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SECRETARY OF THE AIR FORCE**

**DEPARTMENT OF THE AIR FORCE
POLICY DIRECTIVE 21-1**



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Maintenance

***MAINTENANCE OF MILITARY
MATERIEL***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This publication implements direction for air and space maintenance relative to Department of Defense Directive (DoDD) 4151.18, *Maintenance of Military Materiel*. It designates Department of the Air Force (DAF) functional responsibilities for maintenance of air, space, cyberspace, communications, information technology systems and associated equipment (excluding commercial general purpose equipment, commercial business systems and real property installed equipment). This publication is applicable to the entire DAF, including all uniformed members of the Regular Air Force, United States Space Force (USSF), Air Force Reserve and Air National Guard, except where noted otherwise, all DAF civilian employees, and those with a contractual obligation to abide by the terms of DAF issuances. Ensure all records generated as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. This DAFPD may not be supplemented.

SUMMARY OF CHANGES

This document has been revised and should be completely reviewed. Changes include the integration of the United States Space Force (USSF) terminology and responsibilities, in addition to updated references and office symbols.

1. Policy. The Department of the Air Force will:

1.1. Maintain organizational, intermediate, and depot levels of maintenance capabilities to provide operational readiness and ensure an effective and timely response to peacetime operations, mobilizations, national defense contingencies, and other emergencies. Each level of maintenance provides a certain minimum amount of capability.

1.1.1. Organizational-level maintenance. Provides the capability to launch and recover sorties (including the operation of mission system equipment), as well as to maintain and repair materiel coded for organizational level repair.

1.1.2. Intermediate-level maintenance. Provides the capability to maintain materiel coded for organizational and intermediate level repair in back shops and or centralized repair facilities.

1.1.3. Depot-level maintenance. Provides the capability to maintain materiel coded for organizational, intermediate and depot levels of maintenance. Includes maintenance requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary.

1.2. Perform maintenance at the lowest level of maintenance, consistent with available technical manuals, personnel, capacity, infrastructure, equipment and tools.

1.3. Resource maintenance activities at all levels to optimize weapon system readiness and meet mission requirements.

1.4. Standardize maintenance organizations' tools, equipment, processes and skills to the maximum extent practicable.

1.5. Ensure government maintenance organizations follow government verified procedures to accomplish repairs.

1.6. Optimize economies and efficiencies by:

1.6.1. Managing fleet and materiel health to provide long-term capability of equipment.

1.6.2. Use arrangements such as performance-based agreements and public-private partnerships.

1.6.3. Allocating existing government capabilities and inventories that provide best value for meeting mission needs.

1.6.4. Reviewing maintenance workloads and capacity utilization to identify economies of operations or to improve responsiveness.

1.7. Assign skilled personnel to fully support operational and expeditionary DAF forces.

2. Roles and Responsibilities.

2.1. Assistant Secretary of the Air Force for Acquisition, Technology and Logistics (SAF/AQ):

2.1.1. Develops and implements USAF maintenance policy that provides direction to ensure enterprise business practices, employment of organic and commercial support, management processes, and integrated product support.

2.1.2. Ensures USAF system designs optimize supportability and minimize the total life cycle costs.

2.1.3. Ensures USAF system maintenance performance is validated against design parameters throughout the system life cycle utilizing standardized reportable metrics.

2.1.4. Ensures depot-level maintenance strategies support Title 10 United States Code (USC) Chapter 146, Sections 2464, *Core logistics capabilities*, and 2466, *Limitations on the performance of depot-level maintenance of materiel*.

2.2. Assistant Secretary of the Air Force for Space Acquisition and Integration (SAF/SQ):

2.2.1. Develops and implements USSF maintenance policy that provides direction to ensure enterprise business practices, employment of organic and commercial support, management processes, and integrated product support.

2.2.2. Ensures USSF system designs optimize supportability and minimize total life cycle costs.

2.2.3. Ensures USSF system maintenance performance is validated against design parameters throughout the system life cycle utilizing standardized reportable metrics.

2.2.4. Ensures depot-level maintenance strategies support Title 10 United States Code (USC) Chapter 146, Sections 2464, *Core logistics capabilities*, and 2466, *Limitations on the performance of depot-level maintenance of materiel*.

2.3. Department of the Air Force Chief Information Officer (SAF/CN):

2.3.1. Issues policy implementation direction for maintenance of communications, information technology and cyberspace assets.

