



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
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WASHINGTON DC 20350-3000

MCO 4733.1D
LPM
30 May 2023

MARINE CORPS ORDER 4733.1D

From: Commandant of the Marine Corps
To: Distribution List

Subj: MARINE CORPS GROUND TEST, MEASUREMENT, AND DIAGNOSTIC
EQUIPMENT (TMDE) CALIBRATION AND MAINTENANCE PROGRAM (CAMP)

Ref: See Enclosure (1)

Encl: (1) References
(2) Glossary of Acronyms and Abbreviations

1. Situation. To provide Marine Corps policy and guidance for the administration and technical direction of the Marine Corps Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP). This Order is in accordance with references (a) through (ab).

2. Cancellation. MCO 4733.1C.

3. Mission. The mission of the Marine Corps TMDE CAMP is to maintain the prescribed accuracy and reliability of measurement standards to ensure the satisfactory performance and safety of all Marine Corps ground TMDE.

4. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent

(a) To provide Marine Corps field and depot level maintenance activities with diagnostic capabilities to detect and isolate faults at design threshold levels.

(b) To ensure the Marine Corps uses the National Institute of Standards and Technology (NIST) for specifications, tolerances and other technical requirements for weights and measurements.

(c) To maximize the use of Marine Corps Calibration Facilities (CF) as the preferred field level maintenance activity for calibration and maintenance of Marine Corps procured TMDE.

(2) Concept of Operations

(a) The Chief of Naval Operations (CNO) and the Commandant of the Marine Corps (CMC) have adopted the American National Standards Institute (ANSI)-approved, and the National Conference of Standards Laboratories (NCSL) published, "ANSI/NCSL Z540-1-1994" and the "ANSI/ISO/IEC 17025:2017" as the primary basis for evaluation and accreditation criteria to ensure Naval and Marine Corps CFs are capable of performing required calibration measurements.

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In partnership, the Marine Corps and Navy will administer Metrology and Calibration (METCAL) Quality Programs with common goals, criteria, and standards of excellence. In doing so, Marine Corps technical publications will remain in sync with Navy technical instructions and manuals when addressing METCAL processes and procedures that are common to both services.

(b) The Marine Corps will incorporate Conditions Based Maintenance Plus (CBM+) utilizing Conditions Based Maintenance (CBM) data with Reliability-Centered Maintenance (RCM) analysis in accordance with reference (a) for maintenance and employment of TMDE.

(c) Acquisition of TMDE is essential for the administration of the Marine Corps TMDE CAMP. TMDE will be initially procured or procured as replacements by the Program Manager-Supply and Maintenance Systems (PM-SMS), Portfolio Manager-Logistic Combat Element Systems (Pfm-LCES), Marine Corps Systems Command (MARCORSYSCOM), and/or Marine Corps Logistics Command (MARCORLOGCOM) to support combat essential and mission-critical equipment in accordance with references (b) through (e).

(d) TMDE will be calibrated to the extent necessary to perform the required measurements to fulfill operational requirements.

(e) Calibrations will be accomplished in the most cost-effective manner that will satisfy operational requirements.

(f) All Marine Corps organizations requiring calibration services through Inter-service Support Agreements (ISA) or commercial services contracts with any activity outside of the Marine Corps, will request approval in writing from MARCORSYSCOM PM-SMS in regard to, and to ensure the following:

1. The Calibration Service Provider (CSP) will meet the same requirements as the Marine Corps TMDE CAMP. The provider will provide a copy of the scope of accreditation to ensure it meets ISO/IEC 17025:2017 & ANSI/NCSL Z540-1-1994.

2. A contract or Statement Of Work (SOW) will specify that the calibration laboratory providing support is subject to a scheduled annual onsite review by Marine Corps/Navy auditors to validate compliance with the above requirement in accordance with reference (n).

3. A certificate or report of calibration, stating 17025:2017 & ANSI/NCSL Z540-1-1994 specifications, will be provided by the outside support activity for each item that is calibrated.

