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Maintenance

**DEPOT MAINTENANCE TECHNICAL DATA
AND WORK CONTROL DOCUMENTS**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements applicable provisions of AFD 21-1, *Managing Aerospace Equipment Maintenance*, AFD 21-3, *Technical Orders*, AFI 21-102, *Depot Maintenance Management*, AFMCI 21-301, *Air Force Materiel Command Technical Order System Implementing Policies*, AFMCMAN 21-1, *Air Force Materiel Command Technical Order System Procedures*, TO 00-5-1, *AF Technical Order System*, TO 00-20-5, *Aerospace Vehicle Inspection and Documentation*, and TO 00-25-195, *Source, Maintenance and Recoverability Coding of Air Force Weapons, Systems and Equipment*, as well as other applicable TO 00-20 and 00-5 Series Technical Orders and 21 Series Directives.

This instruction defines responsibilities and provides procedures for the control and use of technical data within depot maintenance production. It provides procedures for development and processing Work Control Documents (WCD) in support of the requirements of AFMCI 21-129, *Depot Maintenance Management, Depot Repair Enhancement Process (DREP)*, and AFMCI 21-133, *Depot Maintenance Management For Aircraft Repair*. This instruction applies to all organizations performing depot maintenance at Air Logistics Centers (ALC) and the Aerospace Maintenance and Regeneration Center (AMARC) where applicable. Contracted Organic Workloads and Contract Field Teams (CFT), while working on any AFMC installation, must comply with this instruction.

SUMMARY OF REVISIONS

This instruction has been revised to incorporate major corrections, clarifications, and relevant information from other directives. It has been substantially realigned for clarity and ease of reading and should be read in its entirety. The requirements of this instruction supersede earlier guidance of other AFMC instructions on the same subject, if conflicts exist.

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Chapter 1

TECHNICAL DATA AND WORK CONTROL DOCUMENT (WCD) POLICY

1.1. Purpose. This instruction provides policy and procedures for depot work planning and the use of technical data in compliance with Air Force policy. This document also provides guidance for processing, handling, and storage of WCDs.

1.1.1. Local Instructions. This instruction provides only the minimum requirements of the program and will be expanded as necessary to implement and maintain the center program. Local instructions will be developed or updated and implemented within 180 days from the publication of this instruction and be made available to the lowest level of management.

1.2. General Policy.

1.2.1. All Air Force systems, subsystems, items of equipment and support equipment are operated, maintained, and documented according to the procedures contained in technical data. Technical data is the only authorized source of information used to perform work or to develop local instructions to accomplish technical requirements. All manuals used as TOs must have a TO number assigned. Only verified TOs, as authorized by TO 00-5-1, shall be used for depot maintenance. In the absence of written policy, a locally printed TO extract may only be used on the day it is printed. Locally printed TO extracts may be used for thirty working days if the center has a written policy to control their use and ensure their currency. The policy must be approved by the center vice commander.

1.2.1.1. Use of unapproved technical data (such as notes, manuals, drawings, etc.) including uncontrolled copies (or pages) of formal TOs **is prohibited.**

1.2.2. Specific TOs take precedence over general TOs. When specific technical orders do not contain procedures or processes, such as cleaning, plating, etc., general technical orders containing this information will be used. If there is a difference in requirements between these documents, the more stringent requirement applies. This instruction takes precedence over any other published policy on the subject of WCDs.

1.2.3. The most current version of the technical data will always be used. For those aircraft in storage at AMARC use technical data prescribed by the requesting authority.

1.2.4. Use of Air Force Technical Order (AFTO) forms in depot maintenance and data entry into the AF Maintenance Data Collection (MDC) system is accomplished in accordance with TO 00-20-2, *Maintenance Data Documentation*.

1.3. Waivers. Any policy waivers to this instruction will be sent to HQ AFMC/LG for action. The request will be coordinated through the ALC Quality Assurance Focal Point and signed by the ALC Commander. Requests for waivers will contain justification as to why the unit cannot comply with the existing guidance. Deviations are **NOT** authorized without prior HQ AFMC/LG written approval.

1.4. Technical Data. Compliance with Air Force technical data is mandatory. Unauthorized deviations from technical data will not be tolerated. Conditions under which TO compliance may be waived are explained in TO 00-5-1, AFMCI 21-301, and AFMCMAN 21-1.

1.4.1. Types of Technical Data. As defined in TO 00-5-1, technical data includes engineering data, source data and TO data (for example, schematic diagrams, flow diagrams, manufacturer's handbooks, manuscripts of Operations & Maintenance (O&M) instructions, Preliminary Technical Orders (PTOs), Commercial Technical Manuals (TMs), Research & Development (R&D) TMs, and other system or equipment O&M procedures developed under AFMC or other acquisition agency directions during the system acquisition phase). Avoid use of the term **TECH DATA** when referring to specific types of data.

1.4.1.1. Technical Orders. Types of TOs are listed below. If formal TOs are not available, another technical document must be designated or created and approved for use as specified in TO 00-5-3, or AFMCMAN 21-1. Work specifications are **not** an authorized source of technical data. They may be used as a source of technical information to develop an approved source of technical data for performing depot maintenance.

1.4.1.1.1. Operations & Maintenance (O&M). These TOs cover installation, operation, maintenance and handling of Air Force military systems and commodities, (i.e. Flight Manual Program (FMP) Publications, On-Equipment Organizational Maintenance Manual Sets, Nuclear Weapons Manuals, Work Package TOs, and Computer-Related Manuals, etc.).

1.4.1.1.2. Abbreviated Technical Orders. These TOs are excerpts from one or more basic TOs which organize and simplify instructions. The following are types of abbreviated TOs.

1.4.1.1.2.1. Inspection Workcards. Workcards are developed in sets by type of inspection, and work area or zone being inspected. They provide the required guidance, including applicable safety warnings, cautions and notes and specific accept/reject criteria for performing an inspection.

1.4.1.1.2.2. Inspection Sequence Charts. These are limited-use tools provided for scheduled inspections and depict a basic planned work schedule or sequence in which the inspection workcards can be used.

1.4.1.1.2.3. Checklists. Checklists provide abbreviated step-by-step procedures for operation and maintenance of systems and equipment in the sequence deemed most practical, or to ascertain operational readiness of equipment and minimum serviceable condition. A checklist may be published when one or more of the following criteria exist:

1.4.1.1.2.3.1. When sequential steps must be followed to preclude potential damage or degradation to equipment which would reduce operational readiness or cause catastrophic failure.

1.4.1.1.2.3.2. To preclude potential injury to personnel and/or damage to equipment unless prescribed sequence time-phased procedures are followed.

1.4.1.1.2.3.3. When interaction or communication between two or more differing specialty skills is involved in accomplishing a function.

1.4.1.1.3. Commercial-Off-The-Shelf (COTS) Manuals. COTS manuals support equipment designed and manufactured for commercial use and are furnished (or sold) by equipment manufacturers to their customers. COTS manuals delivered with the equipment they support are authorized for use pending Air Force review and assignment of TO numbers (no authorization letter required). Users must establish Initial Distribution (ID) for the TO-numbered replacement COTS manual according to TO 00-5-2.

1.4.1.1.4. Methods and Procedures TOs (MPTOs). These are general in content and are not issued against specific military systems or commodities. There are two classes of MPTOs.

1.4.1.1.4.1. Those which specify policy, methods and procedures relating to the TO system, maintenance management, administration, inspection of Air Force equipment, control and use of repairable assets, configuration management, etc. Examples include the 00-5-series TOs.

1.4.1.1.4.2. Those which involve policies, methods and procedures relating to ground handling of aerospace vehicles, general maintenance practices, management of precision measurement equipment, and the safe use of Air Force equipment. They may specify common procedures for arrangement of maintenance production facilities or special inspection functions such as the joint oil analysis program. An example is TO 00-25-234, *General Shop Practice Requirements for Repair, Maintenance, and Test of Electrical Equipment*.

1.4.1.2. Preliminary Technical Orders (PTOs). PTOs are copies of TOs prepared in limited quantities during TO acquisition to support in process reviews (IPRs), validation or certification, and verification of data against the military system or commodity being acquired. PTOs are formalized according to TO 00-5-3. Formalization is indicated when a TO update removes the word "PRELIMINARY" from the title page.

1.4.1.3. Other Authorized Technical Data.

1.4.1.3.1. Engineering Drawings. Engineering drawings/detailed blueprints are created and approved by the cognizant engineering organization. They are commonly required to perform depot level manufacture, assembly, repair, and modification of equipment requiring strict compliance to maintain configuration control.

