

**BY ORDER OF THE COMMANDER
307TH BOMB WING**

**307TH BOMB WING INSTRUCTION
21-132**



3 MARCH 2016

Maintenance

**COMPOSITE TOOL KIT (CTK)
MANAGEMENT**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This publication implements Air Force Instruction (AFI) 21-101, *Aircraft and Equipment Maintenance Management*, Air Force Reserve Command (AFRC) Supplement (SUP) 21-101, *Aircraft and Equipment Maintenance Management* and applies to all maintenance personnel assigned to the 307th Bomb Wing at Barksdale Air Force Base or deployed. This publication may be supplemented at any level, but all supplements must be routed to the Office of Primary Responsibility (OPR) listed above for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the OPR listed above using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. 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 in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This publication incorporates numerous minor changes and should be reviewed to ensure compliance.

1. Roles and Responsibilities. The squadron commanders and superintendents are responsible for ensuring personnel adhere to the procedures established in this instruction. **(T3)**

1.1. Work centers that do not perform maintenance on aerospace equipment and/or not involved in flight line operations are exempt from the Composite Took Kit (CTK) program. **(T3)**

1.2. Flight/Section Chiefs will determine the type, size and quantity of CTKs required for their work center and will approve each Master Inventory Listing (MIL).

2. Security, Control and Accountability Procedures.

2.1. All vehicles/trailers that permanently store tools, equipment, and/or technical data will have an inventory list in the vehicle/trailer at all times and will comply with all directives pertaining to tool control. A copy of the MIL will be filed in the owning work center Master Continuity Binder, Tab 4 and approved by the Flight/Section Chief. **(T3)**

2.2. Each tool room/workcenter will develop a Master Tool Room and Cabinet Diagram/Plan indicating all locations of CTKs/Tool Kits (TK). A copy of this diagram/plan will be filed in the Master Continuity Binder Tab 3.

2.3. Each tool room/workcenter will develop a Master Continuity Binder(s) containing the following tabs:

2.3.1. Tab 1 – Memorandum letters.

2.3.1.1. A. CTK Custodian(s)

2.3.1.2. B. Tool Control Multi-Industry Asset Management (TCMax) Authorized User(s) & Personnel Authorized Tool Room Unescorted Access

2.3.1.3. C. Replacement Tool Authorized Procurer(s)

2.3.2. Tab 2 – This instruction

2.3.3. Tab 3 – Master Tool Room and Cabinet Diagram/Plan

2.3.4. Tab 4—Vehicle/Trailer Inventory (if applicable)

2.3.5. Tab 5 – Warranted Tools

2.3.6. Tab 6 – Spare tools

2.3.6.1. A. Spare Tool Authorization Letter

2.3.6.2. B. Spare Tool MIL

2.3.6.3. C. Spare Tool Inventory Replacement Log

2.3.7. Tab 7 – Completed Lost Tool Reports

2.3.7.1. A. Lost items

2.4. Deployment. TCMMax will be used to facilitate a CTK program during deployments. In the event TCMMax is not available, the AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*, will be used to document CTK transactions. (T3)

2.5. Kits. There are two types of kits; tool kits and equipment kits.

2.5.1. Tool Kits will have the items shadowed, silhouetted or inlayed and the sign in/out inventory will be conducted by means of a visual inspection.

2.5.2. Equipment kits do not have to have the items shadowed, silhouetted or inlayed. Therefore, sign in/out inventory will be accomplished by verifying the contents against the MIL.

2.5.3. If equipment and tools are commingled in a CTK, the contents must be shadowed, silhouetted or inlayed as a tool kit.

2.5.4. Blue dye will be kept in the chemical lockers, marked as “restricted” in TCMMax and issued only through TCMMax.

3. Inventory and Inspection.

3.1. Each CTK will receive an annual inventory. The inventory date will be tracked in TCMMax. (T3)

3.1.1. The annual inventory will be documented on the MIL by either:

3.1.2. Reproducing the MIL with the applicable CTK custodian and section supervisor or flight chief signature.

3.1.3. The CTK custodian will document “Annual Inventory Complied With (C/W)”, sign and date below the original CTK inventory.