4. Units coordinating support through contracts will maintain copies of all current contracts. Additionally, these units will maintain copies of all certificates and reports of calibration from outside support activities for a period of three years or until the next calibration is completed and a new certificate/report of calibration is issued.

5. MARCORSYSCOM PM-SMS recognizes Marine Corps depots as a service provider to Marine Forces (MARFORs) and as such, depots will research CSPs who support unfunded program office activities (i.e., depot-specific equipment that requires a CSP is not supported by MARCORSYSCOM PM-SMS).

c. Subordinate Element Missions

(1) Deputy Commandant, Installations and Logistics (DC I&L)

(a) Serve as the Commandant of the Marine Corps' advocate for the Marine Corps TMDE CAMP.

(b) Establish and promulgate Marine Corps enterprise-level TMDE CAMP policy that incorporates CBM+ concepts and RCM principles per reference (a).

(2) Deputy Commandant, Programs and Resources (DC P&R)

(a) Ensure Program Objective Memorandum (POM)-approved resources are distributed to the appropriate comptroller to efficiently execute Marine Corps TMDE CAMP activities.

(b) Receive and review Marine Corps TMDE CAMP current year deficiency requests for funding consideration.

(3) Deputy Commandant, Combat Development & Integration (DC CD&I). Coordinate with stakeholders to develop and validate capability requirements as part of the force development process, to include identification and request for appropriate resourcing as part of the Planning, Programming, Budgeting, and Execution (PPBE) process. All actions between stakeholders will drive formulation of POM funding requirements.

(4) Commander, Marine Corps Systems Command (COMMARCORSSYSCOM)

(a) Develop and implement internal command policies and procedures to facilitate the execution of this Order and incorporate CBM+ concepts and RCM principles in accordance with reference (p).

(b) Publish and maintain Technical Instructions (TI) and Technical Manuals (TM) that provide in-depth guidance for the following sub-functions/programs of the TMDE CAMP:

1. Calibration Requirements Marine Corps TMDE CAMP.
2. Combat Ready Storage Infantry Gage Program.
3. General Support Maintenance Test Measurement and Diagnostic Equipment Calibration Contact Team (GSM TMDE).
4. Infantry Weapons Gage Calibration Program.
5. Marine Corps Transfer Standards Program.
6. Navy and Marine Corps Calibrations Laboratory Audit-Certification.
7. Special Calibrations of Torque Tools Marine Corps TMDE CAMP.
8. Survey Instrument Calibrations Program.
9. Marine Corps METCAL Quality Program.

10. TMDE CAMP Maritime Prepositioning Force (MPF).
 11. Enhanced Equipment Allowance Pool (EEAP).
 12. TMDE CAMP Marine Corps Prepositioning Program - Norway (MCPN).
- (c) Utilize the General Purpose Tools, Test Sets, and Calibration team (GPTTS-C) to facilitate the CAMP.
- (d) Ensure program managers for Marine Corps equipment coordinate with PM-SMS to conduct a calibration requirements analysis or an abbreviated calibration measurements requirements study per reference (g) in order to properly initiate requirements-based acquisitions on new TMDE.
- (e) Budget for and initiate the acquisition and development of instrument calibration procedures for new or replacement measurement standards and calibration equipment in accordance with references (b) through (e).
- (f) Conduct evaluations of Marine Corps CFs from both an administrative and technical perspective, in order to maintain an effective and current CAMP.
- (g) Manage the Marine Corps METCAL Quality Assurance Program, ensuring the following functions are performed:
1. Provide certified auditors for participation in external audits.
 2. Participate in Joint service and CSP audits.
 3. Schedule and conduct triennial external audits and 18 month on-site visits of all Marine Corps CFs and report all results to PM-SMS.
 4. Schedule and conduct Marine Corps CF evaluation on results of Marine Corps Measurement Comparison Program.
 5. Issue or revoke a Marine Corps CFs Certificate of Competency depending on the outcome of scheduled surveillance visits, internal or external audits.
- (h) Establish and maintain a Marine Corps Liaison Office, Naval Surface Warfare Center (NSWC) that provides the following support functions:
1. Provide liaison between MARCORSYSCOM, Marine Corps CFs, and the Metrology Engineering Center (MEC) located at NSWC Corona, California.
 2. Coordinate with the MEC for the preparation of calibration procedures and evaluation of calibration equipment requirements to support the CAMP.
 3. Provide direct liaison to all Marine Corps CFs concerning calibration procedures and other technical problems relating to the calibration of TMDE.

