

**BY ORDER OF THE COMMANDER  
14TH FLYING TRAINING WING  
(AETC)**



**COLUMBUS AIR FORCE BASE  
INSTRUCTION 21-105**

**7 FEBRUARY 2024**

**MAINTENANCE**

**TOOL AND EQUIPMENT  
MANAGEMENT PROGRAM**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*. It establishes procedure not directly covered by DAFI 21-101, *Aircraft and Equipment Maintenance Management*, AFI 21-101 AETC Sup, *Aircraft and Equipment Maintenance Management*, and establishes policies and outlines reporting procedures for ensuring tool control to assigned aircraft and personnel. This instruction applies to all Air Force Active Duty, civilian, and contractor personnel working in, on, or near 14 FTW aircraft or equipment, and to personnel traveling through 14 FTW facilities or aircraft parking ramp. Supervisors are responsible for ensuring compliance with this instruction. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual AFMAN 33-322, *Records Management and Information Governance Program*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at [https://www.my.af.mil/afirms/afirms/afirms/rds/rds\\_series.cfm](https://www.my.af.mil/afirms/afirms/afirms/rds/rds_series.cfm). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Department of the Air Force (DAF) Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Department of the Air Force.

## 1. Overview.

1.1. The objectives of the Tool and Equipment Management Program are to prevent and eliminate FOD to aircraft, engines, missiles, training, and support equipment, and to reduce costs through strict effective control and accountability of assets.

1.2. Positive control and accountability of tools, equipment, and electronic devices used on aircraft parking, runway, hangars, and taxi areas are essential for the elimination of Foreign Object Damage (FOD).

1.3. This publication can only provide general guidance for tool control programs. To be in compliance with this instruction, units must establish a program or demonstrate that existing programs meet the intent of positive tool and equipment accountability and control.

## 2. Definitions.

2.1. Tool: Device/instrument used to perform maintenance and repair of Real Property facilities, roadways, airfields, power distribution systems, airfield lighting, aircraft barriers and utility functions.

2.2. Equipment: A device required to accomplish a task or carry out work, such as surveyors' transit, portable generator, etc.

2.3. Electronic Device: Portable items such as but not limited to the following, land mobile radios (LMR), cell phones and laptop computers.

2.4. Airfield: Includes all areas of the installation involved in aircraft operation, such as taxiways, parking ramps, hardstands, and the runway.

2.5. Aircraft and flight line maintenance facilities: Includes all buildings/docks/structures and aircraft maintenance hangars for T-1, T-6, and T-38 aircraft.

## 3. Responsibilities.

3.1. Unit commanders (or equivalent) are responsible for ensuring an effective program is in place and duty sections are in compliance with this instruction for those that perform duties on the airfield or in aircraft maintenance facilities. Commanders (or equivalent) must also ensure that contractors who work on the airfield or in and around aircraft maintenance facilities understand the importance of tool control in these areas.

3.2. Flight chiefs/section non-commissioned officers in charge (NCOIC) (or equivalent) will:

3.2.1. Develop/Enforce a tool accountability/control program. They may determine if tools/equipment that do not dispatch out to the airfield/maintenance facilities will fall under the scope of this instruction.

3.2.2. All tools/equipment that are dispatchable to the airfield/maintenance facilities that are used for aircraft maintenance will follow this instruction.

3.3. Programs must include an inventory process for items leaving/returning from jobs out on the airfield/maintenance facilities.

3.4. Everyone who performs duties on the airfield or in and around maintenance facilities is responsible for safeguarding their equipment against loss by ensuring accountability before and after each trip.

3.4.1. Immediately notify the 14th FTW Maintenance Operations Center (MOC) of items suspected to be lost near an aircraft or in a maintenance facility.

3.5. Once a tool control program is established, each unit will perform an annual self-inspection of their program.

#### **4. Standardized procedures for security, control, and accountability of tools and equipment.**

4.1. Contracted service provider employees will refer to their own Tool Control Program Directives [Standard Operating Procedures (SOP), Memorandums, Procedural Guidance, etc.] for specific tool control program guidance when operating on the flight line or aircraft/aerospace equipment industrial areas.

