

TECHNICAL MANUAL

MAINTENANCE DATA DOCUMENTATION

This manual supersedes TO 00-20-2, dated 5 September 2019.

FOR QUESTIONS CONCERNING TECHNICAL CONTENT OF THIS MANUAL, CONTACT THE APPLICABLE TECHNICAL CONTENT MANAGER (TCM) LISTED IN THE ENHANCED TECHNICAL INFORMATION MANAGEMENT SYSTEM (ETIMS).

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INTRODUCTION

1 PURPOSE.

This technical manual provides descriptions of the Maintenance Data Documentation (MDD) process objectives, scope, concept, policies, and intended uses. It also provides an authoritative source for certain codes used and entries required in the MDD process, reporting rules, and documentation for cannibalization actions. The requirements of this TO apply to all levels of maintenance, including base level, depot and contractor.

2 USE OF THIS MANUAL.

The table of contents indicates chapter, paragraph, title, and page numbers to facilitate location of information. Illustrations, tables, and diagrams, when applicable, are located throughout the publication to supplement the text material. A list of illustrations and a list of tables indicate the number, title, and location. This TO is to be used in conjunction with the appropriate data system user manual to ensure proper procedures are applied. This TO does not address the operation of the input and retrieval procedures. Mechanics of those processes are covered under major command directives, user manuals, and guide books.

3 DEFINITIONS.

The word SHALL is used to express a provision that is binding. The words SHOULD and MAY are used when it is necessary to express nonmandatory provisions. WILL may be used to express a mandatory declaration of purpose or when it is necessary to express a future event.

4 ABBREVIATIONS AND ACRONYMS.

All abbreviations used in this manual are in accordance with abbreviations per ASME Y14.38M, Abbreviations and Acronyms for use on drawings and related documents: Use acronym list from Appendix J.

5 LIST OF RELATED PUBLICATIONS.

These publications contain information in support of this technical manual.

List of Related Publications

Number	Title
AFCSM 21-556, Vol. 2	Introduction to IMDS-CDB Software User Manual
AFCSM 25-524	REMIS Software User Manual
AFI 10-701	Operations Security (OPSEC)
AFI 20-110	Nuclear Weapons-Related Materiel Management
AFI 20-115	Propulsion Management for Aerial Vehicles
AFI 21-101	Aircraft and Equipment Maintenance Management
AFI 21-103	Equipment Inventory, Status and Utilization Reporting
AFI 23-101	Air Force Materiel Management
AFKAG-1	Air Force Communication Security (COMSEC) Operations
AFMAN 23-122	Materiel Management Procedures
AFPD 16-14	Security Enterprise Governance
AFPD 21-1	Maintenance of Military Materiel
TO 00-20-1	Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures
TO 00-20-14	Air Force Metrology and Calibration Program
TO 00-25-254-1	Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures

List of Related Publications - Continued

Number	Title
TO 00-33A-1001	Methods And Procedures - General Cyberspace Support Activities Management Procedures and Practice Requirements
TO 21M-1-101	Reliability Asset Monitoring System (RAMS)
TO 33K-1-100-1	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
TO 4T-1-4	Application Table for Aircraft Tires and Tubes

6 IMPROVEMENT REPORTS.

Recommended changes to this manual shall be submitted in accordance with TO 00-5-1.

CHAPTER 1

MAINTENANCE DATA DOCUMENTATION (MDD)

1.1 MDD OVERVIEW.

The MDD process begins with the delivery of the first asset to the field and extends through the operational phase of the asset's life cycle. 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 as well as monitoring of maintenance discrepancies. This 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.

1.2 MDD SCOPE.

The scope of MDD includes all functions outlined in the AFI 21-series and Major Command (MAJCOM) supplements; functions maintaining training equipment listed as MDD reportable in the Standard Reporting Designator (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). Additional rules and procedures are in Air Force documents, users manuals, and MAJCOM guidance that further bound the scope of the MDD process as it applies to base-level maintenance production involving labor. This Technical Order (TO) covers the collection and storage of maintenance data for aircraft, spacelift assets, space ground stations, mobile stations, radar systems, cruise missiles and Intercontinental Ballistic Missiles (ICBM), drones, engines, Communications-Electronics (C-E) to include Cyberspace and Cyber-equipment systems, and C-E Meteorological (CEM) equipment, Support Equipment (SE), Aerospace Ground Equipment (AGE), training devices, Nuclear Ordnance Controlled Material (NOCM), Reentry Vehicles and Reentry Systems (RV/RS). TO 21M-1-101 covers the collection and storage of maintenance data for Air-to-Air/Tactical Missiles. Air-to-Air/Tactical Missiles as defined in TO 21M-1-101 are excluded from TO 00-20-2 reporting and are documented in Tactical Munitions Reporting System (TMRS).

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, TO 33K-1-100-1, 33K-1-100-2, and TO 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. 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.

1.3 MDD GUIDANCE.

This TO provides guidance to functional users in the use and operation of MDD and 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)/MDD/Time Compliance Technical Order (TCTO) settings on the 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), Comprehensive Engine Management System (CEMS), and Reliability Asset Monitoring/Tactical Munitions Reporting System (RAM/TMRS). Newly developed systems must comply with portfolio management requirements (Portfolio Management Requirements define the development and approval processes for new systems).

1.4 DATA MANAGEMENT.

To facilitate the collection, storage, and retrieval of data, several systems are utilized for the input of MDD. 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, which may be accessible through the Air Force Center for Electronic Distribution of Systems (AFCEDS):

- G105 IMDS CDB
- D042 CEMS
- Q011 PMEL Automated Management System (PAMS)
- RAM/TMRS

NOTE

All users of MDD systems must ensure that records do not include classified information. MAJCOMs 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) 16-14, *Security Enterprise Governance*.

1.4.1 G081/MAF LOG C2. User manuals are located via a link on the G081 system main page: <https://webg081.csd.disa.mil>.

1.4.2 G099 REMIS. User manuals are located on the REMIS SharePoint: <https://www.my.af.mil/gcss-af/USAF/ep/browse.do?programId=tA4057E1F3EF1D1EA013F8BE9303A0D9F&=s6925EC1357EF0FB5E044080020E329A9>.

1.4.3 MDD Processes. During the collection process, data about maintenance production is entered into management systems and verified for accuracy. This allows for process of short and long term (historical) storage of data to occur and the subsequent process of on-line and hard copy retrieval of data through user inquiries.

1.5 DATA USAGE.

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

1.5.1 On Site. 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.

1.5.1.1 In IMDS CDB, this information can be obtained through use of standard reports. Tailored reports may also be obtained through use of Standard Query Language (SQL). In G081, reports can be generated through InfoAssist program. Examples of information that can be retrieved are:

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

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

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

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

1.5.1.2 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.

1.5.1.3 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.

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

1.5.2 Off Site. 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 AF and MAJCOM instructions and manuals.

1.5.2.1 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:

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

1.5.2.1.2 Establish priorities for product improvement actions.

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

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

1.5.2.1.5 Identify safety deficiencies and monitor corrective actions.

1.5.2.1.6 Validate or adjust calibration intervals.

1.5.2.1.7 Validate spares requirements.

1.5.2.1.8 Identify programmed depot maintenance requirements.

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

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

1.5.2.1.11 Determine TCTO kit distribution requirements and TCTO rescission dates.

1.5.2.1.12 Evaluate compliance with warranties.

1.5.2.1.13 Provide for configuration control and/or management.

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

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

1.5.2.2.2 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 MAJCOMs.

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

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

1.5.2.2.5 Data for operational command and control systems.

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

1.5.2.3 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 man-hours must NOT be used for manning decisions. Maintenance man-hours 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.

1.6 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. Document aerospace equipment maintenance actions IAW TO 00-20-1.

1.6.1 **Data Validation.** 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.

1.7 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.

1.8 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.

1.9 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 AIR FORCE TOTAL OWNERSHIP COST (AFTOC) MANAGEMENT SYSTEM.

2.1.1 AFTOC 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 AFTOC 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 Work Unit Code (WUC) levels for aircraft, and the Type, Model, and Series (TMS) level for ground Communication-Electronics (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 Maintenance Information Systems (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 AFTOC Data. The AFTOC program was developed for AF personnel to use as a repository for information and as a tool to aid in accomplishment of 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 AFTOC 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 man-hours and costs to the correct MDS. The Component Support Cost System (CSCS) uses MDD data to allocate direct maintenance man-hours 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 AFTOC Benefits. AFTOC provides decision makers with 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 RELIABILITY AND MAINTAINABILITY INFORMATION SYSTEM (REMIS) (G099).

2.2.1 REMIS 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, Automatic Test Equipment (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 provides accurate, near-real-time data accessibility to all levels of management. Selected weapon system data from the MISs is transmitted electronically to REMIS. Increased data accuracy, timeliness, and accessibility 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, Time Compliance Technical Order (TCTO) Status, and Chief Financial Office (CFO) reporting.

2.2.2 REMIS Objectives. The REMIS objectives are to:

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 REMIS 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) provide uniform user interface, processing, and reporting capabilities. The EIMSURS, PPS, and GCSAS subsystems receive inputs from on-line users: Integrated Maintenance Data System Central Data Base (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 REMIS Concept. The following applies to the three REMIS sub-systems: 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 cruise missiles and Intercontinental Ballistic Missiles (ICBM); excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS) 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 provides the capability to evaluate maintenance actions, weapon system effectiveness and materiel deficiencies, thereby allowing management to identify equipment that requires corrective actions. This data is 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 REMIS Data. The REMIS program was developed as a repository of R&M information for AF personnel and as an aid in accomplishing the following:

2.2.5.1 EIMSURS:

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

2.2.5.2 PPS:

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

2.2.5.3 GCSAS:

- Administration and management of TCTO data from cradle-to-grave.
- Administration and management of approved configuration data.
- Administration and management of actual configuration and time-change inspection data.

2.2.6 Accuracy of REMIS 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 IMDS CDB Purpose. IMDS CDB is the primary AF, 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.
- Retrieve 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 IMDS CDB 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 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.

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 IMDS CDB 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
- Comprehensive Engine Management Systems (CEMS)
- 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 IMDS CDB 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 either the internal messaging system available through the link at the top of IMDS or via the download screen.

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 IMDS CDB 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 MAJCOMs, 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 Track engines and their components, automate the engine manager's D042 reporting, and establish and maintain the installed-on relationship between the engine and components.

2.3.5.2 Report 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 Report 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 Track maintenance actions and maintain both maintenance and supply data.

2.3.5.5 Automate the location of aircraft, cruise missiles and ICBMs; excludes Air-to-Air/Tactical Missiles documented in TMRS.

2.3.5.6 Allow maintenance personnel to document their maintenance actions on-line.

2.3.5.7 Allow changes to aircraft status or inventory gains and losses.

2.3.5.8 Provide an Estimated Time In Commission (ETIC) monitor.

2.3.5.9 Provide operational events, mission recording, and mission accomplishment.

2.3.5.10 Automate the inspection and time-change processes, forecast TCTO and time-change requirements, and provide current operating time on an item of equipment.

2.3.5.11 Automate the transfer of personnel and equipment to other IMDS CDB units.

2.3.5.12 Maintain TCTO data pertaining to aircraft, engines, cruise missiles and ICBMs; excludes Air-to-Air/Tactical Missiles documented in TMRS. aerospace ground equipment, and C-E equipment owned by an organization to include AFSPC satellite ground stations, mobile stations and radar systems.

2.3.5.13 Automate the capability to monitor manpower resources and forecast and schedule personnel training requirements.

2.3.5.14 Verify actual and approved configurations.

2.3.5.15 Automate parts ordering for unscheduled requirements, time-change requirements, and TCTOs. Maintain maintenance event validation of supply requisition, and automate the process for tracking parts through the repair cycle.

2.3.5.16 Automate the debriefing process, generate flying and maintenance schedules on a monthly, weekly, or daily basis and update and monitor the approved and actual configuration of aircraft.

