (other than "SA-"), TM group table 2 and WD group table 20 (aircraft propulsion and gas turbine engines; auxiliary power units).

D.2.2.3 If the SRD is "H-," TM group table 8 and WD group table 22 (TMDE/PMEL).

D.2.2.4 If the SRD is "Y-," TM group table 9 and WD group table 23 (Munitions - excluding air/ground launched missiles and munitions support equipment).

D.2.2.5 If the SRD is "RS-," TM group table 10 and WD group table 20 (Shop Support Work).

D.2.2.6 If the SRD is "M-," "RM-," "GMC," "GMD," "GMK," "GMM," "GMP," "GMR," "GMV," "GMW," "GMX," or "GGZ," TM group table 4 and WD group table 21 (Ground launched Missile and associated support equipment).

D.2.2.7 If the SRD is "N-," "GG-," "GX-," "G1-," "G2-," "G3-," "G4-," or "GFS," TM group table 3 and WD group table 20 (Air Launched Missiles and associated support equipment).

D.2.2.8 If the SRD is "TRN," "TRP," "TRQ," "TRR," or "TRS," TM group table 4 and WD group table 22 (Trainers, Mobile Training Sets, and Resident Training Equipment).

D.2.2.9 If the SRD is "TRA," "TRB," "TRC," or "TRD," TM group table 6 and WD group table 22 (Trainers, Mobile Training Sets, and Resident Training Equipment).

D.2.2.10 If the SRD is "TZM," "TZN," "TZQ," or "TZP," TM group table 3 and WD group table 22 (Trainers, Mobile Training Sets, and Resident Training Equipment).

D.2.2.11 If the SRD is "TRG," "TRH," "TRJ," "TX" or "TZ-," other than above, TM group table 1, and WD group table 22 (Trainers, Mobile Training Sets, and Resident Training Equipment).

D.2.2.12 If the SRD is "A-," "R1-," "P-," "R5-," "R6-," "R7-," or "R8-," TM group table 1 and WD group table 20 (Aircraft; ECM, Targeting, Photo-reconnaissance, and special purpose pods; life support).

D.2.2.13 If the SRD is "D-," "G-," "R-," "W-," or "SA-," other than above, TM group table 5 and WD group table 22 (Support equipment, to include AGE, RPIE, vehicles).

D.2.2.14 If the SRD is "T-," other than above, TM group table 6 and WD group table 23 (Trainers, Mobile Training Sets, and Resident Training Equipment).

D.2.2.15 If TM is "X," WD may be alpha-numeric.

D.2.2.16 If WUC/LCN is Support General (not TCTO or R&D) WD must be blank.

D.2.3 Column B, Component Position. Must be "0" through "8" for all on-equipment maintenance actions involving installed engine or engine components when using work unit codes which begin with 21, 22, 23, 24, 25, 26, 27, 28, or 29. Also required when installing (action taken "Q" or "R") egress components. Egress components are identified by an egress indicator of "E" or "B." Component position must be "1" through "8" for egress components. Component position for egress items are locally determined.

#### D.2.4 Column C, WUC.

D.2.4.1 First two positions may be "01" through "09" for all equipment.

D.2.4.2 For type maintenance "X" (R&D), WUC must be valid in the REMIS table.

D.2.4.3 For aerospace equipment that is MDC reportable, the WUC must be valid in the REMIS table.

D.2.4.4 If WUC is Support General, ATC, WDC, and HMC are not used.

D.2.4.5 WUC must be exactly 5-characters, no prefixing or embedded spaces, cannot have alpha "I" or "O", and have no special characters.

D.2.4.6 LCN is 6-15 characters, no prefixing or embedded spaces, cannot have alpha "I" or "O", has no special characters, and cannot have alpha characters in positions 1-7.

D.2.4.7 Support general LCNs consist of the first three positions of the LCN, per MIL-STD-1808 and the five positions of the applicable support general WUC, as found in Appendix I. The first two characters are between 05 and 15, excluding 06.

#### D.2.5 Column D, Action Taken.

D.2.5.1 On-Equipment or Off-Equipment (type 1 or 3 record). If WUC/LCN is Support General and type maintenance is not T or X, ATC, WDC, and HMC must be blank.

D.2.5.2 On-Equipment (type 1 record). Action taken must be E, F, G, H, J, K, L, P, Q, R, S, T, U, V, X, Y, or Z.

D.2.5.3 Complete Engine Bench Check and/or Test and/or Repair (type 2 record). Action taken must be A through D, X, or 0 through 9.

D.2.5.4 Off-Equipment (type 3 record). Action taken must be X and HMAL 804 when bench checking uninstalled Engines. Codes A through D will be used only during bench check actions (Off Equipment Only).

D.2.5.5 Removal or Installation of a TCI and/or Engine (type 6 record). For installed record, action taken must be E, Q, R, or U. For removal record, action taken must be P, R, S, or T.

D.2.6 Column F, How Malfunction Code. The How Malfunction code must be one contained in the current how malfunction code table. See compatibility edits.

D.2.7 Column G, Units Completed. Units must be 00 through 99. See compatibility edits.

#### D.2.8 Column H/I, Start Hour/Stop Hour, Day.

- a. Start or stop hours at midnight must be 2400.
- b. Start and/or stop hour must be 00 through 24.
- c. Start and/or stop minutes must be 00 through 59.
- d. Start and/or stop hour cannot be greater than 2400.
- e. Total elapsed clock time cannot exceed 10 hours on a single record.
- f. Day must be 001 through 366 and cannot be greater than the computer processing day. During January, December data will pass this edit (stop day 335 or greater).

D.2.9 Column J, Crew Size. Must be "0" through "9." Must be "0" if TM = "R" or WDC = "S". See compatibility edits.

D.2.10 Column K, Category of Labor. Must be "1" through "6."

D.2.11 Column L, Command and/or Activity Identifier Code. Must be "0" if TM = "R" or WD = "S".

D.2.11.1 May be blank or any alpha-numeric activity identifier code when block 3 contains an equip-ID number.

D.2.11.2 For non-ID records, this field must contain a valid (owning command code).

D.2.12 Column N, EMPL-Number. Must contain 5-position employee number of person performing maintenance. Must be five numerics.

**D.3 BLOCK 29 (REVERSE SIDE) (5 RECORDS).**

- a. Column A, FSC. Same as block 19. May not be blank.
- b. Column B, Part No. Same as block 20.
- c. Column C, WUC.

D.3.1 May be blank when block 3 contains an aircraft drone engine, or missile ID number.

D.3.2 Must contain five-position alpha-numeric for all other equipment.

D.3.3 When entered, must meet same criteria as column C (front side) WUC edits.

**D.4 COMPATIBILITY EDITS, ON-EQUIPMENT, REC-ID-1.**

D.4.1 If TM = "T" and HM = "799" or "804," the WUC, AT, WD edit is performed; otherwise, TCTO data code edit is performed. WUC cannot be Support General.

D.4.2 If TM = "X" (P&D), then all positions of WUC, AT, WD may be alpha-numeric.

D.4.3 TCTO data code may be alpha-numeric in the first position and must be numeric in next six positions.

D.4.4 Package credit for periodic and/or phase inspection or complete bench check and/or test and/or repair of an engine (type 2 record):

D.4.4.1 When WUC = "033," "034," or "037" and units produced is "01" for the prime workcenter, start and/or stop time must be "0000" and crew size must be "0."

**NOTE**

Package reporting applies only to end item/on-equipment use.

D.4.5 For engines, if AT = "A" through "D," or "1" through "9" ("X" with HM = "804"), then last two positions of WUC must be "00." May be "23BN0" or "23QAY" (for F16 aircraft).

D.4.6 If HM = "689", additional conductive path malfunction data is required.

D.4.7 If TM = "T," HM must be "793," "797," "798," "801," "802," or "911."

D.4.8 If HM = "793," "796," "797," or "911," units, crew size, start time and stop time must be zeros.

D.4.9 If HM = "798" or "801," units must be "01." Start and stop time, crew size cannot be zero.

D.4.10 If HM = "802," units must be "00" and labor hours cannot be "0." Crew size cannot be zero.

D.4.11 If HM = "804," units must be "01" and labor hours cannot be "0."

D.4.12 If AT = "T" or "U," HM must be "875."

D.4.13 If AT = "S," HM must be "800," "804," or "805."

D.4.14 If AT = "H," HM must be "672," "799," "812," or "948."

D.4.15 If AT = "Y," HM cannot be "672," "799," "800," "804," or "948" and the last position of the WUC must be zero.

D.4.16 If WUC = "04," TM must be "Q," "S," "X," or "Y."

D.4.17 If AT = "F," "G," "L," "Y," or "Z," HM cannot be "799."

D.4.18 If AT = "Q," HM cannot be "793," "796," "797," "798," "801," "802," "875," or "911."

D.4.19 If AT = "P," "R," "S," "L," or "T," HM cannot be "750."

D.4.20 If HM = "800," AT must be "P," "Q," or "S."

D.4.21 If AT = "X," WUC/LCN cannot be Support General.

D.4.22 If AT = "G," WUC must not end in 9."

D.4.23 If HMC = "242" or "374," ATC must be "2," "A," "B," or "C".

**D.5 COMPATIBILITY EDITS, OFF-EQUIPMENT, REC-ID-3.**

- D.5.1 If HM = "793," "796," "911," crew size start time, stop time, must be zero.
- D.5.2 If AT = "A," "F," "G," "K," "L," "V," or "Z," HM cannot be "242," "796," "799," "800," "804," or "805."
- D.5.3 If AT = "B" or "J," HM must be "672," "799," "812," or "948."
- D.5.4 If AT = "X," HM must be "300," "799," "804," "812," "948," and WUC must not begin with "0."
- D.5.5 If AT = "M" or "N," HM cannot be "242."
- D.5.6 If AT = "0," "1," "2," "3," "4," "5," "6," "7," "8" or "9," HM cannot be "799," "800" or "804."
- D.5.7 If AT = "T" or "U," HM must be "875."
- D.5.8 If TM = "R" or WDC = "S". Crew Size must be "0."
- D.5.9 If WDC = "Y," and SRD not "RSA", then HMC must be "553." (See also paragraph 7.12.6)
- D.5.10 If HMC = "242" or "374," ATC must be "1" thru "9" or "A" thru "D."

**D.6 COMPATIBILITY EDITS, BITS AND PIECES.**

- D.6.1 TM cannot be T.
- D.6.2 HM cannot be "793," "796," "797," "798," "799," "800," "801," "802," "805," "911," or "948."
- D.6.3 Quantity must be "01" through "99."

**D.7 TYPE MAINTENANCE CODE TABLE GROUPS.**

1. A, B, C, D, E, H, J, M, P, Q, R, S, T, X, Y.
2. A, B, C, D, E, H, K, L, P, Q, R, S, T, W, X, Y.
3. A, B, C, D, E, J, P, R, S, T, X.
4. A, B, D, F, J, P, R, S, T, X.
5. A, B, D, J, P, Q, R, S, T, X.
6. A, B, D, J, P, R, S, T, X.
7. A, B, D, F, H, J, P, R, S, T, X.
8. A, B, J, P, S, T.
9. A, B, J, P, R, S, T, X.
10. A, B, C, H, J, K, P, Q, R, S, T, W, X.
11. A, B, C, D, E, F, H, J, M, P, Q, R, S, T, X, Y.

**D.8 WHEN DISCOVERED CODE TABLE GROUPS.**

20. A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S, T, U, V, W, Y, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
21. A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S, T, U, V, W, X, Y.
22. C, D, F, J, L, M, P, Q, R, S, T, U, V, W, Y, 0, 1, 6, 7, 8, 9.
23. A, B, C, D, E, F, G, H, J, L, M, N, P, Q, R, S, T, U, V, W, X, Y, 1, 2, 3, 4, 5, 6.
24. C, D, F, H, J, L, M, P, Q, R, S, T, U, V, W, Y, Z.



## APPENDIX E

### ACTION TAKEN CODES

#### E.1 DEFINITION.

Action taken codes, when used in conjunction with WUCs, How Malfunctioned codes, and When Discovered codes, identify a complete unit of work, a maintenance task, or action. Documentation on any type of repair, adjustment, cleaning, replacement or calibration of a WORK UNIT CODED item will contain the action taken code describing the actual work being performed on the work unit coded system. Codes applicable to CFAR documentation are marked with an asterisk.

#### NOTE

On Equipment Indicator used to classify record types for editing and reporting 0 = N/A, 1 = Available for On Equipment, 3 = Available for Off Equipment.

Code	On Equip	Off Equip	Definition
0-	0	3	Bench Checked -- NRTS Warranty Item: Repair not authorized, item under warranty.
*1-	0	3	Bench Checked -- NRTS (Not Repairable This Station) -- Repair not Authorized --Shop is not authorized to accomplish the repair. This code shall only be used when it is specifically prohibited by current technical directives. This code shall not be used due to lack of authority for equipment, tools, facilities skills, parts, or technical data.
2-	1	3	Test/Inspect -- NRTS -- Lack of Equipment, Tools, Skills, or Facilities -- Repair authorized but cannot be accomplished due to lack of equipment, tools or facilities. This code shall be used without regard as to whether the equipment, tools, or facilities are authorized or unauthorized. May be used for on-equipment when an end item ID is returned to depot.
3-	0	3	Bench Checked -- NRTS -- Due to Lean Logistics Policy. Repair could not be accomplished due to parts non-availability within the time limit imposed by Lean Logistics Policy.
4-	0	3	Bench Checked -- NRTS -- Lack of Parts -- Parts are not available to accomplish repair.
5-	0	3	Bench Checked -- NRTS -- Shop Backlog -- Repair cannot be accomplished due to excessive shop backlog.
6-	0	3	Bench Checked -- NRTS -- Lack of Technical Data -- Repair cannot be accomplished due to lack of maintenance manuals, drawings, etc., which describe detailed repair procedures and requirements.
7-	0	3	Bench Checked -- NRTS -- Lack of Equipment, Tools, Facilities, Skills, Parts or Technical Data -- Repair authorized but cannot be accomplished due to lack of authorization to obtain or possess required equipment, tools, facilities, skills, parts, or technical data.
*8-	0	3	Bench Checked -- Return to Depots -- Returned to depots by direction of system manager (SM) or item manager (IM). Use only when items that are authorized for base-level repair are directed to be returned to depot facilities by specific written or verbal communication from the IM or SM, or when items are to be returned to depot facilities for modification IAW a TCTO, or as MDR exhibits.
9-	0	3	Bench Checked -- Condemned -- Item cannot be repaired and is to be processed for condemnation, reclamation or salvage. This code will also be used when a "Condemned" condition is discovered during field maintenance disassembly or repair.