4.1.1. In addition to the requirements in this Instruction, contract service provider Tool Control Program Directives must include procedures for the following items, as prescribed from AFI 21-101 AETCSUP:

4.1.1.1. Procedures for warranted tool management.

4.1.1.1.1. Procedures to tag/segregate unserviceable warranty tools.

4.1.1.2. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in CTKs/TKs.

4.1.1.3. Procedures for transfer of tools/CTKs/TKs at the job site (on-site transfers).

4.1.1.4. Procedures for issue and control of PPE (e.g., ear protectors, reflective belts, headsets). Mark tools or equipment that a work center assigns/issues to an individual.

4.1.1.5. Procedures to limit numbers of personnel authorized to procure tools.

4.1.1.6. Procedures for control of locally manufactured or developed tools and equipment.

4.1.1.7. Procedures for depot teams, factory representatives, and CFTs when working on equipment within the unit.

4.1.1.8. Procedures and responsibilities for situations where two or more work centers operate a single tool room/support section, or when work centers elect to distribute CTKs/TKs or peculiar support/test equipment to decentralized locations.

4.1.1.9. Procedures for control of CDDAR and hydrazine response equipment permanently stored/located in trailers or vehicles.

4.1.1.10. Procedures for requiring a second party or on-duty supervisor inspection of CTKs/TKs when conditions warrant a single person shift. The same individual that signs out a CTK/TK cannot sign it back in.

4.1.1.11. Procedures for controlled access to tool rooms.

4.2. While not mandatory for non-aircraft maintenance units, TCMa<sup>®</sup> is the preferred automated method to effectively manage a tool control program. Any locally developed method of tool control (e.g., locally developed forms, etc.) must follow the tool control guidelines established by DAFI 21-101 and AFI 21-101 AETC-Sup.

4.3. All other 14 FTW agencies that use tools/equipment on the flight line, aircraft/aerospace equipment maintenance areas, runways, and taxi ways will adhere to the following guidance.

4.3.1. Wing agencies will account for and control tools, equipment, and electronic devices that are dispatched to aircraft parking/runway/taxi area and aircraft maintenance area at all times.

4.3.1.1. An inventory will be accomplished upon issue of the tools/equipment items and immediately upon completion of the task. Once the tools/equipment items are returned to the organization, a separate inventory will be accomplished by a second party.

4.3.1.2. Tools and equipment (including pens, pencils, patches, cellphones, lights, etc.) used by aircrew personnel that dispatch to the flight line will be strictly controlled and inventoried. Aircrew members must account for all equipment and personal items before and after each flight.

4.3.1.2.1. Any item lost during flight is documented on the AFTO Form 781A for that particular aircraft during maintenance debrief. Aircrew members will assist maintenance personnel in searching for lost items.

4.3.1.2.2. The Squadron Director of Operations, due to mission requirements, may waive aircrew participation in the search.

4.4. Expendable/consumable tools and items will be identified on the inventory list and only be replaced via a one-for-one exchange. Empty safety wire spindles, bottles, spray cans, etc., will be returned to the owning organization for exchange.

4.5. Tools, equipment, and CTKs will be secured and controlled in a manner as to prevent access or use without proper accountability.

## **5. Procedures for transfer of tools/CTKs at the job site (on-site transfers).**

5.1. Ensure tool accountability and control is maintained when transfer occurs between the individuals. As a minimum the individuals involved in the transfer will accomplish a joint inventory and document accordingly.

5.2. On-site transfers will be utilized only if mission needs dictate. All on-site transfers must be approved by the owning organization superintendent/NCOIC, supervisor. A joint inventory will be accomplished by the individuals involved in the transfer. On-site transfers will be documented on an DAF Form 1297, *Temporary Issue Receipt*.

5.2.1. A new DAF Form 1297 will be annotated upon completion of the inventory and the old DAF Form 1297 will be returned to the outgoing individual.

## **6. Procedures to ensure positive control of rags.**

6.1. All rags, as defined by DAFI 21-101, will be accounted for. Document on the AFTO Form 781A the number of rags issued. Rags will only be changed out on a one-for-one swap. A complete inventory of all rags will be maintained by the owning organization.

