

**BY ORDER OF THE COMMANDER  
442D FIGHTER WING**

**442D FIGHTER WING INSTRUCTION  
21-105**



**19 OCTOBER 2012**

**Maintenance**

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

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

---

**ACCESSIBILITY:** Publications and forms are available on the e-publishing website at [www.e-publishing.af.mil](http://www.e-publishing.af.mil) for downloading or ordering.

**RELEASABILITY:** There are no releasability restrictions on this publication

---

OPR: 442 MXG/MXQ

Certified by: 442 MXG/CC  
(COL JAMES P. BROCK, JR.)

Pages: 10

Supersedes: 442FWI21-105; 27 March 2008

---

This instruction implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*. It establishes procedures not directly covered by Air Force Instruction (AFI) 21-101, *Aircraft and Equipment Maintenance Management* and AFI 21-101, Air Force Reserve Command (AFRC) Supplement (SUP), *Aircraft and Equipment Maintenance Management*. It lists the work centers assigned Composite Tool Kit (CTK) numbers. This instruction applies to all 442d Fighter Wing personnel. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. 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 Air Force.

**SUMMARY OF CHANGES**

This document is substantially revised and must be completely reviewed. This revision adds procedures for: Initial marking of Personal Protective Equipment (PPE), assignment of Equipment Identification Designators (EID), and transferring of tools and equipment at the job site.

## **1. Standardization Procedures for Security, Control and Accountability of Tools and Equipment.**

1.1. Tools and equipment that are used for Aircraft Maintenance will be loaded in the TC Max® / Tool Accountability System and assigned CTK monitors.

1.1.1. CTK numbers will be assigned to work centers according to [Attachment 2](#).

1.1.2. Flight and section chiefs (or equivalent) will determine the type, size, and number of CTKs required for their work centers and approve the Master Inventory List (MIL)

1.1.3. The Wing Weapons Manager (WWM) will approve the MIL for weapons load crew CTKs.

1.1.4. Load crew crimpers, die and lead seals are not authorized for use.

1.1.5. Engine blade blending blue dye will be controlled by the engine shop.

1.1.6. The tool issue sections will have CTK custodians, primary and alternate, to manage and control CTKs and tool rooms.

1.2. TC Max® will be used to document the annual inventory of tools and equipment.

1.2.1. Letter format may also be utilized to document annual inventory inspections.

1.3. A manual log will be kept for warranty tools which;

1.3.1. List the items nomenclature.

1.3.2. List the Manufacturer.

1.3.3. Shows the date sent out.

1.3.4. Shows the date received.

1.3.5. Shows the current location.

## **2. Procedures for Warranted Tool Management.**

2.1. CTK monitors will be responsible for maintaining replacement tools and quantities stocked.

2.2. CTK monitors or Government-wide Purchase Card (GPC) card holders will be responsible for contacting and obtaining required replacement tools.

2.3. Replacement of lost tool(s) will be purchased only when the Maintenance Group Commander (MXG/CC) authorizes the lost tool(s) to be replaced.

## **3. Procedures for Strict Control and Management of Replacement, Expendable, Consumable Hand Tools, Hazardous Materials (HAZMAT) and other items contained in CTKs.**

3.1. TC Max® will be utilized for the control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in CTKs.

3.1.1. Items that are consumable will be identified as such in TC Max® and will be displayed on the MIL.

3.1.2. Expendable hand tools and bits that are identified as broken, removed or lost will be replaced when replacement item is available. AFRC Form 175, *Missing/Removed Tools and Equipment* and TC Max® will be utilized to identify any items removed and replaced within a CTK including any HAZMATs.

3.2. Spare/ Replacement tools will be tracked through TC Max®.

#### **4. Procedures for On-Site Transfer of CTKs.**

4.1. Onsite procedures apply to Aircraft Maintenance Squadron (AMXS) only during deployments or local exercises.

4.1.1. The user will perform an inventory then sign out the item(s) using the same AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*. The form will remain with the CTK.

