

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 21-123

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Incorporating Through Change 2, 3 December 2014



Maintenance

**AIR FORCE REPAIR ENHANCEMENT
PROGRAM (AFREP)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD 21-1, *Air and Space Maintenance*. It provides guidance and procedures governing the initiation, transmission, and tracking of field-generated suggestions related to repair of aerospace parts and equipment. It also restricts field unit or AFREP work center conversion of non-reparable items to repairable items to the processes described in this AFI. This instruction applies to Air Force Major Commands (MAJCOMs) and the Air National Guard (ANG). MAJCOM supplements to this document will be submitted to AF/A4L for approval prior to publication. For the purposes of policy the ANG is recognized as a MAJCOM. Refer recommended changes and questions about this publication to AF/A4LM using AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional 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, 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 HQ USAF/A4L for non-tiered compliance items. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in the publication does not imply endorsement by the Air Force. Ensure all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).

SUMMARY OF CHANGES

This interim change reflects minor changes to clarify guidance and procedures within AFREP. Contractor repair procedures were expanded in paragraphs 3.6.1.2.1 and 3.6.1.2.2. Furthermore, minimum requirements for the Statement of Work for contracted repairs have been identified in paragraphs 3.6.1.2.2.1, 3.6.1.2.2.2, 3.6.1.2.2.3, and 3.6.1.2.2.4. Minor administrative changes, office symbols, addresses and publication references have been updated throughout the document.

1. Program Objectives. The Air Force Repair Enhancement Program (AFREP) optimizes Air Force resources and repair capability of aerospace parts and equipment by increasing the wing-level (referred also as field-level) participation with the appropriate Program Office (PO). This is accomplished by field-level identification and recommendation of candidates for reparability consideration by the appropriate PO. The concept is to make recommendations to the program manager (PM) of consumable/expendable items which the field-level has identified as desirable candidates to be considered for conversion to field-level repair, limited repair or even full depot-level repair, contract or organic as directed by the DSOR process in AFI 63-101/20-101, *Integrated Life Cycle Management*. The approval to change the SMR/ERRC codes, or select, use, arrange for, contract with, qualify sources of repair, or authorize the initiation of any local or other repair action rests solely with the PM.

1.1. **Repair Approval.** IAW AFI 63-101/20-101 personnel must coordinate any operational change to the system, end item, and/or modified configuration or maintenance procedure (i.e., additional base-level repair or contract repair of any item beyond the provisions which already exist in field-level Technical Orders (TOs)) prior to implementation. **(T-1). Note:** Field-level personnel, including AFREP work centers, shall not contract or arrange for repair services without prior written authorization by the PM for the item recommended for repair. **(T-1).** The PO responsible for the system or end item shall retain responsibility for making any decision stemming from such a recommendation. Field-level TOs do not give permission for local contract or off-base repair of any item, only on-base repair to the extent specified by the SMR code for a given item.

1.2. **Operational Safety, Suitability & Effectiveness (OSS&E).** Operational Safety, Suitability & Effectiveness (OSS&E) is an outcome of properly planned and applied systems engineering. Organizations responsible for preserving OSS&E of Air Force systems or end items must ensure that operational use, configuration changes, maintenance repairs, aging, part substitutions, and similar activities and events do not degrade baselined characteristics of systems or end items over their operational life. It is an integrated effort to ensure items are not allowed to degrade as a result of maintenance, repairs, parts substitutions, and similar activities. The program manager is responsible for the assurance of OSS&E throughout the life cycle of each configuration of each component of each system. Only the program manager may convert an item from non-reparable to reparable.

2. AFREP Requirements.

2.1. **Requirements.** Given authorized repair of a consumable/expendable item, the program manager will determine the SMR/ERRC code validity. All resulting changes are linked with Supply Chain Manager consideration for that item. Supply Chain Management issues must be considered as a matter of law, given these issues affect Congressionally Authorized

budget authority and funds allocated to accomplish specifically different supply chain functions (spares buys versus repairs).

2.1.1. Any personnel, organization or AFREP work center may request SMR/ERRC code changes IAW TO 00-25-195, *AF Technical Order System Source, Maintenance, and Recoverability Coding of Air Force Weapons, Systems, and Equipments*, Chapter 4 and AFH 23-123, Volume 2, Part 2, *Integrated Logistics System-Supply*, Chapter 8.