3.1.4. The annual inventory will account for each tool on the MIL (to include those contained in individual tool kits within the CTK), cross-check contents against the MIL, ensure tool serviceability verify tool etchings/markings and accurate MIL documentation (nomenclatures, consumables, quantities, etc.)

3.1.5. Each CTK MIL will be reproduced at a minimum of every 2 years.

3.2. CTKs containing a Foreign Object Damage (FOD) container/pouch will have the container/pouch listed on the MIL. Container/pouch will be emptied prior to turn in to tool room/support section.

3.3. Decentralized CTK’s outside tool room/support section. An AFRC Form 177 *Consolidated Tool Kit Inventory and Control Log* will be maintained in each CTK (including vehicle, trailer mounted CTKs), and is used to record CTK/tool transactions. The person signing out/assuming responsibility for the CTK/equipment/tool annotates the “out” time/signature block. The “in” block is annotated when the user returns the CTK/equipment. The person annotating the “out” block is not the same person annotating the “in” block.

4. Replacement Tools. Replacement tools will not be issued until all pieces of the broken tool have been turned in to the tool room or upon filing of a completed AFRC Form 174, *Lost Tool/Object Report*. (T3)

4.1. Replacement tools are divided into three categories; spare tools, expendable tools and consumable tools. Spare tools are screwdrivers, wrenches, sockets etc. Expendable tools are drill bits; saw blades, apexes, etc. Consumable tools are safety wire, solder, file cleaners etc.

4.1.1. Spare and Expendable Tools. Limited quantities of spare and expendable tools may be maintained in tool rooms or work centers. Flight Chiefs will authorize in writing, the types of tools and quantities maintained. This letter will be filed in Tab 6 of the Master Continuity Binder. See Attachment 3 for letter format.

4.1.1.1. All spare and expendable tools will be stored in a secured cabinet/bin and will be tracked in TCMax. The spare and expendable tool quarterly inventory will be documented in TCMax and on the Spare Tool MIL in Tab 6 of master continuity binder.

4.1.1.2. Spare Tool Inventory Replacement Log. An AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*, will be used to document spare/expendable tools replacement and filed in Tab 6 of the Master Continuity Binder.

4.1.2. Consumable tools (safety wire, solder) may be stored on bench/shop stock. However, these items will be closely monitored. These items will be replaced on a one-for-one basis and marked/etched appropriately when placed in a CTK. All Hazardous Materials (HAZMAT) and supply procedures need to be followed.

5. Broken/Removed Tools. All bits and pieces of broken tools must be turned in and accounted for. Broken tools not accounted for in their entirety, will be considered lost tools. CTK custodians must obliterate the CTK etching and a marking on unserviceable tools prior to securing in a locked container until the item is properly disposed of. **(T3)**

5.1. All broken tools/items will be removed from the CTK. Plastic safety wire spools, when broken, do not require replacement unless deemed necessary by the CTK custodian. Broken pieces will be accounted for and then disposed of. The remaining broken edge on the spool will be colored with permanent marker so future breakage can be easily detected.

5.2. Removed broken tools documented on the AFRC Form 175, *Missing/Removed Tools and Equipment* should be replaced as soon as possible.

5.2.1. A CTK will not be deployed with a broken/removed tool. If a replacement tool cannot be obtained using normal replacement procedures, the tool will be cannibalized from a non-deploying CTK.

5.2.2. Permanently removed tools:

5.2.2.1. The empty shadow, silhouette, or inlay in the CTK will be filled in and an updated MIL will be reproduced and approved prior to the CTK being issued.

6. Lost or Missing Tools. The lost item/tool procedures outlined in AFI 21-101 are supplemented as follows: **(T3)**

6.1. If an item/tool is not found after an initial search (within 30 minutes), an AFRC Form 174 will be initiated.

6.2. The Maintenance Operations Control (MOC) will provide the Expediter/Pro-Super with a job control number(s) for all affected equipment identified and notify all appropriate

agencies. Impoundment Authorities will determine if impoundment is required on a case by case basis.

6.3. Initiate a thorough search for the lost item/tool.

6.4. If the item/tool is not found after a thorough search, the red X can only be cleared by the appropriate maintenance superintendent or above, authorized on the Special Certification Roster (SCR).