2.3.5.17 Automate the deficiency reporting process.

2.3.6 Accuracy of IMDS CDB 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 G081 Purpose. G081 provides both a maintenance management and logistics command and control system for AMC lead command fleets (C-40, C-5, C-130, KC-10, KC-135, C-17 and KC-46). This system operates on a central database located at Tinker AFB, utilizing an IBM compatible mainframe. It provides fleet-wide management and visibility of status and location of aircraft, discrepancy history, TCTO status, MDD history, personnel, back shop, production control, training, SE, and AGE.

2.4.2 G081 Objectives. The system provides base maintenance managers with the ability to track each aircraft and determine what maintenance is required to make 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. 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), Comprehensive Engine Management System (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 CEMS 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. 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 CEMS Objectives. The CEMS objectives are:

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 CEMS 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 MIS and Time Sharing Options (TSO) programs.

2.5.4 CEMS 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 CEMS 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 MAJCOM Engine Managers, Propulsion Community, and CEMS representatives to optimize scheduling of all requirements to meet the propulsion community's needs.

2.6 RELIABILITY ASSET MONITORING SYSTEM (RAM).

2.6.1 RAM Purpose. RAM/TMRS is the reliability & maintainability system that enables fact-based decision making in support of Safety, Suitability and Effectiveness (OSS&E) responsibilities for serialized missile/munitions configurations across the Armament PEO as defined in TO 21M-1-101. These OSS&E efforts include having a robust maintenance data documentation process, applying an active surveillance program for projecting shelf life and service life of munitions, ensuring the munitions are maintained in a serviceable condition, and analyzing/investigating deficiencies and unsatisfactory reports from organizations. RAM is the AF Maintenance Information System of record for Air-to-Air/Tactical Missiles.

2.6.2 RAM Objectives. The RAM objectives are to:

2.6.2.1 Enhance front-end design and sustainability of USAF weapon systems by improving the availability, accuracy, and flow of essential maintenance, storage, test, and repair information.

2.6.2.2 Increase the operational readiness of the weapon system, decrease ownership costs, and provide information essential to the acquisition, operation and support management of the weapon systems with a focus on OSS&E and Life Cycle Logistics.

2.6.2.3 Use maintenance data documentation to support the warfighter.

2.6.2.4 Structure indented data by weapon system or major equipment category (e.g., rocket motors, warheads, guidance sections, subcomponents) to apply solutions at the most effective configuration level using disciplined analysis.

2.6.2.5 Reduce manual entry of data and optimize decision support through automated data collection procedures and robust business logic.

2.6.3 RAM Scope. RAM provides interactive user web tools to enter maintenance data through TMRS, add data from multiple organic and contractor sources into a database, and then review, analyze, and summarize information in various output types to facilitate decision making for missiles by all stakeholders. RAM also provides a classified platform to combine additional data sources for analysis.

2.6.4 RAM Concept. From missile system development, design, production, operational use, and sustainment to expenditure, the RAM provides a means of assessing current performance as well as predicting future reliability standards for Air Force All Up Round (AUR) assets and unassembled missile components. This concept applies data from production configuration, field maintenance, depot repair, ordnance assessment, and firing data for cradle to grave decision support.

2.6.4.1 Key functionality includes the following input, tracking, and analysis capabilities: flight hours, number of flights, elapsed time indicator, hanger wear, AUR Build/Update/View, asset reconfiguration, inspections, root cause defects, failures, disassembly, component attributes, in process inspections, Time Compliance Technical Orders, suspension/restriction for AUR and component, historical records, test set log file processing and automation, parametric file collection/analysis, part number and serial number tracking, software version, environmental category management, locations, reports, query by example, direct query, and reports.

2.6.4.2 Resulting decision support optimizes OSS&E, ordnance assessment, reliability, warranty, trend analysis, funding, and purchases.

2.6.5 Accuracy of RAM Data. RAM/TMRS data validation is performed at the point of entry as well as ongoing through both automated and manual review and error trapping. Maximized use of pre-defined acceptable values of specific data fields limit manual entry and human error.

CHAPTER 3

MAINTENANCE DATA DOCUMENTATION (MDD) 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.

NOTE

All Air-to-Air/Tactical Missiles MDD processes are outlined in 21M-1-101.

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. 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.

3.1.3 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:

3.1.3.1 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).

3.1.3.2 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.

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

3.1.3.4 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.

3.1.3.5 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.

3.1.3.6 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.

TO 00-20-2

- 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.

3.1.3.7 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.

3.1.3.8 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.

3.2 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 (FOM) 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.

3.2.1 Repair and/or Replacement. If the action taken for convenience of repair is not completed and the removed reparable item is not reinstalled before leaving the equipment end item, an AFTO Form 350, *Reparable 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.

3.2.2 Removal to FOM. 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.

3.2.3 Alternative Procedures. Alternative 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.

3.3 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 Chapter 8.

3.4 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 (MAJCOM). The exemption request should include at 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. Chapter 1 and Chapter 2 of this TO help define the many uses and other data systems that utilize MDD data, and the factors weighed by the reviewing authorities listed in the next paragraph.

3.4.1 Exemption Requests. When the MAJCOM 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 3.5.

3.4.1.1 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 reparable substitute or spare asset. Organizations that want to make use of this type of exemption must follow the request procedures above.

3.4.1.2 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 Controlled Material (NOCM) items listed in 11N series WUC manuals will be reported as required.

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

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

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

3.5 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.

3.5.1 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.

3.6 INPUT OF MDD DIRECTLY TO REMIS.

3.6.1 Depot, Contractors, and Special Activities. 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).

3.6.1.1 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.

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

3.6.1.3 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.

3.6.1.4 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			
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 Integrated Logistics Support System to determine demand levels.
	c. Corrosion treatment	5.	Dispatching specialists
	d. Delayed Discrepancy Repair	6.	Identifying
	e. Inspection	a.	Number of Specialist dispatched
	f. Removal of components	b.	Shop dispatching
	g. Remove to facilitate other maintenance	c.	Reason for dispatch Action
	h. Replacement of components	d.	Where dispatched
	i. Special inspection	e.	Length of dispatch
	j. Support general	f.	Delayed discrepancies
	k. TCTOs	7.	Determining when to schedule maintenance, e.g., inspection, delayed discrepancies, TCTOs, etc.
	l. Time-change items	8.	Historical records
	m. Troubleshooting	9.	Reimbursable
Off-Equipment			
MDD System		Non-MDD System	
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 Integrated Logistics Support 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
NOTE			
To determine when to use the AFTO Form 349 or 350 series tags, refer to Table 3-4.			

Table 3-2. Determining Which References To Use

Line	To Determine	Refer To
1	Which items to document on a maintenance record for on-equipment documentation.	Table 3-4, Table 3-5, and Table 3-6
2	Which items to document on a maintenance record for off-equipment documentation.	Table 3-4, Table 3-7 and Table 3-8
3	Uses of the maintenance records.	Table 3-4
4	Uses of the AFTO Form 350.	Table 3-1 and Table 3-4
5	Rules for convenience of making repair.	Paragraph 3.1.3 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 and Table 3-10
8	Documentation rules for Electronic Countermeasures (ECM) pods.	Paragraph 7.5.2
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 3.2
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

Rule	If the convenience of repair is documented as	and the action taken	and the removed reparable is	and the workcenter that repairs the reparable item	then personnel will
1	On-equipment	is documented as F	a recoverable item	installs the same reparable 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 reparable 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 reparable item
4	On-equipment	is documented as F	a non-recoverable	installs and/or repairs reparable 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 reparable 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

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 not require the removal or replacement of a reparable item	does not 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 reparable item	does not 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 not require the removal or replacement of a reparable 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 reparable 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 not require the removal or replacement of a reparable 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 reparable 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 not require the removal or replacement of a reparable 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 reparable 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***

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 NOT require the removal and re-placement 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 NOT require the removal and re-placement 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, 20, 21, 22, 23, 24, 25, 26, 27, and 28**
5	not at its home base	is not assigned	does NOT require the removal and re-placement 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 NOT require the removal and re-placement 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
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, 20, 21, 22, 23, 24, 25, 26, 27, and 28

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

Rule	If the equipment end item is	and an ID number	and the productive direct work	then personnel will document items
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, 20, 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*

Rule	If the equipment end item is	and the productive direct work is	then personnel will document
1	at its home base and has an ID number assigned	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 assigned	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 assigned	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 assigned	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 assigned	support general	A, C, G, H, I, J, K, and N
9	at its home base and has no ID numbers assigned	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***

Rule	If the assembly, subassembly, or component	and the item	and the AFTO Form 350	then personnel will document
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 replacement 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 replacement 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 replacement 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**

Rule	If the AFTO Form 350 that is attached to the repairable item	then personnel will document
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

A	B	C
Rule	and the work is started and completed	then personnel will use
1	If the maintenance crew does not stop for more than 15 minutes or change crew size	one action line
2	stop for more than 15 minutes but does not change crew size	more than one action line
3	not stop for more than 15 minutes and does change crew size	more than one action line
4	stop for more than 15 minutes and does change crew size	more than one action line
5	not stop for more than 15 minutes or change crew size	more than one action line
6	stop for more than 15 minutes but does not change crew size	more than one action line
7	not stop for more than 15 minutes and does change crew size	more than one action line
8	stop for more than 15 minutes and does change crew size	more than one action line
9	not stop for more than 15 minutes or change crew size	more than one action line
10	stop for more than 15 minutes but does not change crew size	more than one action line
11	not stop for more than 15 minutes and does change crew size	more than one action line
12	stop for more than 15 minutes and does change crew size	more than one action line
<p style="text-align: center;">NOTE</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	B	C	D
	If the man-hour expenditures are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	and an ID number is assigned to the end item of equipment	and the productive direct work involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	then technicians will document items 1, 2, 3, 6*, 15, 19, 20, 21, 22, 28, and columns A through K, and N**
1	are documented against an aircraft, 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**
2	are documented against an aircraft, 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**
3	are documented against an aircraft, 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**
4	are documented against an aircraft, 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**
5	are documented against an aircraft, air-launched missile, ground-launched missile, 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**
6	are documented against an aircraft, 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**
7	are documented against an aircraft, 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**
8	are documented against an aircraft, air-launched missile, ground-launched missile (except ICBMs), drones, and related training equipment	is assigned to the end item of equipment		

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

	A	B	C	D
Rule	If the man-hour expenditures are documented against an aircraft, air-launched missile, ground-launched missile, drones, and related training equipment	and an ID number is not assigned to the end item of equipment	and the productive direct work involves removal of a tracked item (other than engine) and replacement is not accomplished concurrently with the removal	then technicians will document items 1, 2, 3, 4, 5, 6*, 15, 19, 20, 21, 22, 28, and columns A through L, and N**
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, 23, 24, 25*, 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
<p>NOTE</p> <p>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".</p> <p>* Item entries not required for items for which time records are not maintained.</p> <p>** 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.</p>				

Table 3-11. Documentation for TCTOs

Rule	A If the TCTO directs modification of the	B and an end item ID number	C and the productive direct work	D then technicians will document
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 TCTOs - Continued

Rule	A If the TCTO directs modification of the	B and an end item ID number	C and the productive direct work	D 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 style="text-align: center;">NOTE</p> <ul style="list-style-type: none"> • Actions on engines or engine components should contain a column "B", component position code when working on an installed engine. • When TCTOs are accomplished by transient maintenance base, the original record will be placed in the 781 binder for home station use in updating historical files. • In automated information systems, the two records may be combined into a single screen or spread over several screens. 				
* If the TCTO 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.				
** For TCTOs 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 TCTOs, 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.				