2.2. Asset Turn-In. Items repaired IAW technical data will be turned in to the supply system following guidance in AFMAN 23-122, Chapter 6 and TO 00-20-3, *Maintenance Processing of Repairable Property and the Repair Cycle Asset Control System. (T-1)*.

3. Roles and Responsibilities.

3.1. AF/A4L Responsibilities:

3.1.1. Prepares, publishes and reviews AF-level policy and guidance for AFREP.

3.2. Program Manager Responsibilities:

3.2.1. Maintains responsibility for applying integrated systems engineering principles, processes, and practices to ensure the OSS&E of systems and end-items.

3.2.2. Evaluates and approves MAJCOM-validated item repair process requests.

3.2.3. Selects and qualifies sources when the selection authority. When not the selection authority; provides selection criteria guidance and recommendation related to maintenance, supply, and repair sources to the selection authority.

3.2.4. Designates a focal point within the program office for the MAJCOM and end users to contact regarding AFREP recommendations and OSS&E issues.

3.3. MAJCOM Responsibilities:

3.3.1. Coordinates and issues MAJCOM supplement, as required, to this AFI pertaining to identification of candidate items for consideration, and transmission of recommendations to the appropriate PO.

3.3.2. Designates a MAJCOM AFREP Manager for complying with AFREP responsibilities.

3.3.3. Establishes and maintains an AFREP Recommendation Submittal site, (e.g., SharePoint) for tracking recommendations submitted to appropriate POs (N/A to AFSPC).

3.4. MAJCOM AFREP Manager Responsibilities:

3.4.1. Administers/manages the MAJCOM AFREP.

3.4.2. Maintains the AFREP central information site which shall only include:

3.4.2.1. Recommendations to the appropriate PO for repair considerations and their status (part identification, initiation date, submittal date, closure date).

3.4.3. Maintains, updates and distributes list of Wing/Unit AFREP POCs to include representatives from other agencies (e.g., Defense Logistics Agency (DLA), Air Logistics Centers (ALCs), MAJCOMs).

3.4.4. Reviews item repair /SMR code change requests and forwards to the appropriate PO responsible for the item, IAW TO 00-25-195 and TO 00-20-3.

3.4.5. Ensures the Wing/Unit coordinates recommendations for consideration to recode SMR/ERRC of any item with the appropriate PO responsible for the system or end item.

3.4.6. Considers items approved for contract repair for strategic sourcing opportunity and will initiate the opportunity assessment of strategic sourcing candidates when deemed appropriate or when requested by the PO.

3.5. Wing/Unit Responsibilities:

3.5.1. Participates in AFREP, based on MAJCOM guidance. **(T-2)**.

3.5.1.1. MXG/CC or equivalent assigns a unit AFREP Manager/Section functionally aligned under the MXG Quality Assurance (QA). **(T-2)**.

3.5.1.2. Manpower for AFREP section will be authorized, unfunded and reflected on the MXG Unit Manning Document (UMD). **(T-2)**.

3.5.1.3. Provides resources towards AFREP to ensure compliance with this AFI. **(T-2)**.

3.6. Wing/Unit AFREP Manager Responsibilities:

3.6.1. Submit recommendations to the appropriate PO for SMR/ERRC changes, as required, IAW TO 00-25-195, AFI 21-101 and this AFI. **(T-1)**. **Note:** Field-level TOs do not give authorization for local contract repair of any item, only on-base repair to the extent specified by the SMR code for a given item. AFREP work centers or any other field personnel will not perform repairs not authorized by technical data. **(T-1)**.

3.6.1.1. Prior to submitting a recommendation, AFREP work centers will coordinate with appropriate PO to determine the Critical Application Items (CSI) and Critical Safety Items (CAI) designation of the item. **(T-1)**. CAIs, CSIs, or elements of a system which the PM has designated as a CAI system or a CSI system are prohibited from consideration under the AFREP program unless otherwise approved by an authorized engineering authority. All Electronic Warfare (EW) Systems are CAI-designated systems. See Attachment 2, CAI & CSI for additional information.

3.6.1.2. Contractor repairs of any item are not allowed without prior written authorization from the PM. **(T-1)**. **Note:** AFREP work centers are prohibited from entering into repair source contractual/obligation relationships with contractors. DOD regulations exist to assign such actions (finding and qualifying repair sources) to the authorized engineering authority.