Code	On Equip	Off Equip	Definition
A-	1	3	Bench Checked and Repaired -- Bench check and repair of any one item is accomplished at the same time (on-equipment reporting restricted to uninstalled engines only) (also see code F).
B-	1	3	Bench checked -- serviceable (on-equipment restricted to uninstalled engines only) -- Item is bench checked and no repair is required. This code will be used when it is definitely determined that the discrepancy does not exist or cannot be replicated. Must be used with How Malfunction Code 672, 799, 812, or 948. Bench Check Serviceable (BCS) is the terminology for base- level action taken code B and Retest Okay (RTOK) is the terminology for depot-level action taken code B.
C-	1	3	Bench checked-repair deferred -- Bench check is accomplished and repair action is deferred (See code F).
D-	0	3	Bench checked-transferred to another base or unit -- Item is bench checked at a forward operating base, dispersed operating base, or en route base and is found base for repair. Not used for items returned to depot for overhaul. Used also for TMDE or other equipment sent to another base/unit for bench check, calibration, or repair to be returned and for item forwarded to contractors on base level jobs.
E-	1	3	Initial installation -- For installation actions not related to a previous removal action such as installation of additional equipment or installation of an item to remedy a ship-short condition. Must use with HOW MAL code 799.
*F-	1	3	Repair -- Not to be used to code "On-Equipment" work if another code will apply. When it is used in shop environment, this code will denote repair as a separate unit of work after a bench check. Shop repair includes the total repair manhours and includes cleaning, disassembly, inspection, adjustment, reassembly and lubrication of minor components incident to the repair when these services are performed by the same workcenter. For precision measurement equipment, this code will be used only when calibration of repaired item is required (See code G).
*G-	1	3	Repairs and/or replacement of minor parts, hardware, and softgoods (seals, gaskets, electrical connectors, fittings, tubing, hose, wiring, fasteners, vibration isolators, brackets, etc.) -- Work unit codes do not cover most non-reparable items; therefore, when items such as those identified above are repaired or replaced, this action taken code will be used. When this action taken code is used, the WUC will identify the assembly being directly related to parts being repaired.
H-	1	0	Equipment checked -- no repair required (for "On-Equipment" work only) all discrepancies which are checked and found to require no further maintenance action. This code will be used only if it is definitely determined that a reported deficiency does not exist or cannot be duplicated. Must be used with HOW MAL code 672, 799, 812 or 948. Cannot Duplicate (CND) is the terminology for all on-equipment action taken code H maintenance actions.
*J-	1	3	Calibrated -- no adjustment required -- Use this code when an item is calibrated and found serviceable without need for adjustment, or is found to be in tolerance but is adjusted merely to peak or maximize the reading. If the item requires adjustment to actually meet calibration standards or to bring in tolerance, use code K.
*K-	1	3	Calibrated -- Adjustment Required -- Item must be adjusted to bring it in tolerance or meet calibration standards. If the item was repaired or needs repair in addition to calibration and adjustment, use code F.

Code	On Equip	Off Equip	Definition
*L-	1	3	Adjust -- Includes adjustments necessary for safety and proper functioning of equipment such as adjust, bleed, balance, rig, fit, reroute, seat/reseat, position/reposition, program/reprogram, or actuating reset button, switch or circuit breaker. For use when a discrepancy or condition is corrected by these types of actions. If the identified component or assembly also requires replacement of bits and pieces as well as adjustment, enter the appropriate repair action taken code instead of L.
*M-	0	3	Disassemble -- Disassembly action when the complete maintenance job is broken into parts and reported as such. Do not use for on-equipment work.
N-	0	3	Assemble -- Assembly action when the complete maintenance job is broken into parts and reported as such. Do not use for on-equipment work.
*P-	1	3	Removed -- Item is removed and only the removal is to be accounted for. This instance delayed or additional actions will be accounted for separately (see codes Q, R, S, T, and U).
Q-	1	3	Installed -- Item is installed and only the installation action is to be accounted for (see E, P, R, S, T, and U. This code applies to reinstallation/reloading of application software.
*R-	1	3	Remove and Replace -- Item is removed and another like item is installed (see codes T and U) and removal and/or replacement of subassemblies from their next higher assembly.
*S-	1	3	Remove and Reinstall -- Item is removed and the same item reinstalled (see codes T and U). Must be used with HOW MAL code 800, 804 or 805. Not for serially tracked or TCI, see paragraph 7.4.
*T-	1	3	Removed for Cannibalization -- A component is cannibalized. The WUC will identify the component being cannibalized. Must be used with How Malfunction code 875.
*U-	1	3	Replaced after Cannibalization -- This code will be entered when a component is replaced after cannibalization. Must be used with How Malfunctioned code 875.
*V-	1	3	Clean -- Cleaning is accomplished to correct discrepancy and/or cleaning is not accounted for as part of a repair action such as code F. Includes washing, acid bath, buffing, sand blasting, degreasing, decontamination, etc. Cleaning and washing of complete items such as ground equipment vehicles, missiles, or airplanes should be recorded by utilizing support general codes.
W-	1	3	Non Destructive Inspection.
*X-	1	3	Test-Inspection-Service -- Item is tested or inspected or serviced (other than bench check) and no repair is required. This code does not include servicing or used when documenting time against a Reported Discrepancy identifying a test, inspect or service toward a WUC item for On- and Off-Equipment maintenance which is unrelated to a CND action. Will be used when a Reported Discrepancy identifying a Deficiency toward a WUC item is identified to be "Within Limits", with the appropriate no defect How Malfunction code. Will be used to document operational checks performed separately after a maintenance action in the same Job Control Number which is unrelated to a CND action. Will be used when testing items received from supply.
*Y-	1	0	Troubleshoot -- Time expended in locating a discrepancy is great enough to warrant separating the troubleshoot time from the repair time. Use of this code necessitates completion of two separate line entries, or two separate forms, one for the troubleshoot phase and one for the repair phase. When recording the troubleshoot time separate from the repair time, the total time taken to isolate the primary cause of the discrepancy should be recorded utilizing the WUC of the defective item or assembly. If the discrepancy was not isolated, the subsystem or system WUC should be used.

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<b>Code</b>	<b>On Equip</b>	<b>Off Equip</b>	<b>Definition</b>
*Z-	1	3	Corrosion Treatment -- Includes cleaning, treating, priming, and painting of corroded or repaired components and deteriorated coatings. This code should always be used when actually treating corroded items or those with deteriorated paint. The item that is corroded or has damaged paint will be identified by the WUC (also see support general code 09000).

## APPENDIX F

### TYPE MAINTENANCE DESIGNATORS

#### F.1 DEFINITION.

Identifies the type of work that is performed. Not applicable to users of CFAR.

Notes:

1. The definitions contained in this table are for all types of equipment, except as noted on each code.
2. Selected type maintenance codes for research and development projects assigned in AFMC directives will be used with equipment classification code prefix P.
3. Accomplishment of unscheduled inspection actions performed as part of repair will be considered part of the total action, i.e., action taken code F, G, etc.

Code	Definition
A-	Service: Includes all units of work associated with servicing, cleaning, and movement of equipment.
B-	<p>Unscheduled Maintenance: Includes all units of work accomplished between scheduled inspections, excludes TCTO accomplishment.</p> <p>ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Field Maintenance (JEBM): Includes all work required on an engine removed because of a failure or malfunction.</p>
C-	<p>SHOP WORK - Manufacture and/or fabrication of aerospace vehicle components, aerospace ground equipment, ground C-E and RPIE.</p> <p>TYPE MAINTENANCE CODES FOR ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Build-Up: Includes all work required during build-up of an engine from supply stock</p> <p>TYPE MAINTENANCE CODES FOR AIR LAUNCHED MISSILES AND RELATED AGE AND TRAINING EQUIPMENT - Basic Postflight, Thruflight or Alert Exercise Postflight Inspection: Includes all units of work accomplished during all phases of an hourly Postflight inspection.</p> <p>INSTALLED ENGINES AND RELATED MOBILE TRAINING SETS - Basic Postflight, Thru-flight or Alert Exercise Postflight Inspection: Includes all units of work accomplished during all phases of the basic Postflight, Thruflight or Alert Postflight inspection.</p>
D-	<p>Scheduled Inspection: Includes all units of work accomplished during scheduled inspections such as daily, safety, and servicing inspection, excluding periodic/phased inspection.</p> <p>INSTALLED ENGINES AND RELATED MOBILE TRAINING SET - Preflight, Combined Preflight/Postflight, or End of Runway Inspection: Includes all units of work accomplished during all phases of Preflight, combined Preflight/Postflight, or End of Runway Inspection.</p> <p>ENGINE SHOP WORK ON REMOVED ENGINES - Gas Turbine Engine Tear-Down and Preparation for Shipment: Includes all work required to tear-down and prepare a failed or time-expired engine for shipment excluding periodic/phased inspection.</p>
E-	<p>Hourly Postflight or Minor Inspection: Includes all discrepancies not workcard related, and all units of work accomplished during all phases of an hourly or minor (Isochronal) inspection.</p> <p>ENGINE SHOP WORK ON REMOVED ENGINES - Unscheduled Test Cell Operation: To be used when the engine is removed for test cell operation and the removal was made for reasons other than a scheduled inspection or JEBM, i.e., directed removals or accessory replacement. All other test cell operations will be charged to the appropriate work order prefix.</p>
F-	GROUND LAUNCHED MISSILES, RELATED AGE, GROUND CEM, RPIE, TRAINING EQUIPMENT, CE & MISSILE INSPECTONS - Scheduled Ground-Launched Missile Maintenance: Excludes scheduled inspection. Includes all units of work.

Code	Definition
	GROUND CEM TO INCLUDE AFSPC SATELLITE GROUND STATIONS, MOBILE STATIONS AND RADAR SYSTEMS, COMSEC AND GROUND CEM "L" SYSTEM (EXCLUDING GROUND-LAUNCHED MISSILE CEM) - Daily/Shift/Phase/Periodic: Includes all units of work accomplished during daily/shift/phased/periodic inspections. This code will be used on both the "Look" phase of the inspection and on all "Fix" phase documents generated for correction of deficiencies noted during the inspection and on assembly, transportation to launcher, mating to launcher, checkout of missile on launcher, checkout to readiness condition, and the same functions involved in recycling the missile to and from a periodic inspection and return to launcher.
G-	Transport: Includes all units of work performed by activities in recording aircraft and equipment transportability (to be used with action codes "P" and "Q"). This code should be used in conjunction with the tear-down and build-up of aircraft and equipment being transported by air, land and sea.
H-	SHOP WORK - Maintenance of non-aerospace equipment received from activities other than maintenance.  INSTALLED ENGINES AND RELATED MOBILE TRAINING SETS - Home Station Check: Includes all units of work accomplished during all phases of a home station (Isochronal) inspection. ENGINE SHOP WORK ON REMOVED ENGINES - Reciprocating Engine Build-Ups: Includes all work required during build-up of reciprocating engines drawn from supply stock.
	GROUND CEM TO INCLUDE AFSPC SATELLITE GROUND STATIONS, MOBILE STATIONS AND RADAR SYSTEMS, COMSEC, AND GROUND CEM "L" SYSTEMS (EXCLUDING GROUND-LAUNCHED MISSILE CEM) - Emergency On-Site Repair: Includes all units of work authorized and accomplished as a result of an emergency request for assistance. Applicable to all levels of maintenance performed by 38 EIG engineering and installation teams and organizational and intermediate maintenance performed by AFMC mobile maintenance teams. Excludes accomplishment of TCTOs.
J-	Scheduled calibration of equipment or components, including all units of work accomplished concurrently with a scheduled calibration.
K-	ENGINE SHOP WORK ON REMOVED ENGINES - Reciprocating Engine Tear-Down and Preparation for Shipment: Includes all work required to tear-down and prepare a failed or time-expired engine for shipment when repair cannot be accomplished on base.
L-	Reciprocating Engine Field Maintenance: To be used for repair of an engine removed from aircraft when the engine will be the same, or another aircraft.
M-	Interior Refurbishment: Includes all work accomplished during interior refurbishment of aircraft.
P-	Major Periodic or Phased Inspection/Maintenance: Includes all discrepancies not workcard related, and all units of work accomplished during look-and-fix phases of periodic inspections, scheduled maintenance, and time-change items. Excluding accomplishment of TCTOs.  SHOP WORK - Inspection, repair, maintenance and service of life-support (personal) equipment and flotation equipment such as parachutes, oxygen masks, flight clothing, life vests and rafts. Excludes accomplishment of TCTOs.
Q-	Forward-Support Spares: Includes all units of work performed by all activities in recording in-shop maintenance actions on AFMC forward-support spares, excluding accomplishment of TCTOs.
R-	Depot Maintenance: Includes all units of work accomplished when depot maintenance or rehabilitation is performed, regardless of location includes emergency on-site repair. Excludes accomplishment of TCTOs.
S-	Special Inspection: Includes all units of work accomplished during all phases of special inspections. Excluding accomplishment of TCTOs.  GROUND CEM TO INCLUDE AFSPC SATELLITE GROUND STATIONS, MOBILE STATIONS AND RADAR STATIONS, COMSEC, AND GROUND CEM "L" SYSTEMS (EXCLUDING GROUND-LAUNCHED MISSILE CEM) - This code will also be used for correction of deficiencies noted during the special flights.
T-	Time-Compliance Technical Order: Includes accomplishment of all TCTOs and status reporting.

<b>Code</b>	<b>Definition</b>
W-	<p>ENGINE SHOP WORK ON REMOVED ENGINES - Minor Maintenance: Performed on engines ("Short- Time Spares") removed to facilitate airframe TCTO; extended aircraft structural limits due to untimely receipt of part, nonavailability of required equipment, work priority, etc., reconcile airframe and engine time for alignment of periodic/phase inspections; and to record manhours expended in repair (minor maintenance) of engines for which minor repair (other than and not to include JEBM) could not be accomplished.</p> <p>SHOP WORK - Special Support and Compliance with 00-20K Series Technical Orders: Includes inspection, testing checking, preservation, and/or packaging of serviceable items from base supply, or en route-or flyaway-kit items.</p>
X-	Research and Development.
Y-	Aircraft/Engine Transient Maintenance: Include all units of work accomplished on/or for transient aircraft/engines, including non-Air Force. Excluding accomplishment of TCTOs.
Z-	This code will be used only for Reliability Improvement Warranty (RIW) items and for equipment managed under the Advanced Configuration Management System (ACMS).



## APPENDIX G

### HOW MALFUNCTION CODES

#### G.1 DEFINITION.

Indicates how or why a piece of equipment malfunctioned (flame-out, cracked, air in system, compression low, etc.). Detailed description, including test results, BIT readouts, measurements and observations should be placed in the narrative portion of the MDC record.

**Type Defect:**           Type 1 - Inherent, an actual failure of the item.  
                                   Type 2 - Induced, the failure of the item was caused by an outside influence.  
                                   Type 6 - No defect, no actual failure.

#### NOTE

Not applicable to users of CFAR.

