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Maintenance

**COMPOSITE TOOL KIT (CTK) AND TEST
EQUIPMENT MANAGEMENT PROGRAM**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Air Force Policy Directive (AFPD) 21-1, *Managing Aerospace Equipment Maintenance*. It establishes procedures not directly covered by Air Force Instruction (AFI) 21-101, *Aerospace Equipment Maintenance Management*. It lists the work centers assigned CTK numbers. This instruction applies to all 442d Fighter Wing (442 FW) personnel.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This revision adds Tool Accountability System (TAS) and re-identifies work center equipment identification designators throughout publication.

1. Standardization procedures for security, control, and accountability of tools and equipment.

- 1.1. Tool issue sections will be limited to no more than one per work center.
 - 1.1.1. CTK numbers will be assigned to work centers according to **Attachment 2**.
 - 1.1.2. Flight and section chiefs (or equivalent) determine the type, size, and number of CTKs required for their work centers and approve the master inventory list (MIL).
 - 1.1.3. For weapons load crew CTKs, the Wing Weapons Manager (WWM) will approve the MIL.
 - 1.1.4. Load crew crimpers, die, lead seals will be listed on the MIL.
 - 1.1.5. Engine blade blending blue dye will be listed on the MIL.
- 1.2. The tool issue sections will have CTK custodians to manage and control CTKs.
 - 1.2.1. When an individual signs for a tool or piece of equipment, they are accountable for it until it is returned to the tool room and accountability transfers back to the CTK custodian.

1.2.2. When using an automated tool control system (bar code), the support section CTK custodian will monitor all use and control and provide updates to system as required.

1.3. The tool room must be capable of being locked and afford protective measures such as monitoring, 24-hour coverage, or controlled key access.

1.3.1. When all CTKs are not capable of being secured in the tool room, the section chief will design a process to prevent the unauthorized removal of tools.

1.3.2. Locks are not required for tools and equipment stored within secured tool rooms or work centers.

1.3.3. CTKs that are dispatched will be locked and secured when left unattached.

2. Procedures for inventory.

2.1. When using a chit system (Armament Shop):

2.1.1. Chits are controlled as tools to include a beginning and end of shift inventory on Air Force Reserve Command (AFRC) Form 177, **Consolidated Tool Kit Inventory and Control Log**.

2.1.2. Chit control drawer is secured in tool storage facility.

2.2. Account for all CTKs, tools, and equipment at the beginning and end of each shift, document shift inventories.

2.3. Perform a visual inventory of all CTKs, when issued for use, at the completion of job or task, when returned to the tool storage facility.

2.3.1. Accomplish a CTK inventory prior to operation of any aircraft or equipment when maintenance actions were performed.

2.4. Annually, or when the CTK custodian changes, conduct a comprehensive inventory of all tools, equipment, to include condition, identification markings, and accuracy of the MIL.

2.4.1. Purpose of this inventory is to perform an extensive inspection of all tools and equipment, to include; condition, identification markings, accuracy of the MIL, and to inspect all tools for serviceability in accordance with (IAW) Technical Order (T.O.) 32-1-101, *Use and Care of Hand Tools and Measuring Tools*.

2.4.2. CTK custodians document these inventories and maintain the most current inventory documentation on file.

3. Procedures for warranted tool management. If replacement of a tool falls within the guidelines of the warranted tool program, the CTK custodian or alternate will insure that the broken or defective tool is disposed of properly. This is usually a one for one swap with the warrantor. Depot/Contract field teams or factory representatives, while assigned to 442 FW, need not comply with this instruction completely. However, they should have control over their tools.

4. Procedures for strict control and management of replacement, expendable and consumable hand tools, hazardous materials (HAZMATS), and other items contained in CTKs.

4.1. Replacement tools located in the work area will be kept to a minimum.

4.2. Expendable hand tools that are consumed in use may be placed on bench stock. These items will be stored in an inaccessible secured area. The CTK custodian or alternate will control replacements and only issue expendable tools.

4.3. Consumables may be placed in CTKs. If so, they are identified on the MIL (examples are, but not limited too; safety wire, adhesive, wire bundle-lacing, solder).

4.4. Limited bench stock items/consumables are authorized for a CTK; however, they must be marked and included on the CTK inventory list.

5. Procedures for transfer of tools/CTKs at the job site (on-site transfers). Passing or transferring of CTKs at the job site is highly discouraged, but is permitted if both parties agree to the contents. The individual receiving the CTK then assumes responsibility for the turn-in and accountability.