3.6.1.2.1. If contract repairs are authorized, contracts will be established IAW local contracting procedures. **(T-1)**.

3.6.1.2.2. The Wing/Unit AFREP Manager will ensure the Statement of Work (SOW) includes, as a minimum, the following items for contracted repairs:

3.6.1.2.2.1. Requirement for the contractor to acknowledge receipt of item. **(T-1)**.

3.6.1.2.2.2. Requirement for the contractor to inspect/test the item following

repair. **(T-1)**.

3.6.1.2.2.3. Requirement for the contractor to provide a record of the repair and test results to the AFREP office and made available for the Government Inspector (e.g., Defense Contract Management Agency (DCMA)). **(T-1)**.

3.6.1.2.2.4. Contract will specify expected shipping, transportation and repair-estimate completion dates. **(T-1)**.

3.6.1.3. Repair items in accordance with Technical Data. **(T-1)**. **NOTE:** Restricted use of systems will result from use of components which have been repaired as described immediately above, without prior written authorization from the program manager.

3.6.2. Enter data into the AFREP Recommendation Submittal database. **(T-2)**.

3.6.3. Assist technicians by interfacing with engineering, Equipment Specialists (ES), QA and other field-level agencies. **(T-1)**.

3.6.4. Accumulate and forward data requested by MAJCOMs concerning AFREP. **(T-2)**.

3.6.5. Maintain repair authorizations IAW the AF RDS. **(T-1)**.

3.6.6. Ensure individuals assigned to AFREP are trained, qualified and maintains a minimum five-skill level in their Air Force Specialty Code (AFSC) IAW AFI 36-2201, *Air Force Training Program*. **(T-2)**.

3.6.7. Submit and monitors Deficiency Reports (DR) for deficiencies discovered during a Wing/Unit AFREP initiative, IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*. **(T-1)**.

3.6.8. Review Awaiting Parts (AWP) and Mission Capable (MICAP) lists from maintenance activities to determine if the AFREP office can recommend to the appropriate PO, items from those lists. **(T-1)**.

3.6.9. **Deleted.**

JUDITH A. FEDDER, Lieutenant General, USAF
DCS/Logistics, Installations and Mission Support

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

PUBLIC LAW 108-136, Sec 802, *Quality Control In Procurement of Aviation Critical Safety Items and Related Services*, 24 Nov 2003

DOD 4140.1-R, *DOD Supply Chain Materiel Management Regulation*, 14 Dec 2011

DODD 5000.01, *The Defense Acquisition System*, 12 May 2003

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, 8 March 2007

AFPD 21-1, *Air and Space Maintenance*, 25 February 2003

TO 00-20-3, *Maintenance Processing of Reparable Property and the Repair Cycle Asset Control System*, 2 Feb 2009

AFI 20-106IP, *Management of Aviation Critical Safety Items*, 25 January 2006

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 22 April 2014

AFI 23-101, *Air Force Materiel Management*, 8 Aug 13

AFI 63-101/20-101, *Integrated Life Cycle Management*, 7 Mar 2013

AFMAN 23-122, *Material Management Procedures*, 8 Aug 2013

AFMAN 33-363, *Management of Records*, 29 Aug 2013

AFH 23-123V2PT2, *Materiel Management Systems*, 8 Aug 2013

TO 00-20-3, *Maintenance Processing of Reparable Property and the Repair Cycle Asset Control System*, 2 Feb 2009

TO 00-25-195, *AF Technical Order System Source, Maintenance, and Recoverability Coding of Air Force Weapons, Systems, and Equipments*, 1 Oct 2012

TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, 1 Nov 2011

Prescribed Forms

None.

