

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

**COLUMBUS AIR FORCE BASE
INSTRUCTION 21-100**



**11 MARCH 2014
Certified Current, 9 January 2024**

Maintenance

**TEST, MEASUREMENT, AND DIAGNOSTIC
EQUIPMENT (TMDE) HANDLING
PROCEDURES**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction applies to all agencies requiring support from the Precision Measurement Equipment Laboratory (PMEL). This publication does apply to Air Force Reserve Command (AFRC) Units. This publication does not apply to the Air National Guard (ANG).

Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 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 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).

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include grammatical errors fixed and changes to Attachment 3.

1. References:

- 1.1. The references pertaining to PMEL and TMDE are listed in AFI 21-101, *Aircraft & Equipment Maintenance Management* and Technical Order (TO) 00-20-14, *Air Force Metrology and Calibration Program*, Section 3. Work center supervisors and TMDE

coordinators will be familiar with the contents of these references as they pertain to handling, repair and calibration of their Owing Work Center (OWC) TMDE.

2. Terms:

2.1. For purposes of this instruction, TMDE coordinator and PMEL monitor are the same. The terms used throughout this instruction are explained in TO 33K1-100-1, *Calibration Procedures for Maintenance Data Collection Codes and Calibration Measurement Summaries*, Section 3.

3. Forms:

3.1. Descriptions and instructions for the AFTO Forms used by PMEL are contained in TO 00-20-14, Section 5.

4. Responsibilities:

4.1. Unit commanders, supervisory personnel and TMDE coordinators at all levels are responsible for ensuring compliance with this instruction.

5. Computer Printouts/Products:

5.1. The PMEL scheduling section maintains and distributes computer products on a monthly and a quarterly basis.

6. OWC TMDE Coordinator Appointment and Responsibilities:

6.1. Work centers supported by PMEL will appoint a primary and an alternate TMDE coordinator in writing. The appointment letter (Attachment 2) must be signed by the work center branch chief or maintenance supervisor. Send the original to the PMEL scheduler, 14 FTW/MXMPS, and keep a copy in the TMDE coordinator's PMEL Book.

6.1.1. The TMDE coordinator and alternate must be trained by the PMEL scheduler within 30 days of appointment. The TMDE coordinator training can be scheduled by calling the PMEL scheduler at 434-7831 between 0700 and 1545, Monday through Friday.

6.2. Review each line entry on PMEL listings monthly for accuracy and annotate any errors, corrections or updates in red. Particular attention should be paid to the identification (ID) number, part/model number, serial number and due date.

6.2.1. Return a signed and corrected copy to 14FTW/MXMPS within five (5) work days of receipt.

6.2.2. File the corrected original in the OWC TMDE coordinator's PMEL Book.

6.2.3. Update PMEL listings as changes occur.

6.3. Maintain a PMEL Book with the following tabs:

6.3.1. Tab A – Letter signed by the work center branch chief or maintenance supervisor designating the primary and alternate TMDE coordinator. (OWC must contact PMEL whenever there is a change of TMDE coordinators.)

6.3.2. Tab B – This tab contains a 5" x 8" plastic bag or pocket to hold hand receipts for equipment that is at PMEL for calibration/repair.

- 6.3.3. Tab C – Current monthly equipment schedule, if one is received.
 - 6.3.4. Tab D – Current quarterly master inventory listing and copies of the last two semiannual 100-percent inventories.
 - 6.3.5. Tab E – Copies of status letters sent out by the PMEL scheduler.
 - 6.3.6. Tab F – Current TMDE coordinator training package. (Includes samples, examples, customer handouts, training guides and/or any helpful hints.)
 - 6.3.7. Tab G – A current copy of the wing instruction CAFBI 21-100.
 - 6.3.8. Tab H – A minimum of the last two (2) quarterly CAFB TMDE newsletters.
 - 6.3.9. Tab I – Instructions on how to access ETIMS to read Technical Orders, i.e., TO 00-20-14, TO 33K1-100-1 and any others required by para 6.5 of this publication. Instructions on how to access AFI 21-101, AETC Supplement and CAFB Supplement.
 - 6.3.10. Tab J – MFR stating that the squadron commander has been briefed on roles and responsibilities as listed in TO 00-20-14 for TMDE coordinators and users and ensure they are aware of calibration requirements for all Air Force TMDE.
- 6.4. Train other users within area of responsibility concerning proper care and maintenance, limited or special calibration requirements, and proper documentation techniques on user calibrated/maintained TMDE.
- 6.4.1. Train users on the importance of reading and understanding limitations placed on TMDE AFTO forms and the reason for limitations.
 - 6.4.2. Train users on proper procedures for documenting calibrations of local manufactured check devices/equipment utilized for making qualitative/quantitative measurements within their area of responsibility.
 - 6.4.3. Educate all equipment custodians within their area of responsibility to check with the primary or alternate OWC coordinator prior to ordering any equipment that might require calibration prior to use and ensure the new equipment gets into PAMS for tracking.
- 6.5. Shall have access to and be familiar with contents of TO 33K-1-100-1 and TO 33K-1-100-2 *Calibration Procedures for Maintenance Data Collection Codes and Calibration Measurement Summaries*; TO 00-20-14, *Air Force Metrology and Calibration Program*; any applicable Calibration Measurement Summaries TO's; TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance, and Test of Electrical Equipment*; TO 33-1-27, *Logistic Support of Test Measurement and Diagnostic Equipment*; and the Special Certification Roster (SCR) or equivalent document identifying persons designated as calibration limitations approval authority.
- 6.6. Deliver TMDE to the PMEL with all ancillary equipment (e.g., preamps, power supplies, adapters, cables or probes) needed for calibration. PMEL personnel shall advise the OWC coordinators when an item is not sufficiently complete to allow full calibration and may return the item without action if the ancillary equipment and/or technical data are not readily available.

6.7. The TMDE user shall ensure adequate maintenance and technical data for each item of TMDE is available, maintain technical data file for equipment owned and provide technical data for their TMDE when requested by the PMEL.

6.8. Inform PMEL if noise dosimeters, sound-level meters, or acoustic calibrators are used in the "AF Occupational Noise and Hearing Conservation Program." Those items used in support of the "AF Occupational Noise and Hearing Conservation Program" shall be identified by the user and calibration shall be performed IAW the shortest calibration interval listed in the appropriate calibration authority (see TO 00-20-14, para. 3.1.2 or AFOSHSTD 48-20, *Air Force Occupational Safety and Health Standard*)

6.9. Coordinate with PMEL anytime a piece of TMDE is turned into base supply, DRMO, or transferred to another account.

6.10. Conduct a 100-percent inventory and reconcile to the PAMS database semiannually. Document on an MFR and place a copy in the PMEL Book in Tab D.

6.11. Brief squadron commanders on roles and responsibilities as listed in TO 00-20-14 for TMDE coordinators and users. Also brief squadron commanders to ensure they are aware of calibration requirements for all Air Force TMDE and the requirements to follow established procedures to verify TMDE is properly calibrated prior to use. Document this brief and place a copy in the PMEL book in Tab J.

6.12. All other TMDE coordinator responsibilities are listed in TO 00-20-14, Section 3.

7. TMDE User/Owner Responsibilities:

7.1. User/owner responsibilities are listed in TO 00-20-14, Section 3, and in TO 33-1-27.

8. PMEL Scheduling Procedures:

8.1. Scheduled TMDE Delivery:

8.1.1. The OWC TMDE coordinator will make every attempt to deliver item(s) to PMEL between the hours of 0730 and 1100 on the date due calibration. **NOTE:** TMDE is not overdue until midnight of date due calibration.

8.1.2. Exceptions to this delivery schedule must be coordinated with the PMEL scheduler/ leadman. This laboratory accepts inputs up to five (5) duty days early with prior coordination.

8.1.3. The PMEL scheduler will contact the OWC TMDE coordinator when TMDE calibration is complete and ready for pickup.

8.1.4. The OWC will have five (5) duty days from the date notified to pick up completed TMDE.

8.1.5. The original hand receipt issued by the PMEL shall be required to pick up TMDE.

8.1.5.1. If the original hand receipt cannot be presented at the time of pick up, a letter signed by a production supervisor or above, for contractor OWC's, a staff sergeant (E-5) or above, for active duty OWC's, or the equivalent for government employee OWC's, stating why the hand receipt is not available will be required to receive TMDE.

8.1.5.2. With the letter, the PMEL monitor will sign a log indicating the TMDE has been received.

8.2. **Unscheduled TMDE Delivery:**

8.2.1. TMDE requiring initial calibration or unscheduled maintenance will be accepted between the hours of 0730 and 1100, Monday through Friday.

8.2.2. The unscheduled item must have a completed AFTO Form 350, *Repairable Item Processing Tag*, attached to the item.

8.2.3. The PMEL scheduler will contact the OWC TMDE coordinator when the item repair/calibration is completed and item is ready for pickup.

8.3. **Priority Service Requests:** The priority item must be delivered to the PMEL scheduling section with a priority request letter, signed by the unit maintenance officer or manager. The letter (Attachment 3) must state whether the item requires mission essential or emergency calibration or repair, ID Number, Part Number, OWC, date and time the unit is required (Not ASAP), and primary and alternate contacts. Priority equipment will be accepted at any time with prior telephone coordination with the PMEL scheduler/leadman.

8.3.1. **Mission Essential Calibration or Repair:** One-of-a-kind or one-deep TMDE that is part of a unit's deployment package, or is critical to daily operations, or TMDE assets falling below critical availability levels. The PMEL will schedule the unit with sufficient priority level to ensure the work is completed or the maintenance status changes (i.e., from INW to AWP, DEF, etc.) by the date and time specified by the customer. The owning or using organization must pick up the unit immediately upon notification of completion. For mission-essential actions that are shipped off base, the PMEL will coordinate with AFPSL or the depot via telephone or e-mail of the impending arrival of the priority and ship the unit by priority means.

8.3.2. **Emergency Calibration or Repair:** For one-of-a-kind TMDE that is inoperable or due calibration and for which a critical job is at a work stoppage, the PMEL shall immediately place the unit into work. When overtime is authorized, the item will be worked continuously until the status changes (e.g., AWP, DEF, etc.). The PMEL manager may require an OWC technician familiar with the TMDE to accompany the TMDE and remain at the PMEL to provide technical assistance until the item is completed or placed in an interim-complete status. The owning or using organization must pick up the unit immediately upon notification of completion. For emergency actions that are shipped off base, PMEL will coordinate with AFPSL or the depot via telephone or e-mail of the impending arrival of the priority and ship the unit by priority means.

8.4. **TMDE Overdue Calibration:** The PMEL scheduler will notify the TMDE coordinator within ten (10) calendar days (20 calendar days for off-base customers), via telephone and/or e-mail, of TMDE not delivered on or before the scheduled date due calibration.

8.5. **TMDE Deferred: (Awaiting Parts (AWP) and Hold):**

8.5.1. The PMEL scheduler will notify the OWC within three (3) duty days, when their TMDE is placed in AWP or hold status.

8.5.2. OWC supervisors, TMDE coordinators and the PMEL scheduler will closely monitor the status of requisitions against AWP TMDE. When requested, work centers must submit mission impact statements to PMEL scheduling section for requisitions that have unacceptable estimated delivery dates.

8.6. Test Equipment Abuse:

8.6.1. Incidents of TMDE abuse will be elevated to the appropriate level of command (Maintenance Supervisor/Branch Chief) for corrective action.

8.6.2. If necessary, the abused item will be returned to the OWC for corrective actions to be accomplished before PMEL scheduling section will accept the item for repair/calibration.

8.7. Time Compliance Technical Order (TCTO) Policy and Procedures are determined by TO 00-5-15, *Air Force Time Compliance Technical Order Process*, and will be complied with by PMEL. All TMDE TCTO's will be scheduled by the PMEL scheduler based on the type TCTO, quantity of items to be modified and length of time to comply with the TCTO. TCTO planning and documentation will be IAW AFI 21-101 and applicable technical orders.

JAMES R. SEARS, JR., COLONEL, USAF
Commander, 14th Flying Training Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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

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

TO 00-20-14, *Air Force Metrology and Calibration Program*, 30 September 2013

TO 33K1-100-1 and TO 33K-1-100-2, *Calibration Procedures for Maintenance Data Collection Codes and Calibration Measurement Summaries*, 30 November 2012

TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance and Test of Electrical Equipment*, 1 August 1988

TO 33-1-27, *Logistics Support of Test Measurement and Diagnostic Equipment in FSC*, 1 October 1994

AFOSHSTD 48-20, *Air Force Occupational Safety and Health Standard*, 30 June 2006

TO 00-5-15, *Air Force Time Compliance Technical Order Process*, 1 January 2010

Adopted Forms

AFTO Form 350, *Repairable Item Processing Tag*, 14 April 2011

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

Attachment 2

SAMPLE LETTER

YOUR LETTERHEAD

Date:

MEMORANDUM FOR 14 FTW/MXMP

FROM:

SUBJECT: Appointment of TMDE Coordinator

The following persons are appointed as TMDE coordinators for owning work center

(number)

NAME GRADE PHONE#

Primary-

Alternate-

Maintenance Supervisor/Branch Chief

Attachment 3
SAMPLE LETTER
YOUR LETTERHEAD

Date:

MEMORANDUM FOR 14 FTW/MXMP

FROM:

SUBJECT: Priority Service Request

1. Request the following piece of Test, Measurement and Diagnostic Equipment (TMDE) be worked as (**must select one**) ____ Emergency, ____ Mission Essential priority. There is no alternate measurement method or suitable substitute TMDE available to satisfy the requirement for this item.

ID Number:
Part Number:
Nomenclature:
Owning Work Center:

- 2. Justification for requested priority service: (See TO 00-20-14 para., 3.7 a. b.)
- 3. This item is required no later than (i.e., Date/Time) to meet mission requirements:
- 4. When the item is ready for pickup, contact:

PRIMARY:
Name:
Phone:

ALTERNATE:
Name:
Phone:

Maintenance Supervisor/Branch Chief