4.1.2. AF IMT 1297, *Temporary Issue Receipt*, will be utilized for accountability of all items signed out. This form will be provided by the Support Section and will be placed in the CTK prior to the first shift signing the CTK out. The incoming technician will perform a complete inventory of all items and the outgoing technician will verify and hand carry the AF Form 1297 into the support section for proper CTK transfer in TC Max®.

#### **5. Procedures for Lost or Missing.**

5.1. For lost or missing tools reference AFI 21-101\_AFRCSUP\_I, *Aircraft and Equipment Maintenance Management*.

5.2. Replacement of lost tool(s) will be purchased only when the MXG/CC authorizes the lost tool(s) to be replaced.

5.3. The Supervisor of Flying (SOF) will be notified to recall effected taxied and airborne aircraft.

5.4. Store completed TC Max® generated or AFRC Form 174, *Lost Tool/Object Report* with aircraft or equipment historical records for a minimum of one year.

#### **6. Procedures for Personal Issue/Marking of Personnel Protective Equipment (PPE).**

6.1. PPE will be marked with the appropriate World Wide Identifier (WWID) (R8xx) and the last 4 of the member's employee number and a number or letter identifying the items description.

6.1.1. Each work center will develop their number/letter legend identifying each item. The legend will be kept on file within the work center for reference.

6.1.2. PPE items will be loaded into TC Max® with the Equipment Identification Designator (EID) items indicating initial issue.

6.1.3. Work centers may opt to issue PPE as a kit/CTK to their members. The kit/CTK will list all PPE items on the MIL. The kit/CTK will be issued to the individual showing initial issue.

6.1.4. Preferred way to mark PPE such as ear muffs, reflective belts and head set, etc. Position 5 of the EID displays a numerical digit that designates type of PPE. The last four digits of the EID will display the last 4 of individuals assigned employee number. i.e.

6.1.4.1. R8xx10000 for earmuffs

6.1.4.2. R8xx20000 for reflective belt

6.1.4.3. R8xx30000 for noise canceling earmuffs

6.1.4.4. R8xx40000 for headsets

6.1.4.5. R8xx50000 for eye protection

6.1.4.6. R8xx60000 Headlamps

6.1.4.7. R8xx70000 Breathing air mask

6.1.4.8. R8xx80000 Hard hats

6.1.4.9. Markings from previous work centers within the 442 MXG do not need to be removed as long as they are still valid work center markings.

## **7. Procedures to Ensure Positive Control of Rags/Cheese Cloth.**

7.1. According to job requirements a predetermined number of shop rags will be placed in zip lock bags/containers with the quantity identified, and issued as 1 bag/container through TC Max®.

7.2. Shops that utilize cheese cloth will cut and bag a determined amount and issue utilizing the same procedures as shop rags.

## **8. Procedures to limit the number of personnel authorized to procure tools.**

8.1. CTK monitors who have a tool GPC account will purchase required tools.

8.2. CTK monitors that do not have a tool GPC account will provide their request to their unit's tool GPC account holder for purchase of required tools.

## **9. Procedures for control of Locally Manufactured Tools/Equipment.**

9.1. All tools or equipment needed or used that cannot be obtained through appropriate procurement channels will be classified as locally manufactured tools and equipment.

9.1.1. All locally designed tools or equipment will be coordinated through Quality Assurance (QA).

9.1.2. Locally manufactured tools and equipment will have EID numbers to aid in inventory. Drawings and technical data will be filed with the appropriate CTK custodian.

9.1.3. Use maintenance supply support directives outlining procedures covering the manufacture of items which are source coded for local manufacture IAW AFI 21-101 and AFMAN 23-110, *USAF Supply Manual*.

9.1.4. If it is a good idea, submit an Air Force Technical Order (AFTO) Form 22, *Technical Manual (TM) Change Recommendation and Reply*, for addition into the A10 community, IAW AFI 21-101, AFRCSUP\_I.