1.4.1.3.2. AFMC Form 202, **Nonconforming Technical Assistance Request and Reply**. Used for requesting and furnishing technical data.

1.4.2. Technical Data Availability. O&M technical data procedures for operation, troubleshooting, repairing, removing, installing, manufacturing, calibrating, or servicing action must be available and used at the job site as prescribed by TO 00-5-1.

1.4.2.1. Used at the job site. Technical data will be in the immediate vicinity where the work is being performed (i.e., work bench, aircraft stall, dock, machine shop, etc.).

1.4.2.2. General TOs and Methods and Procedures TOs need not be open and in use but must be readily available at the job site. The definition of **readily available** is within easy access to the job site.

1.4.3. Source of Technical Data. The System Program Office (SPO) is responsible for publishing applicable system technical orders and approving associated technical data.

1.4.4. TO Changes and Authorized Deviations. Technical data used in depot maintenance must be complete, accurate, effective and efficient. It is the responsibility of maintenance personnel at all levels to ensure deficiencies are reported in a timely manner and improvements made when needed. When work cannot be performed using the TO as written, an authorized deviation must be processed and approved. The AFTO Form 22 is processed in accordance with TO 00-5-1 or the AFMC Form 202 is sent to the appropriate engineering/planning function which processes the request in accordance with AFMCMAN 21-1.

1.4.4.1. AFTO Form 22, **Technical Manual (TM) Change Recommendation and Reply**. This form provides the mechanism by which improvements and corrections to TO deficiencies may be made. TO 00-5-1 provides detailed instructions on the routing of TO deficiency submissions. It is the responsibility of the individual discovering a TO deficiency to initiate an AFTO Form 22.

1.4.4.2. AFMC Form 202, **Nonconforming Technical Assistance Request and Reply**. Use the AFMC Form 202 to furnish technical data (a) for conditions or procedures beyond published authority under work stoppage and non-work stoppage conditions, and (b) when technical data does not exist and must be developed, approved, and provided to maintenance technicians. Use procedures found in AFMCMAN 21-1.

1.4.4.2.1. For a commodity that is noncompliant, use AFMC Form 76, **Material Review (Hold)** tag (used to identify and help control the nonconforming product), until the discrepancy is corrected.

1.4.4.3. AFMC Form 252, **TO Publication Change Request**. An approved AFMC Form 252 is issued as a result of the AFMC Form 202 when a TO change is required, to provide the corrected or newly developed data necessary to resolve an actual or anticipated work stoppage. The completed AFMC Form 252 is stamped Special Handling (SH252) and is processed and inserted into the TO as detailed in AFMCMAN 21-1 and is used until replaced by the formal TO update.

1.4.4.4. AF Form 2600, **Engineering Order (EO)**. An EO is used to document changes to engineering drawings as described in AFI 21-402, *Engineering Drawing System* and AFMCMAN 21-1.

1.4.5. Posting Technical Order Changes. Changes to TOs must be monitored and documented, ensuring no process is compromised. The organization responsible for posting changes to TOs will publish and provide a list of changes to the appropriate production supervisor and planning organizations. Changes to TOs may require changes to the WCD. The planning and production organization is jointly responsible for reviewing the TO changes and the determination of WCD impacts. Changes to WCDs shall be accomplished within five working days after posting of the TO change.

1.4.6. Technical Data Familiarization. Supervisors must make sure subordinates are familiar with the directives governing their duty assignments and ensure the use of the most recent authorized technical data. The supervisor reviews new, revised, or changed technical data and advises personnel of significant changes. All changes in critical/safety related information (such as cautions and warnings) will be emphasized. In addition, the supervisor determines if new, revised or changed technical data affect the qualifications/certifications of personnel and the entries on the WCDs or definitized lists. If these areas are impacted, steps are taken to bring both personnel and work documents into conformance with the new requirements. For significant/critical changes, retraining/requalification and demonstration of proficiency may be required before personnel are recertified on the task. The training organization must also be notified of any significant changes. (See **paragraph 1.7.**)

1.5. Work Control Document (WCD). WCDs are not technical data. The WCD is an official and authorized instruction and guidance document with the technical data references for processing the item. No work will be performed without an approved WCD. The WCD is the official record for work including control, identification, inspection, and routing of items. All work affecting the quality of products and services must be described by clear and complete instructions appropriate to the circumstances of the task being performed. WCDs shall be auditable and meet the requirements of this instruction. The amount of

detail of these work instructions and technical data references on WCDs is determined by the Production Planning Team and is dependent on the type of work, complexity of work, and repetitiveness of work assignments. The WCD is the official record that certified technicians, as required by AFMCI 21-108, *Production Acceptance Certification Program (PAC)*, performed the task and all work was accomplished using authorized technical data.

1.5.1. If the governing TO applies to every sub-operation of the repair process it is not necessary to repeat the TO designator for each sub-operation. Other TOs *referenced* in the governing TO will not be listed in the governing directive block or on the sub-operation line. If repairs require use of several independent TOs, all required TOs will be listed in the governing directive block and each sub-operation line must specify the TO applicable to that repair action.

1.5.2. WCDs are developed by an authorized Planner in accordance with approved technical data. This instruction or other directives do not authorize use of unapproved or uncontrolled data of any kind. The procedures in this instruction will be carefully followed and supported to ensure products and services meet all technical requirements. All critical tasks designated for secondary PAC certification must be listed and stamped as separate line items.

1.5.3. Initial process for development of WCDs. During the early acquisition stages of a new system, the Pre-Production Planning Team will include a long-range Planner (reference: AFMCI 21-101, *Depot Maintenance Activation Planning*). After the system becomes operational, a Production Planning Team must be formed. The exact timing of the changeover of teams will be at the ALC discretion. The composition will change and the chair will pass to the Planner for the system or subsystem. Where there is a modification to a postured item(s) the policies of AFMCI 21-101 are used.

1.5.4. WCD Change Request

1.5.4.1. AFMC Form 957 is prescribed to identify additions, deletions, and corrections to an existing WCD. It may also be used to recommend action be taken to create a new WCD.

1.5.4.2. The person identifying an error on the WCD will initiate the request by completing Part 1.

1.5.4.2.1. The signature and organization symbol of initiator's supervisor is required. When changes to an RCC are required, both the old RCC and new RCC supervisor's signatures will be required.

1.5.4.3. The supervisor will forward the request to the appropriate WCD planning organization.

1.5.4.4. The responsible WCD Planner will complete the following actions within 15 working days:

1.5.4.4.1. Input necessary changes to the WCD.

1.5.4.4.2. Complete Part II of the request indicating the request was accepted or explains why the request was not accomplished.

1.5.4.4.3. Return a copy of the completed request to the supervisor.

1.5.4.4.4. File the completed original form in the WCD master file.

1.5.5. Production Planning Team (PPT)/Maintenance Review Team (MRT).

1.5.5.1. The PPT purpose is to plan, develop, and refine workload requirements as they pertain to WCDs. The team is composed of a Planner, Production Supervisor, Production Controller/Scheduler, and Quality Assurance Specialist when requested.

1.5.5.2. The MRT purpose is to review handscribed or unplanned work cards to determine the necessity of performing the work, and to determine whether the work is a part of the negotiated work package, or an Over and Above (O&A), requirement. The team will, as a minimum, have planning and production representation with support from the Project Administration Officer (PAO), as necessary. Additional functions, such as schedulers, quality, etc., will participate as conditions dictate. Operating instructions will be developed locally designating team composition and the methods of operation.

1.5.6. Types of Work Control Documents. The following are the only authorized types of WCDs for production maintenance. Deviations are **NOT** authorized without prior HQ AFMC/LG written approval.

1.5.6.1. AFMC Form 959, **Work Control Document**, or Inventory Tracking System (ITS) (G337) Work Control Document. AFMC Form 959 or ITS is used for workloads processed through production maintenance. The ITS or D012 WCD is the HQ AFMC approved system-generated equivalent of the AFMC Form 959. These forms will not be used for the repair and certification of Test, Measurement, and Diagnostic Equipment (TMDE) work.

1.5.6.2. AFMC Form 173, **MDS/Project Operation Assignment**, or Programmed Depot Maintenance Scheduling System (PDMSS) (G097) Work Control Document. AFMC Form 173 or PDMSS is used for workloads processed through production maintenance. The PDMSS WCD is a HQ AFMC approved system-generated equivalent of the AFMC Form 173.