Code	Type Defect	Definition
001	1	Faulty Tube, Transistor, or Integrated Circuit
002	6	Servicing (may be used with WUC items)
006	1	Contacts, Connectors or Connections Defective
008	1	Noisy/Chattering
011	1	Low-Frequency Vibrations
012	1	Medium-Frequency Vibrations
013	1	High-Frequency Vibrations
020	1	Cut, Worn, Chaffed, Frayed, or Torn
025	1	Capacitance Incorrect
028	1	Conductance Incorrect
029	1	Current Incorrect
037	1	Fluctuates, Unstable, or Erratic
051	1	Fails to Tune or Drifts
064	1	Incorrect Modulation
065	1	High Voltage or Standing Wave Ratio
069	2	Flameout
070	1	Broken
080	1	Burned Out or Defective Lamp, Meter or Indicating Device
086	2	Improper Handling, Shipping or Maintenance Damage
088	1	Incorrect Gain
103	1	Attack Display Incorrect
105	2	Loose, Damaged, or Missing Hardware (nuts, bolts, screws, clamps, safety-wire, etc.)
111	1	Burst or Ruptured
127	1	Adjustment or Alignment Improper
135	1	Binding, Stuck, or Jammed
136	1	Damaged/Cracked Fan Stator Case
137	1	Damaged/Cracked Fan Stator Vanes
138	1	Fan Blade Damage
139	1	Cracked or Warped Inlet Guide

Code	Type Defect	Definition
140	1	Frozen Fan
141	1	Compressor Case Failure or Excessive Air Leakage
142	1	Compressor Damage Due to Failure or Seizures
143	1	Damaged/Cracked Compressor Case
144	1	Compressor Rotor Change (other than FOD)
145	1	Cracked Diffuser Cases
146	1	Combustion Case Burn or Hot Spot
147	1	Combustion Damage
148	1	Damaged/Cracked Turbine Frame/Case (Burned Through)
149	1	Flameholder or Fuel Ring/Bars Damaged
150	1	Thrown, Damaged or Failed Buckets
151	1	Turbine Wheel Failure
152	1	Turbine Nozzle Failure
153	1	Turbine Damage Due to Material Failure
154	1	Engine or Afterburner Fire Damage
155	1	Engine to A/C Mount Failure
156	1	Afterburner or Augmentor Problem Repair
157	1	Thrust Reversor System Failure
158	1	Accessory Drive Gear Box Failures (Includes turboprop gearbox) (Worn splines)
159	1	Internal Reduction Gear Failure
160	1	Bearing and/or Support Failure
161	1	Bearing Failure (Causing rotor shift/seizure)
162	1	Scavenger Pump Failure (Includes turboprop gearbox)
163	1	Engine Decoupled (Turboprop)
164	1	Propeller Brake Failed (Turboprop)
165	1	Power Section Failure (Turboprop)
166	1	Reduction Gear Box Failure (Turboprop)
167	2	Tension or Torque Incorrect
168	1	Torque Meter Failure (Turboprop)
169	1	Voltage Incorrect
170	1	Corroded Mild/Moderate
171	1	Impeller or Inducer Damage (Recip only)
172	1	Slipped Blower Clutch (Recip only)
173	1	Turbo Supercharger Failure (Induction system contaminated with metal from turbo) (Recip only)
174	1	QEC Discrepancy
175	1	Condition Monitoring-Adverse EGT/TIT Trend
176	1	Condition Monitoring-Adverse RPM Trend
177	1	High or Low Fuel Consumption
178	1	Condition Monitoring-Vibration Trend
179	1	Condition Monitoring-Exhaust Pressure Ratio (EPR) Trend
180	1	Condition Monitoring-Adverse Oil Consumption Trend
181	1	Condition Monitoring-Adverse Fuel Flow Trend
182	1	Condition Monitoring-Performance trend indicates compressor section deterioration or damage
183	1	Condition Monitoring-Performance trend indicates combustion section deterioration or damage

Code	Type Defect	Definition
184	1	Condition Monitoring-Performance trend indicates turbine section deterioration or damage
185	1	Condition Monitoring-Performance trend indicates accessory section deterioration
186	1	Condition Monitoring-Removed for further test cell diagnostic check
187	1	Condition Monitoring-Borescope indicates compressor section deterioration
188	1	Condition Monitoring-Borescope indicates combustion section deterioration
189	1	Condition Monitoring-Borescope indicates turbine section deterioration
190	1	Cracked
191	1	High EGT
192	1	Over Temperature
193	1	Excessive Stalls
194	1	High Breather Pressure
195	1	Exceeding Quality Check Temperature Limit
196	1	Excessive Oil From Breather, or High Sump Pressure
197	1	Fuel Leakage
198	2	Contaminated Fuel
199	1	High or Low Oil Consumption
200	1	Oil Leakage
201	2	Contaminated Oil
202	1	Low Oil Pressure
203	1	High Oil Pressure
204	1	Smoke or Fumes in Cockpit
205	1	Start or Off Idle Stagnation
206	1	Steady State Stagnation
207	1	Augmentor Induced Stagnation
208	1	Augmentor Nozzle Mechanism Deterioration
209	1	Internal Noise on Shutdown/Start
210	2	Servicing With Improper Grade or Type of Fuel or Oil
211	2	Corroded Internal Surfaces
212	2	Corroded External Surfaces
213	1	Low Compression (Recip Only)
214	1	Blow By or Detonation (Recip Only)
215	1	Manifold pressure beyond limits, overboost (Recip only)
216	1	Low Manifold Pressure (Recip Only)
217	1	Oil in induction system or compressor section (Recip only)
218	1	Sudden Stoppage or Reduction or Exceeded Torque Limits (Recip/Turboprop Only)
219	1	Internal Failure (Recip Only)
220	1	Loss of Torque (Recip Only)
221	1	Will not carry load (APU)
222	1	Engine Shuts Down After Start (APU)
223	1	Control System Component Malfunction
224	1	Backup/Emergency Control System Failure
225	1	Bleed Air Malfunction
226	1	Engine Start Time Beyond Limits
227	1	Rear Compressor Variable Vane (RCVV) Geometry Improper/Axial Flutter
228	1	Compressor Inlet Variable Vane (CIVV) Geometry Improper

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<b>Code</b>	<b>Type Defect</b>	<b>Definition</b>
230	2	Dirty, Contaminated, or Saturated by Foreign Material
231	1	Augmentor Blowout
232	1	Augmentor No Light
233	1	Augmentor Rumble
234	1	Turbine Bore Fire
242	1	Failed to Operate - Specific Reason Unknown.
253	1	Misfires
254	1	No Output
255	1	Incorrect Output
277	1	Fuel Nozzle/Oil Line Coking
279	1	Spray Pattern Defective
290	1	Fails Diagnostic/Automatic Test
298	6	Domestic Object - No Damage
299	2	Domestic Object Damage
300	6	Foreign Object - No Damage
301	2	Foreign Object Damage (FOD)
303	2	Damage By Semi-Solid Foreign Object (Birds)
305	2	Equipment or Material Physically Damaged
306	1	Equipment or Material Physically Failed
307	1	Composite Material Defective
308	1	Improper Operation
309	1	Electrical Measurements Incorrect
310	1	Incorrect Navigation Measurement
311	1	Damaged or Defective Component (Bulb, Transistor, Integrated Circuit, Fuse, etc.)
312	1	Degraded System Performance
314	1	Inability to Accelerate, All Power Settings Above Idle
315	1	Surges/Fluctuates
317	1	Hot Starts
334	1	Temperature Limits Exceeded
350	1	Insulation Breakdown
372	1	Metal in Sump/Screen or on MAG Plug
374	1	Internal Failure
377	1	Leaking - Class A - Slow Seep (TO 1-1-3)
378	1	Leaking- Class B - Seep (TO 1-1-3)
379	1	Leaking - Class C - Heavy Seep (TO 1-1-3)
380	1	Leaking - Class D - Running Leak (TO 1-1-3)
381	1	Leaking Internal or External
383	1	Lock on Malfunction
410	1	Lack of, or Improper Lubrication
425	1	Pitted, Nicked, Chipped, Scored, Scratched, or Crazed
450	1	Open circuit or wire
457	1	Oscillating
458	1	Out of Balance
464	1	Overspeed
472	1	Fuse Blown or Defective Circuit Panel/Breaker
475	1	Inability to Start, Ground or Air

Code	Type Defect	Definition
476	2	Damage By Solid Foreign Objects (Metal, Stone)
477	2	Damage By Semi-Solid Foreign Object (Ice)
478	2	Damage By Semi-Solid Foreign Objects (Rags, Plastics, Rubber, etc.)
479	2	Damage from Simulated Combat (Air to Air/Air to Ground)
480	2	Damage by Aircraft Accident or Incident
481	2	Exposure to Fire Extinguishing Agent
482	2	Excessive "G" Force Inspection
483	6	Dummy Engine Transaction
484	1	Blade Shingling
513	1	Compressor Stalls (Afterburner)
525	1	Pressure Incorrect/Fluctuates
537	1	Low Power or Thrust
553	2	Does Not Meet Specifications, Drawing, or Other Conformance Requirements (Use with "when discovered" code Y)
561	1	Unable to Adjust to Limits
567	1	Resistance Incorrect
580	1	Temperature Sensitive
583	1	Scope Presentation Incorrect or Faulty
585	1	Sheared
599	1	Travel or Extension Incorrect
602	2	Failed or Damaged Due to Malfunction of Associated Equipment
607	1	No-Go Indication
609	1	Out of Track/Fails to Track
611	1	Set Clearance Plane Violation
615	1	Shorted
622	2	Wet/Condensation
625	1	Gating Incorrect
626	1	Inductance Incorrect
627	1	Attenuation Incorrect
631	1	Gyro Bias Voltage Incorrect
632	6	Expended (Thermal Battery, Fire Extinguisher, etc.)
635	1	Sensitivity Incorrect
637	1	Triggering Incorrect
644	1	Built-in Test (BIT) Indicated Fault
649	1	Sweep Malfunction
651	1	Air in System
652	1	Align Time Excessive
653	1	Ground Speed Error
654	1	Terminal Error - CEP Excessive
655	1	Terminal Error - Range Excessive
656	1	Terminal Error - Azimuth Excessive
657	1	Distance Measurement Error (Navigation Equipment)
658	1	Bearing/Heading Error (Navigation Equipment)
667	1	Corroded Severe
669	1	Potting Material Melting (Reversion Process)
670	1	Erroneous Over "G" Indicator

Code	Type Defect	Definition
672	6	Built In Test (BIT) False Alarm
673	1	Bit Fault Indicator Failure
674	1	Bit Fault Indicated Wrong Unit
675	1	BIT Fault Not Duplicated, Parameters Confirmed by Data
676	6	BIT Fault Not Duplicated on Ground, Parameters Do Not Confirm Fault
677	6	No Defect - Unknown System Limitation
678	1	Internal Self-Protection Circuit Activated
679	2	Known Deficiency Awaiting Depot Solution
680	2	Failure Caused by Manufacturer Deficiency
689	1	Conductive Path Defect/Failure
690	1	Excessive Vibration or Rough Operation
691	1	Video Out of Focus
692	1	Video Faulty
693	1	Audio Faulty
694	1	Weak Video
695	1	Sync Absent or Incorrect
698	2	Faulty Card, Tape, Program, or Disk
710	1	Bearing Failure or Faulty
718	1	Improper Response to Mechanical Input
719	1	Un-Commanded Movement
721	1	Improper Response to Electrical Input
730	1	Loose
731	2	Battle Damage
750	1	Missing
752	1	Tape Missing/Defective
753	6	Tape Removal from FOM
754	1	Fairing Compound Missing/Defective
755	1	Gap Filler Missing/Defective
756	1	Blade Seals Missing/Defective
757	1	Outer Mold Line (OML) Paint, Coating Missing/Defective
780	1	Bent, Buckled, Collapsed, Dented, Distorted, or Twisted
782	1	Tire Tread Area Defective
783	1	Tire Sidewall Damaged or Defective
784	1	Tire Bead Area Damaged or Defective
785	1	Tire Inside Surface Damaged or Defective
786	6	No Defect - Tire Tread Normal Wear
787	6	No Defect - Brake Adjustment Normal Wear
788	6	No Defect - Failure Caused by Improper Turn On Sequence
793	6	No Defect - TCTO Kit Received by Base Supply or Parts Are Available in Supply
796	6	No Defect - TCTO Not Applicable: This is an error code used to tell the IM/SM that this specific piece of equipment should not have been included in the TCTO. This code is not to be used to report compliance
797	6	No Defect - TCTO previously complied with
798	6	No Defect - TCTO complied with by record check or inspection. No modification required
799	6	No Defect

Code	Type Defect	Definition
800	6	No Defect - Component removed/reinstalled. This includes circuit breakers pulled and fuses removed during troubleshooting or to Facilitate Other Maintenance (FOM) (includes disconnect/connection of electrical wires, hydraulic lines etc.)
801	6	No Defect - TCTO complied with, all applicable operations completed
802	6	No Defect - Partial TCTO compliance
804	6	No Defect - Removed for scheduled maintenance, modification or reliability assessment.
805	6	No Defect - Pre/Post Alert Reprogramming
806	6	No Defect - Routine/Emergency/Special Reprogramming
808	6	No Defect - "B" Plug Combination Change
812	6	No Defect - Indicated Defect Caused By Associated Equipment Malfunction
813	6	No Defect - Indicated Defect Caused by Associated Software/Key Code Failure
816	1	Impedance Incorrect
824	1	Gyro Precesses
842	1	Voids, (Composites Structure)
843	1	Unbonded Defects in Bonded Joint (All Structures)
844	1	Hole Wear, Out of Round (Composite Structures)
846	1	Delaminated; Separation of Laminated Layers (Composite Structure)
847	1	Abrasions, Erosion, Pits (Composites)
848	1	Missing and Loose Fibers (Composites)
849	1	Chemical Imbalances (Composites)
865	1	Deteriorated (For protective coating/sealing defective; use with action taken code Z.)
866	6	Expiration of maximum time, (TO directed)
867	6	Transfer Time Limit (TO 2-1-18)
868	6	Removed/rolled back for failed external engine component reinstalled in same aircraft
870	6	Removal for Research, Test, or Diagnostic Event
872	6	Removal During Aircraft Programmed Depot Maintenance
874	2	Storage Damage or Deterioration
875	6	Removal for or Replacement after (Cannibalization)
876	6	Non-Technical Order Directed Removal/Removal for Reconfiguration
877	6	TO-Identified Components
878	6	Removal to perform scheduled/special inspection (PE, HSI, etc., - TO-directed).
879	6	Expiration of maximum cycles/sorties for engines, modules or components (TO-directed)
880	6	Opportunistic maintenance removal (modules and tracked components approaching TO limits).
881	6	Removal to Perform Minor Inspection (Borescope -TO-directed)
884	1	Lead Broken
890	2	Lightning Strike Damage
900	1	Burned or Overheated
901	1	Intermittent
911	6	TCTO not complied with, TCTO complied with in error, or placed in work in error.
916	1	Joint Oil Analysis Program (JOAP) Removal
917	1	Impending Failure or Latent Defect Indicated by NDI

<b>Code</b>	<b>Type Defect</b>	<b>Definition</b>
921	6	No Defect. Item Has Been Rebuilt, Refurbished, been replaced (consumable item) or Has Had Parts Replaced Because of Technical Order (Time Change) Requirements (To be used with Action Taken repair code G, or R, P, and Q for Time Change)
932	1	Does Not Engage, Lock, or Unlock Correctly
939	1	Unable to Load Program
940	1	Failure of Application Software
941	1	Non-programmed Halt
942	2	Illegal Operation or Address
943	1	Data Error
944	6	Update or Verification of Program/Software Load
948	2	Operator Error
949	1	Computer Memory Error/Defect
956	1	Computer Equipment Malfunction
957	1	No Display
959	1	Fails to Transfer to Redundant Equipment
962	1	Low Power (Electrical)
964	1	Poor Spectrum
969	1	Cannot Resonate Input Cavity
972	1	Damaged Probe
974	1	Does Not Track Tuning Curve
982	1	Frozen Tuning Mechanism
987	1	Input/Output Pulse Distortion
988	1	Loss of Vacuum
989	1	Low Coolant Flow Rate
991	1	Frequency Out of Band, Unstable, or Incorrect
995	1	EMP Protection Material Defective
996	1	Radar Absorption Material Defective

## APPENDIX H

### WHEN DISCOVERED CODES

#### H.1 DEFINITION.

Indicates when a need for maintenance was discovered (receiving/shipping/storage inspection, during load, calibration, mating, in-flight, alert, scheduled inspection, etc.). Not applicable to users of CFAR.

#### NOTE

Each code may have more than one definition, depending on the group of systems under maintenance. Following each code is a letter in parenthesis that identifies the systems it can be used with.