4. When directed by MARCORSYSCOM, perform administrative and technical evaluations of Marine Corps CFs.

5. Coordinate requests from the CTMS for the performance of engineering services by the MEC in support of the CAMP.

6. Coordinate with the MEC for the revision of calibration procedures used by the Marine Corps, as directed by MARCORSYSCOM PM-SMS.

7. Coordinate calibration requirements with the MEC for newly procured Marine Corps TMDE.

8. Carry out other duties as directed by the MARCORSYSCOM.

(i) Manage calibration policies and support for the MPF, EEAP, and the MCPP-N.

(j) Validate/provide item technical referential data to all authoritative data sources, ensuring TMDE assets that require calibrations are properly coded and interoperable with current logistics systems.

(5) Commanding General, Marine Corps Logistics Command (CG, MARCORLOGCOM)

(a) Incorporate CBM+ concepts and RCM principles within the depot CFs in accordance with reference (p).

(b) Develop and implement command policy for the administration of the CAMP as it pertains to the unique depot requirements not included in this Order.

(c) Provide overflow calibrations and TMDE maintenance support to MARFOR CFs on a fiscally reimbursable basis.

(d) Comply with the Marine Corps METCAL Quality Program and coordinate with PM-SMS for audit scheduling determinations.

(e) Utilize ISAs or commercial services contracts in accordance with this Order for support of unique requirements that cannot be addressed within the Marine Corps Depot CFs.

(f) Report all TMDE performance discrepancies to MARCORSYSCOM, PM-SMS, and initiate a product quality deficiency report per reference (h).

(g) Maintain liaison with the PM-SMS and GPTTS-C concerning calibration procedures and other technical problems relating to the calibration of TMDE belonging to the MARFOR.

(h) Calibrate TMDE prior to issuance to MARFOR, unless prior coordination is made with receiving calibration facility and receipt without calibration is deemed acceptable. In those instances the equipment will be submitted to the local calibration provider or CSP for service as agreed upon. Equipment purchased by program offices outside of PM-SMS will coordinate with LOGCOM reps to ensure that those items meet calibration requirements via vendor service or coordination will occur to have the items calibrated by a depot calibration facility prior to issue.

(6) Commanding General, Training and Education Command (CG, TECOM)

(a) Formal schools are responsible for identifying TMDE used for measurement of values where the accuracy of the measurement is not considered essential to the effectiveness of the training involved, for assignment of Calibrations Not Required (CNR) status.

(b) When performance is suspect, submit TMDE for repair to a Marine Corps CF. Schools may establish ISAs or commercial services contracts in accordance with this Order.

(7) Commanders, Fleet Marine Forces (FMF)

(a) Administer unit calibration programs in accordance with this Order.

(b) Refer to all 4733 series TIs published by MARCORSYSCOM for detailed procedural guidance on properly administering the Marine Corps TMDE CAMP.

(c) Ensure units request assistance, as necessary, from the supporting CF for the education of personnel and questions regarding the Marine Corps TMDE CAMP.

(d) When units utilize a calibration service provider as defined within reference (1), establish ISAs or commercial services contracts in accordance with this Order.

(e) Only TMDE procured by MARCORSYSCOM as a result of an official requirement will be supported by MARFOR CFs.

