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Maintenance

COMPOSITE TOOL KIT PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This Pope Air Force Base instruction establishes specific procedures that provide security, control, positive accountability, and custodial care responsibilities of Composite Tool Kits (CTK). Squadron commanders and maintenance officers are responsible for ensuring compliance with the contents of this instruction. **Records Disposition:** Documentation created by this publication will be maintained and disposed of IAW AFMAN 37-123, *Management of Records* and AFMAN 37-139, *Records Disposition Schedule*.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

1. General Information.

- 1.1. All units that dispatch tools and equipment to the flight line/aircraft maintenance areas, or work on equipment that are destined for use on the flight line or aircraft will follow CTK procedures.
- 1.2. When a depot team, factory representative, or contract field team performs maintenance on equipment within this wing, they will follow this instruction for tool accountability. If the contractor or team has not made provisions for tool control and accountability, the team leader/supervisor will coordinate with the Quality Assurance Representative (QAR) to develop a program. The guidelines developed will be put in letterform and signed by the team leader/supervisor and the QAR. The team leader/supervisor and QAR will maintain a copy of the letter for the duration of the team's stay.
- 1.3. Tool Pouches. Canvas or other non-metal tool pouches are authorized, if used tool pouches will be part of the CTK and marked accordingly. Personnel may remove tools from a properly inventoried CTK and place them in a tool pouch. A complete CTK inventory will be accomplished as often as necessary. Return the tools to their shadowed positions.

1.4. Foreign Objects (FO) Pouches. FO pouches will be maintained with every dispatchable CTK and tool pouch. FO pouches will be shadowed, inlaid or attached to the CTK; they will be included in the inventory list.

1.5. Keys for CTKs, equipment, and tools/vehicles will have a streamer at least 6" long, have the CTK number etched on the key and will be attached to a spring ring or equivalent. Snap rings are not used unless the ends are welded. CTKs without a built in lock will use a combination lock or a keyed padlock.

1.6. CTKs used in an off-equipment environment and are not dispatched may be left open for all personnel to use during a shift. Whenever the CTK is opened or closed, it will be inventoried.

2. Responsibilities.

2.1. Maintenance Supervision is responsible for executing an effective tool room program outlined in AFI 21-101, *Aerospace Equipment Maintenance Management* and AFI 21-101, AMCSUP 1, *Aerospace Equipment Maintenance Management*.

2.2. CTK Custodians will:

2.2.1. CTK custodians are responsible for tool, Hazardous Material (HAZMAT), and equipment accountability and control within their respective areas.

2.2.2. File a master copy of the CTK content list. A copy of the CTKs content list remains in each CTK at all times for inventory purposes. Content lists are broken down by drawer/section indicating the total number of items in each drawer/section of the CTK. All changes to the CTK content list will be annotated in ink, initialed, and dated by the CTK custodian.

2.2.3. File a master copy of all keys, locks, and their appropriate markings used in the section.

2.2.4. Develop a continuity folder/book for all tool rooms. The folder/book will contain at a minimum letters of appointment, inventory and inspection forms, chit assignment letters, and the CTK/shadow board master list.

2.2.5. Keep all documented inspections and inventories on file for at least 1 year after completion.

2.2.6. Ensure contents of non-dispatchable CTKs (cabinets) are opened and inventoried at the beginning and end of each shift. The individual performing the inventory ensures all CTKs and personal protective equipment is on hand or accounted for. All chits will be accounted for by comparing unused chits and control forms. Document beginning and end-of-shift inventories on a Pope AFB Form 524, **Tool Room Inventory**. When the Pope AFB Form 524 is full, initiate a new form and discard the completed form after at least one beginning and one end-of-shift inventory is recorded on the new form.

2.2.7. Inventory all replacement tools at least quarterly. The quarterly inventory of all on-hand replacement tools will be documented and kept on file until the next inventory is conducted.

2.3. All Squadron Personnel will:

2.3.1. Be responsible for the care, cleanliness, proper use, and accountability of tools and toolboxes assigned to them.

2.3.2. Be responsible to secure all CTKs outside of the tool storage area.

2.3.3. Be responsible to inventory tools and equipment before leaving the tool room area and prior to turn-in. Do not store trash or FO in a tool box. A FO bag will be a part of each flight line dispatchable tool box. Inspect and clean FO bag each time the toolbox is checked in or out.