- (1) AIRCRAFT, DRONES, AND AIR LAUNCHED MISSILES, REAL PROPERTY, TRAINERS, ENGINES
- (2) GROUND LAUNCH MISSILE (GLCM) - Not Used
- (3) AGE
- (4) GROUND CEM
- (5) CONVENTIONAL AND NUCLEAR MUNITIONS

Code	Definition
0	Eddy Current. (1) (3) (4) (5)
1-	Magnetic Particle. (1) (3)
2-	During Operation of Malfunction Analysis and Recording Equipment or Subsequent Analysis. (MADAR). (1)
3-	ISO/Home Station Check. (1)
4-	Corrosion Control Inspection. (1) (3) (4) (5)
5-	Interior Refurbishment. (1)"
6-	All Other NDI. (1) (3) (4) (5)
7-	X-Ray. (1) (3) (4) (5)
8-	Ultrasonic. (1) (3) (4) (5)
9-	Fluorescent. (1) (3) (4) (5)
A-	Before Flight - Abort. (1) - Countdown--Abort: This code applies to System Readiness Check (SRC) for countdown for actual launch which results in a no-go condition; not applicable Minuteman exercises; this code is applicable to countdown for actual launch such as training or verification launches of all missiles. (5)
B-	Before Flight - No Abort. (1) - Countdown--No Abort: This code applies to discrepancies discovered as specified for code "A" when the discrepancy(s) does not cause the launch or exercise to be aborted. (5).
C-	In-Flight - Abort. (1) - During equipment operation/caused equipment down time. (3) (4) - Simulated Countdown--Abort: This code applies to the missile commanded calibrate, sixty second test or Sensitive Command Network (SCN) Test for Minuteman; and missile and/or launch verification test for Titan II when the discrepancy(s) discovered during these exercises caused the exercise to be aborted. (5)
D-	In-Flight - No Abort. (1) - During equipment operation/did not cause equipment down time. (3) (4) - Simulated Countdown - No Abort: This code applies to discrepancies discovered as specified for code "C" when the discrepancy(s) does not cause the exercise to be aborted. (5)
E-	After Flight. (1) - Post Launch/Refurbish Maintenance: Use for those discrepancies discovered during refurbishment of a launch after missile launch. (5)

Code	Definition
F-	Between Flight - Ground crew (When not associated with an inspection). (1) - Unscheduled Maintenance: Use for discrepancies during phases of operational maintenance not covered by other when discovered codes. (3) (4) (5)
G-	Ground Alert/Operationally Ready - Not Degraded: Use for discrepancies discovered while the weapon system is in an operationally ready/alert status and the discrepancy operationally ready/alert degradation; do not use this code for discrepancies discovered during maintenance/exercise covered by codes B, D, J, N, P, Q, R, T, or V. (1) (4) (5)
H-	Thru-Flight Inspection. (1) - Post load. (5) -Scheduled inspection CEM phase or periodic (does not include daily/shift). (4)
J-	Preflight Inspection. (1) - Daily Inspection/Shift Verification: Use for discrepancies discovered during the performance of regularly scheduled daily inspections or during shift verification, or inspections conducted during change of missile combat crews. (2) (3) (4) (5)
K-	Hourly Postflight Inspection. (1) (5)
L-	During Training or Maintenance on Training Equipment. (1) - During training or maintenance on equipment utilized in a training environment (Use only for Class II training equipment). (3) (4) (5)
M-	Phased/Scheduled/Periodic Inspection: Use for discrepancies discovered during the performance of inspections specified by the Dash-6 Technical Order except Dash-6 Calibrations (See Code T). (1) (3) (5)
N-	Ground Alert - Degraded. (1) (5)
P-	Functional Check Flight. (1) - Functional/Operational/Systems check. (4) (5) - Functional/Operational Check--Result "Bad": Use for discrepancies discovered during performance of a functional/operational check when the discrepancy(s) caused the result to be "Bad"; do not use this code for discrepancies discovered when checks are performed as part of maintenance/exercises covered by codes A, B, C, D, G, H, J, M, T, or V. (3)
Q-	Special Inspection: Use for discrepancies discovered during the performance of "Special" or "One Time" inspections directed by local or higher authority including those directed by the "Special Inspection" portion of the Dash-6 Technical Order (Excluding Minuteman launch Capability Test). (1) (3) (4) (5)
R-	Quality Control Check: Use for all discrepancies discovered by quality control personnel during any phase of maintenance/operation. (1) (3) (4) (5)
S-	Depot Level Maintenance: Use only for discrepancies discovered during maintenance performed at AFMC activities (including SRA's) and those discrepancies discovered during depot level maintenance performed "On Location" such as compliance with depot level TCTOs and modification programs by depot/contractor personnel; support base civil engineer shops may use this code when performing "Depot Level" category maintenance/repair/overhaul on missile weapon system RPIE. (1) (3) (4) (5)
T-	During Scheduled Calibration: Use only for discrepancies discovered during calibration actions directed by appropriate technical directives to be accomplished on a periodic/recurring basis. (1) (3) (4) (5)
U-	Oil Analysis and Non-destructive inspection. Includes optical, penetrant, magnetic particle, radiographic, eddy current, ultrasonic, spectrometric oil analysis, etc. (1) (3) (4)
V-	During Unscheduled Calibration: Use for discrepancies discovered during calibrations actions not covered by code T. (1) (3) (4) (5)
W-	In-Shop Repair and/or Disassembly for Maintenance: Use of this code is restricted to discrepancies discovered while an item is under going "In-Shop" bench check and/or repair; use code "F" for repair and/or disassembly actions performed "On-Equipment" when these actions are not part of an action covered by one of the other codes. (1) (3) (4) (5)
X-	Engine Test Cell Operation. Also used for discrepancies discovered during portable test stands or cell operation. (1) -Mating/De-mating (warhead/clip-in, basic assembly/shape components). (5)
Y-	Upon Receipt or Withdrawal from Supply Stocks: Use for discrepancies discovered during bench check or installation on items received from AFMC depots, contractors, SRA's and/or supply stocks; this code is intended to pinpoint items which are classed as "Serviceable" at time of issue and later proved to be "Unserviceable." (1) (3) (4) (5)

**Code**    **Definition**

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- Z-    AGM Under Wing Check. (1)  
      - During initial equipment installation. (4)  
      - Minuteman Launch Capability Test: Use for discrepancies discovered during performance of Minuteman Launch Capability Test. (3)



## APPENDIX I

### SUPPORT GENERAL CODES

I.1

#### NOTE

- System Program Managers, MAJCOMS, and local commands may add additional lower level codes to 01000, 02000, 05000, 06000, 07000, and 09000 to track specific actions under the category definition. However, data transmitted up channel is rolled up to the two-digit level. Categories 03000 and 04000 will remain standardized as listed in this appendix. Note that some codes have more than one definition. HQ AFMC/A4FI is OPR for these codes.
- Support general LCNs are those beginning with 05 thru 15, excluding 06. Support general LCN codes pertaining to scheduled inspections/maintenance and special inspections combine the first three characters of an LCN (as per MIL-STD-1808) with the five digit Support General WUC will remain standardized as specified in this Appendix. Support general LCNs 05 thru 15 (excluding 06, 13, 051, 151) are transmitted up channel and rolled up to the two-digit level.

LCN	WUC Code	Definition
	01000	<p><b>Ground handling, servicing, and related tasks</b></p> <p><b>Ground handling</b></p> <p>Equipment moving or repositioning            Installation/relocation of equipment            Removal of equipment            Mission equipment operation or support when not associated with scheduled or un-scheduled maintenance</p> <p><b>Servicing and related tasks</b></p> <p>Scheduled power changeover            Troubleshooting end items or facilities (use only for end items or facilities that do not have a WUC assigned)            Unscheduled power changeover            Power production service and checkout            Environmental control            Rehabilitation of antenna systems            Unscheduled antenna system service            Clearing of antenna/transmission right-of-way            Installation of new antenna system            Receiver or transmitter frequency changes            Tape development, reproduction and analysis            Telephone number change</p> <p><b>Rehabilitation of equipment</b></p>

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02000		Equipment and facility cleaning
		Washing or degreasing
		Cleaning and treating equipment to prevent corrosion
		Ground snow, frost, and ice removal
		Cleaning antenna systems, mobile facilities and fixed facilities
		Decontamination
13203000	03000	<b>Scheduled inspection or maintenance</b>
13203100	03100	Preflight inspection
		Receiving Inspection (includes assembly)
		Prior to use inspection
		As required (other than as specified below)
		Daily inspection
13203101	03101	End of runway check
13203102	03102	Inspection, stress component installation
13203107	03107	7 day interval
13203111	03111	Service inspection
13203112	03112	6 month
		Acceptance
13203113	03113	Annual
		Incoming (entering shop)
13203114	03114	14 day
13203115	03115	Shipping
		Final (leaving shop)
1320311K	0311K	Armament
1320311L	0311L	Shelter maintenance
1320311M	0311M	Ramjet
1320311N	0311N	Missile maintenance
1320311P	0311P	Missile interface unit (MIU)
1320311R	0311R	Fueling

1320311S	0311S	Disassembly
1320311T	0311T	SMATE
1320311U	0311U	IMSOC
13203121	03121	21 day
13203128	03128	28 day interval
13203130	03130	In-storage inspection
13203142	03142	42 day
13203156	03156	56 day
13203184	03184	84 day
13203200	03200	Basic postflight/thruflight inspection, as applicable Postflight/down load inspection Installation (do not use for missile to launcher installation)
13203205	03205	Inspection, Combat quick form
13203209	03209	Alert exercise postflight
13203210	03210	Basic postflight/end of day inspection
13203212	03212	Inspection, aircraft recovery
13203215	03215	Combined preflight/postflight inspection
13203220	03220	7-day calendar inspection
13203221	03221	14-day calendar inspection
13203268	03268	168 day
13203300	03300	Hourly postflight inspection Storage inspection (live) Pre-launch
13203305	03305	25-hour engine inspection
13203310	03310	50-hour engine inspection
13203311	03311	100-hour engine inspection

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13203312	03312	200-hour engine inspection
13203313	03313	400-hour engine inspection
13203314	03314	300-hour engine inspection
13203320	03320	30 day
13203330	03330	90 day
13203336	03336	336 day
13203340	03340	60 day interval
13203360	03360	120 day interval
13203370	03370	180 day interval
13203380	03380	270 day interval
13203390	03390	360 day interval
13203395	03395	540 day interval
13203400	03400	Periodic inspection/phase inspection, basic phase Storage inspection (dead) 720 day interval
1320341A	0341A	Phase 1
1320341B	0341B	Phase 2
1320341C	0341C	Phase 3
1320341D	0341D	Phase 4
1320341E	0341E	Phase 5
1320341F	0341F	Phase 6
1320341G	0341G	Phase 7
1320341H	0341H	Phase 8
1320341J	0341J	Phase 9

1320341K	0341K	Phase 10
1320341L	0341L	Phase 11
1320341M	0341M	Phase 12
1320341N	0341N	Phase 13
1320341P	0341P	Phase 14
1320341Q	0341Q	Phase 15
1320341R	0341R	Phase 16
1320341S	0341S	Phase 17
1320341T	0341T	Phase 18
1320341U	0341U	Phase 19
1320341V	0341V	Phase 20
1320341W	0341W	Phase 21
1320341X	0341X	Phase 22
1320341Y	0341Y	Phase 23
1320341Z	0341Z	Phase 24
1320342A	0342A	Phase 25
1320342B	0342B	Phase 26
13203510	03510	15 day
13203580	03580	Armament test equipment
13203596	03596	720 day/2 year
13203597	03597	900 day
13203600	03600	Look phase of programmed depot maintenance (PDM) Post-launch/static firing
13203610	03610	Fix phase of isochronal inspection, status reporting only

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13203700	03700	Storage
13203710	03710	Major inspection
	03711	#4 Major
	03712	C1 Check
	03713	C2 Check
	03714	D Check
13203720	03720	Minor inspection
	03721	#1 Minor
	03722	#2 Minor
	03723	#3 Minor
	03724	B Check
13203730	03730	Home station check
	03731	Home Station Check
	03732	A Check
13203750	03750	Cannibalization Aircraft (Status reporting only)
13203755	03755	Cannibalization Recovery (Status reporting only)
13203800	03800	Re-entry vehicle recycle
13203802	03802	Re-entry vehicle recycle for higher headquarters evaluation
13203803	03803	Re-entry vehicle recycle for time compliance technical order (TCTO)
13203804	03804	Re-entry vehicle for limited life component/technical critical item (LLC/TCI) replacement
13203806	03806	Disassembly for operational test/follow-on operational test (OT/FOT)
13203900	03900	Scheduled depot maintenance for time or operational limits (no other defects)
13203999	03999	Scheduled inspections, not otherwise coded
13504000	04000	<b>Special Inspections</b>
13504100	04100	Missile and pylon
		Special modification inspection
	04101	Foreign Object (FO) Search
13504110	04110	Hard landing
		Pressure checks, warheads
		Operational or system checks
13504111	04111	Special modification inspection
		Nuclear certification
		Operational or system check
		Continuity

13504112	04112	Acceptance inspection Nuclear decertification Special modification inspection Stray voltage Hydrostatic (includes inspection, weighing, and servicing) inspection Equipment inventory
13504113	04113	After fire inspection Functional operational check Air or ground right-of-way inspection (includes intersite cable system, fences, insulators, posts, cable markers, etc.) Moisture
13504114	04114	Excessive "G" load inspection Special inspection - general requirements Hard landing
13504115	04115	Functional taxi check After operational use Special inspection-special event inspection requirements
13504116	04116	Aircraft accident/incident check Functional Test
13504117	04117	Battery capacity/specific gravity check Lot number
13504118	04118	Compass swing check Date of manufacture
13504119	04119	Oil/fuel tank sumps drained inspection Corrosion control inspection Special inspections NOC Corrosion control inspection (use if accomplished separately from a scheduled inspection)
1350411A	0411A	Climatization (includes preparation for Arctic, desert, or tropical operation) Quality Control
1350411C	0411C	Hydraulic system contamination check
1510411B	0411B	Nondestructive inspection accomplished separately from scheduled inspection
0510411D	0411D	Oil sampling for spectrometric analysis
1350411D		Receiving inspection
1350411E	0411E	Rough field mission check Pre-issue inspection

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1350411H	0411H	Fuel components contamination check
1350411J	0411J	Operationally ready inspection (ORI)
1350411K	0411K	Ground inspection
13504120	04120	Calendar Damage inspection Missile/shelter reset
13504121	04121	Hand landing inspection
13504122	04122	Landing gear retraction check
13504123	04123	Wheel/brake inspection
13504124	04124	Pitot-static purge/check
13504125	04125	Oxygen system components check
13504126	04126	Missile pylon/launcher simulator check
13504127	04127	Missile under the wing/integrated systems check
13504128	04128	Fire control and AWCS system checks
13504129	04129	Bombing-navigation-communications system checks
1350412A	0412A	Seat/ejection seat or emergency egress system check
1350412B	0412B	Auxiliary power plant inspection
1350412C	0412C	Integrated electronics system check
1350412D	0412D	Armament 25 hour inspection
1350412E	0412E	Severe turbulence inspection
1350412F	0412F	Calibration of airborne weapon control system (AWCS)
1350412G	0412G	Weapon suspension system inspection
1350412H	0412H	Remote compass check
1350412J	0412J	Aircraft fuselage section inspection
1350412L	0412L	Missile simulated launch check

1350412M	0412M	Mal 45 day inspection
1350412N	0412N	Mal 90 day inspection
1350412P	0412P	Inspection, overweight landing
1350412Q	0412Q	Inspection, landing GR/DR overspeed
13504130	04130	Modification Pressure check, air bottle Special modification inspection
13504131	04131	Engine or cylinder change inspection (includes pre-oil)
13504132	04132	Hot start or overspeeding inspection
13504133	04133	Valve check
13504134	04134	Compression check
13504135	04135	Propeller shaft due check
13504136	04136	Engine or ignition analyzer check
13504137	04137	Engine conditioning (scheduled)
13504138	04138	Minor engine conditioning (unscheduled)
13504139	04139	Engine trim check
1350413A	0413A	Propeller oil control assembly and dome flushing check
1350413B	0413B	Engine hot section inspection
1350413C	0413C	Engine air inlet inspection Insp, L/R Inlet bleed & bypass plenum Insp, acft engine inlet/exhaust inspection
1350413E	0413E	Cylinder borescope inspection/engine compression borescope inspection
1350413F	0413F	Engine valve decarbonization inspection
1350413H	0413H	Retorque of propeller components following engine or propeller change
1350413J	0413J	Exhaust gas temperature (Jet Cal) calibration