6.5. If the item/tool is not found, hard copy of the AFRC Form 174 will be filed with the CTK custodian in Tab 7 of the Master Continuity Binder and Quality Assurance (QA) for input into the Quality Assurance Tracking and Trend Analysis System (QANTTAS) database.

6.6. If an item/tool is discovered missing after an aircraft has taxied, the Expediter/Pro-Super will immediately contact the Supervisor of Flying (SOF) and MOC. The SOF will take immediate action to stop the aircraft and direct the pilot to return the aircraft to parking.

6.7. If an item/tool is discovered missing after an aircraft has taken off, the Production Supervisor/Superintendent, after notifying the MOC, will assess the risk of the situation based on the last known location of the item/tool. This assessment and recommended course of action will be passed on to the Aircraft Commander (AC) through the SOF/ Command Post. The AC will determine whether the aircraft will continue or abort the mission.

7. Warranted Tools. Warranted info on the tools will be kept on file in the Master Continuity Binder, Tab 5. (T3)

7.1. Unserviceable warranty tools will be segregated from non-warranty tools and placed in a secured in a locked container until the item is returned to the manufacture.

8. Assignment of Equipment Identification Designator (EID). See [Attachment 2](#) for section-level TCMax Identification Numbers. (T3)

8.1. Tools within a tool box will have at a minimum a six digit marking consisting of the first four characters combined with the last two characters of the nine digit universal marking established for that individual tool box.

8.2. Tools and equipment that are not in a designated container will have all nine characters of the universal markings.

9. Issue of Personnel Protective Equipment (PPE). Government issued equipment, i.e., ear defenders, whistles, reflective belts, safety glasses, etc., issued to individuals for use must be strictly controlled to ensure they pose no foreign object damage potential. (T3)

9.1. PPE will be maintained in personal lockers/storage facilities.

9.2. PPE items will be issued in TCMax and marked with the assigned World Wide Identification (WWID) and the individual's employee number.

9.3. Equipment will be issued long term with a recurring annual return date. Upon each recurring return date the employee will present all items to the respective flight/section chief for inventory/review purposes. Flight/section chief will ensure TCMax is updated to reflect the next annual return date.

10. Rag Control. Rags Will Be Controlled In TCMax. (T3)

10.1. All shops will monitor/control all rags/shop towels/cheesecloth at all times in the same manner as tools and equipment.

10.2. Lost rags/shop towels/cheesecloth will be treated in the same manner as a lost tool.

10.3. All unserviceable rags/shop towels/cheesecloth will be removed from use by the tool room/CTK custodian after they are accounted for.

11. Electronic Devices.

11.1. Personal electronic or communication devices (e.g., cell phones, beepers, pagers, portable music/video players, electronic games, etc.) are prohibited on the flightline, munitions areas, hangars and/or other industrial work areas. This restriction does not apply to office, break, locker or ready room.

11.2. eTools. All dispatchable eTools will be tracked in TCMax. Missing, removed and/or broken plugs/cover/doors when broken, do not require replacement unless deemed necessary by the CTK custodian. Broken pieces will be accounted for, documented in TCMax and then disposed of. The remaining broken edge will be colored with permanent marker so future breakage can be easily detected. All broken/removed items will be documented in TCMax.

12. Tool Procurement. The Squadron Maintenance Officer/Superintendent will designate in writing, the individuals who are authorized to procure tools. **(T3)**

13. Locally Manufactured Tools. All locally manufactured tools/equipment will be reviewed every 24 months for applicability and necessity. See 307 MXGOI 21-117, *Local Manufacture* for procedures.

14. Job Site Transfer. CTK/tool transfers at the job site are prohibited unless authorized by the Production Superintendent (Pro-Super)/Flight Chief. If authorized, on site transfers will be documented using an AF 1297, *Temporary Issue Receipt*. The Pro-Super/Flight Chief will contact the tool room and inform them of the authorization for the on-site transfer. The AFRC Form 177 maintained in each dispatchable CTK will only be used when tools are taken from one job site to another. Each aircraft is a separate job site. **(T3)**

14.1. On-coming individual will:

14.1.1. Bring a blank AF Form 1297/TCMax generated AF Form 1297 printout (preferred) of items signed out by out-going technician to the job site and conduct a joint and complete inventory of CTK/tools to be transferred.