MAINTENANCE DATA COLLECTION RECORD															OMB NO. 0704-0188	
1 JOB CONTROL NO		2 WORKCENTER		3. I D NO./SERIAL NO			4 MDS		5. SRD		6. TIME			7. PRI		
8 SORTIE NO		9. LOCATION		10. ENG TIME		11. ENGINE I.D.			12. INST ENG TIME			13 INST ENG ID				
14.		15.		16.		17, TIME SPC REQ			18. JOB STD			19 FSC				
20 PART/LOT NO		21. SER. NO/OPER TIME		22. TAG NO.		23 INST. ITEM PART NO			24 SERIAL NUMBER			25. OPER TIME				
ACT LINE	A	B	C	D	E	F	G	H	I STOP		J	K	L	M	N	
	TYPE MAINT	COMP POS	WORK UNIT CODE OR LOGISTICS CONTROL NUMBER	ACTION TAKEN	WHEN DISC	HOW MAL	UNITS	START HOUR	DAY	HOUR	CREW SIZE	CAT LAB	CMD ACT ID	SCH CODE	AFSC EMPLOYEE NUMBER	
1																
2																
3																
4																
5																
6																
26. DISCREPANCY																
27. CORRECTIVE ACTION													28.			
29. PARTS REPLACED DURING REPAIR (SUBASSEMBLIES REPAIRED/REPLACED)																
LINE NO.	A FSC	B PART NUMBER			C WORK UNIT CODE OR LOGISTICS CONTROL NUMBER			D REF SYMBOL			E HOW MAL		F QTY			
30. CONTINUATION FROM BLOCK																

AFTO FORM 349, 20110329

PREVIOUS EDITION IS OBSOLETE

G1603897

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

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/TSM OR EQUIPMENT DESIGNATOR * | A. TYPE MAINTENANCE CODE * |
| 5. SRD * | B. COMPONENT POSITION |
| 6. TIME | C. WORK UNIT CODE OR REFERENCE DESIGNATOR * |
| 7. PRI | D. ACTION TAKEN CODE |
| 8. SORTIE NO | E. WHEN DISCOVERED CODE |
| 9. LOCATION | F. HOW MALFUNCTION CODE |
| 10. ENGINE TIME | G. UNITS COMPLETED |
| 11. ENGINE I.D. | H. START HOUR |
| 12. INSTALLED ENGINE TIME | I. STOP DAY AND HOUR |
| 13. INSTALLED ENGINE I.D. | J. CREW SIZE |
| 14. | K. CATEGORY OF LABOR |
| 15. | L. COMMAND ACTIVITY ID * |
| 16. | M. SCH CODE |
| 17. TIME SPC REQ | N. EMPLOYEE NUMBER * |
| 18. MASTER JOB STANDARD NUMBER | 26. DISCREPANCY * |
| 19. FEDERAL STOCK CLASS * | 27. CORRECTION ACTION |
| 20. PART NUMBER OR LOT NUMBER* | |
| 21. SERIAL NUMBER OR OPER TIME* | |
| 22. AFTO 350 TAG NUMBER * | |
- FOR DEFINITIONS AND EXCEPTIONS, SEE CHAPTER 4
 * -MIS MAY PRE-FILL SUBSEQUENT SCREENS.

G1603898

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

AFTO FORM 350 20121109			PREVIOUS EDITIONS MAY BE USED		
REPARABLE ITEM PROCESSING TAG					
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	

G1603899

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

WARNING									
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									

G1603900

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

CHAPTER 4

CODES AND ENTRIES USED IN THE MAINTENANCE DATA DOCUMENTATION (MDD) 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.

4.1.1 Rules for Documenting Codes. The peculiar rules for documenting the codes and entries described in this chapter are contained in Chapter 7.

4.1.2 Updates to Codes. Recommended changes, additions, and deletions to these codes and/or data elements will be in accordance with the Recommended Change process in TO 00-5-1.

4.1.2.1 SRD related requests will be submitted as prescribed in AFMAN 23-122.

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 Work Unit Codes (WUCs) will be submitted 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/A4F 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. WUC tables are maintained by the OPR for the applicable -06 WUC Manual, referred to as an Equipment Specialist (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 JOB CONTROL NUMBER (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. 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. 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.

4.2.1 JCN Characters. 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.

4.2.1.1 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.

4.2.1.2 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 of 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.

4.2.1.3 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 (MAD-ARS) and/or Ground Processing System (GPS) capability.

4.2.1.4 One 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.

4.2.1.5 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 Types of Workcenters. 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 man-hours, 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 Location Data. 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 Outside Team Maintenance Entries. 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.

4.3.3.1 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 AF-CSM 21-556, Volume 2, *Introduction to IMDS-CDB Software User Manual*.

4.4 ID NUMBER.

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.

4.4.1 ID Number Characters. 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 an 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.

4.4.2 ID Number Categories. There are three basic categories of ID numbers:

4.4.2.1 ID number assigned to specific end item equipment. This includes aircraft, cruise missiles and Intercontinental Ballistic Missiles (ICBM); excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS), 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 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.

4.4.2.3.1.3 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.

4.4.2.3.1.4 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 When ID Numbers Are Not Required. 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.

4.4.3.1 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.

4.4.3.2 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.

4.4.3.3 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 MAJCOM 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.

4.4.3.4 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 into 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 into 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 Corrective Action Narrative. The corrective actions will contain a free text narrative describing the action taken to correct the discrepancy. 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.

4.13.1.1 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.

4.13.1.2 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; troubleshoot (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.

4.13.1.3 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).

4.13.1.4 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/Logistics Control Number (LCN). If a component or part that is replaced has an assigned WUC/LCN, enter the WUC/LCN. If a component or part does not have an assigned WUC/LCN, use the appropriate Not Otherwise Coded (NOC) WUC/LCN for higher assembly (see Paragraph 4.18.5). 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 Reliability and Maintainability (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 facilitates data interchange from one MIS to another. The SRD also identifies whether an item is Mission Capable (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 SRD Reporting. All up-channel reportable, non-classified SRD codes are contained in the REMIS SRD table.

4.15.1.1 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 AFMAN 23-122. 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.

4.15.1.2 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. For uninstalled engines

and engine related parts not directly tied to a specific engine position, the entry will be zero ("0"). An entry is also required when installing egress items. Valid component position entries for egress items are 0-8. Egress items are identified by Egress Indicators of "B" and "E".

4.18 WUC REFERENCE.

WUCs 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. Non-AFMC managed C-E equipment may have WUCs loaded to REMIS by HQ CCC (hqccc.comm-elec.analysis@us.af.mil). 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. Generally, parts with different part numbers, that meet the same form, fit, and function should be identified by a single WUC.

4.18.1 WUC Characters. The first two characters of the WUC for aircraft, cruise missiles, and ICBMs; excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS) identify the type of system the assembly or component is part of, as defined in MIL-DTL-38769, Tables I - VII. For aircraft, cruise missiles, and ICBMs; excludes Air-to-Air/Tactical Missiles documented in TMRS 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).

4.18.1.2 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.

4.18.1.3 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 4.18.3.2 for Support General (SG) LCN guidance.

4.18.1.4 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.

4.18.1.5 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.

4.18.2 WUC Tables. 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.

4.18.2.1 WUC tables IAW MIL-DTL-38769 (most current version obtained through ASSIST online at <https://quicksearch.dla.mil/qsSearch.aspx>) that are 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.

4.18.3 Logistics Control Numbers (LCNs). An LCN 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.

4.18.3.1 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.

4.18.3.2 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.

4.18.3.3 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.

4.18.4 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.

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

4.18.6 WUC Use. 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.

4.18.6.1 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.

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

4.18.7 Air Transport Association (ATA) Codes. Commercial Derivative Aircraft (CDA) that are strictly utilizing commercial practices and manuals may use commercial ATA codes in lieu of WUC's. CDA aircraft will be in compliance with the intent of Title 14 Code of Federal Regulations (CFR) Parts 43, 65, 121 and 145. AFD 62-6 directs CDAs, whose primary mission is the transport of passengers, shall be FAA type certified; FAA certification of these commercial derivative passenger carrying aircraft shall be maintained for the operational life of the aircraft.

4.18.7.1 The ATA numbering system is organized as a hierarchical number space covering the entire aircraft.

4.18.7.2 The basic six digit number format provides a unique address for each component. The number is grouped into three two digit elements for hardware identification and up to four elements for maintenance task identification. The first three two digit paired elements correspond to ATA chapter, section and subject respectively. Refer to Table 4-3.

4.18.7.2.1 The first 2 characters (1st two digits of paired elements) are standard in ATA Code tables and identify the different aircraft assemblies and systems.

4.18.7.2.2 The third and fourth characters (2nd two digits of paired elements) refer to sections within chapters.

4.18.7.2.3 The fifth and sixth characters (3rd two digits of paired elements) refers to subjects within sections, i.e. to separate components.

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). 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 end items in accordance with Appendix E. Codes 1 through 9 can be used during subsequent shop processing. Shop code repairs are accomplished after reporting an ATC of C 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 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 G, never use a NOC WUC in lieu of a valid WUC related to the repaired or replaced item. ATC G may also be used to denote the following actions HMC 925; Cold Spray (CS) and HMC 926; Additive Manufacturing (AM) 3-D printing.

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 repairable status and for a reference to document the repair action when work is resumed.

4.19.1.7 The Not Repairable This Station (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 **Deficiency Reporting (DR).** When a determination is made that an item requires 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. When the discrepancy is discovered during a depot-level overhaul,

the on-equipment record will use WDC S. If the item under repair came from another location, use the WDC recorded on the AFTO Form 350 or automated equivalent.

NOTE

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

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 HMC 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 man-hour 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 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 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 HMC 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 A through 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 Units Produced Entries. 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-off 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 man-hour 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 man-hours 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 man-hour and unit data. Reference Appendix C of this TO. Any man-hours 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.

NOTE

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 for which they are qualified.

4.26 START AND STOP TIME.

The start and stop time entries will always reflect the time expended (duration) 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 man-hours expended to accomplish the maintenance action. 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 Time Range. The documented time range of the start and stop time or duration should accurately reflect task duration to account for work center hours.

4.26.2 NRTS Actions. 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.

NOTE

- Shifts are normally 8 hours, but may be up to 10 hours. This is a MAJCOM option.
- 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.
- Start and stop times are not used at depot level. Depots report the total actual man-hours 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

	A	B
Step	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	
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, thru-flight, 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	
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.		
* The same JCN will be used for both the T and U action.		
** See Table 4-4 for unique sixth digit requirements.		

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. ATA Numbering System Codes

Aircraft General	
05	Time Limits/Mx Checks
06	Dimensions & Areas
07	Lifting & Shoring
08	Leveling & Weighing
09	Towing & Taxiing
10	Parking, Mooring, Storage & Return to Service
11	Placards & Markings
12	Servicing
Airframe Systems	
20	Standards & Practices Airframe
21	Air Conditioning
22	Auto Flight
23	Communications
24	Electrical Power
25	Equipment & Furnishings
26	Fire Protection
27	Flight Controls
28	Fuel
29	Hydraulic Power
30	Ice & Rain Protection
31	Indication/Recording Systems
32	Landing Gear
33	Lights
34	Navigation
35	Oxygen
36	Pneumatic
37	Vacuum
38	Water/Waste
42	Integrated Modular Avionics
43	Mission Communication System
44	Cabin Systems
45	Central Maintenance System
46	Information Systems
47	Inert Gas Systems

Table 4-3. ATA Numbering System Codes - Continued

49	Airborne Auxiliary Power
Structures	
50	Cargo & Accessory Compartments
51	Standards & Practices Structures
52	Doors
53	Fuselage
54	Nacelles/Pylons
55	Stabilizers
56	Windows
57	Wings
Powerplant	
70	Standards & Practices Engines
71	Power Plant
72	Engine
73	Engine Fuel & Control
74	Ignition
75	Air
76	Engine Controls
77	Engine Indicating
78	Exhaust
79	Oil
80	Starting
Defensive Systems	
99	Defensive Systems

Table 4-4. 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
<p style="text-align: center;">NOTE</p> <p>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.</p> <p>* C-E calendar inspections may also have any alpha-character except O and I in the seventh position.</p> <p>** 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.</p>	

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 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 man-hour 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 CANNIBALIZATION DEFINED.