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1350413K	0413K	Engine ramp system functional check
1350413L	0413L	By pass bellmouth functional check
1350413M	0413M	Bleed air system pressure loss test check
1350413N	0413N	Engine oil screen inspection/oil strainer inspection
1350413P	0413P	Engine stall/flameout check
13504140	04140	Cabin pressurization/leak test Excessive G loading
13504141	04141	Corrosion control inspections accomplished separately from scheduled inspections Corrosion control
13504142	04142	Engine bay inspection-engine removed
13504143	04143	Air conditioning system check
13504144	04144	Post maintenance check (PMC) of fuel gages
13504145	04145	Transformer rectifier (T/R) unit capacitor check for electrolyte leakage/corrosion
13504147	04147	Penetration aids confidence/self test
■ 1350414X	0414X	High Winds Inspection
	04149	Integral weight and balance check (C130)
13504150	04150	Weight and balance (includes weighing) Transfer Return to storage area
13504151	04151	Emergency equipment (includes life raft, first aid kits, emergency radio, etc.)
13504152	04152	Inspection of seat belts and all harnesses
1350415A	0415A	Datscal
	0415B	ALE-20 system check prior to flare loading (B-52)
1350415C	0415C	AWM-13 stray voltage check
13504160	04160	Rotor overspeed inspection Non-tactical instrumentation Incident/accident

	04161	Powertrain over torque inspection (helicopters)
	04162	Vibration analysis (helicopters)
	04163	Transmission interval (oil filter inspection, helicopters)
13504170	04170	Equipment inventory Cold weather
13504180	04180	Checks requiring special checkout equipment Combined systems checkout
13504181	04181	Airborne WSEM rail checkout
13504182	04182	Harmonization of sights, guns and cameras (fire control, bomb-nav and photo systems)
13504184	04184	Partial AGM-28 combined systems checkout
13504185	04185	Squib continuity and corrosion check
13504186	04186	Inspection of guns and feeder mechanisms
13504187	04187	Quantity indicating system(s) calibration
13504188	04188	Flight director group operational check
13504189	04189	Maximum effort stop/high energy braking inspection
1350418A	0418A	Air data computer and associated pitot and static instruments leak check
1350418B	0418B	Overheat and fire warning system inspection
1350418C	0418C	Refueling boom-probe-drogue-special inspection
	0418D	SRAM system interface check (B-52)
	0418E	SRAM CAE checkout (B-52)
1350418F	0418F	Aero 27 900 hour inspection
13504190	04190	Sudden stoppage inspection
13504199	04199	Special inspection, not otherwise coded
135041M5	041M5	Mode 5 transponder functional check

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13504200	04200	Unscheduled periodic inspection
13604210	04210	Functional check flight
	04221	Corrosion inspection phase I (KC-135 and B-52)
	04222	Corrosion inspection phase II (KC-135 and B-52)
13504227	04227	Controlled interval extension (CIE) inspection accomplished separately from scheduled inspections
13504228	04228	MAU 12 bomb ejector rack inspections
13504270	04270	Partial combined systems checkout
13504280	04280	Checks requiring special checkout equipment
13504310	04310	Receiving inspection
13504311	04311	Uncrating
13504313	04313	Stray voltage check
13504314	04314	Blown fuse/squib or parameter activated
13504315	04315	Purging
13504316	04316	Assembly
13504317	04317	Disassembly
13504320	04320	Hangfire
13504321	04321	Misfire
13504322	04322	30 day on aircraft
13504324	04324	Moisture
13504325	04325	Desiccant container
13504326	04326	Dust cover plug
13504327	04327	DPM-14 checkout
13504330	04330	Extreme temperature

13504340	04340	Load/unload
13504341	04341	Whenever sealing sleeve is removed
13504342	04342	Abort
13504343	04343	When chassis #5 or frequency converter is replaced
13504344	04344	Whenever warhead safe arm device or fuse is removed from missile
13504345	04345	Whenever rocket motor is removed from missile
13504346	04346	Whenever power plant is removed from missile
13504347	04347	Whenever access covers are removed from WSEM or missile
13504348	04348	Incident/accident
13504349	04349	When hydraulic or electrical connections are disconnected
13504350	04350	Whenever branched warhead harness has been installed for 24 months
13504351	04351	Whenever guidance unit is removed from missile
13504352	04352	When the warhead is to be removed from missile
13504353	04353	When warhead is handled
13504354	04354	When control surfaces, servo-positioner, wing cowling is removed or installed
13504355	04355	When fuse antenna is being installed
13504356	04356	When missile or missile components are stored in shipping/storage containers
13504358	04358	Evidence of tampering
13504359	04359	Whenever radioactive atmosphere has been encountered
13504360	04360	Wind/rolleron and fin check
13504361	04361	When guidance unit is exposed to sunlight
13504362	04362	Whenever forward body section displays a dent or deterioration
13504363	04363	Holding area

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13504364	04364	Return to holding area
13504365	04365	Physical shock
13504366	04366	Transfer from container to MHU-12 trailer
13504367	04367	Launcher post download inspection
13504370	04370	After 20 WSEM flights
13504371	04371	Whenever engine exhaust gas temperature exceeds limits
13504372	04372	First run after engine change
13504373	04373	Whenever emergency engine shutdown occurs
13504400	04400	Droppage inspections (these codes shall be assigned as required through/with code 04400)
13504500	04500	Accomplishment of checklists
	04510	Refurbishment Inspection (C-5A only)
13504572	04572	Missile/launch verification (simulation)
13504573	04573	Missile/launch verification (no simulation)
13504574	04574	Missile verification
13504575	04575	Launch verification (simulation)
13504576	04576	Launch verification (no simulation)
13504577	04577	Dynamic response test
13504578	04578	Combined systems test
13504583	04583	Thrust maintenance operation
13504584	04584	Silo door operation
15104610	04610	Nondestructive testing (all types)
15104620	04620	Analysis of oil samples
15104630	04630	Research and development of new or revised nondestructive inspection techniques
13504650	04650	Initial build-up-recovery vehicle (RV)

13504660	04660	Program, re-program, load, re-load, keying, re-keying, of software or keys.
	04710	Digital Flight Data Recorder (DFDR) downloads
13504999	04999	Special inspections not otherwise coded
13504MD4	04MD4	Mode 4 transponder functional check
	05000	Preservation, de-preservation and storage of equipment
	06000	<b>Ground safety</b>
	07000	<b>Preparation and maintenance of records</b> The code will be used to record only the direct labor expended in preparation/maintenance of status and historical forms (this excludes initiation and completion of production documentation forms).
	08000	<b>Special Purpose</b>
	09000	<b>Shop support general code</b> Fabricate (includes fabrication or local manufacture of miscellaneous items). Stenciling/painting (includes stenciling, lettering, installing decals, instrument range marking, etc., and painting for cosmetic purposes only). Do not use this code for treating corrosion or painting of parts/assemblies/equipment for corrosion prevention/control.  Testing and servicing fire extinguishers  Reclamation



## APPENDIX J

### ABBREVIATIONS AND DEFINITIONS

**J.1** This appendix lists abbreviations that are used frequently in this to without their description. Abbreviations used after a single description or in the same paragraph in which they first appear are excluded from this listing. Common, well known abbreviations such as afr, afm, command names, etc., are also excluded.

AAVS	Aerospace Audio Visual Service
ACC	Air Combat Command
ACMS	Advanced Configuration Management System
AETC	Air Education and Training Command
AFSC	Air Force Specialty Code
AFSC	Air Force Sustainment Center
AFCSM	Air Force Computers System Manual
AFTOC	Air Force Total Ownership Cost
AGE	Aerospace Ground Equipment, a subset of support equipment
AGM	Air Ground Missile
ALC	Air Logistics Complex
AMC	Air Mobility Command
ANG	Air National Guard
APU	Auxiliary Power Unit
AS&I	Assembly Surveillance and Inspection
ATC	Action Taken Code
ATE	Automatic Test Equipment
AWP	Awaiting Parts
BCS	Bench Check Serviceable, when off-equipment testing can not replicate the reported discrepancy
BIT	Built-In-Test
CAGE	Contractor and Government Entity
CAIG	Cost Analysis Improvement Group
CBU	Cluster Bomb Unit
CCMS	Commodity Configuration Management System
CCSGMDC	Centrally Calculated Support General Maintenance Data Collection
CDAAS	Centralized Data Acquisition and Analysis System
C-E	Communications-Electronics
CEM	Communications-Electronics & Meteorological
CEMS	Comprehensive Engine Management System
CFAR	Configuration, Failure and Repair
CND	Cannot Duplicate (when on-equipment reported discrepancy is not found in testing)
COMSEC	Communications Security
CPIN	Computer Program Identification Number
CSAS	Configuration Status Accounting System
CSCS	Component Support Cost System
DLT	Decision Logic Table
DPC	Data Processing Center
DR	Deficiency Reporting
DSCS	Defense Satellite Communications System
DSN	Defense Switch Network

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ECM	Electronic Countermeasures
ECS	Embedded Computer System
EIMSURS	Equipment Inventory, Multiple Status, Utilization Reporting Subsystem
EOD	Explosive Ordnance Disposal
ESR	Equipment Status Reporting
ETI	Elapsed Time Indicator
ETIC	Estimated Time In Commission
FEMS	Facility Equipment Maintenance System
FSC	Federal Stock Class
GCSAS	Generic Configuration Status Accounting Subsystem
GEOLOC	Geographic Location Code
GPS	Ground Processing System
ICBM	Intercontinental Ballistic Missiles
ID	Identification
IG	Inspector General
IM	Item Manager
IMDS CDB	Integrated Maintenance Data System Central Data Base
IMF	Integrated Maintenance Facility
IQU	Interactive Query Utility
I/S/U	Inventory/Status/Utilization
JCN	Job Control Number
JDD	Job Data Documentation
JEIM	Jet Engine Intermediate Maintenance
JETD	Joint Electronic Type Designator
LAN	Local Area Network
LCN	Logistics Control Number
LF	Launch Facilities
LIMSS	Logistics Information Management Support System
LRU	Line Replaceable Unit
MADARS	Malfunction and Detection Analysis Recording Subsystem
MA	Maintenance Activity
MAF	Missile Alert Facilities
MDC	Maintenance Data Collection
MDD	Maintenance Data Documentation
MDR	Materiel Deficiency Report
MDS	Mission, Design, and Series
MGM	Material Group Manager
M&I	Maintenance and Inspection
MICAP	Mission Capability
MIS	Management Information System
MISTR	Management of Items Subject to Repair
MJSN	Master Job Standard Number
MRCM	Mobile Radio Communications Maintenance
MSL	Maintenance Supply Liaison
MTS	Mobile Training Set
NATO	North Atlantic Treaty Organization
NDI	Documenting Nondestructive Inspection

NIIN	National Item Identification Number
NOC	Not Otherwise Coded
NOCM	Nuclear Ordnance Commodity Management
NRTS	Not Repairable This Station
NSA	National Security Agency
NSL	National Stock List
NSN	National Stock Number
OCM	On-Condition Maintenance
OMB	Office of Management and Budget
OPR	Office of Primary Responsibility
O&S	Operating and Support
OT&E	Operational Test and Evaluation
PAMS	PMEL Automated Management System
PDM	Programmed Depot Maintenance
PEC	Program Element Code
PGM	Product Group Manager
PM	Program Manager
PME	Precision Measurement Equipment
PMEL	Precision Measurement Equipment Laboratory
PMI	Preventive Maintenance Inspection
PPS	Product Performance Subsystem
PREL	Power, Refrigeration and Electrical
QEC	Quick Engine Change
QPA	Quantity Per Application
RCC	Resource Control Center
REMIS	Reliability and Maintainability Information System
RIW	Reliability Improvement Warranty
R&M	Reliability and Maintainability
RPC	Reparable Processing Center
RPIE	Real Property Installed Equipment
RTE	Resident Training Equipment
RTS	Repaired This Station
RTOK	Retested OK (when depot testing does not replicate reported discrepancy)
RV/RS	Reentry Vehicle/Reentry System
SBLC	Standard Base Level Computer
SCMS	Standard Configuration Management System
SE	Support Equipment, including AGE
SMC	System Management Center
SPD	System Program Director
SPO	System Project Office
SRA	Specialized Repair Activity
SRAM	Short Range Attack Missile
SRAN	Stock Record Account Number
SRD	Standard Reporting Designator
TCI	Time Change Items
TCTO	Time-Compliance Technical Order
TM	TO Manager

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TMC	Type Maintenance Code
TMDE	Test Measurement and Diagnostic Equipment
TMS	Type, Model, and Series
TMSM	Type Model Series Modification
TO	Technical Order
TRC	Technology Repair Center
TRN	Turnaround
TSEC	Telecommunications Security
UF	Usage Factor
WDC	When Discovered Code
WSSCS	Weapon System Support Cost System
WUC	Work Unit Code

## APPENDIX K

### TIME-COMPLIANCE TECHNICAL ORDER CODES

#### K.1 TYPES OF TIME COMPLIANCE TECHNICAL ORDERS.

TCTOs are coded by type as follows:

Type TCTO	Type Code
Immediate action	1
Urgent action	2
Routine action or record type	3
Event type	7
Routine Action, Permanent MOD	8
Immediate Action Inspection	A
Urgent Action Inspection	B
Routine Action Inspection	F
Event Type Inspection	G

#### K.2 TCTO STATUS CODES AND ASSOCIATED HOWMAL CODES.

The following are TCTO status codes:

Code	HOWMAL	TCTO Status
00		No status, no previous action
01	801	Completely complied with
02	797	Previously complied with
03	798	Complied with by record check or inspection. No modification required
04		Not complied with, canceled
05		Lost from AF inventory (Aircraft terminated) (REMIS & CEMS only)
06	802	Partially complied with, ready for work
07		Partially complied with, kit, parts, test equipment on order
08		Not complied with, condition inspection needed
09		Not complied with, held in abeyance. Can only be assigned at the direction of TCTO issuing authority
10	911	Not complied with, placed in work, or reported complied with, in error
11		Not complied with, kit/part/tool on order and not received
12		Not complied with, prior compliance of a field or depot TCTO needed
13		Not complied with, test or support equipment not available
14		Not complied with, equipment not available for compliance
15		Not complied with, event type TCTO
16		Not complied with, depot level TCTO
17	793	Not complied with, TCTO ready for work
18		Partially complied with, depot level
19		Not released by system program manager or item manager
20		TCTO Not Complied with, Kits on Hand, Parts on Order
21		TCTO Not Complied with, Established in CEMS CDB with Release and Rescission date. Applies to organization/intermediate level TCTOs.
22		TCTO not applicable to this equipment

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■	23	796	Not applicable. This is an error code to tell the equipment IM/PM this specific piece of equipment should not have been included in the TCTO. This code is not to be used to report compliance. (REMIS)
	24		Not complied with in storage at AMARG (SRAN 2373) or Tinker Storage (SRAN 20ST). (REMIS & CEMS only)

## APPENDIX L

### AIR FORCE STANDARD ALGORITHMS

**L.1** The following algorithms were compiled based on previous Military Standards.

#### NOTE

TCTO data is stored separately from the rest of MDC at input within REMIS.