6.2. Marking or identifying each shop rag with a CTK number is not necessary. Issue and receipt procedures will be established to ensure positive control and accountability of each rag that leaves a CTK area.

6.3. Rags contained in CTKs will be annotated on the CTK inventory.

## **7. Procedures for lost or missing tools.**

7.1. Supervisors will ensure all assigned personnel are familiar with the following lost tool procedures. The person issued CTKs/equipment/keys is responsible until the turn-in inventory is accomplished and documented. If an item/tool or a portion of an item/tool is discovered missing, the following procedures apply:

7.1.1. An immediate search of the work area will be accomplished, if the item is not found immediately contact the individual's supervisor, the contracted service provider supervisor of the affected work area and the 14th FTW MOC (see [paragraph 3.4.1.](#)).

7.1.2. In the event of a lost/missing tool or item, all efforts should be made to locate the tool/item, or a determination made that no FO hazard exists. If the item is discovered missing following an inspection or maintenance of an aircraft the aircraft will be immediately grounded. A red X will be entered in the AFTO 781A, for all affected aircraft. AFTO 781A entries will include a description of the item and the suspected area where the item/tool was lost. If the item/tool is not found the original discrepancy will be signed off by the DOM or designated representative.

## **8. Procedures for FSRs/DFTs/CFTs when working on equipment within a unit.**

8.1. Contractor QA representatives will brief Depot Field Teams, Contract Field Teams, Field Service Representatives, and other agencies on proper procedures for tool and equipment control prior to work starting and will monitor throughout for compliance. Depot teams, factory representatives, and CFTs will maintain strict inventory and control procedures of all tools/equipment items. A beginning inventory will be performed before starting the task and an ending inventory will be accomplished prior to leaving the maintenance area. No tools will be left unattended at any time.

8.2. Lost or missing tools/equipment will be reported immediately to the contracted service provider supervisor of the affected work area and by calling the 14th FTW MOC (see [paragraph 3.4.1.](#)).

8.3. In the event of a lost/missing tool or item, all efforts should be made to locate the tool/item, or a determination made that no FO hazard exists.

## **9. Procedures for issue, marking, and control of PPE, tools, or equipment (e.g., hearing protectors, reflective belts, headsets, etc.) assigned/issued to individuals.**

9.1. For individuals with assigned man numbers, issued PPE (e.g., ear protectors, reflective belts, headsets) will be etched with the individual's man number. All other individuals will etch issued PPE with their first name initial, last name, and work center.

9.2. Personnel issued PPE (e.g., ear protectors and reflective belts) not controlled in a CTK will comply with strict control and accountability of equipment.

## **10. Procedures for warranted tool management.**

10.1. Damaged and Warranted Tool Management.

10.2. Individuals will inform the CTK custodian immediately of any damaged or broken tools. The CTK custodian will annotate all copies of the MIL with the appropriate information. Broken or damaged tools will be checked to determine if they are covered under the warranty.

tool program. All broken or damaged tools that are not warranted will be replaced with a warranty tool, when available.

**11. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in CTKs.**

11.1. Replacement of tools, to include expendable and consumable tools, in CTKs will be accomplished by the appointed CTK custodian, alternate CTK custodian, or on shift section chief/ supervisor or equivalent.

11.2. Replacement/spare, expendable and consumable tools will be controlled monitored by CTK custodians and alternates.

11.3. Documentation will be accomplished when removing or adding replacement/spare, expendable, or consumable tools from/to their storage location.

11.4. HAZMAT materials will not be maintained within CTKs.

**12. Procedures to limit numbers of personnel authorized to procure tools.**

12.1. Section chiefs/ Superintendents or equivalent will limit the number of individuals authorized to purchase tools and will designate those individuals in writing.

**13. Procedures for control of locally manufactured or developed tools and equipment.**

13.1. The acquisition process for approval, manufacturer, and uses of locally manufactured/ modified tools will be followed as per AFI 21-101 AETC SUP Chapter 8.

13.2. Locally manufactured tools will be controlled in the same manner as other tools/CTKs.

**14. Standardized procedures and responsibilities for decentralizing CTKs, tool, and equipment outside tool room/support section to meet mission requirements.**

14.1. Procedures and Responsibilities for situations where two or more work centers operate a single tool room/support section, or when work centers elect to distribute CTKs/TKs or peculiar support/test equipment to decentralized locations. When a tool room or support section is shared by two or more work centers, the tools will be sectioned off accordingly and easily identifiable as to the owning work center by the location as well as the EID.