14.1.2. Any tool not being transferred on the TCMax-generated AF Form 1297 will be lined through and initialed by both parties.

14.2. Out-going individual will:

14.2.1. Conduct a joint and complete inventory of CTK/tools to be transferred.

14.2.2. Sign "Issued by" block of AF Form 1297.

14.2.3. Take completed TCMax generated AF Form 1297 to the tool room for transfer in TCMax.

14.2.4. Out-going technician will not leave the tool room under any circumstances until all items have been transferred/turned in.

14.3. Tool Room attendant will notify the Pro-Super/Flight Chief upon completion of the TCMax transfer.

15. Field Service Representatives / Contract / Depot Field Team (FSR/CFT/DFT). All Field Teams will receive a QA briefing addressing compliance with all technical data, maintenance operating instructions/local procedures. This briefing will be documented and kept on file in QA until the team leaves. **(T3)**

16. Second Party Inspection. In the event that only one person is assigned to a shift, work center, or tool room, an employee from any work center (preferably within the same flight) must comply with sign-in/out procedures for tool control. All supervisors will be granted TCMax “Turn In” access. The TCMax shift inventory will be accomplished. **(T3)**

17. Controlled Access to Tool Rooms. When not occupied, tool room areas will be secured at all times. The Flight Chief will designate in writing all personnel authorized to use TCMax and unescorted access to the tool room. This listing will be maintained in the Master Continuity Book, Tab 1. Work centers that do not have tool rooms will provide a means to restrict access to tools to prevent unauthorized access. Lockable bins and securing cables are acceptable. **(T3)**

18. Aircrew/Life Support Personnel. The Life Support Supervisor ensures only authorized tools and equipment is dispatched to the flight line and is controlled IAW this instruction, AFI 21-101 and AFI 21-101_AFRCSUP. **(T3)**

19. Laminated Warning Tags. All laminated warning tags must be tracked in TCMax. Tags will be inventoried/signed out of TCMax prior to installation on the aircraft and inventoried/signed back into TCMax after removal from the aircraft. **(T3)**

BRUCE R. COX, Col, USAFR
Commander

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

AFI 21-101_AFRCSUP, *Aircraft and Equipment Maintenance Management*, 24 August 2015

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 29 May 2015

AFMAN 33-363, *Aircraft and Equipment Maintenance*, 1 March 2008

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AFRC Form 174, *Lost Tool/Object Report*

AFRC Form 175, *Missing/Removed Tools and Equipment*

AFRC Form 177, *Consolidated Tool Kit Inventory and Control Log*

Abbreviations and Acronyms

AC—Aircraft Commander

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

C/W—Complied With

CFT—Contract Field Team

CTK—Composite Tool Kit

DFT—Depot Field Team

EID—Equipment Identification Designator

FOD—Foreign Object Damage

HAZMAT—Hazardous Materials

IAW—In Accordance With

MIL—Master Inventory Listing

MOC—Maintenance Operations Center

OPR—Office of Primary Responsibility

PPE—Personnel Protective Equipment

Pro-Super—Production Superintendent

QA—Quality Assurance

QANTTAS—Quality Assurance Tracking and Trend Analysis System

RDS—Records Disposition Schedule

SCR—Special Certification Roster

SOF—Supervisor of Flying

SUP—Supplement

TCMax–Tool Control Multi—Industry Asset Management

TK—Tool Kit

WWID—World Wide Identification

Terms

Composite Tool Kit (CTK)—A controlled area or container used to store tools or equipment and maintain order, positive control, and ease of inventory. CTKs are assembled as a kit and designed to provide quick, easy visual inventory and accountability of all tools and equipment. CTKs may be in the form of a toolbox, a shadow board, shelves, system of drawers (Stanley Vidmar®, Lista®, etc.), cabinets, or other similar areas or containers. The CTK contains tools and equipment necessary to accomplish maintenance tasks, troubleshooting, and repair.

Decentralized CTK—CTK which is not physically kept in the workcenter.

Dispatchable CTK—CTK issued out and is designed to be used outside the work center.