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2. ABORT AIR RELATED MAINTENANCE ACTIONS
3. ABORT AIR RATE
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5. ABORT GROUND RELATED MAINTENANCE ACTIONS
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7. ABORT TOTAL RATE
8. BREAK
9. BREAK RELATED REPAIRS
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12. 4 HOUR FIX RATE
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19. TOTAL NRTS
20. BASE NRTS RATE
21. DEPOT NRTS RATE
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23. BASE BENCH CHECK REPAIR (BCR)
24. DEPOT BCR
25. TOTAL BCR
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27. BCS RATE
28. RTOK
29. RTOK RATE
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31. CANNIBALIZATIONS HOURS
32. CANNIBALIZATION RATE
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34. CANNOT DUPLICATE RATE
35. BASE CONDEMNATIONS
36. BASE CONDEMNATION RATE
37. DEPOT CONDEMNATIONS

- 38. DEPOT CONDEMNATION RATE
- 39. TOTAL CONDEMNATIONS
- 40. TOTAL CONDEMNATION RATE
- 41. CORROSIONS
- 42. INHERENT FAILURES (TYPE 1)
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- 45. TOTAL ACTIONS (Type 1, 2 and 6)
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- 52. MANHOURS (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
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- 61. MANHOURS / MISSION (ON EQUIPMENT AND OFF EQUIPMENT)
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- 64. MANHOURS / POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
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- 72. BASE BCR RATE
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- 75. REPAIR HOURS OFF EQUIPMENT (NO CREW SIZE)
- 76. REPAIR HOURS ON EQUIPMENT (NO CREW SIZE)
- 77. REPAIR HOURS OFF EQUIPMENT AND ON EQUIPMENT (NO CREW SIZE)
- 78. REPAIRS OFF EQUIPMENT
- 79. REPAIRS ON EQUIPMENT
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- 85. REPAIR MANHOURS (OFF)
- 86. REPAIR MANHOURS (ON)
- 87. REPAIR MANHOURS (ON EQUIPMENT AND OFF EQUIPMENT)
- 88. MEAN REPAIR TIME OFF EQUIPMENT (MRT)
- 89. MEAN REPAIR TIME ON EQUIPMENT (MRT)
- 90. MEAN REPAIR TIME (MRT) (ON EQUIPMENT AND OFF EQUIPMENT)
- 91. MEAN TIME BETWEEN FAILURE TYPE 1 (MTBF-1) (INHERENT)
- 92. MEAN TIME BETWEEN FAILURE TYPE 2 (MTBF-2) (INDUCED)
- 93. MEAN TIME BETWEEN MAINTENANCE TYPE 6 (MTBM-6) (NO DEFECT)
- 94. MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL)
- 95. MEAN TIME BETWEEN FAILURE TYPE 1 (MTBF-1) (INHERENT) (POSSESSED)
- 96. MEAN TIME BETWEEN FAILURE TYPE 2 (MTBF-2) (INDUCED) (POSSESSED)
- 97. MEAN TIME BETWEEN MAINTENANCE TYPE 6 (MTBM-6) (NO DEFECT) (POSSESSED)
- 98. MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL) (POSSESSED)
- 99. MEAN TIME BETWEEN REMOVAL (MTBR)
- 100. REMOVALS PER 1000 FLYING HOURS
- 101. MEAN TIME TO REPAIR OFF EQUIPMENT (MTTR)
- 102. MEAN TIME TO REPAIR ON EQUIPMENT (MTTR)
- 103. MEAN TIME TO REPAIR ON EQUIPMENT AND OFF EQUIPMENT (MTTR)
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- 106. AIRCRAFT AVAILABILITY (AA)
- 107. UNIT POSSESSED - NOT REPORTED (UPNR)
- 108. DEPOT RATE
- 109. NOT MISSION CAPABLE MAINTENANCE (NMCM)<sub>na</sub>RATE
- 110. NOT MISSION CAPABLE SUPPLY (NMCS)<sub>na</sub>RATE
- 111. NOT MISSION CAPABLE BOTH (NMCB)<sub>na</sub>RATE
- 112. FULLY MISSION CAPABLE (FMC) RATE
- 113. MISSION CAPABLE (MC) RATE
- 114. PARTIALLY MISSION CAPABLE (PMC) RATE
- 115. PARTIALLY MISSION CAPABLE BOTH (PMCB) RATE
- 116. PARTIALLY MISSION CAPABLE MAINTENANCE (PMCM) RATE
- 117. PARTIALLY MISSION CAPABLE SUPPLY (PMCS) RATE
- 118. NOT MISSION CAPABLE (NMC) RATE
- 119. NOT MISSION CAPABLE MAINTENANCE (NMCM) RATE
- 120. NOT MISSION CAPABLE SUPPLY (NMCS) RATE
- 121. NOT MISSION CAPABLE BOTH (NMCB) RATE
- 122. TOTAL NOT MISSION CAPABLE (TNMC) RATE
- 123. TOTAL NOT MISSION CAPABLE MAINTENANCE (TNMCM) RATE)
- 124. TOTAL NOT MISSION CAPABLE SUPPLY (TNMCS) RATE
- 125. TOTAL PARTIALLY MISSION CAPABLE SUPPLY (TPMCS) RATE
- 126. TOTAL PARTIALLY MISSION CAPABLE MAINTENANCE (TPMCM) RATE

1. ABORT AIR

if DEBRIEF DEVIATION CODE = "AA" OR "AI", then add "1" to AIR ABORT.

- 2. ABORT AIR RELATED MAINTENANCE ACTIONS  
if WHEN DISCOVERED CODE = "C"  
then add units to AIR ABORT RELATED MAINTENANCE ACTIONS.

- 3. ABORT AIR RATE  
$$\text{ABORT AIR RATE} = \frac{\text{ABORT AIR}}{\text{SORTIES FLOWN}} \times 100$$

- 4. ABORT GROUND  
if DEBRIEF DEVIATION CODE = "GA" or DEBRIEF DEVIATION CODE ="SP" and CAUSE CODE = "GA\*", then add "1" to GROUND ABORT.

- 5. ABORT GROUND RELATED MAINTENANCE ACTIONS  
if WHEN DISCOVERED CODE = "A"  
then add UNITS to GROUND ABORT RELATED MAINTENANCE ACTIONS.

- 6. ABORT GROUND RATE  
$$\text{ABORT GROUND RATE} = \frac{\text{ABORT GROUND}}{\text{SORTIES FLOWN} + \text{GROUND ABORTS NOT SPARED}} \times 100$$

- 7. ABORT TOTAL RATE  
$$\text{ABORT TOTAL RATE} = \frac{\text{ABORT AIR}}{\text{SORTIES FLOWN}} + \frac{\text{ABORT GROUND}}{\text{SORTIES FLOWN} + \text{GROUND ABORTS NOT SPARED}} \times 100$$

- 8. BREAK  
if DEBRIEF LANDINGS STATUS CODE = "3"  
then add "1" to BREAK.

- 9. BREAK RELATED REPAIRS  
if DEBRIEF LANDINGS STATUS CODE = "3" and  
a related discrepancy record with capability code equal to "3" or "4"  
and for each debriefing discrepancy count the number of  
on and off equipment repairs with the same command  
ON EQUIP RECORD WITH  
ACTION TAKEN CODE equals "P","R","G," "K","L","V","Z"  
or  
OFF EQUIP RECORD WITH  
ACTION TAKEN CODE equals "A","F","G," "K","L","M","N","V," "Z"  
with the same command code, geographic location indicator and JCN  
then add units to BREAK RELATED REPAIRS.

- 10. BREAK RATE  
$$\text{BREAK RATE} = \frac{\text{BREAK}}{\text{SORTIES FLOWN}} \times 100$$

11. FIX  
if DEBRIEF LANDINGS STATUS CODE = "3" and  
there is a related FIX action  
then add "1" to FIX.
12. 4 HOUR FIX RATE
- $$4 \text{ HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 4 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$
13. 8 HOUR FIX RATE
- $$8 \text{ HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 8 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$
14. 12 HOUR FIX RATE
- $$12 \text{ HOUR FIX RATE} = \frac{\text{BREAKS FIXED WITHIN 12 HOURS AFTER LANDING}}{\text{BREAKS}} \times 100$$
15. IN FLIGHT EMERGENCY  
if DEBRIEF DEVIATION CODE = "FE" OR "AI"  
then add "1" to IN FLIGHT EMERGENCY.
16. BASE LEVEL EVENTS  
if the on-equipment or off-equipment  
and the first position of the WUC is not equal to "0"  
(or not equal to support general LCNs, reference Appendix I)  
(the TYPE MAINTENANCE CODE is not equal to "R" and  
the WHEN DISCOVERED CODE is not equal to "S")  
then augment BASE LEVEL EVENTS.
17. BASE NOT REPAIRABLE THIS STATION (NRTS)  
if the on-equipment or off-equipment ACTION TAKEN CODE equals  
"0," "1," "2," "3," "4," "5," "6," "7," or "8" and  
(the TYPE MAINTENANCE CODE is not equal to "R" and  
the WHEN DISCOVERED CODE is not equal to "S"),  
then add UNITS to BASE NRTS.
18. DEPOT NRTS  
if the on-equipment or off-equipment ACTION TAKEN CODE equals  
"0," "1," "2," "3," "4," "5," "6," "7" or "8" or  
(the TYPE MAINTENANCE CODE equals to "R" or  
the WHEN DISCOVERED CODE equals to "S"),  
then add UNITS to DEPOT NRTS.
19. TOTAL NRTS
- $$\text{TOTAL NRTS} = \text{BASE NRTS} + \text{DEPOT NRTS}$$

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20. BASE NRTS RATE

$$\text{BASE NRTS RATE} = \frac{\text{BASE NRTS}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

21. DEPOT NRTS RATE

$$\text{DEPOT NRTS RATE} = \frac{\text{DEPOT NRTS}}{(\text{RTOKS} + \text{DEPOT BCR} + \text{DEPOT NRTS} + \text{DEPOT CONDEMNATIONS} - \text{BASE NRTS})} \times 100$$

22. TOTAL NRTS RATE

$$\text{TOTAL NRTS RATE} = \frac{\text{TOTAL NRTS}}{(\text{BCS} + \text{RTOK} + \text{TOTAL BCR} + \text{TOTAL CONDEMNATIONS} - \text{TOTAL NRTS})} \times 100$$

23. BASE BENCH CHECK REPAIR (BCR)

if the on-equipment  
first position of the WUC is not equal to "0" and  
(or not equal to support general LCNs, reference Appendix I)  
HOW MAL CLASS equals 1 or 2 and  
the ACTION TAKEN CODE equals "P" or "R" and  
there exists a related off-equipment record  
whose WUC equals this on-equipment record's WUC and  
the ACTION TAKEN CODE of the off-equipment record equals "A" or "F"  
(the TYPE MAINTENANCE CODE is not equal to "R" and  
the WHEN DISCOVERED CODE is not equal to "S")  
then add UNITS to BASE BCR.

24. DEPOT BCR

if the first position of the WUC is not equal to "0" and  
(or not equal to support general LCNs, reference Appendix I)  
the ACTION TAKEN CODE of the off-equipment record equals "A" or "F"  
(the TYPE MAINTENANCE CODE equals "R" and  
the WHEN DISCOVERED CODE equals "S")  
then add UNITS to DEPOT BCR.

25. TOTAL BCR

$$\text{TOTAL BCR} = \text{BASE BCR} + \text{DEPOT BCR}$$

26. BENCH CHECK SERVICEABLE (BCS)

if the on-equipment  
first position of the WUC is not equal to "0" and  
(or not equal to support general LCNs, reference Appendix I)  
the HOW MAL CLASS equals 1 or 2 and  
the ACTION TAKEN CODE equals "P" or "R" and  
there is a related off-equipment record  
whose WUC equals this on-equipment record's WUC and  
the ACTION TAKEN CODE equals "B" and  
(the TYPE MAINTENANCE CODE is not equal to "R" and  
the WHEN DISCOVERED CODE is not equal to "S")  
then add UNITS to BCS.

## 27. BASE BCS RATE

$$\text{BCS RATE} = \frac{\text{BASE BCS}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

## 28. RTOK

if the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 the ACTION TAKEN CODE of the off equipment record equals "B"  
 (the TYPE MAINTENANCE CODE equals "R" or  
 the WHEN DISCOVERED CODE equals "S")  
 then add UNITS to RTOK.

## 29. RTOK RATE

$$\text{RTOK RATE} = \frac{\text{RTOK}}{(\text{RTOK} + \text{DEPOT BCR} + \text{DEPOT CONDEMNATIONS})} \times 100$$

## 30. CANNIBALIZATIONS (CANNS)

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 the ACTION TAKEN CODE equals "T"  
 then add UNITS to CANNIBALIZATIONS.

## 31. CANNIBALIZATIONS (CANNS) HOURS

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 the ACTION TAKEN CODE equals "T" or "U"  
 then add LABOR MANHOURS to CANNIBALIZATION HOURS.

## 32. CANNIBALIZATION RATE

if TYPE EQUIPMENT equals "A" or "E" then

$$\text{CANNIBALIZATION RATE} = \frac{\text{CANNIBALIZATIONS}}{\text{SORTIES FLOWN}} \times 100$$

if TYPE EQUIPMENT not equal "A" or "E" then

$$\text{CANNIBALIZATION RATE} = \frac{\text{CANNIBALIZATIONS}}{\text{action taken "P," "R," or "T"}} \times 100$$

## 33. CANNOT DUPLICATES (CND)

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 the ACTION TAKEN CODE equals "H" and  
 the HOW MALFUNCTION CODE equals 672, 799, 812 or 948  
 then add UNITS to CANNOT DUPLICATES.

34. CANNOT DUPLICATE RATE

$$\text{CANNOT DUPLICATE RATE} = \frac{\text{CANNOT DUPLICATES}}{\text{TOTAL ACTIONS}} \times 100$$

35. BASE CONDEMNATIONS

if the off-equipment

the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 (the TYPE MAINTENANCE CODE is not equal to "R" and  
 the WHEN DISCOVERED CODE is not equal to "S") and  
 the ACTION TAKEN CODE equals "9"  
 then add UNITS to BASE CONDEMNATIONS.

if the on-equipment

TYPE EQUIPMENT equals "E" and  
 the first position of the WUC is not equal to "0" and  
 (the TYPE MAINTENANCE CODE is not equal to "R" and  
 the WHEN DISCOVERED CODE is not equal to "S") and  
 the ACTION TAKEN CODE equals "9"  
 then add UNITS to BASE CONDEMNATIONS.

36. BASE CONDEMNATION RATE

$$\text{BASE CONDEMNATION RATE} = \frac{\text{BASE CONDEMNATIONS}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

37. DEPOT CONDEMNATIONS

if the off-equipment

the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 (the TYPE MAINTENANCE CODE equals "R" or  
 the WHEN DISCOVERED CODE equals "S") and  
 the ACTION TAKEN CODE equals "9"  
 then add UNITS to DEPOT CONDEMNATIONS.

if the on-equipment

TYPE EQUIPMENT equals "E" and  
 the first position of the WUC is not equal to "0" and  
 (the TYPE MAINTENANCE CODE equals "R" or  
 the WHEN DISCOVERED CODE equals "S") and  
 the ACTION TAKEN CODE equals "9"  
 then add UNITS to DEPOT CONDEMNATIONS.