9.1.5. Users will review items and requirements biennially (every two years) for applicability and current configuration, and document the review in the QA office.

#### **10. Procedures for Depot Team, Factory Representatives, and Contract Field Teams (CFT) when working within the unit.**

10.1. Depot/contract field teams or factory representatives that will use unit's CTKs will be registered and loaded with the designated CTK custodian and will follow the same guidelines outlined in this instruction.

#### **11. Procedures and Responsibilities for Two or More Work Centers to Operate a Single Tool Room/Support Section.**

11.1. The AMXS will operate one tool room/support section for three work centers. (Flightline, Specialist & Weapons Load). Weapons and Specialists will use TC Max® for dispatchable equipment and tools, in-shop technical orders, and Land Mobile Radios and shop tools that are not removed for flight line use.

11.1.1. Each work center supervisor will designate in writing monitors for the following areas:

11.1.1.1. CTK / Custodian who will be responsible for their respective work center's inspection, inventory, documentation, build-up, maintenance of Tool Kits located in the Support Section.

11.1.1.2. Items requiring calibration through base Precision Measurement Equipment Laboratory (PMEL).

11.1.1.3. Items accounted for on an equipment account.

11.1.1.4. Items requiring AFTO Form 244, *Industrial/Support Equipment Record* inspections.

11.1.2. These personnel will be accountable for all inspections, documentation and maintenance of these assets as well as providing inspection intervals to the Support Section Chief. If PMEL assets are geographically separated from the Support Section, and are accounted for in the Support Section's TC Max®, the applicable PMEL monitor will notify the Support Section of any removal and return actions for those assets.

11.1.3. All items requiring local manufacturing approval will be completed by individual work center. The work center supervisor or a designated representative will provide a copy of all paperwork to the Support Section Chief for filing.

11.1.4. Each work center supervisor will approve MILs as well as tool changes/additions required to meet their work center requirements.

#### **12. Procedures to Direct a Second Party or On-Duty Supervisor Inspection of CTKs or Turn In.**

12.1. TC Max® does not allow individuals to sign in CTKs if they were the issuer themselves. AFRC Form 177 will not be utilized at home station for shift transfers or signing in or out of CTKs unless TC Max® is not available or functioning properly.

12.2. If personnel are unavailable to verify the CTK, document the CTK for the next shift supervisor to verify contents.

**13. Procedures for Controlled Access to Tool Rooms.**

13.1. Every tool room/support section must have the ability to be locked when not attended. Personnel who must access the tool room/support section and who do not possess a key will sign-out the master key or request access from Maintenance Operations Center (MOC).

13.1.1. If personnel must enter a tool room/support section that is not attended to acquire tools, equipment or supplies, their entry will be documented on an AFRC Form 177. This form should be maintained in a visible location within the tool room/support section.

13.1.2. This allows the CTK monitors to know who opened their tool room/support section to obtain tools, equipment and supplies for accountability and replenishment.

13.1.3. Anything that is removed from an unattended tool room/support section will be documented on the AFRC Form 177, clearly identifying which items were removed from the tool room/support section and who removed them.

**14. Procedures for Crashed, Damaged or Disabled Aircraft Recovery (CDDAR) and Hydrazine Response.**

14.1. CDDAR equipment is maintained and controlled by the Repair and Reclamation (R&R) Shop and stored/located in the 442d Crash Recovery Trailer (see 442 Fighter Wing Instruction 21-121, *Crashed/Disabled Aircraft Program* for further guidance).

**15. The work center “Flight Equipment” will follow guidance set forth in this instruction.**

ERIC S. OVERTURF, Brig Gen, USAFR  
Commander

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

442 FWI 21-121, *Crashed/Disabled Aircraft Program*, 29 July 2010

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010

AFI 21-101 AFRCSUP\_I, *Aircraft and Equipment Maintenance Management*, 13 January 2011

AFMAN 23-110, *USAF Supply Manual*, 1 April 2009

AFMAN 33-363, *Management of Records*, 1 March 2008

AFPD 21-1, *Air and Space Maintenance*, 25 February 2003

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009.