2.3.2. Supports development of maintenance strategy, concept and planning for communications, information technology and cyberspace programs that:

2.3.2.1. Provides affordable systems' operational support.

2.3.2.2. Mitigates risks to operational readiness.

2.3.2.3. Ensures availability of metrics, data systems and guidance for communications, information technology and cyberspace maintenance organizations to measure and report data to evaluate system availability.

2.3.3. Advocates for communications, information technology and cyberspace maintenance resources.

2.4. Assistant Secretary of the Air Force for Financial Management and Comptroller (SAF/FM):

2.4.1. Directs and manages all financial management, comptroller functions and activities to include those associated with the planning, programming, budgeting and execution processes.

2.4.2. Ensures availability of financial management information to maintenance activities.

2.4.3. Provides financial management guidance and policy implementation direction.

2.5. Deputy Chief of Staff, Logistics, Engineering and Force Protection (AF/A4):

2.5.1. Provides functional area career field management and issues guidance for training and equipping the USAF and USSF maintenance workforce.

2.5.2. Issues USAF specific policy implementation direction for maintenance of weapon systems, munitions and associated equipment.

2.5.3. Supports development of maintenance policy, strategy, concept and planning for USAF weapon systems, munitions and associated equipment to optimize mission generation and provide affordable and agile operational support.

2.5.4. Oversees USAF assets and associated equipment to:

2.5.4.1. Analyze maintenance trends.

2.5.4.2. Advocate for resources to sustain maintenance operations.

2.5.4.3. Ensure maintenance operations are supported by robust management information.

2.5.4.4. Ensure availability of metrics, data systems and guidance for maintenance organizations to measure and report data to evaluate systems' availabilities.

2.5.4.5. Mitigate maintenance risks to operational readiness.

2.6. Deputy Chief of Space Operations for Operations, Cyber and Nuclear (SF/COO):

2.6.1. Issues USSF specific policy implementation direction for maintenance of space systems and associated equipment.

2.6.2. Supports development of maintenance policy, strategy, concept and planning for USSF systems and associated equipment to optimize mission generation and provide affordable and agile operational support.

2.6.3. Oversees USSF assets and associated equipment to:

2.6.3.1. Analyze maintenance trends.

2.6.3.2. Advocate for resources to sustain maintenance operations.

2.6.3.3. Ensure maintenance operations are supported by robust management information.

2.6.3.4. Ensure availability of metrics, data systems and guidance for maintenance organizations to measure and report data to evaluate systems' availabilities.

2.6.3.5. Mitigate maintenance risks to operational readiness.

2.7. Major command and field command commanders:

2.7.1. Provide manpower, resources and training consistent with the assigned mission.

2.7.2. Interface/collaborate with program offices in developing and implementing maintenance strategies and concepts that provide for the long-term sustainment and enhanced capability of assigned systems and equipment.

2.7.3. Provide interface between operational units and program offices to achieve expedient resolution of technical and materiel deficiencies to optimize reliability and maintainability of fielded systems.

2.7.4. Analyze maintenance trends and mitigate inefficiencies or risks to operational readiness and environmental, safety and occupational health risk.

2.7.5. Provide guidance, funding and analysis to optimize systems and equipment availability.

2.7.6. Ensure units within wings and deltas are the primary activities executing organizational and intermediate maintenance of assigned mission systems.

2.7.7. Ensure maintenance activities have the capability to meet mission generation requirements and simultaneously sustain preventative maintenance and training.

2.7.8. Ensure maintenance activities measure and report maintenance data to permit evaluation of maintenance performance and system/equipment availability.

2.7.9. Review maintenance workloads to identify economies of operations and/or improve responsiveness.

2.8. Air Force Materiel Command Commander (AFMC/CC):

2.8. 1. Follow all requirements listed in [paragraph 2.6](#).

2.8.2. Provides depot maintenance management guidance.

2.8.2.1. Optimizes efficiencies and effectiveness of depot maintenance activities.

2.8.2.2. Ensures financial planning and budgets for depot maintenance requirements.

2.8.3. Ensures capital investment in depot operations for infrastructure, equipment and process improvement.

2.8.4. Provides engineering, maintenance, corrosion prevention and control, and nondestructive inspection support to major commands, field commands and the Air National Guard.