38. DEPOT CONDEMNATION RATE

$$\text{DEPOT CONDEMNATION RATE} = \frac{\text{DEPOT CONDEMNATIONS}}{(\text{RTOK} + \text{DEPOT BCR} + \text{DEPOT CONDEMNATIONS})} \times 100$$

39. TOTAL CONDEMNATIONS

$$\text{TOTAL CONDEMNATIONS} = \text{BASE CONDEMNATIONS} + \text{DEPOT CONDEMNATIONS}$$

## 40. TOTAL CONDEMNATION RATE

$$\text{TOTAL CONDEMNATION RATE} = \frac{\text{TOTAL CONDEMNATIONS}}{(\text{RTOKs} + \text{BCS} + \text{TOTAL BCR} + \text{TOTAL CONDEMNATIONS})} \times 100$$

## 41. CORROSIONS

if the on-equipment or off-equipment  
 the WUC/LCN is not support general and  
 (the HOW MALFUNCTION CODE equals 170, 211, 212, or 667 or  
 the ACTION TAKEN CODE equals "Z")  
 then add UNITS to CORROSIONS.

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 the ACTION TAKEN CODE equals "P" or "R" and  
 there is a related off-equipment record  
 whose WUC equals this on-equipment record's WUC and  
 (the HOW MALFUNCTION CODE equals 170, 211, 212, or 667 or  
 the ACTION TAKEN CODE equals "Z")  
 then add UNITS to CORROSIONS.

## 42. INHERENT FAILURES (TYPE 1)

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 the HOW MAL CLASS equals 1 and  
 the ACTION TAKEN CODE equals "F","K","L," or "Z"  
 then add UNITS to INHERENT FAILURES.

if the on-equipment  
 the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 the HOW MAL CLASS equals 1 and  
 the ACTION TAKEN CODE equals "P" or "R" and  
 there is no related off-equipment record  
 whose WUC equals this on-equipment record's WUC and  
 the ACTION TAKEN CODE equals "B"  
 then add UNITS to INHERENT FAILURES.

if the on-equipment  
 the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 the HOW MAL CLASS equals 1 and  
 the type equipment is equal to "E" and  
 the ACTION TAKEN CODE equals "A"  
 then add UNITS to INHERENT FAILURES.

## 43. INDUCED FAILURES (TYPE 2)

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 (the HOW MAL CLASS equals 2 and  
 the ACTION TAKEN CODE equals "F","G","K," "L," or "Z") or  
 (the HOW MAL CLASS equals 1 and the ACTION TAKEN CODE equals "G")  
 then add UNITS to INDUCED FAILURES.

if the on-equipment  
the first position of the WUC is not equal to "0" and  
the HOW MAL CLASS equals 2 and  
the ACTION TAKEN CODE equals "P" or "R" and  
there is no related off-equipment record  
whose WUC equals this on-equipment record's WUC and  
the ACTION TAKEN CODE equals "B"  
then add UNITS to INDUCED FAILURES.

if the on-equipment  
the first position of the WUC is not equal to "0" and  
the HOW MAL CLASS equals 2 and  
the type equipment is equal to "E" and  
the ACTION TAKEN CODE equals "A"  
then add UNITS to INDUCED FAILURES.

44. NO DEFECT ACTIONS (TYPE 6)

if the on-equipment  
the first position of the WUC is not equal to "0" and  
(or not equal to support general LCNs, reference Appendix I)  
there is a related off-equipment record  
whose WUC equals this on-equipment record's WUC and  
the ACTION TAKEN CODE equals "B"  
then add UNITS to NO DEFECT ACTIONS.

if the on-equipment  
the first position of the WUC is not equal to "0" and  
(the HOW MAL CLASS equals 6 and the ACTION TAKEN CODE  
equals "P," "R," "L," "Z," "T," "S," or "G") or  
(the ACTION TAKEN CODE equals "E," "H," "J," "Q," "W," "V," "X," or "Y")  
then add UNITS to NO DEFECT ACTIONS.

if the on-equipment  
TYPE EQUIPMENT is equal to "E" and  
the first position of the WUC is not equal to "0" and  
the HOW MAL CLASS equals 6 and  
the ACTION TAKEN CODE equals "A"  
then add UNITS to NO DEFECT ACTIONS.

45. TOTAL FAILURES (TYPE 1, 2 and 6)

TOTAL FAILURES = INHERENT FAILURES + INDUCED FAILURES + NO DEFECT ACTIONS

45a. TOTAL MAINTENANCE ACTIONS

TOTAL MAINTENANCE ACTIONS = ALL WORK CENTER EVENTS (WCE) WITH UNITS PRODUCED > 0

46. MAINTENANCE EVENTS OFF EQUIPMENT

if the off-equipment  
the first position of the WUC is not equal to "0" and  
(or not equal to support general LCNs, reference Appendix I)  
then augment MAINTENANCE EVENTS (OFF).

**NOTE**

The difference between events and total actions is that events does not check for particular action taken and how malfunction combinations and total actions does. Total actions may be smaller than events in some instances.

47. MAINTENANCE EVENTS ON EQUIPMENT  
 if the on-equipment  
   the first position of the WUC is not equal to "0" and  
   (or not equal to support general LCNs, reference Appendix I)  
 then augment MAINTENANCE EVENTS (ON).
48. MANHOURS (INSPECTION)  
 if on-equipment or off-equipment  
   the first two positions of the WUC equals 03 or 04  
   (or LCN equal to 132, 135, 136, 051 or 151)  
 then add LABOR MANHOURS to MANHOURS (INSPECTION).
49. MANHOURS (OFF EQUIPMENT)  
 if the off-equipment  
   the first position of the WUC is not equal to "0" and  
   (or not equal to support general LCNs, reference Appendix I)  
 then add LABOR MANHOURS to MANHOURS (OFF).
50. MANHOURS (ON EQUIPMENT)  
 If the on-equipment  
   the first position of the WUC is not equal to "0" and  
   (or not equal to support general LCNs, reference Appendix I)  
 then add LABOR MANHOURS to MANHOURS (ON).
51. MANHOURS (ON EQUIPMENT AND OFF EQUIPMENT)  
  
 MANHOURS (ON AND OFF) = MANHOURS (ON) + MANHOURS (OFF)
52. MANHOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN)  
 MANHOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN) = MANHOURS (ON)  
   + MANHOURS (OFF)  
   + MANHOURS (SUPGEN)
53. MANHOURS (SCHEDULED)  
 If the on-equipment or off-equipment  
 (TYPE\_EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals  
   "A," "C," "D," "E," "H," "J," "P," "Q," or "R")  
 (TYPE\_EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals  
   "A," "C," "D," "H," "J," "P," "Q," or "R") or  
 (TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals  
   "A," "C," "D," "E," "J," "P," "Q," or "R") or  
 (TYPE EQUIPMENT is not equal "C" or "R" or "A" or "E" and TYPE MAINTENANCE  
   CODE equals "A," "D," "J," "P," "Q" or "R")  
 and the first position of the WUC is not equal to "0"  
 add the LABOR MANHOURS to MANHOURS (SCHEDULED).
54. MANHOURS (UNSCHEDULED)

if the on-equipment or off-equipment  
 TYPE\_EQUIPMENT equals "A" and  
 TYPE MAINTENANCE CODE equals "B," "S," or "Y" and  
 the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT equals "E" and  
 TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and  
 and the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT equals "C" or "R" and  
 TYPE MAINTENANCE CODE equals "B," "H," or "S" and  
 the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and  
 TYPE MAINTENANCE CODE equals "B" or "S" and  
 the first position of the WUC is not equal to "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (UNSCHEDULED).

55. MANHOURS (SUPPORT GENERAL)

if the on-equipment or off-equipment  
 the first WUC position equals "0"  
 then add LABOR MANHOURS to MANHOURS (SUPPORT GENERAL).

56. MANHOURS (SUPPORT GENERAL UNSCHEDULED)

if the on-equipment or off-equipment  
 TYPE\_EQUIPMENT equals "A" and  
 TYPE MAINTENANCE CODE equals "B," "S," or "Y" and  
 the first position of the WUC equals "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT equals "E" and  
 TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and  
 and the first position of the WUC equals "0"  
 (or not equal to support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT equals "C" or "R" and  
 TYPE MAINTENANCE CODE equals "B," "H," or "S" and  
 the first position of the WUC equals "0"  
 add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

if the on-equipment or off-equipment  
 TYPE EQUIPMENT is not equal "C," "R," "A" or "E" and  
 TYPE MAINTENANCE CODE equals "B" or "S" and  
 the first position of the WUC equals "0"  
 add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL UNSCHEDULED).

57. MANHOURS (SUPPORT GENERAL SCHEDULED)

if the on-equipment or off-equipment  
 (TYPE\_EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals  
 "A," "C," "D," "E," "H," "J," "P," "Q," or "R") or  
 (TYPE\_EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals  
 "A," "C," "D," "H," "J," "P," "Q," or "R") or  
 (TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals  
 "A," "C," "D," "E," "J," "P," "Q" or "R") or  
 (TYPE EQUIPMENT is not equal "C" or "R" or "A" or "E" and TYPE MAINTENANCE  
 CODE equals "A," "D," "J," "P," "Q," or "R")  
 and the position of the WUC equals to "0"  
 (or equals support general LCNs, reference Appendix I)  
 add the LABOR MANHOURS to MANHOURS (SUPPORT GENERAL SCHEDULED).

## 58. MANHOURS (TCTO)

if the on-equipment or off-equipment  
 TYPE MAINTENANCE CODE equals "T"  
 then add LABOR MANHOURS to MANHOURS (TCTO).

## 59. MANHOURS/FLYING HOURS (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / FLYING HOUR} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{FLYING HOURS}}$$

## 60. MANHOURS/FLYING HOURS (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS / FLYING HOUR} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{FLYING HOURS}}$$

## 61. MANHOURS/MISSION (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / MISSION} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{MISSIONS}}$$

## 62. MANHOURS/MISSION (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS / MISSION} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{MISSIONS}}$$

## 63. MANHOURS/POSSESSED (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / POSSESSED} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{POSSESSED HOURS}}$$

## 64. MANHOURS/POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS / POSSESSED} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{POSSESSED HOURS}}$$

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65. MANHOURS/SORTIES (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / SORTIE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{SORTIES FLOWN}}$$

66. MANHOURS/SORTIES (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS / SORTIE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{SORTIES FLOWN}}$$

67. MANHOURS/ACTIVE (ON EQUIPMENT AND OFF EQUIPMENT)

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{MANHOURS / ACTIVE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{ACTIVE TIME}}$$

68. MANHOURS/ACTIVE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{MANHOURS / ACTIVE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{ACTIVE TIME}}$$

69. REMOVALS

if the on-equipment or off-equipment  
and the first position of the WUC is not equal to "0"  
(or not equal to support general LCNs, reference Appendix I)  
the ACTION TAKEN CODE equals "P" or "R"  
then add UNITS to REMOVALS.

70. REMOVALS (SCHEDULED)

when the scheduled removals did not bench check serviceable  
if the on-equipment or off-equipment  
(TYPE EQUIPMENT equals "A" and TYPE MAINTENANCE CODE equals  
"A," "C," "D," "E," "H," "J," "P," "Q," or "R" or  
(TYPE EQUIPMENT equals "E" and TYPE MAINTENANCE CODE equals  
"A," "C," "D," "H," "J," "P," "Q," or "R") or  
(TYPE EQUIPMENT equals "C" or "R" and TYPE MAINTENANCE CODE equals  
"A," "C," "D," "E," "J," "P," "Q," or "R" or  
(TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and TYPE MAINTENANCE  
CODE equals "A," "D," "J," "P," "Q," or "R")  
and the first position of the WUC is not equal to "0"  
(or not equal to support general LCNs, reference Appendix I)  
and TAKEN CODE equals "P" or "R" and  
HOW MALFUNCTION CLASS equals 1 or 2 and  
there is not a related off-equipment record  
whose WUC equals this on-equipment record's WUC and  
the ACTION TAKEN CODE equals "B"  
then add UNITS to REMOVALS (SCHEDULED).

## 71. REMOVALS (UNSCHEDULED)

when the removals did not bench check serviceable

if the on-equipment or off-equipment

TYPE EQUIPMENT equals "A" and

TYPE MAINTENANCE CODE equals "B," "S," or "Y" and

the first position of the WUC is not equal to "0"

(or not equal to support general LCNs, reference Appendix I)

and TAKEN CODE equals "P" or "R" and

HOW MALFUNCTION CLASS equals 1 or 2 and

there is not a related off-equipment record

whose WUC equals this on-equipment record's WUC and

the ACTION TAKEN CODE equals "B"

then add UNITS to REMOVALS (UNSCHEDULED).

if the on-equipment or off-equipment

TYPE EQUIPMENT equals "E" and

TYPE MAINTENANCE CODE equals "B," "E," "L," "S," "W," "X," or "Y" and

the first position of the WUC is not equal to "0"

and TAKEN CODE equals "P" or "R" and

HOW MALFUNCTION CLASS equals 1 or 2 and

there is not a related off-equipment record

whose WUC equals this on-equipment record's WUC and

the ACTION TAKEN CODE equals "B"

then add UNITS to REMOVALS (UNSCHEDULED).

if the on-equipment or off-equipment

TYPE EQUIPMENT equals "C" or "R" and

TYPE MAINTENANCE CODE equals "B," "H," or "S" and

the first position of the WUC is not equal to "0"

(or not equal to support general LCNs, reference Appendix I)

and TAKEN CODE equals "P" or "R" and

HOW MALFUNCTION CLASS equals 1 or 2 and

there is not a related off-equipment record

whose WUC equals this on-equipment record's WUC and

the ACTION TAKEN CODE equals "B"

then add UNITS to REMOVALS (UNSCHEDULED).

If the on-equipment or off-equipment

TYPE EQUIPMENT is not equal "C," "R," "A," or "E" and

TYPE MAINTENANCE CODE equals "B" or "S" and

the first position of the WUC is not equal to "0"

(or not equal to support general LCNs, reference Appendix I)

and TAKEN CODE equals "P" or "R" and

HOW MALFUNCTION CLASS equals 1 or 2 and

there is not a related off-equipment record

whose WUC equals this on-equipment record's WUC and

the ACTION TAKEN CODE equals "B"

then add UNITS to REMOVALS (UNSCHEDULED).

## 72. BASE BCR RATE

$$\text{BASE BCR RATE} = \frac{\text{BASE BCR}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATION})} \times 100$$

## 73. DEPOT BCR RATE

$$\text{DEPOT BCR RATE} = \frac{\text{DEPOT BCR}}{(\text{RTOK} + \text{DEPOT BCR} + \text{DEPOT CONDEMNATIONS})} \times 100$$

74. TOTAL BCR RATE

$$\text{TOTAL BCR RATE} = \frac{\text{TOTAL BCR}}{(\text{BCS} + \text{RTOK} + \text{TOTAL BCR} + \text{TOTAL CONDEMNATIONS})} \times 100$$

75. REPAIR HOURS ON EQUIPMENT (No Crew Size) (Maintenance time to repair on-equipment regardless of crew size)

if the on-equipment

WUC/LCN is not support general and

ACTION TAKEN CODE equals "R","P","G," "K","L","V","Z," or "F"

then add LABOR HOURS (not using CREW SIZE) to REPAIR HOURS (ON).

**NOTE**

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

76. REPAIR HOURS OFF EQUIPMENT (No Crew Size) (Maintenance time to repair off-equipment regardless of crew size)

if the off-equipment

the first position of the WUC is not equal to "0" and

(or not equal to support general LCNs, reference Appendix I)

ACTION TAKEN CODE equals "A","F","G," "K","L","M","N","V" or "Z"

then add LABOR HOURS (not using CREW SIZE) to the REPAIR HOURS (OFF).

**NOTE**

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

77. REPAIR HOURS (OFF EQUIPMENT AND ON EQUIPMENT) = REPAIR HOURS (ON)  
+ REPAIR HOURS (OFF) (Maintenance time to repair on or off equipment regardless of crew size)

**NOTE**

If start and stop time are not provided with the transaction add the difference between stop date and time and start date and time to the repair hours else add labor hours to the repair hours.