Impoundment—Isolation of an aircraft/engine or piece of equipment due to an unknown malfunction or condition making it unsafe for flight or use.

Individual Tools and Equipment—Tools and equipment that are available for individual sign-out but stored in the tool room in storage bins, cabinets, shelves, etc., with every item having an assigned location (e.g., flashlights, ladders).

Master Inventory List (MIL)—Primary source document for inventory of CTKs. The MIL indicates the total number of items in each drawer or section of the tool kit. MIL may be automated.

Personnel Protective Equipment (PPE)—Government issued equipment, i.e., ear defenders, whistles, reflective belts, safety glasses, etc.

Rag—A remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth (uniform size and color) or similar material used in general industrial, shop, and flightline operations.

Shop CTK—Tool kits (not dispatched) used by work center personnel during a shift, provided a single person is responsible for the tool kit.

Special Certification Roster (SCR)—Management tool that provides supervisors a listing of personnel authorized to perform, evaluate, and inspect critical work.

Special Purpose CTK—Small individually issued tool kits that because of the nature of contents or type of container could preclude shadowing or silhouetting (e.g., launch kits, recovery kits, cartridge cleaning kits, oxygen servicing kits, etc.).

Tool Storage Facility/Tool Room—A controlled area within a work center designated for storage and issue of tools and equipment.

Attachment 2

ASSIGNMENT OF EQUIPMENT IDENTIFICATION DESIGNATOR (EID)

Table A2.1. Assignment Of Equipment Identification Designator (EID).

FIRST 4 DIGITS FOR THE TCMAX TOOL & EQUIPMENT MARKING BY SHOP		
SHOP	OFFICE	4 DIGITS
307 BW		
WING SAFETY	SE	U6SE
307 OSF		
B-52 LIFE SUPPORT	OSLB	U6BD
PARACHUTE SHOP	OSLS	U6MK
307 MXG		
QA	MXQ	U6LG
307 AMXS		
TOOL ROOM	MXAF	U6BS
CREW CHIEF	MXAA/MXAB	U6BA
ELECTRONIC COUNTER MEASURES	MXASD	U6BM
GUIDANCE AND CONTROL	MXASAC	U6BG
COMM NAV MISSION SYSTEM	MXASAA	U6BC
HYDRAULICS	MXASB	U6BH
ENGINE	MXASB	U6BP
ELECTRO ENVIRONMENTAL	MXASB	U6BE
WEAPONS LOADING	MXAW	U6BW
307 MXS		
ELECTRO ENVIRONMENTAL BACKSHOP	MXMCE	U6BZ

FUEL SHOP	MXMCF	U6BF
EGRESS	MXMCG	U6BJ
PNEUDRAULIC SHOP	MXMCP	U6BN
NDI	MXMFN	U6BX
STRUCTURAL REPAIR	MXMFS	U6B8
METALS TECHNOLOGY	MXMFM	U6BT
ENGINE SHOP (TF-33)	MXMPJ	U6MJ
B-52 PHASE	MXMTA	U6MU
REPAIR & RECLINATION	MXMTR	U6BY
ARMAMENT SHOP	MXMRB	U6BR
AGE	MXMG	U6MA
BOMB NAV BACKSHOP	MXMVB	U6MB
ECM BACKSHOP	MXMVE	U6MC
MUNITIONS PRODUCTION	MXMWA	U6MW
MUNITIONS MATERIAL	MXMWM	U6ML

Attachment 3

SPARE AND EXPENDABLE TOOLS LIMITED QUANTITIES SAMPLE LETTER

Figure A3.1. Spare And Expendable Tools Limited Quantities Sample Letter.



DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

5 January 2016

MEMORANDUM FOR 307th MXG QA PERSONNEL

FROM: 307 MXG/MXQ

SUBJECT: Quality Assurance Spare Tool Authorization

1. The following tools and quantities are authorized as spares.

NSN/Part#	Name	QTY
1234-05-678-9100	Common screwdriver, 8 inch	3
MS25987	Socket, 8 point, 3/8 drive, size 9/16	3

2. This letter supersedes all previous letters same subject.

VERNON W. COX, CMSgt, USAFR
Quality Assurance Superintendent