AF IMT 1297, *Temporary Issue Receipt*, 1 July 1987

AFRC Form 174, *Lost Tool/Object Report*, 1 January 2007.

AFRC Form 175, *Missing/Removed Tools and Equipment*, 1 January 2007.

AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*, 1 January 2007.

AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, 29 September 2011.

AFTO Form 244, *Industrial/Support Equipment Record*, 13 January 2011.

***Abbreviations and Acronyms***

**AF**—Air Force

**AFI**—Air Force instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRC**—Air Force Reserve Command

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

**AFTO**—Air Force Technical Order

**AMXS**—Aircraft Maintenance Squadron

**CDDAR**—Crashed, Damaged or Disabled Aircraft Recovery Program

**CFT**—Contract Field Teams

**CTK**—Composite Tool Kit

**EID**—Equipment Identification Designators

**GPC**—Government-wide Purchase Card

**HAZMAT**—Hazardous Materials  
**IAW**—In Accordance With  
**IMT**—Information Management Tool  
**MIL**—Master Inventory List  
**MOC**—Maintenance Operation Control  
**MXG/CC**—Maintenance Group Commander  
**OPR**—Office of Primary Responsibility  
**PMEL**—Precision Measurement Equipment Laboratory  
**PPE**—Personal Protective Equipment  
**QA**—Quality Assurance  
**RDS**—Records Disposition Schedule  
**R&R**—Repair and Reclamation  
**SOF**—Supervisor of Flying  
**SUP**—Supplement  
**TC MAX®**—Tool Accountability System  
**WWID**—World Wide Identifier  
**WWM**—Wing Weapons Manager

## Attachment 2

## 442 FW WORK CENTERS

Figure A2.1. WORK CENTER MAX® CURRENT/NON TC MAX®.

WORK CENTER	SECTION TC MAX CURRENT/NON TC MAX
LIFE SUPPORT	R8LS 1 thru 14
SUPPORT	R8AM O1A thru O1Z, F30A, F11A, F14C, O2A thru O2Z, O3A thru O3Z, R8AM1 thru 99 and R8AMA thru Z thru O3, O5 thru O8
SPECIALIST FLIGHT	R8SF 1, A3A thru A3H, 18, F22A thru F22M, R8SF 1 thru 99, R8SF A thru Z
WEAPONS LOADING	R8WL 1 thru 20, 13A, 13B, 16A, 16B, 17C31 thru 17C42, 35A04, 35A05, 37B01, 37B02, R8WL 1 thru 99, R8WL A thru Z
QUALITY ASSURANCE	R8QA1
AVIONICS	R8AT 1 thru 3, 20
ELECTRONIC COUNTERMEASURES	R8EC 13
ARMAMENT SHOP	R8AS 1 thru 11, 1A thru 1D, 2A thru 2C, 3A, 6A thru 6J, 6SB
PROPULSION	R8JE F13A and F13B, F14A and F14B
AEROSPACE GROUND EQUIPMENT	R8AG 1 thru 99
PNEUDRAULICS	R8HD 1 thru 3

ELECTROENVIRONMENTAL	R8EL F22, F22A thru F22Z, F34
FUELS	R8FS 1 thru 11
EGRESS	R8EG 1 thru 6
PHASE	R8PD TR1 thru 10, R8PD SJ1 & SJ2, D1 thru D12
REPAIR/RECLAMATION	R8RR 1 thru 10, CR1 thru CR9, ST1, TR
SURVIVAL	R8SE F5, F5A thru F5Z
STRUCTURAL MAINTENANCE	R8ST A thru Z , R8ST 1 thru 9
METALS TECHNOLOGY	R8MT A thru Z, R8MT 1 thru 9
NONDESTRUCTIVE INSPECTION	R8ND F8, F8A thru F8Z
MUNITIONS STORAGE	R8MF 1 thru 25