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 systems, 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 Cannibalization vs. Transfer. Cannibalization data provides information to logistics decision makers. It is used to evaluate supply and repair shortages. Cannibalization man-hours are often used to help justify repair actions and spares procurement. Properly reporting cannibalization or transfer actions ensures accuracy of cannibalization data. The following maintenance actions to obtain assemblies, subassemblies, or parts require cannibalization documentation:

5.2.2 Cannibalization. The following maintenance actions to obtain assemblies, subassemblies, or parts require cannibalization documentation:

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

5.2.2.2 Cannibalization of items to satisfy a Mission Capable (MICAP) condition for either on- or off-equipment repair to include Awaiting Parts (AWP) status for off-equipment.

5.2.2.3 Cannibalization of items to support deployment kits.

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

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

5.2.3.2 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.

5.2.4 Cannibalization From Depot. 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 reparable and does not have a specific WUC and the NOC WUC is used, the technician will submit a Recommended Change requesting a WUC be issued for the assembly, subassembly, or part.

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

5.3.2 Action Taken Code U. Use ATC U to document the installation of a 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 when automated systems are not available

Step	For cannibalization	Take these steps***
1	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.
2		Document items 1, 2**, 3, (4 - 5 when applicable), and columns A, C, D, E, and F on both records.
3		Document the removal records with a "T" ATC in column D, HMC 875 in column F, a check (✓) in block 28 and a statement * in block 26.
4		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.
5		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	Decentralized materiel support personnel 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.

6.1.1 Event Consolidation. 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.

6.1.1.1 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.

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

6.1.1.3 Major Commands (MAJCOMs) 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.

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

6.2 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).

6.2.1 Support General Reporting. 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, *Support General Documentation Record*. Fabrication, 09000 is in direct support of the system and should be reported. Other normal Support General actions will be recorded in the MIS properly except as noted below:

6.2.1.1 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.

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

6.2.1.3 The AFTO Form 781P may be used to record support general actions when an automated system is unavailable.

6.2.2 Inspection Reporting. Support General documentation is used 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. When support general work unit codes are available, they must be used for inspections.

6.2.2.1 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.

6.2.2.2 Scheduled and unscheduled inspections will be recorded and maintained so maintenance schedules can be updated correctly. Reasons for this include Maintenance scheduling effectiveness, accurate inspection history, and ease of maintenance reviews.

6.2.2.3 Phase Package Reporting. Major Phase Support General documentation is restricted to On-Equipment End Item use only (incorporating WUCs using 033 (phase), 034 (periodic), 037 (isochronal), LCN equivalents begin with 132 and then the applicable 033-, 034-, or 037- WUC). Aircraft, engines, cruise missiles, and Intercontinental Ballistic Missiles (ICBM); excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS) will document these WUCs using the package credit edit in Appendix D.

6.2.2.3.1 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 USERIDs dependant upon Inspection and Symbol used
- Associated narrative inputs

6.2.2.3.2 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 USERIDs dependant upon Inspection and Symbol used
- Associated narrative inputs

6.3 MASTER JOB STANDARD NUMBER (MJSN).

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 Mission, Design, and Series (MDS). MJSN tables allow global management of -6 TO inspections and time change items at all levels. MJSN tables 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 is used by maintenance in the management of the inspection and time change subsystems in REMIS, IMDS CDB, and IMDS for Mobility (G081). 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. MJSNs also assist in mishap investigations by standardizing the data and enhancing data integrity. MJSNs increase accuracy and validity, save labor, and allow a smoother conversion to the final IMDS CDB product.

6.4 MJSN PROCEDURES.

The purpose of these procedures is to provide management oversight and guidance for developing and maintaining MJSN tables. 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.

6.4.1 Program Manager (PM) Responsibilities. 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.

6.4.1.1 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.

6.4.1.2 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.

6.4.1.3 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.

6.4.1.4 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).

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

6.4.1.6 Changes to the -6 TO or equivalent are made using the ETIMS Recommended Change/Publication Change Request (RC/PCR) process. If necessary, an Interim Operational Supplement (IOS) may be issued for Emergency and Urgent situations IAW TO 00-5-1.

6.4.1.7 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.

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

6.4.1.9 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

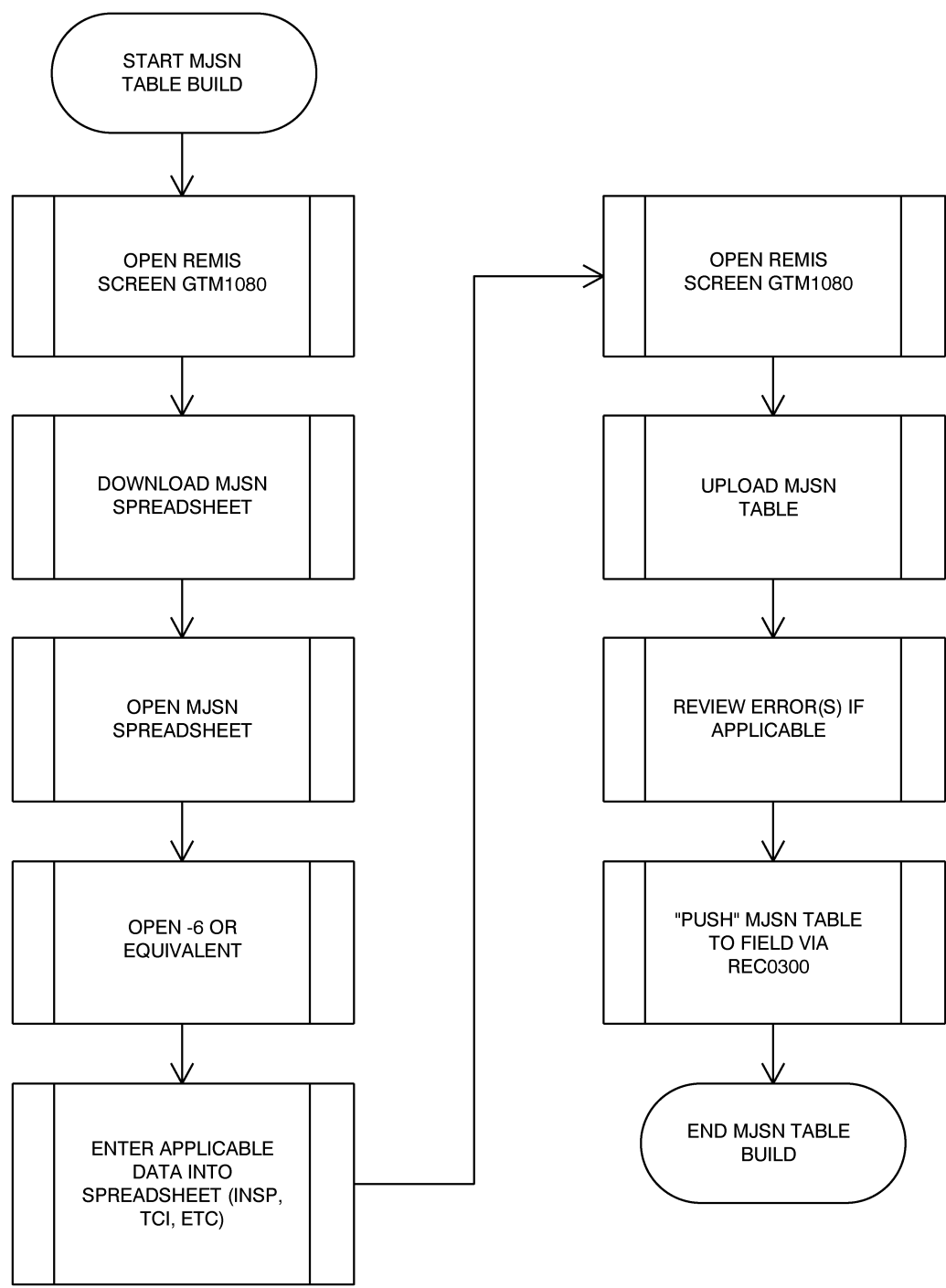
If REMIS is unavailable, contact the System Management Center (SMC) at REMIS and the local communication squadron to work the issue. Manually assign a MJSN for the IOS and update REMIS when connectivity is restored.

6.4.1.10 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.

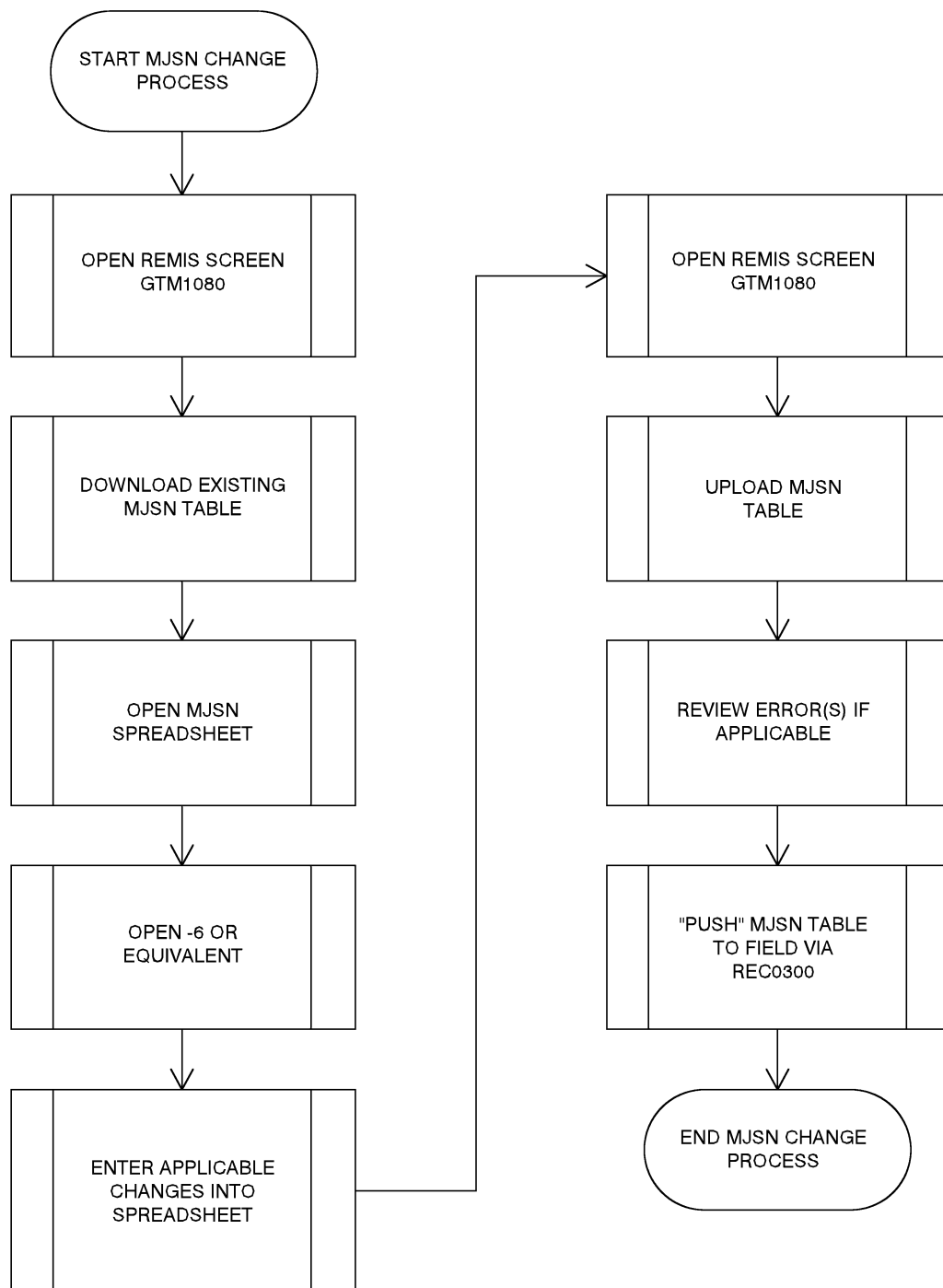
MJSN BUILD



G1603901

Figure 6-1. MJSN Process Flow Diagram - Build

MJSN CHANGES



G1603902

Figure 6-2. MJSN Process Flow Diagram - Changes

6.4.2 Base-Level Responsibilities. 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.

6.4.2.1 IMDS receives the MJSN Tables and will use a conversion program to programmatically link MJSN table TCIs to IMDS local JSNs to MJSNs. The remainder of the local JSNs must be manually linked by MO PS&D, Job Control (C-E), or equivalent. For G081 units, the JSNs will be maintained by the Lead Command A4s using applicable -6 TO screens.

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.

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

6.4.2.2.1 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.

6.4.2.3 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.

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

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

6.4.2.6 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.

6.5 TEMPLATE FOR MJSN TABLE MAINTENANCE.

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

6.5.1 MJSN Table Build. The following elements must be considered in developing a MJSN table:

6.5.1.1 Determine Type Equipment, see Table 6-1.

Table 6-1. Type Equipment Codes

Type Equipment Code	Nomenclature
A	Aircraft
B	Test equipment
C/R	C-E
E	Engines
G	Support Equipment (SE)
H	PMEL
M	Missiles
N	NC3 Communication Systems
T	Trainers
Y	Munitions

6.5.1.2 **Master Equipment Designator (MED).** The MED is a 15 alphanumeric character field that encompasses all equipment identified by an MDS, Type, Model, and Series (TMS), Type Model Series Modification (TMSM), and End Item Work Unit Code (EIWUC).

6.5.1.2.1 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-196G. TMSM equipment identifies all engines and propulsion equipment.

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

6.5.1.2.3 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 F015s, 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).

6.5.1.2.4 Wildcards are based on the following REMIS conventions:

6.5.1.2.4.1 Wildcard convention example for MD is:

- UnderscoreUnderscoreF015% (_F015%) for all F-15 aircraft

6.5.1.2.4.2 Wildcard convention examples for TMSM are:

- UnderscoreF0100% (_F0100%) for all F100 engines
- UnderscoreF0200100% (_F0200100%) for all F200100 engines

NOTE

There are no other wildcards allowed.

6.5.1.2.5 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*.

6.6 MJSN NUMBERING SCHEME DEVELOPMENT.

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). A recommended methodology, with the exception of the categories, is to use the two-position system level WUC number for each job standard as applicable (Example: INSP Landing Gear

TO 00-20-2

Strut; WUC 04xxx (support general); associated MJSN might be 13xxx to reflect a system level WUC). Each MJSN must be unique for the combination of WUC, Frequency, Interval, and MJSN Category.

6.6.1 Category MJSNs. Categories are tasks 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 alpha characters identified in Table 6-2.

Table 6-2. Category MJSNs

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

6.6.2 Master Start Date. Assign a master start date, which is the effective date for the use of the MJSN.

6.6.3 Master Stop Date. Assign a stop date when applicable. The MJSN will not be usable after the Stop Date.

6.6.4 Multi Block Indicator (if applicable). System driven. See GTM1080 screen help in REMIS for values.

6.6.5 End Item Equipment Designator. (Used for Change or Stop processes only). When retrieving a record that was originally wildcarded against an MD or TMS, enter the MDS or TMSM that will be changed or stopped using this process (for IMDS users).

6.7 END ITEM EQUIPMENT DESIGNATOR BLOCK NUMBER (EIEDBN).

The EIEDBN is a three alphanumeric character field, used to identify aircraft grouped together at a lower level than MDS. 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. The only other authorized value is a valid three-position block number, prefixed with zeroes.

6.7.1 End Item Start Date/Time. This field is used only in conjunction with the EIEDBN field.

6.7.2 End Item Stop Date/Time. This field is used only in conjunction with EIEDBN field.

6.7.3 Part Number. Not applicable at this time - reserved for future use.

6.7.4 Cage Code. Not applicable at this time - reserved for future use.

6.7.5 Part Number Start Date. Not applicable at this time - reserved for future use.

6.7.6 Part Number Stop Date. Not applicable at this time - reserved for future use.

6.7.7 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).

6.7.8 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.

6.7.9 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
<p style="text-align: center;">NOTE</p> <p>B is used for MJSNs such as Over-G, bird strike or any item with no recurring interval.</p>	

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

6.7.10.1 WUC is a five 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.

6.7.10.2 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 five character WUC or an eight character LCN for all items.

6.7.10.3 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).

6.7.10.4 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.

6.7.11 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
<p style="text-align: center;">NOTE</p> <p>Profile style MJSNs (Hard Landing, Over-G, etc.) have no recurring tracking method so this entry will be blank.</p>	

6.8 TIME CHANGE INSPECTION FORMAT.

Table 6-5 identifies acceptable Time Change Inspection formats.

Table 6-5. Time Change Inspection Formats

Format Code	Format Narratives
1	Inspection on the End Item
2	Inspection on Parts
3	Inspection on Engines
4	Time Change for Parts
<p style="text-align: center;">NOTE</p> <p>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 Time Change Inspection.</p>	

6.9 DATE OF MANUFACTURE (DOM)/DATE OF INSTALLATION (DOI) INDICATOR.

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 Manufacture
R	Date of Refurbishment/Overhaul
	Blank
<p style="text-align: center;">NOTE</p> <p>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.</p>	

6.10 CATALOG NUMBER.**NOTE**

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

Tracking method used for engines (reference TO 00-25-254-1 for values). 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. 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.

6.10.1 Due Time Calculation. The due time calculation is a one 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 DOCUMENTING MAINTENANCE ACTIONS.

The purpose of this chapter is to prescribe the policy and rules for documenting maintenance performed on weapon systems, support systems, and equipment. Peculiar entries required on maintenance records for documenting maintenance actions involving Time Change Technical Orders (TCTO), serially-controlled items, warranty tracked items and Time Change Items are also identified in this chapter. This chapter prescribes specific entries or codes to be entered. To simplify these instructions; only peculiar block entry requirements are specified, the instructions in Paragraph 9.3 will be used to complete all other form entries.

7.2 DOCUMENTATION RULES.

7.2.1 TCTO Actions. 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 (Paragraph 7.3 for aircraft, 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 7.2.4. For these occasions, How Malfunction Code (HMC) 804, no defect removed for scheduled maintenance, should be used.

7.2.1.1 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.

7.2.1.2 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.

7.2.1.3 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.

7.2.2 Serially Controlled, Warranty Tracked Items, and Time-Change Items. 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.

7.2.2.1 To document the removal and/or replacement of serially-controlled/serially tracked subassemblies from their next higher assembly, ATCs, E, 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 man-hour entries, this suspense form may be held for the time specified in Chapter 3 of this TO.

7.2.2.2 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.

7.2.2.3 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.

7.2.2.4 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.

7.2.2.5 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.

7.2.2.6 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.

7.2.3 Training Equipment Maintenance Actions. 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.

7.2.4 Nuclear Weapons-Related Materiel (NWRM) Actions. 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. 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 for specifics requirements.

7.3 DOCUMENTATION RULES FOR ON-EQUIPMENT MAINTENANCE ACTIONS.

7.3.1 Aircraft, Air Launched Missiles, Drones, and Related Training Equipment. 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, Support Equipment (SE) or Communications-Electronics (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 AFI 23-101. When SRD codes indicate non-AF, "non-AF" must be entered in place of the ID number. See Paragraph 4.4 for more information.

7.3.1.1 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 cruise missiles and Intercontinental Ballistic Missiles (ICBM); excludes Air-to-Air/Tactical Missiles documented in Tactical Missiles Record System (TMRS), drones, engines, guns, and pod systems. When in-shop, on-equipment work is performed on 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.

7.3.1.2 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.

7.3.1.3 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.

7.3.2 Electronic Counter Measure (ECM) Pods, Communications Security (COMSEC), and Cryptologic Equipment. 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 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.

7.3.3 Support Equipment (SE), Aerospace ground Equipment (AGE), and Automatic Test Equipment (ATE). 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 . 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. Normal documentation rules apply for AGE.

7.3.4 C-E and Comprehensive Engine Management (CEM) Equipment and COMSEC. 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.

7.3.4.1 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.

7.3.4.2 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.

7.3.4.3 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.

7.3.4.4 Documenting 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.

7.3.4.5 Documenting 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. Supervisors (assigned labor code 300) performing or assisting in direct labor production will document their actions.

7.3.4.5.1 When kits, parts, or special tools are required for TCTO accomplishment, documentation activity personnel will follow the rules as specified in AFI 21-101 to order the needed items and prepare documentation after notification from Decentralized Materiel Support (DMS) 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.

7.3.4.5.2 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).

7.4 GENERAL DOCUMENTATION RULES FOR C-E EQUIPMENT.

7.4.1 Type Maintenance Code (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.

7.4.2 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.

7.4.2.1 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.

7.4.2.2 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. A Recommended Change (RC) will be submitted when a 99 NOC code is used due to lack of a WUC for a reparable item.

7.4.3 Action Taken Code (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.

7.4.3.1 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.

7.4.3.2 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.

7.4.3.3 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).

7.4.3.4 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.

7.4.4 How Malfunctioned Code (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.

7.4.4.1 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.

7.4.4.2 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.

7.4.4.3 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 man-hour 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.

7.4.4.4 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.

7.4.4.5 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 WDC W (upon receipt or withdrawal from supply stocks). When HMC 553 and WDC Y are used, a Category II Deficiency Report (DR) should be submitted under the provisions of TO 00-35D-54.

7.4.4.6 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.

7.4.4.7 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.

7.5 OFF-EQUIPMENT MAINTENANCE DOCUMENTATION RULES FOR SHOPWORK AND TMDE.

7.5.1 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 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.

7.5.2 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.

7.5.2.1 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.

7.5.3 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:

7.5.3.1 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 7.5.3 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.

7.5.3.2 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.

7.5.4 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.

7.5.5 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 7.3.4. All work performed on assemblies, subassemblies, and components removed from COMSEC and cryptologic equipment will be documented as normal off-equipment maintenance.

7.5.5.1 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.

7.5.5.2 The WUC and SRD must be obtained from the appropriate AFKAG/AFKAM-series publications. 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.

7.6 DOCUMENTATION RULES FOR MISCELLANEOUS MDD ACTIONS.

7.6.1 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.

7.6.2 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 MAJCOM for guidance.

7.6.3 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 00-20-1.

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

7.6.5 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.

7.6.5.1 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.

7.6.5.2 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.

7.6.6 Shelf-Life Inspection Requirements. 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."

7.6.6.1 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.

7.6.7 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:

7.6.7.1 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.

7.6.7.2 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.

7.6.7.3 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.

7.6.7.4 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.

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

7.6.7.6 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.

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

7.6.7.8 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.

7.6.7.9 For conventional munition commodity items (e.g., ammunition, bombs, signals and/or flares, rockets, arming wires, Cluster Bomb Unit (CBU) components, grenades, or mines), block 20 will contain the part number of the item. 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.

7.6.7.10 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 AFTO FORM 350.

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 Job Control Number (JCN) must be documented on the AFTO Form 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 Applicability. 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:

DD FORM 1574, SERVICEABLE TAG MATERIEL
 DD FORM 1574-1, SERVICEABLE LABEL MATERIEL
 DD FORM 1575, SUSPENDED TAG - MATERIEL
 DD FORM 1575-1, SUSPENDED LABEL - MATERIEL
 DD FORM 1576, TEST/MODIFICATION TAG - MATERIEL
 DD FORM 1576-1, TEST/MODIFICATION LABEL - MATERIEL
 DD FORM 1577, UNSERVICEABLE (CONDEMNED) TAG - MATERIEL
 DD FORM 1577-1, UNSERVICEABLE (CONDEMNED) LABEL - MATERIEL
 DD FORM 1577-2, UNSERVICEABLE (REPAIRABLE) TAG - MATERIEL
 DD FORM 1577-3, UNSERVICEABLE (REPAIRABLE) LABEL - MATERIEL

8.2.1.1 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.

8.2.1.2 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.

8.2.1.3 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.

8.2.1.4 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 AFTO FORM 350, PART I, FRONT.

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 reparable item. If more than one reparable 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 (WDC).

8.3.6 Block 5, How Malfunction. Enter the How Malfunctioned Code (HMC).

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

8.3.8 Block 7, WUC. Enter the WUC/REF DES of the item to which the form is to be attached. If the item is a reparable subassembly which does not have a WUC/REF DES, enter the WUC/REF DES 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 National Stock Number (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-1-4, Table 2-5 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 AFTO FORM 350, PART II, FRONT.

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.

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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.

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 AFTO FORM 350, PART I, REVERSE.

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 AFTO FORM 350, PART II, REVERSE.

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 or AFI 10-701.

8.8 AUTOMATED AFTO FORM 350.

Automated AFTO Forms 350 are authorized for use when produced by the automated MDD systems, an example of automated equivalent would be a screen print of screen 122 in IMDS CDB. 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 would be a screen print of screen 122 in IMDS CDB. A Portable Document Format (PDF) version of the AFTO Form 350 tag is available at <https://www.e-publishing.af.mil>.

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 an automated MDD system is unavailable.
- 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 AFPD 21-1. 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. 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.

9.2.1 Applicability. 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 (MAJCOMs) 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 (SPD), Product Group Managers (PGM), Material Group Managers (MGM), and Equipment Specialist (ES) when prescribed in this TO. Status accounting reports are also used by HQ USAF, HQ AFMC, and MAJCOMs 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 require-

ments. 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 accomplished. 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. 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. The ES is required to check and correct TCTO errors in REMIS on REC0311.

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, do not 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 AUTOMATED REPORTING.

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 C-E Equipment. 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. 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 AFTO Form 95. 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.

9.11.2.1 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.

9.11.3 MIS Documentation. 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.

9.11.3.1 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.

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

9.11.3.3 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.

9.11.3.4 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.

9.11.3.5 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.

9.11.3.6 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.

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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>).

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 TCTO Replacement. 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 Rescinded TCTO. 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 Equipment Specialist (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 TCTO Not Applicable. 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 TCTO Previously Complied With. 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 Duplicate TCTO. 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 Interim TCTO. 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 TCTO Decompliance. 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 Engineering Change Proposals. Those entries for engineering change proposals which were incorporated into the equipment during production are lined out.

9.14 TCTO STATUS REPORTS.

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

9.15 ANNUAL TCTO STATUS REVIEW.

All units possessing a weapon system will obtain a status list from one of the automated systems listed in paragraph 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. 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 weapon system 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 Air Force Metrology and Calibration (AFMETCAL) for collecting and reporting depot maintenance data.

10.2 RESPONSIBILITIES.

10.2.1 Program Managers. 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 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 3.6).

10.2.1.5 Ensure that organic and non-organic work authorization documents, contracts, work specifications, project directives, etc., specifically state the need of an 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.

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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.

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 WUC/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, configuration and time-change data will not be recorded. Ensure proper usage when utilizing serial tracking capability to make certain no additional workload is put on field maintenance personnel. Requests to serially track components not represented in the applicable -6 Inspection-Time Change manual, will be routed through the MAJCOM Functional for that system, the lead command if applicable, then to the primary system WUC manager for final approval prior to updating -06 TO or REMIS tables. XB3 (base-level non-recoverable items managed with the stock fund program) time-change items that do not have a manufacturer's serial number, will be coded as serial tracked in REMIS or MIS for tracking as deemed necessary by the applicable aircraft/system -06 TO and commodity TOs.

10.2.3.3.1 For tracking purposes, recommended changes will be routed through the MAJCOM Functional for that system, to the Lead Command if different, then to the primary system WUC manager for final approval and update to the WUC/LCN table.

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 email of any WUC/LCN changes to be accomplished on the primary system WUC/LCN table. This notification shall be followed by an Enhanced Technical Information System (ETIMS) Recommended Change (RC). 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. When a TCTO is issued, the issuing activity PM will ensure it is loaded into REMIS, including applicable serial numbers. If the performing field unit discovers that any of the serial numbers are not applicable to the unit, they must contact the issuing activity TCTO Modification Manager and inform them of the non-applicability status. Upon notification of non-applicability by the performing unit, the issuing activity TCTO Modification Manager mark the serial numbers as non-applicable in REMIS. An entry into the official folder on the basic TCTO shall be made documenting the non-applicability. A supplement is not required.

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 3.5 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 Paragraph 3.6.

10.3 AIR LOGISTICS COMPLEXES (ALCS) AND CONTRACTOR MDD 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 and 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 TO 00-20-14. 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.

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 TIME CHANGE ITEM (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.

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, 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.

10.5.1.5.1 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 man-hours 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.

10.5.1.5.2 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.

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

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

10.5.2 Configuration Tables. 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.

10.5.2.1 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.

10.5.2.2 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.

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 Master Job Standard Number (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.

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 man-hours 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 WCCs.

NOTE

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

WCC	WCC DESCRIPTION
-116-	Tech Orders
-117-	Flight Test
-120-	Maintenance
-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/Recon
-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

WCC	WCC DESCRIPTION
-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)
-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)

WCC	WCC DESCRIPTION
	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 Interm
-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	Squadron "B" -SHHH	-SIII	-SJJJ
-SKKK	-LLLL	Squadron "C" -SMMM	-SNNN	-SOOO
-SPPP	-SQQQ	Squadron "D" -SRRR	-SSSS	-STTT

WCC	Sub Function
-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
-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	

	Org Symbol
• 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 SECTION	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 HSNIG 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 MANCHINING/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	LAPPA
• 135 MOVING LINE UNIT 1	LAPPA
• 135 MOVING LINE UNIT 2	LAPPA
• 135 PRE- AND POST-DOCK UNIT	LAPPA

• EXAMINATION, INVENTORY, AND TOOL CRIB UNIT	LAPPA
• 135 OVERFLOW UNIT	LAPPA
• 135 SPECIAL PURPOSE UNIT	LAPPA
• 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
• 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

TO 00-20-2

- 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
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)
MABCPX	INDUSTRIAL SECTION (KADENA)
MABCPY	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
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
 MAKPHY 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
MADSFc	OPERATIONAL FLIGHT PROGRAM SECTION
MADSFd	OPERATIONAL FLIGHT PROGRAM SECTION
MADSFx	OPERATIONAL FLIGHT PROGRAM DEVELOPMENT BRANCH
MADSFy	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
MADSMd	ATE AND WEAPON SYSTEM INTERFACE ENGINEERING
MADSMe	ENGINEERING PROTOTYPE AND TEST SECTION
MADSMf	ENGINEERING PROTOTYPE AND TEST SECTION
MADSMx	WEAPON SYSTEM SOFTWARE ENGINEERING BRANCH
MADSMY	WEAPON SYSTEM SOFTWARE ENGINEERING (DEPREC.)
MADSMZ	HARDWARE TECHNOLOGY (DEPRECIATION)
MADSSA	SOFTWARE CONTROL CENTER (SCC)
MADSTX	SUPPORT BRANCH
MADSXX	SOFTWARE ENGINEERING DIVISION
MADVLC	CHEMICAL SCIENCES LABORATORY SECTION
MADVLE	ELECTRONIC LABORATORY AND ENGINEERING SERVICES
MADVLM	MATERIAL SCIENCE AND ENGINEERING LABORATORY
MADVLV	VERIFICATION LABORATORY SECTION

MADV LX	SCIENCE AND ENGINEERING LABORATORY
MADV LY	SCIENCE AND ENGINEERING LABORATORY
MADV NA	AIRCRAFT X-RAY AND NDI SECTION
MADV NB	ULTRASONIC AND EDDY CURRENT SECTION
MADV ND	MISSILE X-RAY AND COMPUTED TOMOGRAPHY
MADV NM	NDI - COMPUTED TOMOGRAPHY (CT)
MADV NN	NDI WHEEL CONTRACT WORKLOAD
MADV NX	NON-DESTRUCTIVE TEST INSPECTION
MADV NZ	AIRCRAFT X-RAY AND NON-DESTRUCTIVE TEST INSPECTION
MADV XX	SCIENCE AND ENGINEERING SUPPORT
MADV XY	MONTHLY EXPENSES/ACCRUAL ACCOUNT
MADV XX	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)
MDROM-	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)

Organization	Org Symbol
Strategic Production Branch	LNPA
Strategic Production Team - A	LNPA A
Strategic Production Team - B	LNPAB
Strategic Production Team - C	LNPAC
Strategic Production Team - D	LNPAD
Strategic Production Team - E	LNPAE
Strategic Production Team - F	LNPAF
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	LNPCC
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)

Organization	Org Symbol
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)

Organization	Org Symbol
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)

Organization	Org Symbol
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)

Organization	Org Symbol
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
Productivity Tools Team

TIECM
TIECP

COMPONENT REPAIR DIVISION (WR-ALC)

Organization

Org Symbol

Bond Team - A
Bond Team - B
Bond Team - C
Bond Team - D
Bond Team - E
Repair Team - 1A
Repair Team - 1B
Repair Team - 1C
Repair Team - 1D
Repair Team - 1E
Repair Team - 1F
Repair Team - 2A
Repair Team - 2B
Repair Team - 2C
Repair Team - 2D
Repair Team - 2E
Overhead Support

TIKBA
TIKBB
TIKBC
TIKBD
TIKBE
TIKCA
TIKCA
TIKCC
TIKCD
TIKCE
TIKCF
TIKPA
TIKPB
TIKPC
TIKPD
TIKPE
TIKPS

STRUCTURAL REPAIR DIVISION (WR-ALC)

Organization

Org Symbol

Overhead Support
Overhead Support
Overhead Support
Overhead Support

TIRAS
TIRBS
TIRCS
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.

Major Command	Command Code	Nomenclature
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
RNL	4F	ROYAL NETHERLANDS AIR FORCE
RNO	4G	ROYAL NORWEGIAN AIR FORCE

Major Command	Command Code	Nomenclature
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.

Data Items	Data Codes
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.

TO 00-20-2

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.

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 SERIALY-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 Columns A and E. Type Maintenance and When Discovered.

D.2.2.1 If the first position of the SRD is "B," "C," "E," "F," "J," "K," "L," "Q," "U," or "1" 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 "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. Component position of "0" is used for uninstalled engines. Component position must be "1" through "8" for egress components when the egress indicator is E or B. 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, W, X, Y, or Z.

D.2.5.3 Complete End Item Bench Check and/or Test and/or Repair (type 2 record). Action taken must be A through D, X, with HMC 804, or 0 through 9 with uninstalled end items.

D.2.5.4 Off-Equipment (type 3 record). Codes A through D will be used only during bench check actions.

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.

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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 HMC = "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 ATC = "A" through "D," or "0" through "9" ("X" with HMC = "804"), then last two positions of WUC must be "00." May be "23BN0" or "23QAY" (for F16 aircraft).

D.4.6 If HMC = "689", additional conductive path malfunction data is required.

D.4.7 If TM = "T," HMC must be "793," "797," "798," "801," "802," or "911."

D.4.8 If HMC = "793," "796," "797," or "911," units, crew size, start time and stop time must be zeros.

D.4.9 If HMC = "798" or "801," units must be "01." Start and stop time, crew size cannot be zero.

D.4.10 If HMC = "802," units must be "00" and labor hours cannot be "0." Crew size cannot be zero.

D.4.11 If HMC = "804," units must be "01" and labor hours cannot be "0."

D.4.12 If ATC = "T" or "U," HMC must be "875."

D.4.13 If ATC = "S," HMC must be "800," "804," or "805."

D.4.14 If ATC = "H," HMC must be "672," "799," "812," or "948."

D.4.15 If ATC = "Y," HMC cannot be "672," "799," "800," "804," or "948" and the last position of the WUC must be zero.

D.4.16 If WUC = "04," HMC must be "Q," "S," "X," or "Y."

D.4.17 If ATC = "F," "G," "L," "Y," or "Z," HMC cannot be "799."

D.4.18 If ATC = "Q," HMC cannot be "793," "796," "797," "798," "801," "802," "875," or "911."

D.4.19 If ATC = "P," "R," "S," "L," or "T," HMC cannot be "750."

D.4.20 If HMC = "800," AT must be "P," "Q," or "S."

D.4.21 If ATC = "X," WUC/LCN cannot be Support General.

D.4.22 If ATC = "G," WUC must not end in 9."

D.4.23 If HMC = "242" or "374," ATC must be "2," "A," "B," or "C".

D.4.24 If HMC = "925" or "926," ATC must be "G."

D.5 COMPATIBILITY EDITS, OFF-EQUIPMENT, REC-ID-3.

D.5.1 If HMC = "793," "796," "911," crew size start time, stop time, must be zero.

D.5.2 If ATC = "A," "F," "G," "K," "L," "V," or "Z," HMC cannot be "242," "796," "799," "800," "804," or "805."

D.5.3 If ATC = "B" or "J," HMC must be "672," "799," "812," or "948."

D.5.4 If ATC = "X," HMC must be "300," "799," "804," "812," "948," and WUC must not begin with "0."

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D.5.5 If ATC = "M" or "N," HMC cannot be "242."

D.5.6 If ATC = "0," "1," "2," "3," "4," "5," "6," "7," "8" or "9," HMC cannot be "799," "800" or "804."

D.5.7 If ATC = "T" or "U," HMC 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 "0" thru "9" or "A" thru "D."

D.5.11 If HMC = "925" or "926," ATC must be "G."

D.6 COMPATIBILITY EDITS, BITS AND PIECES.

D.6.1 TM cannot be T.

D.6.2 HMC 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, I, 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-	1	3	Bench Checked -- NRTS Warranty Item: Repair not authorized, item under warranty (on-equipment restricted to uninstalled end item only).
*1-	1	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 (on-equipment restricted to uninstalled end item only).
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-	1	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 (on-equipment restricted to uninstalled end item only).
4-	1	3	Bench Checked -- NRTS -- Lack of Parts -- Parts are not available to accomplish repair (on-equipment restricted to uninstalled end item only).
5-	1	3	Bench Checked -- NRTS -- Shop Backlog -- Repair cannot be accomplished due to excessive shop backlog (on-equipment restricted to uninstalled end item only).
6-	1	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 (on-equipment restricted to uninstalled end item only).
7-	1	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 (on-equipment restricted to uninstalled end item only).

Code	On Equip	Off Equip	Definition
*8-	1	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 (on-equipment restricted to uninstalled end item only).
9-	1	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 (on-equipment restricted to uninstalled end item only).
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 end item only) (also see code F).
B-	1	3	Bench checked -- serviceable (on-equipment restricted to uninstalled end item 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) (on-equipment restricted to uninstalled end item only).
D-	1	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 (on-equipment restricted to uninstalled end item only).
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 HMC 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 man-hours 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. This code should always be used when the Additive Manufacturing (AM) process is used on the parts produced and/or an item is repaired with a Cold Spray (CS) process. The item that is additively manufactured or repaired with a CS process will be identified by the WUC.

Code	On Equip	Off Equip	Definition
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 HMC 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.
*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, includes open and close of same item (see codes T and U). Must be used with HMC 800, 804 or 805. Install and Remove -- To include the installation and removal of safety equipment, AGE, test/diagnostic equipment, and warning tags to FOM (must be used with HMC 803). Includes pulling/resetting circuit breakers to FOM (must be used with HMC 800).
*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 HMC 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.

Code	On Equip	Off Equip	Definition
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 HMC. 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.
*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>AEROSPACE VEHICLES, 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>AEROSPACE VEHICLE, 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 accomplished during initial receipt and 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. AEROSPACE VEHICLES, 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.
W-	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 man-hours expended in repair (minor maintenance) of engines for which minor repair (other than and not to include JEBM) could not be accomplished.

Code	Definition
	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.
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
140	1	Frozen Fan
141	1	Compressor Case Failure or Excessive Air Leakage

Code	Type	Defect	Definition
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	
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	

Code	Type	Defect	Definition
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
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

Code	Type Defect	Definition
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
382	1	Blocked/Plugged
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
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

Code	Type	Defect	Definition
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	Expendable (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	
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	

Code	Type	Defect	Definition
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
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, and opening/closing doors etc.)
801	6		No Defect - TCTO complied with, all applicable operations completed
802	6		No Defect - Partial TCTO compliance
803	6		No Defect - Equipment installed and removed to FOM. This includes safety devices/locks, warning tags, AGE and test/diagnostic equipment. Not to be used to document the installation and removal of serially controlled items or to record aircraft configuration changes. Used with Action Taken Code S.
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)

Code	Type Defect	Definition
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
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)
925	2	Cold Spray (To be used with Action Taken Code G only)
926	6	Additive Manufacturing (3D printing) (To be used with Action Taken Code G only)
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

TO 00-20-2

Code	Type Defect	Definition
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)

Code	Definition
E-	After Flight. (1) - Post Launch/Refurbish Maintenance: Use for those discrepancies discovered during refurbishment of a launch after missile launch. (5)
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)
I-	- Predictive Maintenance: Use for Condition Based Maintenance (CBM) discrepancies discovered during data analysis.
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)

Code	Definition
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)
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/A4F 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	Ground handling, servicing, and related tasks
		Ground handling
		Equipment moving or repositioning
		Installation/relocation of equipment
		Removal of equipment
		Mission equipment operation or support when not associated with scheduled or unscheduled maintenance
		Servicing and related tasks
		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
		Rehabilitation of equipment
	02000	Equipment and facility cleaning

LCN	WUC Code	Definition
		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	Scheduled inspection or maintenance
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

LCN	WUC Code	Definition
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 inspection
13203305	03305	25-hour engine inspection
13203310	03310	50-hour engine inspection
13203311	03311	100-hour engine inspection
13203312	03312	200-hour engine inspection
13203313	03313	400-hour engine inspection
13203314	03314	300-hour engine inspection
13203320	03320	30 day

LCN	WUC Code	Definition
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

LCN	WUC Code	Definition
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
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

LCN	WUC Code	Definition
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	Special Inspections
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

LCN	WUC Code	Definition
		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
1350411F	0411F	Fuel System Jettison Check
1350411H	0411H	Fuel components contamination check
1350411J	0411J	Operationally ready inspection (ORI)
1350411K	0411K	Ground inspection
	0411L	Suspected foreign object damage or confirmed bird strike
	0411M	Flight through area of high volcanic ash concentrations
	0411N	Deployment of flaps above limiting airspeed
	0411P	Lightning strike/static electricity discharge
	0411Q	Operation of air deflectors above limiting airspeed
	0411R	Operation of cargo door above limiting airspeed

LCN	WUC Code	Definition
	0411S	Operation of cargo ramp above limiting airspeed
	0411T	Universal Aerial Refueling Receptacle Slipway Installation (UARRSI) whenever a brute force disconnect occurs
	0411U	Jettison of ALE-47 CMDS with flares
	0411V	Dispense of ALE-47 CMDS with flares
	0411W	Blown tire, departure of prepared surface, etc., which could result in possible landing gear damage
	0411X	Differential cabin pressure exceeds limits
	0411Y	90 day no-fly
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

LCN	WUC Code	Definition
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
1350412R	0412R	Auxiliary Power Unit (APU) In-Flight Start Check
1350412S	0412S	CAT III Systems Check
1350412V	0412V	Reduced Vertical Separation Minimum (RVSM) Systems Check
1350412W	0412W	Wing Air Refueling Pod (WARP) Check
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

LCN	WUC Code	Definition
		Insp, L/R Inlet bleed & bypass plenum
		Insp, aircraft engine inlet/exhaust inspection
1350413D	0413D	Engine(s) Overtorque
1350413E	0413E	Cylinder borescope inspection/engine compression borescope inspection
1350413F	0413F	Engine valve decarbonization inspection
1350413G	0413G	Propeller Balancing
1350413H	0413H	Retorque of propeller components following engine or propeller change
1350413J	0413J	Exhaust gas temperature (Jet Cal) calibration
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
	0414Z	Gun Bay Inspection- Gun Removed
	04149	Integral weight and balance check (C130)
13504150	04150	Weight and balance (includes weighing)
		Transfer
		Return to storage area

LCN	WUC Code	Definition
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
	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)

LCN	WUC Code	Definition
	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
135041P1	041P1	In-Process Inspection
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

LCN	WUC Code	Definition
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

LCN	WUC Code	Definition
13504361	04361	When guidance unit is exposed to sunlight
13504362	04362	Whenever forward body section displays a dent or deterioration
13504363	04363	Holding area
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

LCN	WUC Code	Definition
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
13504TAG	04TAG	ECB strapped or Warning Tag applied
	05000	Preservation, de-preservation and storage of equipment
	06000	Ground safety
	07000	Preparation and maintenance of records
		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	Special Purpose
	09000	Shop support general code
		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
AFDS	Air Force Data Services
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
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
HMC	How Malfunctioned Code
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 Capable
MIS	Management Information System
MISTR	Management of Items Subject to Repair
MJSN	Master Job Standard Number
MRCM	Mobile Radio Communications Maintenance
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 Controlled Material
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
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

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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	HMC	TCTO Status
00		No status, no previous action
01	801	Completely complied with
02	797	Previously complied with by inspection check. No modification required.
03		Complied with by record check (ie AFTO Form 95). 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		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

Code	HMC	TCTO Status
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 ALGORITHMS.

NOTE

TCTO data is stored separately from the rest of MDC at input within REMIS.

The following algorithms were compiled based on previous Military Standards.

Index

1. ABORT AIR
2. ABORT AIR RELATED MAINTENANCE ACTIONS
3. ABORT AIR RATE
4. ABORT GROUND
5. ABORT GROUND RELATED MAINTENANCE ACTIONS
6. ABORT GROUND RATE
7. ABORT TOTAL RATE
8. BREAK
9. BREAK RELATED REPAIRS
10. BREAK RATE
11. FIX
12. 4 HOUR FIX RATE
13. 8 HOUR FIX RATE
14. 12 HOUR FIX RATE
15. 12 HOUR FLIGHT EMERGENCY
16. BASE LEVEL EVENTS
17. BASE NOT REPAIRABLE THIS STATION (NRTS)
18. DEPOT NRTS
19. TOTAL NRTS
20. BASE NRTS RATE
21. DEPOT NRTS RATE
22. TOTAL NRTS RATE
23. BASE BENCH CHECK REPAIR (BCR)
24. DEPOT BCR
25. TOTAL BCR
26. BENCH CHECK SERVICEABLE (BCS)
27. BCS RATE
28. RTOK
29. RTOK RATE
30. CANNIBALIZATIONS
31. CANNIBALIZATIONS HOURS
32. CANNIBALIZATION RATE
33. CANNOT DUPLICATE (CND)
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)
- 43. INDUCED FAILURES (TYPE 2)
- 44. NO DEFECT ACTIONS (TYPE 6)
- 45. TOTAL ACTIONS (Type 1, 2 and 6)
- 46. MAINTENANCE EVENTS OFF EQUIPMENT
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- 48. MAN-HOURS (INSPECTIONS)
- 49. MAN-HOURS OFF EQUIPMENT
- 50. MAN-HOURS ON EQUIPMENT
- 51. MAN-HOURS (ON EQUIPMENT AND OFF EQUIPMENT)
- 52. MAN-HOURS (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 53. MAN-HOURS (SCHEDULED)
- 54. MAN-HOURS (UNSCHEDULED)
- 55. MAN-HOURS (SUPPORT GENERAL)
- 56. MAN-HOURS (SUPPORT GENERAL UNSCHEDULED)
- 57. MAN-HOURS (SUPPORT GENERAL SCHEDULED)
- 58. MAN-HOURS (TCTO)
- 59. MAN-HOURS / FLYING HOUR (ON EQUIPMENT AND OFF EQUIPMENT)
- 60. MAN-HOURS / FLYING HOUR (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 61. MAN-HOURS / MISSION (ON EQUIPMENT AND OFF EQUIPMENT)
- 62. MAN-HOURS / MISSION (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 63. MAN-HOURS / POSSESSED (ON EQUIPMENT AND OFF EQUIPMENT)
- 64. MAN-HOURS / POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 65. MAN-HOURS / SORTIE (ON EQUIPMENT AND OFF EQUIPMENT)
- 66. MAN-HOURS / SORTIE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 67. MAN-HOURS / ACTIVE (ON EQUIPMENT AND OFF EQUIPMENT)
- 68. MAN-HOURS / ACTIVE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
- 69. REMOVALS
- 70. REMOVALS (SCHEDULED)
- 71. REMOVALS (UNSCHEDULED)
- 72. BASE BCR RATE
- 73. DEPOT BCR RATE
- 74. TOTAL BCR RATE
- 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
- 80. REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
- 81. BASE REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
- 82. BASE REPAIR RATE (ON EQUIPMENT AND OFF EQUIPMENT)
- 83. DEPOT REPAIRS (ON EQUIPMENT AND OFF EQUIPMENT)
- 84. DEPOT REPAIR RATE (ON EQUIPMENT AND OFF EQUIPMENT)
- 85. REPAIR MAN-HOURS (OFF)
- 86. REPAIR MAN-HOURS (ON)
- 87. REPAIR MAN-HOURS (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)
104. MEAN TIME BETWEEN MAINTENANCE EVENT (MTBME) (FLYING HOURS / ON EVENTS)
105. MEAN TIME BETWEEN MAINTENANCE EVENT (MTBME) (FLYING HOURS / ON AND OFF EVENTS)
106. AIRCRAFT AVAILABILITY (AA)
107. UNIT POSSESSED - NOT REPORTED (UPNR)
108. DEPOT RATE
109. NOT MISSION CAPABLE MAINTENANCE (NMCM)_{na} RATE
110. NOT MISSION CAPABLE SUPPLY (NMCS)_{na} RATE
111. NOT MISSION CAPABLE BOTH (NMCB)_{na} 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

$$\text{ABORT AIR RATE} = \frac{\text{ABORT AIR}}{\text{SORTIES FLOWN}} \times 100$$

TO 00-20-2

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

TOTAL NRTS = BASE NRTS + DEPOT NRTS
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

$$\text{BASE BCS RATE} = \frac{\text{BASE BCS}}{(\text{BCS} + \text{BASE BCR} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})} \times 100$$

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 MAN-HOURS 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

TOTAL CONDEMNATIONS = BASE CONDEMNATIONS + 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. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (INSPECTION).

49. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (OFF).

50. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (ON).

51. MAN-HOURS (ON EQUIPMENT AND OFF EQUIPMENT)

MAN-HOURS (ON AND OFF) = MAN-HOURS (ON) + MAN-HOURS (OFF)

52. MAN-HOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN)

MAN-HOURS (ON EQUIPMENT, OFF EQUIPMENT & SUP GEN) = MAN-HOURS (ON)
+ MAN-HOURS (OFF)
+ MAN-HOURS (SUPGEN)

53. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (SCHEDULED).

54. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (UNSCHEDULED).

55. MAN-HOURS (SUPPORT GENERAL)

if the on-equipment or off-equipment
 the first WUC position equals "0"
 then add LABOR MAN-HOURS to MAN-HOURS (SUPPORT GENERAL).

56. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (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 MAN-HOURS to MAN-HOURS (SUPPORT GENERAL UNSCHEDULED).

57. MAN-HOURS (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 MAN-HOURS to MAN-HOURS (SUPPORT GENERAL SCHEDULED).

58. MAN-HOURS (TCTO)
if the on-equipment or off-equipment
TYPE MAINTENANCE CODE equals "T"
then add LABOR MAN-HOURS to MAN-HOURS (TCTO).

59. MAN-HOURS/FLYING HOURS (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / FLYING HOUR} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{FLYING HOURS}}$$

60. MAN-HOURS/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. MAN-HOURS/MISSION (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / MISSION} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{MISSIONS}}$$

62. MAN-HOURS/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. MAN-HOURS/POSSESSED (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / POSSESSED} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{POSSESSED HOURS}}$$

64. MAN-HOURS/POSSESSED (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)

$$\text{MANHOURS / POSSESSED} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)} + \text{MANHOURS (SUP GEN)}}{\text{POSSESSED HOURS}}$$

65. MAN-HOURS/SORTIES (ON EQUIPMENT AND OFF EQUIPMENT)

$$\text{MANHOURS / SORTIE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{SORTIES FLOWN}}$$

66. MAN-HOURS/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. MAN-HOURS/ACTIVE (ON EQUIPMENT AND OFF EQUIPMENT)
if TYPE EQUIPMENT equals "C" or "R"
then

$$\text{MANHOURS / ACTIVE} = \frac{\text{MANHOURS (ON)} + \text{MANHOURS (OFF)}}{\text{ACTIVE TIME}}$$

68. MAN-HOURS/ACTIVE (ON EQUIPMENT, OFF EQUIPMENT AND SUP GEN)
if TYPE EQUIPMENT equals "C" or "R"
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," "E," "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

$$\text{BASE REPAIR RATE} = \frac{\text{BASE REPAIR ACTIONS (ON AND OFF)}}{(\text{BCS} + \text{BASE REPAIR ACTIONS (ON AND OFF)} + \text{BASE NRTS} + \text{BASE CONDEMNATIONS})}$$

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

$$\text{DEPOT REPAIR RATE} = \frac{\text{DEPOT REPAIR ACTIONS (ON AND OFF)}}{(\text{RTOK} + \text{DEPOT REPAIR ACTIONS (ON AND OFF)} + \text{DEPOT CONDEMNATIONS})}$$

85. REPAIR MAN-HOURS (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 MAN-HOURS (ON).

NOTE

On Equip Engine work may have ATC "A" for repairs.

86. REPAIR MAN-HOURS (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 MAN-HOURS (OFF).
87. REPAIR MAN-HOURS (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 MAN-HOURS (ON AND OFF).

88. MEAN REPAIR TIME OFF EQUIPMENT (MRT)

$$MRT = \frac{\text{REPAIR MANHOURS (OFF)}}{\text{REPAIR ACTIONS (OFF)}}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of man-hours and MTTR does not use crew size in the calculation of hours.

89. MEAN REPAIR TIME ON EQUIPMENT (MRT)

$$MRT = \frac{\text{REPAIR MANHOURS (ON)}}{\text{REPAIR ACTIONS (ON)}}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of man-hours and MTTR does not use crew size in the calculation of hours.

90. MEAN REPAIR TIME ON EQUIPMENT AND OFF EQUIPMENT (MRT)

$$MRT = \frac{\text{REPAIR MANHOURS (ON)} + \text{REPAIR MANHOURS (OFF)}}{\text{REPAIR ACTIONS (ON)} + \text{REPAIR ACTIONS (OFF)}}$$

NOTE

The difference between MRT and MTTR is that MRT uses crew size in the calculation of man-hours 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

$$MTBF-1 \text{ (INHERENT)} = \frac{\text{FLYING HOURS} \times \text{QPA} \times \text{UF}}{\text{INHERENT FAILURES}}$$

if TYPE EQUIPMENT equals "C" or "R"
then

$$\text{MTBF} = \frac{\text{Active Hours} - (\text{PMCU Hours} + \text{NMCU Hours})}{\text{Number of PMCU} + \text{NMCU Statuses}}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," or "R"
then

$$\text{MTBF-1 (INHERENT)} = \frac{\text{POSSESSED HOURS} \times \text{QPA} \times \text{UF}}{\text{INHERENT FAILURES}}$$

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

$$\text{MTBF-2 (INDUCED)} = \frac{\text{FLYING HOURS} \times \text{QPA} \times \text{UF}}{\text{INDUCED FAILURES}}$$

if TYPE EQUIPMENT equals "C" or "R"
then

$$\text{MTBF} = \frac{\text{Active Hours} - (\text{PMCU Hours} + \text{NMCU Hours})}{\text{Number of PMCU} + \text{NMCU Statuses}}$$

if TYPE EQUIPMENT is not equal to "A," "E," "C," or "R"
then

$$\text{MTBF-2 (INDUCED)} = \frac{\text{POSSESSED HOURS} \times \text{QPA} \times \text{UF}}{\text{INDUCED FAILURES}}$$

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" or "R"
then

$$\text{MTBF} = \frac{\text{Active Hours} - (\text{PMCU Hours} + \text{NMCU Hours})}{\text{Number of PMCU} + \text{NMCU Statuses}}$$

if TYPE EQUIPMENT is not equal "A," "E," "C," or "R" 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" or "R"
then

$$\text{MTBM} = \frac{\text{Active Hours} - (\text{PMC Hours} + \text{NMC Hours})}{\text{Number of PMC} + \text{NMC Statuses}}$$

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" or "R"
then

$$\text{MTBR} = \frac{\text{ACTIVE TIME}}{\text{REMOVALS}}$$

if TYPE EQUIPMENT not equal to "A," "E," "C," or "R"
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" or "R"
then

$$\text{REMOVALS/1000 ACTIVE HOURS} = \frac{\text{REMOVALS}}{\text{ACTIVE TIME}} \times 1000$$

If TYPE EQUIPMENT not equal to "A," "E," "C" or "R"
then

$$\text{REMOVALS/1000 POSSESSED HOURS} = \frac{\text{REMOVALS}}{\text{POSSESSED HOURS}} \times 1000$$

101. MEAN TIME TO REPAIR OFF EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (OFF)}}$$

102. MEAN TIME TO REPAIR ON EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (ON)}}{\text{REPAIR ACTIONS (ON)}}$$

103. MEAN TIME TO REPAIR ON EQUIPMENT AND OFF EQUIPMENT (MTTR)

$$\text{MTTR} = \frac{\text{REPAIR HOURS (ON)} + \text{REPAIR HOURS (OFF)}}{\text{REPAIR ACTIONS (ON)} + \text{REPAIR ACTIONS (OFF)}}$$

104. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON EVENTS)

$$\text{MTBME} = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON)}}$$

105. MEAN TIME BETWEEN MAINTENANCE EVENTS (MTBME) (FLY HOURS / ON AND OFF EVENTS)

$$\text{MTBME} = \frac{\text{FLYING HOURS}}{\text{MAINTENANCE EVENTS (ON)} + \text{MAINTENANCE EVENTS (OFF)}}$$

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: BI, BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XC, XJ, XW, XZ, ZA, and ZB.

107. UNIT POSSESSED - NOT REPORTED (UPNR)

$$\text{UPNR RATE} = \frac{\text{UPNR HOURS}}{\text{TAI HOURS}}$$

NOTE

- UPNR hours are the sum of the number of possessed hours in the following PPCs: BI, 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: BI, BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XJ, XC, 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: BI, BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XC, XJ, XW, XZ, ZA, and ZB.

109. NMCM_{na} RATE

$$\text{NMCM RATE} = \frac{(\text{NMCMa} + \text{NMCMs} + \text{NMCMU HOURS})}{\text{POSSESSED HOURS}} \times 100$$

NOTE

- NMCM_{na} hours are the sum of the TNMCM hours minus NMCB hours in the following PPCs: CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB. When data is retrieved from REMIS or Air Force Data Services, the NMCB hours are subtracted from TNMCM hours to derive the number of NMCM_{na} 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, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XC, XJ, XW, XZ, ZA and ZB.

110. NMCS_{na} RATE

$$\text{NMCS RATE} = \frac{(\text{NMCS} + \text{NMCSA HOURS})}{\text{POSSESSED HOURS}} \times 100$$

NOTE

- NMCS_{na} 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: BI, BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XC, XJ, XW, XZ, ZA, and ZB.

111. NMCB_{na} RATE

$$\text{NMCB RATE} = \frac{(\text{NMCBA} + \text{NMCBS} + \text{NMCBU HOURS})}{\text{POSSESSED HOURS}} \times 100$$

NOTE

- NMCB_{na} 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: BI, BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DN, DO, DR, DT, IF, PJ, PL, PR, TF, TJ, XC, 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

$$\text{NMCM RATE} = \frac{(\text{NMCM} + \text{NMCMU HOURS})}{\text{POSSESSED HOURS}} \times 100$$

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

$$\text{NMCS RATE} = \frac{(\text{NMCS} + \text{NMCSA HOURS})}{\text{POSSESSED HOURS}} \times 100$$

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

$$\text{NMCB RATE} = \frac{(\text{NMCBA} + \text{NMCBS} + \text{NMCBU HOURS})}{\text{POSSESSED HOURS}} \times 100$$

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.

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