2.9. Air Education and Training Command Commander (AETC/CC):

2.9.1. Follow all requirements listed in [paragraph 2.6](#).

2.9.2. Provides formal training for equipment maintenance technicians to meet operational requirements.

FRANK KENDALL
Secretary of the Air Force

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

10USC § 2460, *Definition of depot-level maintenance and repair*

10USC § 2464, *Core logistics capabilities*

10USC § 2466, *Limitations on the performance of depot-level maintenance of materiel*

DoDD 4151.18, *Maintenance of Military Materiel*, 31 August 2018

AFI 33-322, *Records Management and Information Governance Program*, 28 July 2021

Prescribed Forms

None

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

DAF—Department of the Air Force

AFPD—Air Force Policy Directive

DAFPD—Department of the Air Force Policy Directive

USSF—United States Space Force

Office Symbols

AF/A4—Deputy Chief of Staff, Logistics, Engineering and Force Protection

AETC/CC—Commander, Air Education and Training Command

AFMC/CC—Commander, Air Force Materiel Command

SAF/AQ—Assistant Secretary of the Air Force, Acquisition Technology and Logistics

SAF/AQD—Office of the Assistant Secretary of the Air Force, Logistics and Product Support

SAF/CN—Department of the Air Force Chief Information Officer

SAF/FM—Assistant Secretary of the Air Force for Financial Management

SAF/SQ—Assistant Secretary of the Air Force, Space Acquisition and Integration

SF/COO—Deputy Chief of Space Operations for Operations, Cyber and Nuclear

Terms

Capability—Ability to execute a specified course of action.

Cyberspace Assets—Assets that makeup the global domain within the information environment consisting of the interdependent network of information technology infrastructures; including the

internet, telecommunications networks, computer systems, and embedded processors and controllers.

Depot maintenance—Materiel maintenance or repair requiring the inspection, overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary, regardless of the source of funds for the maintenance or repair or the location at which the maintenance or repair is performed. The term includes (1) all aspects of software maintenance classified by the Department of Defense as of July 1, 1995, as depot-level maintenance and repair, and (2) interim contractor support or contractor logistics support (or any similar contractor support), to the extent that such support is for the performance of services

described in the preceding sentence. The term does not include the procurement of major modifications or upgrades of weapon systems that are designed to improve program performance or the nuclear refueling or defueling of an aircraft carrier and any concurrent complex overhaul. A major upgrade program covered by this exception could continue to be performed by private or public sector activities. The term also does not include the procurement of parts for safety modifications. However, the term does include the installation of parts for that purpose.

Intermediate maintenance—Repair coded “intermediate” that is beyond essential organizational but below depot capability requirements that may be performed on or off equipment, but generally off-equipment, by organizational, intermediate or depot maintenance activities.

Life cycle—From system concept development through disposal; total phases through which an item passes from the time it is initially developed until it is either consumed in use or disposed.

Mission generation—Cumulative efforts to launch and recover sorties, includes associated activities required to sustain the capability to generate sorties.

Maintenance—All action taken to retain materiel in a serviceable condition or to restore it to serviceability. It includes inspection, testing, servicing, classification as to serviceability, repair, rebuilding and reclamation.

Materiel—All items necessary to equip, operate, maintain, and support military activities without distinction as to its application for administrative or combat purposes.

Munition—Complete device charged with explosive, propellants, pyrotechnics, initiating composition, or nuclear, biological, or chemical materiel for use in military operations.

Organizational-level maintenance—Repair coded “organizational” that is below essential intermediate or depot capability requirements that may be performed on or off equipment, but generally on-equipment, by organizational, intermediate or depot maintenance activities.

Product support—Package of support functions required to field and maintain the readiness and operational capability of major weapon systems, subsystems, and components, including all functions related to weapon system readiness.

Readiness—Ability of United States military forces to fight and meet the demands of the national military strategy.

Operational readiness—The capability of a unit, weapon system, or equipment to perform the mission or functions for which it is organized or designed.

Repair—Restoration of an item to serviceable condition through correction of a specific failure or unserviceable condition.

Risk—Probability and severity of loss linked to hazards.

Space systems—Devices and organizations forming the space network. These consist of:

spacecraft; mission packages; ground stations; data links among spacecraft, mission or user terminals; launch systems; and directly related supporting infrastructure.

Sortie—An operational flight by one aircraft or an operational mission executed by one cyber crew.

System—A functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements; group of elements forming a unified whole.

Technical manual—Publications containing information and instructions relating to the research, development, engineering, test, evaluation, production, operation, use and maintenance of supplies and equipment. TM information may be presented in any form or characteristic including, but not limited to, hard copy, audio and visual displays, disks and other electronic devices. A technical manual normally includes operational and maintenance instructions, parts lists or parts breakdown, and related technical information or procedures exclusive of administrative procedures. Technical Orders that meet the criteria of this definition may also be classified as technical manuals.