1.5.6.2.1. Definitized List. A definitized list supplements AFMC Form 173 and shall be attached to and become a permanent part of the AFMC Form 173. Definitized lists must be updated and in complete agreement with the source AFMC Form 173. It provides a detailed step-by-step breakdown of a single operation and must not duplicate technical data.

1.5.6.3. Management Planning, and Control System (MPCS), (D012). D012 is approved for use as part of the AFMC suite of standard data systems identified in AFMCI 21-133, *Depot Maintenance Management for Aircraft Repair (AREP)* and is used for manufacturing workload control. The D012 system produces official Work Control Documents (WCD) comparable to the ITS and AFMC Form 959 WCD and will comply with the requirements of this instruction.

1.5.6.4. Electronic WCDs. HQ AFMC approved computer systems generated WCDs without hard copies are authorized and encouraged as long as the accuracy and integrity of the documents can be maintained and the minimum documentation is accomplished as required by this and other applicable instructions. For Automated Data Processing Systems (ADPS) that have the capability, electronic completion, and certification of WCDs are encouraged to include PAC and supervisory certifications. These systems must have sufficient built-in safeguards (PINS, electronic signatures, passwords, firewalls, etc.) to ensure system integrity and security are maintained and that a reliable audit trail is maintained. The records must be maintained as prescribed in Air Force Manual 37-139, *Records Disposition Schedule*.

1.5.6.5. Sequential Tasks. Tasks must be accomplished and certified in step-by-step order of accomplishment.

1.5.6.5.1. Step-by-step deviation is permissible, based on the nature of the task, as determined by the PPT. This deviation will not create a conflict with the technical data source and integrity of the task accomplishment will not be compromised. The deviated definitized list must con-

tain the following statement: Sequential step-by-step order of accomplishment not required. If there are conflicts between the WCD and the technical data, the technical data shall prevail.

1.5.7. Technical Information on WCDs.

1.5.7.1. Technical Data Usage Requirement. All WCDs requiring PAC certification (M, I, E, and N Coded) must contain the technical data reference applicable to the work being performed.

1.5.7.1.1. When the statement In Accordance With (IAW) is used, the technical data must be open and in use. IAW is the preferred method of technical data usage and will be the rule rather than the exception.

1.5.7.1.2. When the statement Reference (REF) is used, the technical data must be readily available. **Note:** REF of the technical data will be the exception rather than the rule. Careful consideration of the task must be given to justify the use of REF rather than IAW. When REF is used on a WCD the maintenance technician will review all warnings, notes, and cautions applicable to the task prior to performing the task or at the beginning of each shift for tasks that take more than one shift to complete.

1.5.7.1.3. The statement Technical Data Not Required will be made on WCDs which are general tasks in nature and do not require technical data. When the *X* code is used, the technical data usage statement ***Technical Data Not Required*** does not have to be annotated on the WCD.

1.5.7.1.4. Technical data, called out on the WCD, may reference additional TOs or drawings necessary to accomplish task. Due to space constraints on AFMC Form 173, the primary TOs may be the only ones referenced on the WCD.

1.5.7.2. Specifications and Tolerances on WCDs. Including specifications, tolerances, and any similar information **verbatim** from the governing technical data into any WCD will be held to an absolute minimum. The intent must not be to enable using WCDs in lieu of the official technical data. Justification for inclusion of this type of data on WCDs is based on either of the following conditions:

1.5.7.2.1. The inclusion of the information on the WCD results in a significant gain in efficiency and/or productivity.

1.5.7.2.2. Providing this information clearly reduces the chance of using the wrong specifications or tolerances or avoids possible misinterpretation or miscalculations of these values.

1.5.7.2.3. Approval authority will be at no lower than the product division level on a work document by work document basis.

1.5.7.2.4. Any specification or tolerance or similar data that in any way deviates from verbatim technical data shall be reviewed and approved by the cognizant systems engineering authority, IAW AFMCMAN 21-1.

1.5.7.2.5. A reliable system shall be established to identify, track and update these WCDs. If the technical data changes, the WCD shall subsequently be changed.

1.5.7.2.6. A local operating instruction must be developed (or an existing directive modified) to document and control this process to include at least all the above requirements.

1.5.7.2.7. The applicable QA organization must perform periodic core inspections of the WCDs on a sample basis to ensure compliance to the above procedures.

1.5.8. Data Collection on WCDs. Provisions will be made to annotate measurements, laboratory/test results, entries on AFTO Form 95, Significant Historical Data, time changes and calendar inspection items complied with, on the WCD or attached data sheet when such annotation is required. Requirements can be generated by technical data, the Production Planning Team, work specifications, quality plans, or when a precise audit trail is needed. Data sheets used to annotate measurements or laboratory/test results will be attached to the WCDs.

1.5.9. Inspection/Certification Codes. These are codes utilized for determining the type of Inspection/Certification required on a WCD. The only authorized Inspection/Certification Codes are listed in **Attachment 6**. The Planner is responsible for including certification codes on WCDs. Production supervisors must identify critical tasks to the Planners if they are not identified in the technical data. When supervisors are not fully familiar with the work, they must ensure a qualified work leader or journeyman technician/mechanic reviews WCDs to ensure all critical tasks have been identified. A maintenance stamp is mandatory and will be used to indicate work completion and certification. **Use of initials and employee numbers are not permitted.**

1.5.9.1. Critical Task Identification. All production performed by AFMC personnel will be reviewed to identify critical maintenance tasks. The Pre-Production/Production Planning Teams identify critical tasks as any task that, if not done correctly, can result in one of the following conditions:

1.5.9.1.1. A catastrophic failure of an end item.

1.5.9.1.2. An end item failure that may affect safety of flight

1.5.9.1.2.1. Where end item failure may present an imminent safety/health hazard or affect a life support system.

1.5.9.2. Secondary Certification. Secondary certification (second set of eyes) will be applied and is required for all critical tasks. They can also be used as a designated inspection tool to help control problem/high dollar tasks, provide measurement, and improve processes. Secondary certification will be accomplished on the applicable WCD using one of the PAC certification codes identified in **Attachment 6**. Note: There are some Special Skills Qualification (SSQ) tasks that by their very nature do not allow secondary certification (e.g., some non-destructive testing, welding and soldering tasks). In addition, there are those where it is impossible to inspect or witness the accomplishment of the task (i.e., engine run on single seat fighter aircraft). The following areas must be considered when identifying these requirements along with any other sources that are available for specific workloads:

- All mandatory SSQ tasks except those that are non-critical (e.g., some soldering tasks).
- All cautions and warnings may have associated tasks that are critical in nature.
- Other items identified in the technical data identified by the Statement of Work (SOW) that meet the criticality criteria.
- Mishaps and other safety reports/alerts, and investigations involving the workload that identify critical areas.
- Previously identified problem areas from similar workloads.

- Deficiency reports, especially category one, and other customer feedback.
- Any mandatory inspection or other applicable items identified in the SOW.

1.5.9.2.1. After the initial work planning process is complete, the first level supervisor or higher has the primary responsibility for identifying additional operations for secondary certification requirements. The Planner must work closely with the responsible supervisor to ensure all critical items identified in the technical data are included. Changes in workload requirements and technical data must be carefully screened for tasks that meet the criticality criteria.

1.5.9.3. Multitask, Subtask and Team Task Certification. Local procedures must be developed to document work accomplishment for tasks that are accomplished by several individuals and/or for all work accomplished by more than one person due to shift change. When possible, the same individual or crew should perform multitask work to maintain continuity. For multitask, subtask, and team task certifications, the person performing the last operation must certify on the WCD that the portion they performed was done correctly and that all previous work has been stamped. Every effort will be made to document who performed specific portions of the tasks so that accountability can be maintained.

1.5.9.3.1. When critical tasks (secondary certification) are performed by a team, the team chief will brief the team members on all safety requirements prior to task initiation.

1.5.9.4. Changing Inspection/Certification Codes. Inspection/Certification codes can only be changed, in-work, by the following functions:

1.5.9.4.1. A production supervisor can upgrade a code if a sample secondary certification is desired. This will be a **Red Ink** pen and ink change that can later be changed back, only by the same supervisor. The supervisor will also affix a **P** stamp and date above the inspection block.

1.5.9.4.2. A Quality Assurance Specialist (QAS) can add a **Q** code in column 2 of block 29 of the AFMC Form 173 or in the quality block of the AFMC Form 959, ITS WCD, or the Definitized List. This will be a **Red Ink** pen and ink change. The QAS will also affix a stamp and date above the code.

1.5.9.4.3. The Production Planning Team must make any downgrades to an inspection/certification code signified by a Planner (IET) stamp. This will be a **Red Ink** pen and ink change and the Planner will also affix a stamp and date above the code.