(f) Units that purchase unsupported TMDE not listed in reference (m) or published fielding documentation will assume all lifecycle support management responsibilities to include repair and/or calibration. TMDE capabilities purchased outside of official requirements should include submission of universal needs statements via the chain of command.

(g) During annual TMDE review and calibration support requests, ensure units utilize Special Calibration, Inactive, and Calibration Not Required (CNR) calibration statuses to the maximum extent that will still allow for operational support requirements to be met.

(h) Ensure units submit TMDE no more than 30 days prior to the calibration due date in order for MARFOR CFs to accomplish timely maintenance and calibration of TMDE. Exceptions must be requested in writing and approved by the CF Laboratory Manager.

(i) Ensure MARFOR CFs participate in the Marine Corps Transfer Standards Program.

(j) Ensure MARFOR CFs use the most up to date automated calibration and maintenance software, as fielded and approved by PM-SMS, for the collection of all calibration and repair attribute data.

(k) Ensure MARFOR CFs are compliant with the Marine Corps METCAL Quality Program and maintain a certification from MARCORSYSCOM PM-SMS per reference (n).

(l) Ensure the MARFOR CFs provide training, as requested or required, to using units for the education of personnel in analyzing measurement requirements and proper use of TMDE.

(m) Ensure units are staggering like items to ensure availability for day-to-day operations.

(n) Ensure units coordinate and document annual review of all TMDE per reference (q).

5. Administration and Logistics

a. Records Management. Records created as a result of this directive shall be managed according to National Archives and Records Administration (NARA)-approved dispositions per reference (i) to ensure proper maintenance, use, accessibility and preservation, regardless of format or medium. Records disposition schedules are located on the Department of Navy/Assistant for Administration (DON/AA), Directives and Records Management Division (DRMD) portal page at: <https://portal.secnav.navy.mil/orgs/DUSNM/DONAA/DRM/Records-and-Information-Management/Approved%20Record%20Schedules/Forms/AllItems.aspx>. Refer to reference (ab) for Marine Corps records management policy and procedures.

b. Privacy Act. Any misuse or unauthorized disclosure of Personally Identifiable Information (PII) may result in both civil and criminal penalties. The Department of the Navy (DON) recognizes that the privacy of an individual is a personal and fundamental right that shall be respected and protected. The DON's need to collect, use, maintain, or disseminate PII about individuals for purposes of discharging its statutory responsibilities shall be balanced against the individuals' right to be protected against unwarranted invasion of privacy. All collection, use, maintenance, or dissemination of PII shall be in accordance with the Privacy Act of 1974, as amended (reference (j)) and implemented per reference (k).

c. Internal Controls. The policies for this Order that contain provisions for internal controls in accordance with MCO 4000.60 and MCO 5200.24E (MICP) that must be evaluated can be found in references (x), (y), (z), and (aa).

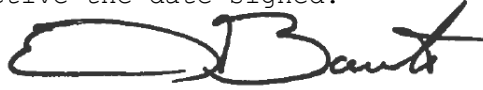
d. Recommendations. Recommendations concerning the content of this Order should be sent to Headquarters Marine Corps (HQMC), Installations and Logistics (I&L), Logistics Division (LP), Materiel Readiness and Management Branch (LPM), Commodity Management Section (LPM-2) through the proper chain of command.

e. This Order will be managed in accordance with record schedule 5000-8 of reference (i).

6. Command and Signal

a. Command. This Order is applicable to the Marine Corps Total Force. This Order is not applicable to Marine Corps Aviation calibration facilities that operate under the Naval Aviation Command Calibration Program.

b. Signal. This Order is effective the date signed.

A handwritten signature in black ink, appearing to read "E. D. Banta", with a stylized flourish at the end.