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ACAT—Acquisition Category

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive
AFREP—Air Force Repair Enhancement Program
AFSC—Air Force Specialty Code
AFSPC—Air Force Space Command
ALC—Air Logistics Center
ANG—Air National Guard
APML—Acquisition Program Master List
AWP—Awaiting Parts
CAI—Critical Application Items
CSI—Critical Safety Items
DCA—Design Control Activity
DCMA—Defense Contract Management Agency
DIFM—Due-In From Maintenance
DLA—Defense Logistics Agency
DoD—Department of Defense
DOD—Department of Defense
DR—Deficiency Report
DSOR—Depot Source of Repair
ERRC—Expendability, Recoverability, Reparability, Category (Code)
ES—Equipment Specialist
ESS—Environmental Stress Screening
EW—Electronic Warfare
IAW—In Accordance With
IREP—Intermediate Repair Enhancement Program
LRS—Logistics Readiness Squadron
MAJCOM—Major Command
MDA—Milestone Decision Authority
MICAP—Mission Capability
MML—Material management Liaison
MXG—Maintenance Group
OSS&E—Operational Safety, Suitability & Effectiveness
PEO—Program Executive Officer

PFMR—Project Funds Management Records

PM—Program Manager

PO—Program Office

POC—Point of Contact

QA—Quality Assurance

RDS—Records Disposition Schedule

SAE—Service Acquisition Executive

SBSS—Standard Base Supply System

SMR—Source, Maintenance, Recoverability

SOW—Statement of Work

SPM—System Program Manager

SPML—Sustainment Program Master List

TO—Technical Order

UMD—Unit Manning Document

Terms

Awaiting Parts—The condition or status of an item (equipment) needing additional part(s) to repair it or make it serviceable for use. Also sometimes used to describe the elapsed time a repairable item spends awaiting parts while in the repair cycle.

Consumable Items—Also known as “Consumption” or “Expendable” Items designated XB3. Items which are consumed in use or which lose their original identity during periods of use by incorporation into or attachments upon another assembly. Issued on an as required basis and consist of such supplies as maintenance parts or office supplies.

Critical Application Item (CAI)—An item that is essential to weapon system performance or operation, or the preservation of life or safety of operating personnel, as determined by the military services. The subset of CAI whose failure could have catastrophic or critical safety consequences is called CSIs.

Critical Safety Item (CSI)—A part, assembly, installation equipment, launch equipment, recovery equipment, or support equipment for an aircraft or aviation weapons system that contains a characteristic any failure, malfunction, or absence of which could cause a catastrophic or critical failure resulting in the loss or serious damage to the aircraft or weapons system, an unacceptable risk of personal injury or loss of life, or an uncommanded engine shutdown that jeopardizes safety. Damage is considered serious or substantial when it would be sufficient to cause a "Class A" accident or a mishap of severity category I. The determining factor in CSIs is the consequence of failure, not the probability that the failure or consequence would occur. For the purpose of this instruction "Critical Safety Item", "Flight Safety Critical Aircraft Part", "Flight Safety Part", "Safety of Flight Item", and similar terms are synonymous.

Expendability, Recoverability, Reparability, Category (ERRC)—Used to categorize Air Force inventory into various management groupings. The grouping determine the type of

management used throughout the logistics cycle, designates the process to be used in computing requirements and are used in the correction and reporting of asset and usage data. (e.g., XB3, XF3, XD2, NF2, NF4).

Milestone Decision Authority (MDA)—The designated individual with overall responsibility for a program. The MDA shall have the authority to approve entry of an acquisition program into the next phase of the acquisition process and shall be accountable for cost, schedule, and performance reporting to higher authority, including Congressional reporting.

Non—Consumable Item—Also referred to as a “non-expendable” or “equipment” item. Durable items that are capable of continuing or repetitive use by an individual or organization.

Operational Safety, Suitability & Effectiveness (OSS&E)—OSS&E is an outcome of properly applied systems engineering principles, processes, and practices. Well-integrated configuration management and control, deficiency reporting and response, reliability, maintainability, integrity, and other engineering practices ensure that base-lined engineering characteristics of systems and end items are not allowed to degrade as a result of maintenance, repairs, parts substitutions, and similar activities. The PM is responsible for the assurance OSS&E throughout the life cycle of each configuration of each component of each system.

Program Manager (PM)—The designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the MDA.

Project Funds Management Records (PFMR)—a record maintained in the material accounting system to provide for control over that portion of each responsibility center manager operating budget programmed for purchase of expense materials from the Defense Business Operations Funds stock activity fund. It is used to record available expense authority, current month and fiscal year-to-date sales, sales returns, and due-outs for both supplies and expense equipment.

Repairable—Unserviceable items that can be economically repaired and restored to a serviceable condition.

Repair Recommendation—An idea or proposal to repair an item that is not currently repaired or is beyond the capability of the work center. An AFREP initiative is generated when an asset has a demand level of "greater than three" per calendar year. All new AFREP initiatives will be staffed through the applicable organizations.

Recoverability Code—A one position code assigned to end items and support items to indicate the recoverability intention and the level of maintenance authorized disposition action on unserviceable support items; and for reparable, it is used to indicate the lowest maintenance level responsible for repair/condemnation and disposition of the item.

Source Code—Codes assigned to end items and support items to indicate the manner of acquiring items for the maintenance, repair, or overhaul of end items.

Source, Maintenance, Recoverability (SMR) Code—A code assigned to parts/assemblies that provides maintenance activities with repair level responsibilities, support method and disposition instructions. The SMR codes are also input into the supply and maintenance automated data

system. The uniform SMR code is composed of three parts, consisting of a two position source code, a two position maintenance code, and one position recoverability code.

Standard Base Supply System (SBSS)—A unified management system that accomplishes all Logistics Readiness Squadron/supply activity and service workloads. The Standard Base Supply System operates through the collective interactions of supply procedures, service procedures, processing routines, and the SBSS computers.

Supply Reports—There are many examples of “Supply Reports” used to record supply transactions. The Daily Document Register (D04) provides a means for organizations to review all document numbers processed during the day by the SBSS. The Project Funds Management Records (PFMR) and Organization Cost Center Record Update and Reconciliation (D11) show the current status and internal balance of the PFMR by supplies and equipment. The Repair Cycle Asset Management Listing (D23) is used to monitor repair cycle assets and as a management product to monitor the stock position and repair cycle status of repairable (DIFM) assets. It may be produced in several sequences and is provided to the customer daily.

Technical Data—Information (regardless of the form or method of the recording) of a scientific or technical nature, including computer software documentation. As applied in this publication, it includes information required for the design, development, production, manufacture, assembly, operation, training, testing, repair, maintenance, or modification of defense articles.

Attachment 2

CRITICAL APPLICATION ITEMS & CRITICAL SAFETY ITEMS

A2.1. CRITICAL APPLICATION ITEMS (CAIs). For the purpose of this instruction, it is an item that is essential to weapon system performance or operation, or the operating personnel as determined by AFI 20-106IP, *Management of Aviation Critical Safety Items*.

A2.1.1. Includes flight/safety critical, life support, critical safety items (CSI), and nuclear hardened items. For systems including radar, avionics, munitions, etc, contact the PO for the system to obtain the CAI designation.

A2.1.2. The management of CAIs (contains unique repair and manufacturing qualifications; material/manufacturing process requirements; and extensive testing requirements after repair) is a complex process. These specified procedures rest with the program manager.

A2.1.3. Other than TO and PO approved repairs, Electronic Warfare (EW) Systems are Critical Application Items and prohibited from consideration under the AFREP program. Performing repairs on EW system components may render the entire EW system degraded. Environmental Stress Screening (ESS) of repaired EW components is mandatory. Many EW components cannot be repaired due to electrical characteristics that are not visible or evident without special test facilities and procedures, none of which are available to field personnel or unqualified contractors.

A2.2. CRITICAL SAFETY ITEMS (CSIs). For the purpose of this instruction, CSIs are items whose failure may cause loss of life, permanent physical disability or major injury, loss of a system, or significant damage to equipment.

A2.2.1. Special attention is placed on CSIs due to potential catastrophic or critical consequences of failure; Public Law 108-136, sec 802 was enacted to address aviation CSIs. The public law addresses three concerns:

A2.2.1.1. The Design Control Activity (DCA) is responsible for processes related to identification and management of CSIs used in procurement, modification, repair, and overhaul of aviation systems. The DCA is defined as the systems command of a military Service responsible for the airworthiness certification of the system in which a CSI is used.

A2.2.1.2. For contracts involving CSIs, DoD is restricted to DCA approved sources.

A2.2.1.3. The law requires that CSI deliveries and services meet the technical and quality requirements established by the DCA.

A2.2.2. DoD 4140.1, *DoD Supply Chain Materiel Management Regulation*, establishes procedures for the management of aviation CSIs. AFI 20-106IP, *Management of Aviation Critical Safety Items*, addresses requirements for identification, acquisition, quality assurance, management, repair, and disposition of aviation CSIs.