6. Procedures for lost or missing tools. If a tool or any object is discovered missing after the aircraft has taxied or taken off, Maintenance Operation Control (MOC) will be notified in the most expedient manner. MOC will notify the Supervisor of Flying (SOF) and either direct the return of the aircraft or it be held in the arming (taxi) area until the missing tool/object is located. No aircraft having had maintenance performed on it prior to take off will be allowed to fly if there is an object/tool missing from the applicable CTK.

7. Assignment of equipment identification designators (EID) for equipment and CTKs and assignment of CTK numbers for tools.

7.1. Tools, equipment, and CTKs will be etched, stamped, or marked with EID numbers to aid in inventory.

7.2. Shadow boards will be treated as a CTK and have its own CTK number assigned.

7.3. The shadow will identify the CTK number for the tool/equipment with only one item per shadow to aid in inventory.

7.4. 442 FW work center numbers (see [Attachment 2](#)).

8. Procedures for issue and control of personal equipment.

8.1. Personal equipment (i.e., ear protectors, reflective belts, headsets) will either be assigned to a CTK/shadow board or marked with the individual's last name, employee number and work center.

9. Procedures to ensure positive control of rags.

9.1. The purpose is to comply with AFI 21-101, paragraph 18.23.2.9. to control and maintain environmental compliance of use and cleaning of commercial shop towels/rags, and to ensure non-metallic usage by all aircraft maintenance sections.

9.2. Shop towels/red rags will be issued and returned at the end of shift.

9.3. If shop towels/red rags are determined to be unserviceable they will be terminated from use.

9.4. The shop towel/red rag program will apply to all sections that use the 18 X 18 commercial grade shop towel/red rag.

9.5. CTK custodians will issue shop towels/red rags from tool issue sections.

- 9.6. Shop towels/red rags will be exchanged and laundered with the 509th Bomb Wing base laundry.
- 9.7. Shop towels/red rags may be dropped off at the base laundry anytime during normal work hours.
- 9.8. Personnel returning used shop towels/red rags to the base laundry will count and inventory the used shop towels/red rags confirming the total turned-in.
- 9.9. The base laundry will issue clean shop towels/red rags to individuals on a one for one basis. The total issue will equal the confirmed number of used shop towels/red rags that were turned-in.

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

- 10.1. Those persons with a government impact card with the special designator authorizing the purchasing of tools can procure tools.
- 10.2. Only CTK custodians with a government impact card with the special designator authorizing the purchasing of tools can request and procure tools.

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

- 11.1. Any tools or equipment needed or used that cannot be procured through proper channels will be classified as locally manufactured tools and equipment.
 - 11.1.1. Locally designed tools or equipment that carry loads, change torque, or present potential to damage government resources. This will be coordinated through Quality Assurance (QA) inspectors and the QA chief.
 - 11.1.2. Tools and equipment locally manufactured will have EID numbers to aid in inventory. Drawings and technical data will be filed with the appropriate CTK custodian.
 - 11.1.3. Users will review items and requirements biennially (every two years) for applicability and current configuration.
- 11.2. Maintenance supply support directives outlining procedures covering the manufacture of items source coded local manufacture IAW AFI 21-101, Chapter 10, paragraph 10.19. and AFMAN 23-110, *Base Air Force Supply Procedures*.

12. Procedures for depot teams, factory representatives, and contract field teams (CFT) when working on equipment within the unit.

- 12.1. Depot/contract field teams or factory representatives should have control over their tools.
 - 12.1.1. Depot/contract field teams or factory representatives that will use units CTKs will be registered and loaded with the designated CTK custodian and will follow same guidelines as outlined in this instruction.

13. 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 or peculiar support/test equipment to decentralized locations.

- 13.1. Procedures for control of the crash recovery and hydrazine response equipment are permanently stored/located in trailers or vehicles.
 - 13.1.1. Host unit performs crash recovery.

13.2. Procedures for control of aircrew tools and life support section tool kits dispatched to the flight line.

13.2.1. Life Support follow guidance set forth in this instruction.

13.3. Procedures for occasions when a single person must sign-in and sign-out a CTK.

13.3.1. It is preferred that single person sign-in and sign-out is avoided by using a CTK custodian from another respective area.

13.3.2. When a single person signs-in and signs-out the CTK, make an annotation on AFRC Form 177 to acknowledge ensuring CTK will be inventoried during the next shift inventory.

13.4. Procedures for identifying changes in wing operations that require an Environmental Impact Analysis Process (EIAP) assessment. Program planning shall identify large changes in wing operations to the environmental flight for EIAP assessment fund programming as early as possible.

13.4.1. EIAP is identified for all aspects of operation by the biohazard environmental of office of the host unit.

PATRICK CORD, Colonel, USAFR
Commander

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

AFPD 21-1, *Managing Aerospace Equipment Maintenance*

AFI 21-101, *Maintenance Management of Aircraft*

AFMAN 23-110, *Basic Air Force Supply Procedures*

T.O. 32-1-101, *Use and Care of Hand Tools and Measuring Tools*

Abbreviations and Acronyms

AFI—Air Force instruction

AFPD—Air Force policy directive

AFRC—Air Force Reserve Command

CFT—contract field teams

CTK—composite tool kit

EIAP—environmental impact analysis process

EID—equipment identification designators

HAZMATS—hazardous materials

IAW—in accordance with

MIL—master inventory list

MOC—maintenance operation control

QA—quality assurance

SOF—supervisor of flying

TAS—tool accountability system

T.O.—technical order

WWM—wing weapons manager

Attachment 2

442 FW WORK CENTERS

303D FIGHTER SQUADRON

SECTION	TAS	CURRENT/NON-TAS
LIFE SUPPORT	R8LS	LS-1 THRU LS-7

442D AIRCRAFT MAINTENANCE SQUADRON

SECTION	TAS	CURRENT/NON-TAS
SUPPORT	R8AM	O-1A THRU O-1S, F-30A, F-11A, F-14C, O-2A THRU O-2Z, O-3A THRU O-3Y, O-1 THRU O-3, O-5 THRU O-8
SPECIALIST FLIGHT	R8SF3	A-2SF, A-2ESF THRU S-2TSF, F-22CSF THRU F-22MSF, A-3ASF THRU A-3JSF
WEAPONS LOADING	R8WL	WL-01A THRU WL-12A, WL-01B THRU WL-12B, WL-13 THRU WL-23, WL-17A THRU WL-17D, WL-22A, WL-22B

442D MAINTENANCE GROUP

SECTION	TAS	CURRENT/NON-TAS
QUALITY ASSURANCE	R8QA	QA-01

442D MAINTENANCE SQUADRON

AVIONICS FLIGHT

SECTION	TAS	CURRENT/NON-TAS
AVIONICS	R8AT	IATS A2A THRU A2D, A-3, A-5, A3G
ECM	R8EC	A-1, A-1A THRU A-1Z, A-4, A-4A THRU A-4Z, CB16, CB17
SENSOR	R8PS	A-6, A-7, A-6A THRU A-6Z

PROPULSION FLIGHT

SECTION	TAS	CURRENT/NON-TAS
PROPULSION	R8JE	F-13A THRU F-13ZM, F-14ZM, F-14BM, F-15 THRU F-19, F-19A THRU F-19Z, F-17A THRU F-17Z

AGE FLIGHT

SECTION	TAS	CURRENT/NON-TAS
AGE	R8AG	F-36 THRU F-43, F-36A THRU F-41A, F-36B THRU F-41B

ACCESSORY MAINTENANCE FLIGHT

SECTION	TAS	CURRENT/NON-TAS
PNEUDRAULICS	R8HD	F-30, F-30C THRU F-30Z
ELECTRO-ENVIRONMENTAL	R8EL	F-22, F-22A THRU F-22Z, F-34
FUELS	R8FS	F-27, F-27A THRU F-27Z, F-28A THRU F-28Z, F35
EGRESS	R8EG	E-1, E-1A THRU E-1Z, E-2, E-2A THRU E-2Z, E-3, E-3A THRU E-3Z
PHASE	R8PD	D-1 THRU D-10, O-4
REPAIR/RECLAMATION	R8RR	F-23, F-23A THRU F-23Z, F-24, F-24A THRU F-24Z, CR-23, CR-23A THRU CR-23Z, ST-23, ST-23A

FABRICATION FLIGHT

SECTION	TAS	CURRENT/NON-TAS
SURVIVAL	R8SE	F-5, F-5A THRU F-5Z
STRUCTURAL MAINTENANCE	R8ST	F-1, F-1A THRU F-1Z, F-10, F-10A THRU F-10Z
METALS TECHNOLOGY	R8MT	F-2, F-2A THRU F-2Z, F-3, F-3A THRU F-3Z
ABDR		KC, KC1 THRU KC20
NDI	R8ND	F-8, F-8A THRU F-8Z

MUNITIONS FLIGHT

SECTION	TAS	CURRENT/NON-TAS
MUNITIONS STORAGE	R8MF	MM-1 THRU MM-25
ARMAMENT SHOP	R8AS	AS-1 THRU AS-9, AS-7A THRU AS-7D, AS-6A THRU AS-6J, AS-1A THRU AS-1E, AS-2A AS-2E, AS-3A THRU AS-3E