2.3.4. Account for all tools, equipment, personal items, and hardware immediately upon completion of each task.

2.3.5. Follow lost tool/object procedures for all lost items.

3. Identification.

3.1. To identify items tracked in Tool Accountability System units will use a standard nine-digit Worldwide (WW) Identification (ID) Code as the Equipment Identification Designator (EID). The first two letters of the WW ID will be the first two letters of the wing's Personnel Assignment System code, Pope AFB is designated as PV. The third and fourth characters are designated as the unit or the first two digits of the office symbol. Each unit establishes the remaining five characters for tool and equipment identification. (See [Attachment 2](#))

3.2. Special purpose kits (i.e. tire change kits, LOX service kits, etc.) will be identified, and controlled as a CTK in accordance with this instruction.

3.3. Each CTK is individually numbered. Units with multiple cabinets may elect to identify all cabinets as one CTK. Tools contained in a CTK are marked with the assigned CTK number.

3.4. Tools will have only one CTK number. Dual etchings are not authorized.

3.5. Dispatchable CTKs will be marked with the CTK designator. Reflective tape 2 inches wide will be applied to all exposed sides (including top) with a minimum of 4 inches in length. One piece of 2" X 4" tape per side is sufficient.

3.6. Technical Orders (TOs) and checklists may be placed inside special purpose kits and special purpose repair kits as determined by the section chief. These items will be listed on the tool inventory.

3.7. Items that are maintained in special repair kits must meet the "shadow concept" outlined in para. [5](#).

3.8. Mark mobility toolboxes according to AFI 10-403, *Deployment Planning*.

3.9. Mark and control tools or equipment that a work center assigns to an individual in accordance with this instruction. At a minimum mark last name, unit, and employee number.

3.10. Aircrew and life support section tool rooms that dispatch equipment, tools, and CTKs to the flight line, will follow guide lines listed in this instruction. Aircrew members inventory all equipment and personal items prior to flight and account for them after flight. Document any lost item in the aircraft AFTO Form 781 A on a RED X.

3.11. Crash recovery equipment, tools, and CTKs that are permanently stored/located in trailers or vehicles, will follow guide lines listed in this instruction.

3.12. Mark hand grease guns, dispensing cans, spray bottles, pump oilers and similar containers with the type of grease, fluid, or other liquids and military specification (MILSPEC) of the contents. NOTE: If containers are used to hold or apply substances classified as hazardous materials, ensure labeling requirements of AFOSHSTD 161-21, *Hazard Communication*, and local directives are accomplished.

4. Shadow Concepts.

- 4.1. Shadow blocks. Shadow blocks are authorized, and may be used in place of a container.
- 4.2. Shadow boards. Shadow boards can be used to store tools and equipment in a controlled area. Shadow boards will be assigned their own CTK identifying number and have an authorized tool listing.

5. Inventory and Inspection.

- 5.1. Unit CTK custodians will establish a program to manage and inventory tool/equipment and deployment kits.
- 5.2. At least annually or when the CTK custodian changes, conduct a comprehensive inventory of all tools, equipment, and CTKs. The purpose of this inventory is to perform an extensive inspection of all tools and equipment, to include condition, identification markings, and accuracy of the Master Inventory List (MIL). Inspect all tools for serviceability according to TO 32-1-101, Maintenance & Care of Hand Tools. CTK custodians document these inventories and maintain the most current inventory documentation on file. Inventories will be documented by letter to section chiefs and flight chiefs identifying discrepancies and corrective actions taken.

6. Lost/Broken Tool Replacement and Management.

- 6.1. Limited quantities of replacement tools may be maintained in tool rooms, support flights, sections, or work centers. These tools are used to replace broken, worn, or missing tools to prevent unnecessary work delays. Strict control is mandatory due to spare and consumable tools are highly pilferable and pose an increased fraud, waste, and abuse potential.
- 6.2. Replacement tools will not be issued until all the pieces of a broken/damaged tool are presented or documentation indicating the tool is lost and reported IAW the lost tool procedures outlined in para **8**. Replacement tools are marked with the CTK number prior to issue.
- 6.3. Damaged or broken tools will be stored in a separate secure location. All permanently removed tools (i.e. broken) will be de-etched. Account for all damaged or broken tools until processed for disposal. Documentation should include, at a minimum, tool name, CTK # removed from, date/time turned in for storage, name of person turning in the item, and date/time turned in for disposal with the CTK custodian's initials.
- 6.4. If one item of a set is unserviceable, the item will be removed and handled as a broken tool. If the item is not to be replaced, the number of pieces on the MIL must be changed, and annotated on Pope AFB Form 523 **Missing/Removed Tools and Equipment**.
- 6.5. The Pope AFB Form 523 is used to annotate all removed/missing tools and equipment and action taken on these items. A separate Pope Form 523 is maintained for each CTK. When replacement tools are placed on order, the document number is entered in the reason block of the form. When a tool is reported missing or lost, indicate the date and time lost tool procedures were initiated. Items removed for calibration are entered on this form. When the Pope Form 523 is full, initiate a new form and transfer all open entries to the new form.
- 6.6. The Pope AFB Form 523 will never be used as the primary source to inventory the CTK during turn-in. This form will not be used to document discrepancies with serviceable tools.

6.7. A Pope AFB Form 525, **Lost Tool/Object Report**, is completed for each lost tool/object unless the item is immediately recovered. The CTK custodian maintains Pope Form 525 on suspense. Destroy suspense report when it has been on file for 1 year. Segregate copies "recovered" and "not recovered".

7. Tool Accountability and Control.

7.1. When a chit system is used, chits will be controlled as tools, to include a beginning and end of shift inventory. Chits are not issued directly to individuals or removed from support flights/sections or tool rooms. Chit control boards are located only in secure, controlled locations, (i.e., support sections, tool rooms, work center offices, etc.). Chits will be colored as follows:

7.1.1. Lost/broken tool chits for non-flight line assigned tool kits will be colored red.

7.1.2. Deployed/TDY equipment chits will be colored blue.

7.1.3. Chits for tools/items issued on AF form 1297, **Temporary Issue Receipt** chits will be colored gray.

7.1.4. Chits for tools removed for calibration or repair will be colored yellow.

7.2. Items will be tracked in TAS or the Pope AFB Form 232, **CTK/Chit Control Log**, will be used for accountability and control of CTKs and tools. The form remains in the tool room support section, or work center. A separate Pope Form 232 is maintained for each CTK this form is used to record CTK/tool transactions (check in/check out). Completion of each line of the Pope Form 232 denotes a complete inventory of contents. The "out time/signature" block is annotated by the person signing out/assuming responsibility for the CTK/equipment. The "in" block is annotated by the tool CTK custodian/alternates or designated representative when the CTK/equipment is returned by the user. The person annotating the "out" block is not the same person annotating the "in" block.

7.3. Ensure a secure area is designated to store CTKs when not in use. The area is capable of being locked and provides protective measure, such as monitoring or controlled key access, to preclude access by unauthorized personnel.

7.4. Dispatched CTK's are locked and secured to an immobile object when left unattended. CTK's locked and located within the restricted access area do not need to be secured to an object.

7.5. Equipment and accessories that do not present a FOD potential and are not dispatched from a work center, support section, or tool room, need not be included in a CTK; however, this equipment must have designated storage locations for accountability and listed on the MIL.

7.5.1. If industrial shop machinery and non-dispatchable CTK's are used during the shift; inventory prior to task and at completion.

7.5.2. At a minimum, storage cabinets/drawers will be labeled to identify the contents.

7.6. CTKs stored outside of tool room are subject to this instruction.

8. Lost Tool/Object Procedures.

8.1. The person issued the CTK/equipment must search the immediate work area for the item. After a thorough search, immediately initiate a PAFB Form 525. The wing FOD NCO or QA issues a control number for the report. The squadron maintenance officer/superintendent or production supervisor

ensures a thorough search is conducted to include utilizing x-ray, borescope, and other state of the art equipment to locate tools/objects in inaccessible areas if required.

8.2. If an item is missing after aircraft/equipment maintenance, the Maintenance Operations Center (MOC) and QA will be informed. The MOC will notify 43MXG/CC or CD of the missing tool immediately if it is mission impacting (any delay in launch sequence i.e.: preflight, end of runway, take-off time, etc.). If non-mission impacting the 43MXG/CC or CD will be notified immediately unless loss occurs after 2300 hours local; then notify within the first hour of the next duty day.

8.3. The Maintenance Operations Officer (MOO) ensures that a Pope Form 525 tracking log is maintained to control and track all lost tool reports for the unit.

8.4. If the item is not recovered, an entry is placed in the aircraft active forms (red X) stating what was lost and the suspected area or a copy of the Form 525 is placed in the aircraft jacket file. A copy of the completed report is given to QA/Wing FOD NCO.

8.5. Segregate completed Pope Form 525s, "recovered" and "not recovered." These forms will be maintained on file for 1 year.

8.5.1. Limit authorization to clear red X's for lost tools to no lower than Maintenance Supervision.

8.6. Lost Tool/Object Procedures for Taxied Aircraft:

8.6.1. If a tool or object is discovered missing and the affected aircraft has taxied, the following procedures to hold or recall the aircraft are followed:

8.6.1.1. The person making the discovery will immediately notify the MOC through the most expedient means possible. Additional notifications are made to the expediter or work center supervisor, and the maintenance officer/supervisor on duty.

8.6.1.2. The MOC notifies the Command Post. The Command Post/squadron operations center instructs the aircrew to return to the parking spot. If the aircraft is airborne at the time of notification, the aircraft is directed to return to base with minimal maneuvering.

8.6.1.3. Once aircraft has landed initiate Lost Tool/Object investigation Report and follow the procedures in para 8.

9. Contingency Requirements.

9.1. All contingency tool kits will be inventoried every 18 months; although once a contingency kit is used it will be inspected and inventoried in accordance with section 5 of this instruction. Document inventories on a Pope AFB Form 232 and inspections on a Pope AFB Form 524.

9.2. Contingency kits will not have batteries stored in equipment (i.e., flashlights, multimeters, etc.).

9.3. The use of the chit system at deployed locations is not mandatory. A sign out/in log, AF Form 1297 or Pope Form 232 may be utilized to control CTK's and equipment.

10. Rag Control Procedures.

10.1. Rag control applies to organizations and personnel performing on-equipment aircraft maintenance/off-equipment aircraft maintenance and jet engine maintenance. While marking or identifying each rag with a CTK number is not necessary, issue and receipt procedures will be established to

ensure positive control. Rags of uniform size and colors, such as those available through GSA and commercial contract suppliers may be used to facilitate control procedures. Some recommended methods of rag control include:

10.2. Issuing rags on a one-for-one swap.

10.2.1. Issuing a predetermined number of rags with CTK's and including them on the CTK contents listing.

10.2.2. Issuing rags in pre-packaged containers with the number of rags marked on each container.

10.3. Rags will be treated like tools and will be controlled by either TAS, AF Form 1297 or chits. Lost tool/object procedures will be followed for missing or lost rags.

10.4. The CTK custodian will establish procedures to ensure how many rags are on hand (segregate; clean and dirty/oily rags).

10.5. Rags in a CTK will be in a fire proof locked container. The container will be marked like a tool, with the number of rags in the container/bag.

10.6. Pre-package containers will be used for mobility tasking and TDY requirements (segregated; clean and dirty/oily rags).

11. Bench Stock.

11.1. Tool Room/CTK Manager will submit to the section chief requests for additions/deletions to the bench stock items authorized.

11.2. Bench stock items are inventoried in conjunction with the tool kit inventory and replenished as necessary (i.e. rubber gloves, safety wire, Teflon tape, etc.).

11.3. The use of deployable bench stock kits are a squadron option.

11.3.1. Kits may be issued in support of aircraft departing off station to locations lacking adequate supply support. They shall not be issued for use at home station or to TDY locations which have fully functional supply systems.

11.3.2. Kits are controlled by and secured in the squadron support section and maintained by the squadron bench stock monitor.

11.3.3. An inventory is required in each kit. The inventory contains an entry for each line item consisting of National Stock Number, nomenclature, part number, and quantity contained in the kit. Small items are placed in bags for control purposes. Each line item, or bag of items, is labeled with the same information as required on the inventory. A separate sheet is maintained to track items as they are used.

11.3.4. Kits are signed out utilizing Pope Form 232, chits, AF Form 1297 or a computerized Tool Control System. The kit is completely inventoried by the individual gaining responsibility. During deployment the individual responsible for the kit updates the inventory as items are used. The kit is inventoried by support section personnel upon return.

11.3.5. Kits are periodically checked to ensure they contain only those items required for TDY support.

12. Locally Manufactured or Developed Tools and Equipment.

12.1. Locally manufactured tools must be approved for manufacturer by QA. QA will maintain a record of all locally manufactured tools.

12.2. Section chiefs will notify QA of CTK location of locally manufactured tools.

13. Warranted Tools.

13.1. CTK custodian will track warranted tools by TAS or Log Book. Damaged or broken warranted tools will be stored in a separate secure location.

13.2. All removed tools will be de-etched. Account and track all damaged or broken tools until replaced by contractor. Documentation should include, at a minimum tool name, CTK # removed from, date/time turned in for warranty, date/time replaced by contractor, name of person turning in the item, and contractor.

13.3. All other broken tools aspects are outlined in para 6. of this instruction.

WINFIELD W. SCOTT III, Brigadier General, USAF
Commander

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

AFI 10-403, *Deployment Planning*

AFI 21-101, *Aerospace Equipment Maintenance Management*

AFI 21-101, AMC Sup 1, *Aerospace Equipment Maintenance Management*

AFOSHSTD 91-100, *Aircraft Flight Line-Ground Operations and Activities*

AFOSHSTD 161-21, *Hazard Communication*

POPEAFBI 21-111, *Foreign Object Damage Prevention Program*

T.O. 32-1-101, *Maintenance & Care of Hand Tools*

Abbreviations and Acronyms

A/R—Aerospace Repair

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFOSH—Air Force Occupational Safety and Health

CTK—Composite Tool Kits

FO—Foreign Object

HAZMAT—Hazardous Material

IAW—In Accordance With

ID—Identification

LOX—Liquid Oxygen

MIL—Master Inventory Listing

MOC—Maintenance Operations Center

MOO—Maintenance Operations Officer

MXG—Maintenance Group

NCO—Non Commissioned Officer

QA—Quality Assurance

QAR—Quality Assurance Representative

TAS—Tool Accountability System

TDY—Temporary Duty

TO—Technical Order

Attachment 2**WORLDWIDE IDENTIFICATION CODES**

Pope Air Force Base

PVFQ 23 Fight Group Quality Assurance
PVAD 23 Fighter Group DEMO TEAM
PVAE 23 AMXS EOR
PVA4 74 AMU Support Section
PVA5 75 AMU Support Section
PVMA 23MXS Armament Section
PVMC 23MXS Computer Section
PVME 23MXS Egress Section
PVMF 23MXS Munitions Storage
PVMG 23MXS Munitions PGM Section
PVMH 23MXS Munitions Line Delivery
PVMI 23MXS Munitions Inspections Section
PVMJ 23MXS Munitions Training/Mobility
PVMK 23MXS Munitions Conventional Section
PVML 23MXS Munitions Trailer Maintenance Section
PVMM 23MXS ECM Section
PVMP 23MXS Phase Section
PVMR 23MXS Repair & Reclamation Section
PVMS 23MXS Sensors Section
PVMT 23MXS Training Flight Section
PVMW 23MXS Wheel & Tire Section

43d Maintenance Squadron

PVMXMT 43d MXSISO/AR

Wheel & Tire – PVMXTS

AR Crash Trailer – PVAERO

Engines – PVMXMP

Engine Test Cell - PVMXTC

Hydraulics – PVMXHY

Elen – PVMXEE

SM – PVMXSM

Washrack - PVMXWR

Metals Tech – PVMXMS
NDI – PVMXND
Fuels – PVMXFC
AGE – PVMXAG
Electro Warfare – PVMXEW
PMEL – PVMXPL
Refurb – PVMXRF
Conventional Avionics –
PVMXCA
Survival Equipment - PVMXSE
AMXS
743 AMXS – PV743
41 AS (Flight Crew) – PV41
41 AMU – PVAM1
2 AS (Flight Crew) – PV02
2 AMU – PVAM
43 -21 section - PVAMD
Life Support – PVLS2
43 MOS
QA – PVMXQA
AFREP – PVMXQG
MOC – PVMXMC
PTEC - PVMXPC
3rd APS – PVAPS
AES – PVAES