78. REPAIR ACTIONS (OFF EQUIPMENT) (Repair actions to repair Off-Equipment)

if the off-equipment

the first position of the WUC is not equal to "0" and

(or not equal to support general LCNs, reference Appendix I)

ACTION TAKEN CODE equals "A," F","G","K," "L," "V," or "Z"

then add UNITS to the REPAIR ACTIONS (OFF).

79. REPAIR ACTIONS (ON EQUIPMENT) (Repair actions to repair On-Equipment)

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 ACTION TAKEN CODE equals "P","R","F," "G","K","L","V," or "Z" and TYPE MAINTENANCE CODE not  
 equal to "T"  
 then add UNITS to REPAIR ACTIONS (ON).

### NOTE

On Equip Engine work may have ATC "A" for repairs.

80. REPAIR ACTIONS  
 (ON EQUIPMENT AND OFF EQUIPMENT) = REPAIR ACTIONS (ON) + REPAIR ACTIONS (OFF)

81. BASE REPAIR ACTIONS (ON EQUIPMENT AND OFF EQUIPMENT)

if the off-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 ACTION TAKEN CODE equals "A","F","G," "K," "L," "V," or "Z"  
 (the TYPE MAINTENANCE CODE is not equal to "R" or  
 the WHEN DISCOVERED CODE is not equal to "S"),  
 then add UNITS to the BASE REPAIR ACTIONS (ON AND OFF).

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 ACTION TAKEN CODE equals "R","P","F," "G","K","L","V," or "X"  
 (the TYPE MAINTENANCE CODE is not equal to "R" or  
 the WHEN DISCOVERED CODE is not equal to "S"),  
 then add UNITS to BASE REPAIR ACTIONS (ON AND OFF).

82. BASE REPAIR RATE

$$\text{BASE REPAIR RATE} = \frac{\text{BASE REPAIR ACTIONS (ON AND OFF)}}{(\text{BCS} + \text{BASE REPAIR ACTIONS (ON AND OFF)} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

83. DEPOT REPAIR ACTIONS (ON EQUIPMENT AND OFF EQUIPMENT)

if the off-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 ACTION TAKEN CODE equals "A","F","G," "K," "L," "V" or "Z"  
 (the TYPE MAINTENANCE CODE equals to "R" or  
 the WHEN DISCOVERED CODE equals to "S"),  
 then add UNITS to the DEPOT REPAIR ACTIONS (ON AND OFF).

if the on-equipment  
 the first position of the WUC is not equal to "0" and  
 (or not equal to support general LCNs, reference Appendix I)  
 ACTION TAKEN CODE equals "R","P","F," "G","K","L","V," or "Z"  
 (the TYPE MAINTENANCE CODE equals to "R" or  
 the WHEN DISCOVERED CODE equals to "S"),  
 then add UNITS to DEPOT REPAIR ACTIONS (ON AND OFF).

84. DEPOT REPAIR RATE

$$\text{REPAIR RATE} = \frac{\text{DEPOT REPAIR ACTIONS (ON AND OFF)}}{(\text{RTOK} + \text{DEPOT REPAIR ACTIONS (ON AND OFF)} + \text{DEPOT CONDEMNATIONS})} \times 100$$

85. REPAIR MANHOURS (ON EQUIPMENT) (Maintenance time to complete repair of On-Equipment actions regardless of crew size)  
 if the on-equipment  
     the first position of the WUC is not equal to "0" and  
     (or not equal to support general LCNs, reference Appendix I)  
     ACTION TAKEN CODE equals "P," "R," "F," "G," "K," "L," "V," or "Z" and TYPE MAINTENANCE CODE not equal to "T"  
     then add LABOR HOURS to REPAIR MANHOURS (ON).

**NOTE**

On Equip Engine work may have ATC "A" for repairs.

86. REPAIR MANHOURS (OFF EQUIPMENT) (Maintenance time to complete repair of Off-Equipment actions regardless of crew size)  
 if the off-equipment  
     the first position of the WUC is not equal to "0" and  
     (or not equal to support general LCNs, reference Appendix I)  
     ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V," or "Z"  
     then add LABOR HOURS to the REPAIR MANHOURS (OFF);
87. REPAIR MANHOURS (ON AND OFF EQUIPMENT)  
 if the on-equipment  
     the first position of the WUC is not equal to "0" and  
     (or not equal to support general LCNs, reference Appendix I)  
     ACTION TAKEN CODE equals "P," "R," "G," "K," "L," "V," or "Z"  
     then add LABOR HOURS to REPAIR MANHOURS (ON AND OFF).  
 if the off-equipment  
     the first position of the WUC is not equal to "0" and  
     (or not equal to support general LCNs, reference Appendix I)  
     ACTION TAKEN CODE equals "A," "F," "G," "K," "L," "M," "N," "V," or "Z"  
     then add LABOR HOURS to REPAIR MANHOURS (ON AND OFF).

88. MEAN REPAIR TIME OFF EQUIPMENT (MRT)

$$\text{MRT} = \frac{\text{REPAIR MANHOURS (OFF)}}{\text{REPAIR ACTIONS (OFF)}}$$

**NOTE**

The difference between MRT and MTTR is that MRT uses crew size in the calculation of manhours and MTTR does not use crew size in the calculation of hours.

89. MEAN REPAIR TIME ON EQUIPMENT (MRT)

$$\text{MRT} = \frac{\text{REPAIR MANHOURS (ON)}}{\text{REPAIR ACTIONS (ON)}}$$

**NOTE**

The difference between MRT and MTTR is that MRT uses crew size in the calculation of manhours and MTTR does not use crew size in the calculation of hours.

## 90. MEAN REPAIR TIME ON EQUIPMENT AND OFF EQUIPMENT (MRT)

$$\text{MRT} = \frac{\text{REPAIR MANHOURS (ON)} + \text{REPAIR MANHOURS (OFF)}}{\text{REPAIR ACTIONS (ON)} + \text{REPAIR ACTIONS (OFF)}}$$

**NOTE**

The difference between MRT and MTTR is that MRT uses crew size in the calculation of manhours and MTTR does not use crew size in the calculation of hours.

## 91. MEAN TIME BETWEEN FAILURE TYPE 1 (INHERENT) (MTBF-1)

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{MTBF-1 (INHERENT)} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{INHERENT FAILURES}}$$

if TYPE EQUIPMENT equals "C," "R," "S"  
then

$$\text{MTBF-1 (INHERENT)} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{INHERENT FAILURES}}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," "R," or "S"  
then

$$\text{MTBF-1 (INHERENT)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INHERENT FAILURES}}$$

**NOTE**

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

MTBF-1 is the mean time between a verified failure. All bench check serviceables are subtracted out. No cannot duplicates are included.

## 92. MEAN TIME BETWEEN FAILURE TYPE 2 (INDUCED) (MTBF-2)

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{INDUCED FAILURES}}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," "R," or "S"  
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

**NOTE**

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

93. MEAN TIME BETWEEN MAINTENANCE TYPE 6 (NO DEFECT) (MTBM-6)

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{DEFECT FAILURES ACTIONS}}$$

if TYPE EQUIPMENT is not equal "A," "E," "C," "R," or "S" then

$$\text{MTBM-6 (NO DEFECT)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

**NOTE**

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

94. MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL)

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{MTBM-TOTAL} = \frac{\text{FLYING HOURS X QPA X UF}}{\text{TOTAL MAINTENANCE ACTIONS}}$$

if TYPE EQUIPMENT equals to "C," "R," "S"  
then

$$\text{MTBM-TOTAL} = \frac{\text{ACTIVE TIME X QPA X UF}}{\text{TOTAL MAINTENANCE ACTIONS}}$$

**NOTE**

USAGE FACTOR (UF) and QUANTITY PER APPLICATION (QPA) shall come from the WUC table for 5 digit WUCs. For 2, 3, and 4 digit WUC roll ups the UF and QPA of the next higher assembly shall be used. For total aircraft roll ups, the QPA and UF shall be set to one.

95. MEAN TIME BETWEEN FAILURE TYPE 1 (INHERENT) (MTBF-1) (POSSESSED)

$$\text{MTBF-1 (INHERENT) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INHERENT FAILURES}}$$

96. MEAN TIME BETWEEN FAILURE TYPE 2 (INDUCED) (MTBF-2) (POSSESSED)

$$\text{MTBF-2 (INDUCED) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{INDUCED FAILURES}}$$

97. MEAN TIME BETWEEN MAINTENANCE TYPE 6 (NO DEFECT) (MTBM-6) (POSSESSED)

$$\text{MTBM-6 (NO DEFECT) (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{NO DEFECT FAILURES ACTIONS}}$$

98. MEAN TIME BETWEEN MAINTENANCE TOTAL (MTBM-TOTAL) (POSSESSED)

$$\text{MTBM-TOTAL (POSSESSED)} = \frac{\text{POSSESSED HOURS X QPA X UF}}{\text{TOTAL ACTIONS (1, 2 and 6)}}$$

99. MEAN TIME BETWEEN REMOVAL (MTBR)

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{MTBR} = \frac{\text{FLYING HOURS}}{\text{REMOVALS}}$$

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{MTBR} = \frac{\text{ACTIVE TIME}}{\text{REMOVALS}}$$

if TYPE EQUIPMENT not equal to "A," "E," "C," "R," or "S"  
then

$$\text{MTBR} = \frac{\text{POSSESSED HOURS}}{\text{REMOVALS}}$$

100. REMOVALS PER 1000 FLYING HOURS

if the TYPE EQUIPMENT equals "A" or "E"  
then

$$\text{REMOVALS/1000 FH} = \frac{\text{REMOVALS}}{\text{FLYING HOURS}} \times 1000$$

if TYPE EQUIPMENT equals "C," "R," or "S"  
then

$$\text{REMOVALS/1000 ACTIVE HOURS} = \frac{\text{REMOVALS}}{\text{ACTIVE TIME}} \times 1000$$

If TYPE EQUIPMENT not equal to "A," "E," "C," "R," or "S"  
then

$$\text{REMOVALS/1000 POSSESSED HOURS} = \frac{\text{REMOVALS}}{\text{POSSESSED HOURS}} \times 1000$$

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101. MEAN TIME TO REPAIR OFF EQUIPMENT (MTTR)

$$MTTR = \frac{\text{REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (OFF)}}$$

102. MEAN TIME TO REPAIR ON EQUIPMENT (MTTR)

$$MTTR = \frac{\text{REPAIR HOURS (ON)}}{\text{REPAIR ACTIONS (ON)}}$$

103. MEAN TIME TO REPAIR ON EQUIPMENT AND OFF EQUIPMENT (MTTR)

$$MTTR = \frac{\text{REPAIR HOURS (ON)} + \text{REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (ON)} + \text{REPAIR ACTIONS (OFF)}}$$

104. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON EVENTS)

$$MTBME = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON)}}$$

105. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON AND OFF EVENTS)

$$MTBME = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON)} + \text{MAINTENANCE EVENTS (OFF)}}$$

106. AIRCRAFT AVAILABILITY (AA)

$$\text{AVAILABILITY RATE} = \frac{\text{MC HOURS}}{\text{TAI HOURS}} \times 100$$

**NOTE**

Mission capable (MC) hours are the sum of MC hours in following Possession Purpose Codes (PPCs): CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.

Total Active Inventory (TAI) hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA, and ZB.

107. UNIT POSSESSED - NOT REPORTED (UPNR)

$$\text{UPNR RATE} = \frac{\text{UPNR HOURS}}{\text{TAI HOURS}} \times 100$$

**NOTE**

UPNR hours are the sum of the number of possessed hours in the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, XJ, XW, and XZ.

TAI hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA, and ZB.

## 108. DEPOT RATE

$$\text{DEPOT RATE} = \frac{\text{DEPOT HOURS}}{\text{TAI HOURS}} \times 100$$

**NOTE**

Depot hours are the sum of the number of possessed hours in the following PPCs: DJ, DK, DL, DM, DO, and DR.

TAI hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA, and ZB.

109. NMCM<sub>na</sub> RATE

$$\text{NMCM}_{\text{na}} \text{ RATE} = \frac{(\text{TNMCM HOURS} - \text{NMCSB HOURS})}{\text{TAI HOURS}} \times 100$$

**NOTE**

NMCM<sub>na</sub> hours are the sum of the TNMCM hours minus NMCSB hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB. When date is retrieved from REMIS or Air Force Data Services, the NMCSB hours are subtracted from TNMCM hours to derive the number of NMCM<sub>na</sub> hours. REMIS nor AFDS account for status codes K, L, M, N, and P (airworthy hours) in the NMCM data element.

TAI hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA and ZB.

110. NMCS<sub>na</sub> RATE

$$\text{NMCS}_{\text{na}} \text{ RATE} = \frac{\text{NMCS}_{\text{na}} \text{ HOURS}}{\text{TAI HOURS}} \times 100$$

**NOTE**

NMCS<sub>na</sub> hours are the sum of NMCS hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.

TAI hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA, and ZB.

111. NMCB<sub>na</sub> RATE

$$\text{NMCB RATE} = \frac{\text{NMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMCB hours are the sum of NMCB hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.

TAI hours are the possessed hours of the following PPCs: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, EJ, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XJ, XW, XZ, ZA, and ZB.

112. FMC RATE

$$\text{FMC RATE} = \frac{\text{FMC HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

FMC and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

113. MC RATE

$$\text{MC RATE} = \frac{(\text{FMC HOURS} + \text{PMC HOURS})}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

FMC, PMC and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

114. PMC RATE

$$\text{PMC RATE} = \frac{\text{PMC HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMC and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

115. PMCB RATE

$$\text{PMCB RATE} = \frac{\text{PMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMCB and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

## 116. PMCM RATE

$$\text{PMCM RATE} = \frac{\text{PMCM HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMCM and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

## 117. PMCS RATE

$$\text{PMCS RATE} = \frac{\text{PMCS HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMCS and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

## 118. NMC RATE

$$\text{NMC RATE} = \frac{(\text{NMCA} + \text{NMCB} + \text{NMCM} + \text{NMCS HOURS})}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMC and Possessed hours are the sum of NMCA, NMCB, NMCM, AND NMCS hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

## 119. NMCM RATE

$$\text{NMCM}_{\text{na}} \text{ RATE} = \frac{(\text{TNMCM HOURS} - \text{NMCM HOURS})}{\text{TAI HOURS}} \times 100$$

**NOTE**

NMCM, NMCMU, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

120. NMCS RATE

$$\text{NMCS}_{na} \text{ RATE} = \frac{\text{NMCS}_{na} \text{ HOURS}}{\text{TAI HOURS}} \times 100$$

**NOTE**

NMCS, NMCSA, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

121. NMCB RATE

$$\text{NMCB RATE} = \frac{\text{NMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMCB and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

122. TNMC RATE

$$\text{TNMC RATE} = \frac{\text{NMCB} + \text{NMCM} + \text{NMCS HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMCB, NMCM, NMCS, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

123. TNMCM RATE

$$\text{TNMCM RATE} = \frac{\text{NMCM} + \text{NMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMCM, NMCB, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

124. TNMCS RATE

$$\text{TNMCS RATE} = \frac{\text{NMCS} + \text{NMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

NMCS, NMCB, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

125. TPMCS RATE

$$\text{TPMCS RATE} = \frac{\text{PMCS} + \text{PMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMCS, PMCB and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

126. TPMCM RATE

$$\text{TPMCM RATE} = \frac{\text{PMCM} + \text{PMCB HOURS}}{\text{POSSESSED HOURS}} \times 100$$

**NOTE**

PMCM, PMCB, and Possessed hours are the sum of hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, TF, TJ, ZA, and ZB.