**15. Procedures for control of response equipment permanently stored/located in trailers or vehicles.**

15.1. Procedures for control of crash damaged, or disabled aircraft recovery (CDDAR) and Hydrazine response equipment permanently stored/located in trailers or vehicles. Trailers and vehicles used for permanent storage/location of CDDAR, and hydrazine response equipment are maintained by the aircraft maintenance contractor and are treated as a CTK, IAW AFI21-101 AETC SUP 1 Chapter 8.

**16. Procedures for requiring a second party or on duty supervisor inspection of CTKs when conditions warrant a single person shift.**

16.1. In the event that a single person is on shift and must sign out a CTK the next person on shift/duty or section supervisor will verify that all tools are accounted for, and place his/her initials in the "INSP" by block of the AETC Form 1042, and the date the CTK is being signed back in.

**17. Procedures for controlled access to tool rooms.**

- 17.1. Personnel authorized unescorted access to tool rooms will be appointed in writing by the Section Chief/Superintendent or equivalent.
- 17.2. Procedures to control aircrew tools and Aircrew Flight Equipment (AFE) tool kits that are dispatchable to the flight line.
- 17.3. The AFE Superintendent will develop procedures to control all aircrew tools and AFE tool kits that are dispatchable to the flight line/aircraft maintenance areas.
- 17.4. The first AFE technician on duty will sign out flight line CTKs at the beginning of each duty day on AETC Form 1042, for rapid response to the flight line. Supervisors will ensure CTKs are closed/signed in, then re-opened/ signed out during shift changes.
- 17.5. All tools will be inventoried prior to being dispatched to the flight line, at completion of each job, and arrival back at the work center.
- 17.6. Upon returning to the AFE section, personnel will immediately replace all consumable items removed from the CTK and document item replacement on AETC Form 1042.
- 17.7. Flight line CTKs will be signed-in/closed and locked at the end of each duty day. Flight line CTKs will be stored in a locked closet, cabinet, or other location after duty hours to prevent unauthorized access.
- 17.8. EID prefix for Columbus AFB is "COXXXXXXXX". The five-digit number following "COXX" identifies the CTK number. (EXAMPLE— "COXX00001"). Contractor shall document all CTK Prefixes in use and provide them to the COR office as requested. Changes and additions must be routed through the COR office for approval to ensure compliance through AF/A4LM.

JUSTIN T GRIEVE, Colonel, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 15 January 2020

AFI 21-101 AETCSUP, *Aircraft and Equipment Maintenance Management*, 10 August 2020

***Prescribed Forms***

None

***Adopted Forms***

AETC Form 1042, *CTK Tool Checklist*

DAF Form 847, *Recommendation for Change of Publication*

DAF Form 1297, *Temporary Issue Receipt*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

***Abbreviations and Acronyms***

**AETC**—Air Education and Training Command

**AF**—Air Force

**AFB**—Air Force Base

**AFE**—Aircrew Flight Equipment

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRIMS**—Air Force Records Information Management System

**AFTO**—Air Force Technical Order

**CDDAR**—Crash Damaged, or Disabled Aircraft Recovery

**CFT**—Contract Field Team

**COR**—Contracting Officers Representative

**CTK**—Composite Tool Kit

**DFT**—Depot Field Team

**DOM**—Director of Maintenance

**EID**—Equipment Identification Designator

**FO**—Foreign Object

**FOD**—Foreign Object Damage

**FSR**—Field Service Representatives

**FTW**—Flying Training Wing

**HAZMAT**—Hazardous Material

**LMR**—Land Mobile Radio

**MIL**—Master Inventory List

**MOC**—Maintenance Operations Center

**NCOIC**—Non-Commissioned Officer in Charge

**OPR**—Office of Primary Responsibility

**PPE**—Personal Protective Equipment

**QA**—Quality Assurance

**RDS**—Records Disposition Schedule

**SOP**—Standard Operating Procedure

**TK**—Tool Kit