1.6. Functional Check Flights (FCF) and Maintenance Operational Checks (MOC) Documentation. FCF and MOC documentation will be according to the basic policy contained in TO 1-1-300, *Acceptance Functional Check Flights and Maintenance Operational Checks*. After AFTO Form 781 is reinitiated, some maintenance actions may involve the use of WCDs or WCD packages. MOCs that are a step in the WCD or WCD package must be cleared in the WCD or WCD package. However, the discrepancy that led to such maintenance action must be cleared on the AFTO Form 781. WCDs or WCD packages that could be used after transfer of the aircraft will be structured so that the last entry requires: (1) clearance of the AFTO Form 781 discrepancy, if applicable; (2) AFTO Form 781 entries of other discrepancies found during the maintenance action; and (3) documentation of all open actions remaining at the time of transfer of the aircraft to the preflight unit. All flight preparation documentation will be in accordance with TO 00-20-1, TO 00-20-5, and other applicable TO 00-20 series directives.

1.7. Qualification/Certification Requirements for Depot Maintenance Personnel. All depot maintenance personnel must be trained and qualified to the extent necessary to perform assigned duties. Qualification and Certification requirements are defined in AFMCI 21-108.

1.7.1. Technical Data and WCD Training. Depot maintenance personnel will be trained on technical data and WCD use and responsibilities as described in this instruction. Both procedural guidance and the responsibilities associated with completing the documentation required will be stressed. Training will be tracked in the Education and Training Management System (ETMS).

1.7.2. Planners Training. Planners must be trained to properly read and interpret technical data. They also need systems training to produce WCDs, associated documents and reports. Systems training could include data systems, such as Programmed Depot Maintenance Scheduling System (PDMSS) (G097), MDS/Project Workload Planning System (G037), ITS (G337) and Job Order Production Master System (G004L). They need to be trained how to read and interpret reports, and their part in processing and clearing WCDs.

1.7.2.1. Planners Initial Training Requirements. Initial training requirements are: Defense Work Methods and Standards, Labor Standards, Performance Rating (Leveling), Technical Order/Blueprint Reading and Interpretation.

1.7.2.1.1. Commodities Planners specific training includes, but not limited to: Temporary Workloads (G004L), ITS, and Management of Items Subject to Repair (MISTR).

1.7.2.1.2. Weapon Systems Planners specific training includes, but not limited to: G037E, G097, Temporary Workloads (G004L), and Weapon System Specific Familiarization Course (only the last item applies at AMARC).

1.8. Rework. Collection and analysis of rework data is essential to promoting efficient and effective processes. Rework is any work accomplished to correct deficiencies in work previously accomplished.

1.8.1. Documentation of Rework. When it is necessary to rework an item, the item and the accompanying WCD retreat to the first step requiring reaccomplishment, then the normal sequence is followed to completion. The WCD is flagged with a red diagonal at the operation/task where the defect or deficiency is discovered. The red diagonal is drawn through the stamp of the mechanic who PAC certified the operation/task, but must not obliterate the entry. Care must be taken to prevent over stamping, double stamping, or obliteration on the original WCD.

1.8.1.1. A new rework WCD is generated that includes all operations/tasks that must be reaccomplished and is attached to the original WCD. All rework operations/tasks are reaccomplished, stamped, and dated. Production count is not taken for rework.

1.8.1.2. All WCDs used for rework will contain the header information of the original WCD. **WCDs will be annotated *REWORK* on the header of the WCD in Red Ink.**

1.8.1.3. All rework must be documented to include the cost of material and labor expended in the applicable data system and to provide an audit trail of final certification of work reaccomplishment. Rework must be analyzed to determine cause and corrective action taken to prevent recurrence.

1.8.1.3.1. When rework results in material review actions, process the items according to AFMCI 21-130.

1.9. Routed Items. Routing may be classified as either job routing or process routing. Routing may involve multiple Resource Control Centers (RCCs), or may occur within a single shop.

1.9.1. Job Routed Repair/Modifications. Job routed repair/modification occurs when a recoverable component is found to be unserviceable during the overhaul of the major end item (aircraft, engine, and next higher assembly); the item is removed, repaired/reconditioned, and reinstalled on the same end item.

1.9.2. Process Routing. Process routing, which consists of forwarding an item to a process shop, is an integral part of the overall repair effort, but isn't considered a job route. A process shop is defined as a depot maintenance function that provides conditioning support on component assemblies and materials, or essential support services for end items being repaired by other depot maintenance organizations. The following are examples of candidates for process routing: cleaning, plating, heat treat, welding, battery servicing, grinding, machining, non-destructive inspections (NDI), check/test, and minor maintenance.

1.9.3. AFMCI 21-129, *Depot Maintenance Management, Depot Repair Enhancement Process (DREP)*, directs all job routed repairs accomplished in a DREP shop shall be input and tracked through the DREP repair process via the ITS.

1.9.3.1. This supports Depot Maintenance Accounting and Production System (DMAPS) design and implementation standards, specifically the AFMC DMAPS system specifications version 8.1 phase II interdivisional support aircraft routed items business process which specifies ITS (G337) to be the system for management of aircraft PDM routed items through non-AREP shops.

1.9.4. AFMC Form 137, **Routed Order (PROJ DIR)**. AFMC Form 137 may be used when designated by the Production Planning Team. The aircraft tail number must be included along with the Mission Design Series, Job Order Number, control number, part number, and serial number so that mechanics can tell if the item is the original item repaired or if it is a replacement item. Items routed between organizations processed using Routed Order documents require the performing organization to develop an ITS WCD in compliance with this instruction.

1.10. Nonprogrammed Work. Nonprogrammed work is work authorized by AFMC Form 206, **Temporary Work Request**. Reference to all technical data applicable to the work being requested will be made on the Special Instructions. The responsible Planner prepares an AFMC Form 237, **Temporary Labor and Material Plan**, for each nonprogrammed work request. Once input, a series of documents, including a temporary job record, G004L-L3A, will be generated. An AFMC Form 240, **Temporary Labor and Material Plan Addendum**, is used to plan additional labor and material after the AFMC Form 237 is established. Each AFMC Form 206 will have an approved WCD. The G004L-L3A and AFMC Form 237 **will not** be used as the WCD.

1.11. Deficiency Report Data. Deficiency data reported IAW TO 00-35D-54, *USAF Deficiency Reporting and Investigating System*, (to include aircraft/engine acceptance discrepancies), must be analyzed by the Production Division QA Office. Technical data and WCD problems contributing to reported defects must be corrected. Changes to these documents must be formally requested and tracked to ensure effectiveness as part of the corrective actions, as appropriate. The QA program must provide feedback to managers and supervisors. See AFMCI 21-115, *Depot Maintenance Quality Assurance (QA)*.

1.12. Maintenance Stamps. Stamps are issued to maintenance personnel to denote status on WCDs. Maintenance stamps will be issued to maintenance personnel to certify, **by stamping**, that work has been accomplished and completed as required by specified technical data. Any time a maintenance stamp is used the stamp impression will be dated.

1.12.1. Local instructions will be developed to retain control of maintenance stamps. As a minimum, local instructions will include the following:

1.12.1.1. Designation of the organization responsible for issue and control of stamps.

1.12.1.2. Administrative procedures for request, issue, control, accountability, revocation, and recall of stamps. Local instructions will include criteria for issue.

1.12.1.3. Requirements for documenting request, issue, receipt relocation, loss and annual inventory of stamps.

1.12.1.4. Procedures and responsibilities for performing an annual inventory of the stamps.

1.12.2. Only stamps issued and controlled through the organization Stamp Monitor will be used for the certification/verification of depot maintenance.

1.12.3. The stamps listed below have mandatory issue and use requirements and may only be issued to and used for the purpose specified.

1.12.3.1. (M) Maintenance Stamp. Issued to production maintenance personnel for certifying accomplished maintenance tasks. (M) Maintenance stamps will not be used to certify work unless the mechanic has met all required qualification and training requirements identified under the PAC Program.

1.12.3.2. (N) Non Destructive Inspection Stamp. Issued to NDI PAC certified mechanics. Mechanics must be trained and qualified in NDI maintenance tasks prior to being issued an (N) stamp.

1.12.3.3. (P) Production Supervisor Stamp. Issued to production supervisors to certify or change inspection codes on maintenance WCDs. Other uses may be included in local instructions. Required to perform WCD related responsibilities.

1.12.3.4. (IET) Planning Stamp. Issued to the Planner to verify or change requirements on maintenance WCDs. Other uses may be included in local instructions. Required to perform WCD related responsibilities.

1.12.3.5. (C) Scheduler Stamp. Issued to the scheduler to perform WCD related responsibilities. Procedures may be included in local instructions.

1.12.3.6. (Q) Quality Stamp. Issued to Quality Assurance Specialists to certify verifications or inspections when required on maintenance WCDs. Other uses may be included in local instructions. Required to perform WCD related responsibilities.

1.12.3.7. (MRT) and (PAO) Stamps. Issued to designated members of the Maintenance Review Team (MRT) to certify authorization for work. Unpredictable/handwritten AFMC Form 173 WCDs are not considered approved and cannot be used to perform maintenance unless stamped and dated by the MRT Team.

1.12.4. Other stamps may be authorized locally. Local procedures must specify conditions for use.

1.12.5. Examples of AFMC authorized depot maintenance stamps are depicted in [Attachment 7](#). All stamps will be of a size as to not obliterate any other stamp or information on the WCD.

Chapter 2

TECHNICAL DATA AND WCD PLANNING RESPONSIBILITIES

2.1. General Planning Requirements. Timely and complete work planning is essential to provide labor and material standards, shop capacity, WCDs, and associated data to accomplish the depot production process. The Maintenance Directorate is responsible for adequacy of production planning for its products and services. Planning requires detailed knowledge of production processes, data systems, directives, and technical requirements for the specific workload. The responsible Planner, working with the appropriate planning teams, integrates all the parameters into comprehensive WCDs to support their maintenance production functions. The goal is accurate, efficient and effective WCDs for use in the production functions.

2.1.1. Critical Workload Characteristics. Workloads containing critical characteristics such as safety of flight, life support, quality inspection/verification requirements, or Secondary Certification requirements, must receive formal planning coordination as it applies to WCD preparation.

2.1.2. Depot Field Team (DFT) Activities. Special planning may be required for DFT activities depending on the operations/tasks assigned. Local instructions, to include development, processing, and control of WCDs for DFT activities must be developed or included in existing instructions as required by AFMCI 21-120, *Organic Depot Field Teams*.

2.2. Pre-Production Planning Team Responsibilities. The Pre-Production Planning Team is composed of representatives from production, scheduling, inventory control, quality assurance and planning. When additional expertise is desired, other organizations possessing the skills required may be included. These additional members may serve on, either a full time or part-time basis. The team will be chaired by the lead Planner or designated alternate. The Pre-Production Planning Team will accomplish the following actions: (ref: **paragraph 1.5.3**).

2.2.1. Develop Major Workload Requirements. The identification of critical characteristics/parameters is an integral part of preproduction planning and is essential. Subjects will include RCC manning requirements (personnel equivalents), tools, equipment, ground handling, facility, production control requirements, and special safety considerations.

2.2.2. Ensure Technical Data is Available. The Pre-Production Planning Team will review preliminary overhaul/repair procedures and technical data. They also review the illustrated parts breakdown data to ensure all replaceable parts are identified and the test station data is adequate to support maintenance. A production technician must be present when technical data, test station data and process procedures are being worked.

2.2.3. Determine Training Requirements. The Pre-Production Planning Team will determine if new workload or tasks will require additional training. If training is necessary, the organization PAC training monitor will be notified of the requirement and the additional training needed. The PAC training monitor will ensure adequate training is provided or developed, if none exists.

2.2.4. Quality Requirements. All workloads must be covered by a Quality Assurance Plan (QAP), as described in AFMCI 21-115, *Depot Maintenance Quality Assurance (QA)*. The quality assurance team member must ensure the adequacy of the QAP.

2.3. Production Planning Team. The Production Planning Team WCD and technical data responsibilities are as follows: (ref **paragraph 1.5.3.**)

2.3.1. Prepares, signs and dates the Master WCD.

2.3.1.1. For commodity workloads, will prepare, sign, and date the Master WCD for programmed workloads.

2.3.2. Provides and receives input between divisions for routed items. The performing division will prepare and develop the WCD with input from the owning division.

2.3.3. Reviews inspection/certification requirements.

2.4. Planner:

2.4.1. The planning representative serves as chairperson of the Production Planning Team.

2.4.2. Ensures development, preparation, revision, and coordination of WCDs and Definitized Lists and the accuracy of technical contents thereof. When informed by the servicing TO custodian or production supervisor of data changes, ensures WCDs are reviewed and updated as required.

2.4.3. Notifies the scheduling function and production supervisor when revisions are made to WCDs so outdated documents can be purged.

2.4.4. Performs a review and update of WCDs as required when work scope, tech data, or engineering changes are processed with the applicable PPT members to ensure they contain all steps necessary for tasks performed by the mechanics. The Planner will review WCDs as necessary to ensure accuracy and currency. Reviews of WCDs will include confirmation of the availability of complete and accurate technical data, the work process complies with all applicable requirements, and inspection codes are still valid.

2.4.5. Maintains a file of all WCD Change Requests (AFMC Form 957) until the next WCD Package Review.

2.4.6. Maintains a file or list of applicable AFMC Forms 561, **Process Order**, either electronically or hard copy in a designated location, as updated by the OPR.

2.4.7. Participates in the AFMC Form 202 process and maintains documentation as required by AFMCMAN 21-1.

2.4.8. Maintains and stores the latest coordinated Master WCD/Work Package in the Planning Office.

2.4.8.1. Signs and dates the AFMC Form 959, **ITS Master WCD/Work Package**.

2.4.8.1.1. For commodity workloads, signs and dates the Master WCD for programmed workloads.

2.4.8.2. AFMC Form 173, **PDMSS Master WCD** information will be maintained on a Master WCD/Work Package Review Sheet. Local procedures must be developed to define procedures, coordination process, etc.

2.4.8.3. Electronic Reviews. Systems generated reviews without hard copies are authorized and encouraged as long as the accuracy and integrity of the documents can be maintained and the minimum documentation is accomplished as required by this and other applicable instructions. These systems must have sufficient built-in safeguards (PINS, electronic signatures, passwords, fire-

walls, etc.) to ensure system integrity and security are maintained and that a reliable audit trail is maintained. The records must be maintained as prescribed in AFMAN 37-139.

2.5. Production Supervisor:

- 2.5.1. Provides a representative on the Production Planning Team.
- 2.5.2. Assists in the development of WCDs.
- 2.5.3. Reviews, signs and dates the Master WCD/Work Package documentation.
 - 2.5.3.1. For commodity workloads, reviews, signs, and dates the Master WCD for programmed workloads.
- 2.5.4. Identifies PAC tasks and secondary certification requirements on the WCD.
- 2.5.5. Reviews new, revised, or changed publications. Provides recommendations to the planning team concerning revisions to WCDs.
- 2.5.6. Review and update WCDs as required when work scope, tech data, or engineering changes are processed with the Planner, to make sure they contain all necessary steps for the tasks being performed by the mechanic.
- 2.5.7. Reviews WCDs to ensure all steps are complete and assigns the appropriate PAC certification code.
 - 2.5.7.1. For unpredictable/handwritten AFMC Form 173, the supervisor will annotate the code and affix a **P** stamp and date in the area above block 29.
- 2.5.8. Provides the completed WCDs to the Production Controller.
- 2.5.9. In conjunction with the Production Controller, prepares routing documents when none are pre-printed.

2.6. Maintenance Technician or Mechanic:

- 2.6.1. Certifies completion (the work was completed and meets the requirements of the source technical data) of a PAC inspection/certification coded task by stamping and dating the WCD. When a task listed on a WCD is not or will not be accomplished, an annotation of not required (NR), previously complied with (PCW), or satisfactory as is (SAI) will be indicated in the applicable task description block. Any person using NR, PCW, and, SAI will annotate, stamp, and date the task description block.
 - 2.6.1.1. Electronic certification is authorized if the Automated Data Processing (ADP) system has this capability (see **paragraph 1.5.6.4.**).
 - 2.6.1.2. All stamps, dates, and signatures must be clear and legible.
- 2.6.2. Submits a Request for Change to WCD to Planning through the supervisor for WCD discrepancies using AFMC Form 957.
- 2.6.3. Initiate a WCD or notify the supervisor when stumble-on (unpredictable, unplanned) tasks are identified, to ensure a WCD is created to identify all disturbed systems and follow-on maintenance actions.
- 2.6.4. Documents AFTO Forms 781, **Aircraft Forms** in accordance with TO 00-20-5 when required.

2.7. Production Controller (Scheduler):

- 2.7.1. Serves as member on the Production Planning Team.
- 2.7.2. Reviews, signs and dates the AFMC Form 959, **ITS Master Planned WCD/Work Package**.
 - 2.7.2.1. For commodity workloads, reviews, signs, and dates the Master WCD for programmed workloads.
- 2.7.3. Purges in-process WCDs when notified by the Planner.
- 2.7.4. Receives completed WCDs and retains them in an auditable file for the period prescribed in AFMAN 37-139. Documents may be retained for a longer period at local discretion.
- 2.7.5. Prepares, in conjunction with the Production Supervisor, routing documents, when none are preprinted.
- 2.7.6. Enters item serial number on the WCD when item is delivered for work, where applicable.
- 2.7.7. Distributes and receives WCDs and monitors progress against the schedule.
- 2.7.8. Reviews, stamps (Scheduler C stamps), and dates the completed WCDs to ensure all required certification blocks have been stamped and dated.

2.8. Quality Assurance Specialist (QAS).

- 2.8.1. Serves as member on the Pre-Production Planning Team (new workload) and assists in the development of the WCD by identifying quality (Q) inspection codes, if required and any other quality requirements contained in the QAP for that workload.

Chapter 3

PREPARING MASTER WCDs AND PROCESS ORDERS

3.1. Work Control Documents. Used for repetitive workloads processed through the maintenance areas. The original WCD is known as the **Master**. The Production Planning Team prepares the master WCDs. In order to produce quality items, maintenance tasks will be described in a clear and concise manner to ensure workers rely on the source technical data with minimum reference to the WCD. WCDs do not replace technical data and do not negate the requirement to have the source technical information readily available and used when appropriate.

3.2. Preparation of Master AFMC Forms 959 or ITS. When an AFMC Form 959 is used as the master WCD, it will be prepared as shown in [Attachment 2](#). As a minimum, the data required in this attachment must be used. When the master WCD is an ITS generated document, it is completed per AFMCM 66-419, *Inventory Tracking System (G337) (User Manual)*. Additional information used on the form must be documented in a local operating instruction. Manual annotations on the WCDs must be stamped and dated by the Planner making the entry and will be incorporated into the WCD at the next revision. Master WCDs will be maintained for three years.

3.2.1. Processing AFMC Forms 959 or ITS. An approved WCD must accompany the item until the item is complete and all certifications are accomplished; or the WCD will be placed in a designated location, for those items where attachment is not practical. Once completed, the WCD is given to scheduling for processing. The completed WCD is retained as specified in AFMAN 37-139. Longer retention may be locally authorized for specific documents in the case of safety critical items (i.e., mishap investigations).

3.3. AFMC Form 173. AFMC Forms 173 are WCDs used for Programmed Depot Maintenance (PDM), modifications, and other repetitive aircraft workloads. The Production Planning team develops an effective plan of action for accomplishing work requirements from the approved Project Directive and work specification. They will also assign a work specification code to every operation that will relate back to a specific task in the Maintenance Requirement Review Board (MRRB) Brochure or other Project Directive. The G037E or G097 system provides information to the system user for planning, scheduling and controlling the modification or repair workloads.

3.3.1. Preparation of Master AFMC Form 173. The WCD information will be input into the applicable G037E/G097 systems. These will produce the Method Resource Standards (MRS) which describe the tasks or operations applicable to a MDS/project serial number and identify the resources (skills and equipment). The Master AFMC Form 173 is maintained on file by the originating weapon system Planner in a Master Deck (may be electronic) located in the appropriate planning office.

3.3.1.1. Definitized List. When prepared using the G037E/G097 systems refer to the detailed description in [Attachment 4](#). AFMC Form 959 may be used as a Definitized List for AFMC Forms 173, MDS/Project Operation Assignment. If AFMC Form 959 is used in this manner it must adhere to the definitized guidelines in section [1.5.6.2.1](#).

3.3.2. Unpredictable AFMC Form 173. Unpredictables can be either planned or unplanned, based on the expected frequency of the work and the nature of the operation (complexity and criticality). Unpredictable operations that occur on at least 20 percent of the job order numbers will be considered

for potential formal planning and inclusion in the Master WCD/package. Formal planning is not always completed on low frequency operations. These WCDs can be handscribed or system generated.

3.3.3. Handscribed AFMC Forms 173/959 can be used if no planned WCD is available. All operations that occur will be planned when work is critical or complex, even if the operation is performed on less than 20 percent of the job order numbers. Unpredictable operations can be either project related (PR) or non-project related (NPR).

3.3.3.1. All unpredictable AFMC Forms 173 will be processed through the Maintenance Review Team (MRT) and PAO for approval. The MRT and PAO must place their appropriate stamps on the WCD before it is approved for work. This indicates all technical research has been completed. Preparation criteria and responsibility are shown in [Attachment 3](#).

3.3.3.1.1. A Work Emergency is defined as a situation on weekend, holidays, or off-shifts (MRT and PAO are not present) where accomplishment avoids work stoppage or delays of aircraft flow time. The aircraft ALS or designee and production foreman will make this determination. Local instructions must be developed to ensure the work emergency WCD is documented and controlled.

3.3.3.1.2. MRT approval must occur the first business day, following this condition, to formally meet, approve, and comply with coordination requirements on the WCD.

3.4. Process Orders. AFMC Form 561 is used where needed to describe specific applications, procedures, techniques, methods and shop practices to complement, not duplicate, technical data. The process order/process operation sheet must not violate technical data requirements. Process order/process operation sheets will be monitored, controlled, and referenced in applicable WCDs and definitized lists. Including specifications, tolerances and any similar information **verbatim** from the governing technical data into any process order/process operation sheet will not be authorized. The intent must not be to enable using process orders in lieu of the official technical data.

3.4.1. Process order/process operation sheet requirements are determined by the appropriate engineer who will be the OPR. They are written by the appropriate engineering organization who are responsible for obtaining all coordination. The OPR can request technical expertise from organizations as required. Coordination is obtained from other applicable functions to ensure compatibility of processes. Coordination actions are shown on the process order. Coordination by the applicable safety function is mandatory.

3.4.2. Prepare process orders according to directions in [Attachment 5](#). Figures and diagrams may be added to process orders if locally authorized. The process order number is obtained as locally determined. Local procedures must be developed by the engineering organization for control, distribution, and deletion of a master process order/process operation sheet.

3.4.3. Each process order OPR will review their process order/process operation sheet, every two years, to ensure continued currency. OPRs must update the status of process orders/process operation sheets to the applicable distribution function as soon as possible so they can update the master process order index.

3.5. Forms: AFMC Form 76, AFMC Form 137, AFMC Form 173, AFMC Form 206, AFMC Form 237, AFMC Form 240, AFMC Form 561, AFMC FORM 957 and AFMC Form 959.

3.6. Local Procedures : Local directives may need to be developed or updated for implementation within 180 days from the publication of this instruction.

DEBRA K. WALKER
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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

Terms

Abbreviated Tech Data—A breakout listing of step-by-step tasks for a single operation, authorized by the cognizant engineering authority.

At the Job Site—In the immediate vicinity where the work is being performed, e.g., work bench, aircraft stall, etc.

Commodity—A designated item, subsystem, or system which is not identified as a weapon or military system. Commodities are grouped into Product Groups or Materiel Groups which possess similar characteristics and applications benefiting from similar developmental, acquisition, and logistics support management processes.

Critical Task—Any task that if not done correctly, can result in one of the following conditions:

- (1) A catastrophic failure of an end item;
- (2) An end item failure that may affect safety of flight; or
- (3) Where end item failure may present an imminent safety/health hazard or affect a life support system.

Definitized List—An attachment that becomes a permanent part of the AFMC Form 173. It provides a detailed step-by-step breakdown of a single operation and must not duplicate technical data.

Depot Maintenance—This designates all workloads performed by the organic facilities of the Depot Maintenance Activity Group. This includes both depot level maintenance and other services.

Functional Check Flights (FCF)—Are performed to ensure an aircraft is airworthy and capable of accomplishing its mission. However, FCFs are not flown when the airworthiness of the aircraft can be determined by maintenance operational checks prescribed by a technical directive.

In Use—(1) The mechanic must be able to cite the governing TO for the task at hand, be able to go directly to it and find the source information, and must be doing the job according to the source documents, or (2) have the documents open to the correct page and in actual use.

Inventory Tracking System (ITS) (G337)—The command standard automated system for managing exchangeable production. ITS tracks repairable end items from time of induction to time of turn-in. It assigns item tracking numbers to all parts as they come in and subsequently tracks them through disassembly, repair, and assembly. The system provides management information to all levels of management and provides inventory control.

Maintenance Stamps—Numbered stamps, generally assigned to a technician for the purpose of signing off work performed.

Maintenance Review Team (MRT)—The purpose is to review handscribed or unplanned work cards to determine the necessity of performing the work, and to determine whether the work is a part of the negotiated work package, or an Over and Above (O&A), requirement.

MAKE IT-Management Planning and Control System (D012)—This system provides: quote/order processing; process planning; bill of materials; shop floor control (labor tracking, quality); resource control (inventory, shipping).

Management of Items Subject to Repair (MISTR)—Items programmed for repair to support the supply-demand system.

Nonprogrammed Work—Any work performed by the organic facility that is not pre-planned and resources not budgeted for.

Operation—A step in the accomplishment of a task, sequenced to be worked during the maintenance cycle, denoting the Resource Control Center (RCC), skill, PAC requirements and technical data needed.

Part Number (P/N)—A number assigned by the items' manufacturer.

Process Order—Written process used where needed to describe specific applications, procedures, techniques, methods, and shop practices to complement technical data.

Production Acceptance Certification (PAC) Program—The PAC program ensures employees are certified to perform and accept completion of assigned work. PAC does this through systematic training, qualification and certification of individuals.

Programmed Depot Maintenance (PDM)—Predetermined amount of repair work requiring depot skills, equipment, and tooling, which require disassembly, necessary cleaning, and inspection for repair or replacement, as necessary, of the component or assemblies.

Programmed Depot Maintenance Scheduling System (PDMSS) (G097)—The USAF standard project management information system which facilitates planning, tracking, scheduling and execution, and performance measurement activities for programmed/unprogrammed depot maintenance workloads at Air Logistics Centers.

Project Directive—Document, which includes all negotiated workloads other than MISTR that have a defined production count and control.

Quality Assurance Plan (QAP)—A detailed action plan implementing quality assurance for a specific area or workload, which defines the operational requirements, and responsibilities for implementation.

Resource Control Center (RCC)—The lowest organized unit within depot maintenance at which costs are collected.

Readily Available—The mechanic has the TO in hand or within easy access to the job site.

Rework—Any work done to correct deficiencies in work previously accomplished.

Routed Order—Maintenance document used for support maintenance from one directorate to another.

Secondary Certifications—Tasks determined to be **Critical** will be certified by a second qualified technician, either in-process or end-process.

Special Skills Qualifications (SSQ)—Required for individuals who perform functions requiring highly developed skills to perform certain tasks.

Task—Depot maintenance requirements requested by the System Engineer or the customers, to inspect and/or repair an item or system.

Technical Data (TD)—The only authorized source of information used to perform work or locally developed instructions to accomplish technical requirements.

Technical Orders (TO)—TMs developed to MILSPECs or commercial manuals reviewed and approved in accordance with MIL-M-7298, managed in the Air Force TO System, and meeting the criteria for TMs

listed above. The term *Technical Order* is equivalent to the DoD term *Technical Manual*.

Test Measurement and Diagnostic Equipment (TMDE)—Devices used to test, measure, calibrate, evaluate, inspect, or otherwise examine materials, supplies, equipment, and systems to identify or isolate any actual or potential malfunctions.

Time Compliance Technical Orders (TCTO)—An authorized directive issued to provide instructions to Air Force activities for accomplishing one-time changes, modifications, inspection of equipment, or installation of new equipment within a given timeframe.

Temporary Work Request—Request to accomplish unprogrammed depot maintenance.

Uncontrolled Tech Data—Technical data not file maintained and documented.

Uncontrolled Copies—Copies or extractions made from technical data.

Unpredictable—Tasks discovered by maintenance personnel that are not planned, but must be worked.

Work Control Document (WCD)—An instruction and guidance document summarizing sequenced steps and the TO references for processing the item.

Work Emergency—A situation on weekends, holidays, or off-shifts (MRT and PAO are not present) where accomplishment avoids both work stoppage and delays of aircraft flow time.

Work Specification—The part of a contract which provides instructions for accomplishing the work requirements of the weapon system or end item under contract. Included in the work specification are technical publications concerning overhaul and maintenance, cleaning, corrosion treatment, etc. and other special work requirements.

Attachment 2

INSTRUCTIONS FOR AFMC FORM 959

Mandatory entries are identified as **REQUIRED**. The following information will be entered in the appropriate blocks.

Table A2.1. Instructions For AFMC Form 959

BLOCK #	TITLE	CONTENT
1.	Date	REQUIRED: Enter Date.
2.	Job Order Number	REQUIRED: Enter the control number and job designator (the three digit JON suffix will be inserted when the item is scheduled for work).
3.	Quantity	Enter the quantity.
4.	Production	REQUIRED: Enter the symbol for the responsible Section/RCC performing production section/RCC.
5.	Date Scheduled	REQUIRED - SCHEDULER: The scheduling function enters the date when the items are placed into work.
6.	Date Completed	REQUIRED - SCHEDULER: The scheduling function enters the date after the work is completely PAC and P/supervisory certified.
7.	Part Number	Enter the part number. When the WCD is for more than one part then all part numbers, NSNs and production numbers can be listed, blocks 12 and 17 can be used for continuation. When multiple part numbers are listed, the scheduling function designates part number, NSN, and control number combination for the item by circling the appropriate part when block five is completed.
8.	Tech Data	REQUIRED: Enter the technical data source. Specific references are entered with tasks/operations as when entered in block 17.
9.	Item Serial Number	Leave blank. The scheduling function enters the serial number.
10.	Mission Design Series	REQUIRED: Enter the MDS when the item is routed from an aircraft, engine, or other major end item.
11.	Stock Number	Enter the complete stock number to include the MMAC if applicable. If not stock listed, so state.
12.	Optional	Optional. Specify in local instructions.
13.	Serial Number	REQUIRED: Aircraft tail number.
14.	Noun	Enter the nomenclature identifying the item.

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|-----|-----------------------------|---|
| 15. | Dispatch Station Skill Code | Enter the dispatch station number. When routed to more than one building, include building numbers.

REQUIRED: Enter skill code for the task being performed. |
| 16. | PDN/OP Number | REQUIRED: Enter the performing RCC if different from block 4 and Ops numbers from labor plan. Do not duplicate numbers. |
| 17. | Work to be Accomplished | REQUIRED: Enter description of work and technical data and usage references, if different than block 8. Secondary Certification tasks must be listed separately. |
| 18. | Mechanic | REQUIRED: PAC certification code M E I N . The mechanic stamps and dates the completion of the operation/task.

When task is administrative in nature an X code will be designated and no stamp certification is required. |
| 19. | P | Supervisor verification P stamp will be entered when required. The Supervisor stamps and dates at the completion of the required inspection/verification.

Secondary Certification block for E and I codes. The mechanic stamps and dates at the completion of the operation/task. |
| 20. | Q | Quality Inspection code Q . The QAS stamps and dates at the completion of the required inspection/verification. |

NOTE: The contents of blocks 15, 16, 17, 18, 19 and 20 will be determined by the Production Planning Team.

All operations/tasks must be certified as complete by stamping and dating in the appropriate blocks.

For aircraft/missiles planned operations the aircraft/missiles Planner is the only one authorized to delete or negate a planned requirement. Planners will annotate, stamp and date the block.

When a task listed on a WCD is not or will not be accomplished, an annotation of Not Required (NR), Previously Complied With (PCW), or Satisfactory As Is (SAI) will be indicated in the applicable task description block. Any person using NR, PCW, and SAI will annotate, stamp, and date the block.

Any person other than the Planner will identify the PDN or OPS number in the next open line (Block 16) and provide a brief statement as to why in Block 17.

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|-----|--|--|
| 21. | Final Destination | Enter the destination or dispatch station and functional code of the RCC responsible for disposition of routed item. |
| 22. | Coordination/Initiating RCC Signature/Date | REQUIRED: Enter the office symbol, date, and signature of the Production Planning Team representative. |

23. Document S/N

Enter the serial number of the form as required. Sequential numbering may be used or this number can be used along with the publication date to control form revisions. It can also be used for suspense or other tracking purposes.

Attachment 3

INSTRUCTIONS FOR COMPLETING UNPREDICTABLE/HANDSCRIBED AFMC FORM 173

The instructions provided below are the mandatory and basic requirements for completing a handscribed (pen and ink) AFMC Form 173.

These instructions will also apply for the same elements and data fields for an Unpredictable AFMC Form 173 when it is generated through an approved AFMC data system (i.e. PDMSS (G097)). Additional information for explanation of the G097 can be found at the URL site: <https://www.ilspo.wpafb.af.mil/g097/> and in the DM-SUM-A007-020; *Software User's Manual*.

Mandatory entries are identified as **REQUIRED** and are identified specifically when required. Any person initiating an AFMC Form 173 should make every effort to complete as many blocks as possible when knowledgeable of the requirement.

Table A3.1. Instructions for Completing AFMC Form 173

BLOCK #	TITLE	CONTENT
1	Date	REQUIRED - INITIATOR: Date initiated
2	Skill Code	REQUIRED - Primary skill code required to complete the task/operation.
3	Operation Number	REQUIRED - SCHEDULER. Operation Number will be unpredictable or Over and Above as determined by the MRT.
4	JON Number	REQUIRED - Job Order Number for the aircraft.
5	Standard Hours	REQUIRED - PLANNER: Planner reviews defect, verifies technical data, checks for follow-on maintenance, and applies an estimated standard. The responsible Planner stamps and dates above Block 5.
7	Number of Workers	REQUIRED - Number of workers required to do the task.
8	Area	Location of discrepancy on the A/C.
12	Work Category Description	REQUIRED - Work Category Description (Unpredictable, O&A, Shakedown, etc.).
19	RCC	REQUIRED - Resource Control Center (Coincides with Skill).
22	Date Completed	REQUIRED - MECHANIC. Numeric Day, Month, Year (DD/MM/YY).
23	Work Unit Code	REQUIRED - 5 digit, alphanumeric code used to identify the system, subsystem and component which are being worked.
26	How Mal	3 digit, numeric code used to describe the equipment malfunction.
29	Inspection Code	REQUIRED - SUPERVISOR/MRT PLANNER: PAC certification code. Supervisor will P stamp and date verifying accuracy of PAC code by placing P stamp and date above Block 29.

BLOCK #	TITLE	CONTENT
30	Facility Code	System Requirement for Capacity Utilization.
31	Description	REQUIRED - INITIATOR: Detailed description of discrepancy and technical data reference. REQUIRED - Task description and technical data reference required to perform corrective action for the discrepancy identified. Specify if the task is critical or non-critical.
36	Mechanic Stamp	REQUIRED - PRODUCTION MECHANIC: PAC Code identified in Block 29 indicates level of certification/inspection required. The responsible mechanic stamps and dates at completion of the operation/task.
37	Production Certifier	REQUIRED - PRODUCTION MECHANIC: When PAC Code identified in Block 29 indicates Secondary Certification required the mechanic stamps and dates at completion of the operation/ task. Supervisor P stamp and date when required and defined in local instructions.
38	Quality Inspection	Quality Q stamps and dates at completion of verification/ inspection when specified in Block 29. DCMA D stamps and dates when specified in Block 29.
39	Scheduler	REQUIRED - SCHEDULER: Stamps and dates to clear document after verification that all required entries have been completed and certification blocks have been stamped as required.
40	Initiator	REQUIRED - INITIATOR: Name. Mechanic, Planner, Supervisor.

PAO places Approval or Disapproval stamp over blocks 33, 34 & 35.

Maintenance Review Team distinguishes whether defect is PR or NPR and places appropriate stamp over blocks 12, 13, 14, 15, 45, & 46.

Attachment 4

INSTRUCTIONS FOR COMPLETING A DEFINITIZED LIST

Table A4.1. Instructions for Completing a Definitized List

<u>COLUMN #</u>	<u>TITLE</u>	<u>CONTENT</u>
1-3	G097 Master Ops	REQUIRED - System Transaction Designator.
4-5	Originator Code	REQUIRED – PLANNER. Last Two Digits.
6-7	Design Code	REQUIRED - Weapon System Design is pre-established in G037E Database but is placed on the WCD by the Planner.
8-12	Operation Number	REQUIRED - Enter the Operation Number shown on the AFMC Form 138 (Input document for 173).
13	Action Code	REQUIRED - Enter applicable code A for addition; C for change; and D for Delete.
14	Format Code	Format Code is B.
15-19	Sub-operation Number	REQUIRED - Sub operation number is five numeric numbers in any ascending order generally starting with 00010 and increasing in increments of ten to allow for alterations.
22-23	PAC/Verification Code	REQUIRED – MECHANIC. Two-digit alphanumeric code designating the level of PAC Certification required for this step. REQUIRED – DATE BY MECHANIC UNDER STAMP IMPRESSION. Numeric Day, Month, Year (DD/MM/YY).
24-25	Indicator Code	REQUIRED – Two-digit numeric code (01-99) for each line under a Sub operation.
26-80	Sub operation Description	REQUIRED - Operation description that best describes this step. Each line must have a new indicator code.

Attachment 5**GUIDELINES FOR PREPARING A PROCESS ORDER**

Including specifications, tolerances, and any similar information **verbatim** from the governing technical data into any process order/process operation sheet will not be authorized. The intent must not be to enable using process orders/process operation sheet in lieu of the official technical data.

Purpose - A brief reason for the process order.

Scope - Describe the scope.

General Information - This section provides information about the overall process. Process orders are either oriented to a specific process or to a component. Content depends upon the complexity and criticality of the process. Suggested content for these two kinds of process orders is as follows:

Process oriented:

- Process references.
- Military/commercial standards that apply.
- Quality plan.
- Other directives and operating procedures that apply.
- The typical production sequence or flow.
- The method or procedure to qualify the process (e.g., first article, certification team, etc.).
- Process controls that will be used.
- The method and frequency of sampling.
- Specific quality requirements.
- Limits for product characteristics.
- Any general parameters that apply.
- Equipment.
- The equipment capabilities and work environment.
- The installation requirements and qualification.
- Preventive maintenance requirements.
- The procedure for qualification of the process and approval methodology.
- List of process operation sheets and/or other procedure specifications.
- Non-conforming material or process results.
- List of applicable Process Operation Sheets (POS) and/or Procedure Specifications.

Component oriented:

- Title.
- Name of part/process POS is applicable.

- Date of original issue.
- Reaffirmed date.
- Revision number.
- The part numbers the process order supports.
- The technical data that applies.
- The WCDs that apply.
- Clear and concise instructions on how to perform the operations on the components (note: all requirements must be consistent with the applicable technical data).
- Any critical considerations or other workmanship criteria (secondary certification may be required on the WCD).

Procedure - This is the how-to instruction to include cautions and warnings that apply.

- Title.
- Name of part/process POS is applicable.
- Date of original issue.
- Reaffirmed date.
- Revision number.
- The Part Number applicable.
- T.O. reference.
- WCD reference.
- Specific component repair equipment parameter settings.
- **Note:** Only one feature of the repair shall be applicable for each sheet. Each feature repair will have its own Procedure Specification (PS). If this feature repair is performed on more than one model of equipment, each model will have an applicable PS for that feature.
- List all consumable materials.
- Measure of difficulty of repair.
- Generically state the NDI requirements.
- Must reference a Procedure Qualification Record.

Safety Notes - Identifies any steps or materials that present safety hazards to include environmental impact.

Coordination - List the coordination required for the process order.

The completed process order is approved by the chief of the responsible engineering function by signing block 13, **Approval**. This organization is the Office of Primary Responsibility (OPR) for the process order.

Attachment 6

INSPECTION/CERTIFICATION CODES

The codes identified below are the only inspection/certification codes authorized for use on depot maintenance WCDs.

Any maintenance personnel that certify depot maintenance WCDs will stamp and date each required certification. Stamp impression must be legible and will not obliterate any other stamp impression already applied to the document.

Only stamps issued by the applicable organization Stamp Monitor will be used for the certification of depot maintenance WCDs.

Table A6.1. Inspection/Certification Codes

M	Requires certification by ONE PAC Certified Mechanic.
E I	Requires certification by TWO PAC Certified Mechanics. E for end process/product certifications. I for in-process certifications
N	Requires certification by ONE Nondestructive Inspections (NDI) PAC certified mechanic.
Q	Requires certification by ONE Quality Assurance Specialist for inspection/verification.
D	Identifies required review by a DCMA inspector/evaluator.
X	Certification not required . This code will be used for tasks that are administrative in nature. This code will NOT be applied to any maintenance task. Tasks that are administrative in nature include but are not limited to those that are: informational in nature, used for scheduling (trigger operations) tasks, non-maintenance related time tracking, etc. When the X certification/verification code is used the technical data usage statement No TO required ; X does not have to be annotated on the WCD.

Attachment 7

TYPICAL MAINTENANCE STAMPS

Figure A7.1. Typical Maintenance Stamps