E. D. BANTA
Deputy Commandant for
Installations and Logistics

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References

- (a) MCO 4790.25
- (b) DoD Directive 5000.01 CH 1, "The Defense Acquisition System," July 28, 2022
- (c) DoD Instruction 5000.02 CH 1, "Operation of the Defense Acquisition Framework," June 8, 2022
- (d) SECNAVINST 5000.2G
- (e) SECNAVINST 5400.15D
- (f) MCO 4000.57A
- (g) DoD Directive 4151.18 CH 1, "Maintenance of Military Materiel," August 31, 2018
- (h) MCO 4855.10C
- (i) SECNAV M-5210.1
- (j) 5 U.S.C. 552a
- (k) SECNAVIST 5211.5F
- (l) OPNAVINST 3960.16B
- (m) TM 10510-14/1, "General Purpose TMDE Listing and Support Items", January 31, 2022
- (n) TI 4733-35/24D, "USMC Metrology Calibration Quality Assurance Program," March 30, 2018
- (o) TI 4733-35/25A, "Fleet Automotive Support Team," October 31, 2019
- (p) TI 4733-15/11F, "Infantry Weapons Gage Calibration Program," October 31, 2022
- (q) TI 4733-15/1A, "TMDE Calibration and Maintenance Program," May 31, 2018
- (r) TI 4733-15/21D, "Survey Instrument Calibration Program," July 31, 2021
- (s) TI 4733-35/8C, "Marine Corps Transfer Standards Program," July 29, 2022
- (t) TI 4733-35/23C, "Naval Calibration Audit/Certification Manual," March 22, 2021
- (u) TI 4733-15/13, "Metrology Requirements List," November 30, 2016
- (v) TI 4733-15/2A, "Combat Ready Storage Infantry Program," December 29, 2017
- (w) MCO 4151.22
- (x) MCO 4790.2
- (y) ANSI/NCSL Z540-1-1994, "Calibration Laboratories and Measuring and Test Equipment - General Requirements," July 27, 1994.
- (z) ISO/IEC 17025:2017, "General Requirements for the competence of Testing and Calibration Laboratories," November, 2011
- (aa) "National Instituted of Science and Technology Handbook 44," 18 November, 2022
- (ab) MCO 5210.11F

Glossary of Acronyms and Abbreviations

ANSI	American National Standards Institute
CAMP	Calibration And Maintenance Program
CBM	Conditions Based Maintenance
CBM+	Conditions Based Maintenance Plus
CF	Calibration Facility
CG, MARCORLOGCOM	Commanding General, Marine Corps Logistics Command
CG, TECOM	Commanding General, Training and Education Command
CMB	Configuration Management Board
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
CNR	Calibration Not Required
COMMARCORSYSCOM	Commander, Marine Corps Systems Command
COR	Contracting Officer's Representative
CSP	Calibration Service Provider
DC	Deputy Commandant
DC CD&I	Deputy Commandant, Combat Development & Integration
DC I&L	Deputy Commandant, Installations and Logistics
DC P&R	Deputy Commandant, Programs and Resources
DON	Department of the Navy
DON/AA	Department of Navy/Assistant for Administration
DRMD	Directives and Records Management Division
FMF	Fleet Marine Forces
GPTTS-C	General Purpose Tools, Test Sets, and Calibration
ISA	Inter-service Support Agreement
NCSL	National Conference of Standards Laboratories
NIST	National Institute of Standards and Technology
NSWC	Naval Surface Warfare Center
MARCORSYSCOM	Marine Corps Systems Command
MARFOR	Marine Forces
MCPP-N	Marine Corps Prepositioning Program - Norway
MEC	Metrology Engineering Center
METCAL	Metrology and Calibration
Pfm-LCES	Portfolio Manager Logistic Combat Element Systems
PII	Personally Identifiable Information
PM	Program Manager
PM-SMS	Program Manager Supply and Maintenance Systems
POM	Program Objective Memorandum
RCM	Reliability-Centered Maintenance
SOW	Statement Of Work
TI	Technical Instruction
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment