

**BY ORDER OF THE COMMANDER
PACIFIC AIR FORCES**

**PACIFIC AIR FORCES INSTRUCTION
21-104**



13 MARCH 2013

Maintenance

**MAINTENANCE PROCEDURES
CONCERNING CONSOLIDATED JET
ENGINE INTERMEDIATE REPAIR**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction is implemented by AFPD 21-1, *Managing Aerospace Equipment Maintenance*. This instruction prescribes procedures for consolidated jet engine repair at the Centralized Repair Facilities (CRF) for F110, TF34, and T56 engines in PACAF. This publication does not apply to Air Force Reserve Command (AFRC) Units or to the Air National Guard (ANG). This publication also does not apply to the T56 CRF at Yokota AB, Japan when providing support to Air Force Special Operations Command (AFSOC) assets. This publication may not be supplemented.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) HQ PACAF/A4MM, 25 E Street, Suite I-307, JBPHH, HI 96853-5427 or email submissions to pacaf.a4mm@us.af.mil using the AF Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. This revision incorporates procedures formerly published in PACAFI 21-104 (1 November 2008). Changes to this instruction realign it with AFI 21-101, *Aerospace Equipment Maintenance Management* (26 July 2010) and AFI 21-101 CAFSUP I (11 July 2012). Section C--Funds Management has been deleted in its entirety.

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Section A—Maintenance Responsibilities**1. Centralized Repair Facilities (CRF):**

- 1.1. Complete all scheduled intermediate level maintenance and any unscheduled maintenance beyond the capability of the operating wings. Additionally, repair any engines mutually agreed upon.
- 1.2. Complete all intermediate-level time compliance technical orders (TCTO).
- 1.3. Prepare jet engines for shipment in accordance with (IAW) applicable technical orders (T.O.).
- 1.4. Ensure all inspection items (e.g. 400 hour exhaust nozzle inspection, 100 HPO, etc.) are completed, allowing a full inspection interval until next due date.
- 1.5. Ensure all F110 production engines meet the minimum build policy of 500 Total Accumulated Cycles (TAC) remaining, except in special circumstances after coordination with HQ PACAF/A4MYE and the operating wing.
- 1.6. Meet all applicable requirements of AFI 21-101 and CAF Supplement to AFI 21-101.
- 1.7. Ensure all TF34 production engines meet minimum build policy of 16 months' time remaining, except in special circumstances after coordination with HQ PACAF/A4MYE and the operating wing, to include repair of the Quick Engine Change (QEC) kit.
- 1.8. Ensure all T56 production engines meet minimum build policy IAW T.O. 2J-T56-56, Turboprop Eng, Models T56-A-7B, -15, (Allison Gas Turbine Div, GMC), except in special circumstances after coordination with HQ PACAF/A4MYE and the operating wing, to include repair of the QEC kit.
- 1.9. Provide locally developed feedback forms with every engine shipment.
- 1.10. Obtain HQ PACAF/A4MYE approval before transferring PACAF serviceable/reparable engines between commands.

2. Operating Wings dependent upon CRF:

- 2.1. Units fielding the F110 engine will:
 - 2.1.1. Retain 100 percent capability for:
 - 2.1.1.1. Repair/replacement of all external components.
 - 2.1.1.2. Line replaceable units (LRU).
 - 2.1.2. Retain essential 2A6X1 manpower positions within the Maintenance Squadron to conduct the responsibilities listed in this document. (These positions may be organizationally aligned within the Maintenance Flight or retained under the previously existing Propulsion Flight work center.)
 - 2.1.2.1. Retained 2A6X1 personnel assigned to the Maintenance Squadron will be responsible for the following functions:
 - 2.1.2.1.1. Complete engine work cards in support of aircraft phase inspection as well as maintenance tasks and repairs associated with the performance of these

duties. This includes, but is not limited to, completion of applicable engine TCTOs.

2.1.2.1.2. Maintain Hush House serviceability, inspections, and general upkeep.

2.1.2.1.3. Perform maintenance, inspections, and general upkeep on assigned engine trailers.

2.1.2.2. Propulsion NCOIC will:

2.1.2.2.1. Be a 2A671 SNCO.

2.1.2.2.2. Serve as base-level functional manager of 2A6X1 field. Provide direct interaction with MAJCOM Functional Managers on Propulsion related manning, training, and equipment concerns.

2.1.2.2.3. Coordinate with MXG CEM to adequately spread experience of inbound 2A6X1 personnel across AMUs, Phase, Engine management, and other requirements.

2.1.2.2.4. Ensure adequate utilization and training of all assigned 2A6X1 personnel.

2.1.2.2.5. Coordinate on all unscheduled engine changes to ensure necessity of engine removal.

2.1.2.2.6. Serve as the single focal point for release of spare engines to AMUs.

2.1.2.2.7. Coordinate with Command Engine Manager on any potential drop below WRE.

2.1.2.2.8. Serve as focal point for engine-related serviceability waivers and engineering requests.

2.1.2.2.9. Provide direct oversight of hush house management, engine trailer maintenance, and engine inspections related to aircraft phase.

2.1.3. HQ PACAF/A4MYE approval will be required on a case by case basis to repair any engine beyond the repairs listed in this paragraph.

2.2. For the TF34 engine: Retain 100 percent responsibility for all organization level maintenance. HQ PACAF/A4MYE approval will be required on a case by case basis to repair any engine beyond the repairs listed in this paragraph.

2.3. In addition, operating wings will:

2.3.1. Replace all LRU time change items.

2.3.2. Complete all Organizational/Intermediate level TCTO within local maintenance capability (e.g. TCTO coded completed at "O and/or I-level")

2.3.3. Prepare jet engines for shipment IAW applicable T.O.

2.3.4. Meet all applicable requirements of AFI 21-101 and CAF Supplement to AFI 21-101.

2.3.5. Return completed feedback forms to the applicable CRF.

2.4. Submit waiver requests and engineering assistance requests to the engine functional manager at PACAF/A4MYE with a copy to the owning Wing Propulsion Flight Chief and appropriate OC-ALC Logistics Liaison Officer (LLO). This pertains to all propulsion related issues, whether engine is installed or removed, and includes all associated support equipment and tooling. All propulsion related technicians must adhere to this process, to include in-shop engine specialists, aircraft maintenance unit engine specialists, propulsion AFETS representatives, and contract personnel from Original Equipment Manufacturers.

Section B—Engine Management Responsibilities

3. Consolidated Repair Facility (CRF):

3.1. Maintain engine records IAW T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*.

3.1.1. Transfer all data from the engine work packages into CEMS and the automated history within 10 days after receipt.

3.2. In coordination with the Propulsion Flight, order interval time change items 60 days or between 300 and 500 TAC prior to scheduled engine shipment to the CRF.

3.3. Provide direct oversight to Engine TCTO management. Coordinate directly with Command Engine Manager and MAJCOM FAMs on potential waivers of TCTO compliance timeline (“when to accomplish”).

3.4. Order I-level TCTO kits upon release of the applicable TCTO.

3.5. Report Engine Status daily using the Maintenance Information System (MIS) Fleet Engine Daily Status in the AF Portal. This report should reflect information reported in the Comprehensive Engine Management System (CEMS).

3.6. Update and return to the operating wing all Engine Health Monitoring (EHM) System, Comprehensive Engine Trending And Diagnostic System (CETADS), and Turbine Engine Monitoring System (TEMS) data.

3.7. Meet all applicable requirements of AFI 21-101 and CAF Supplement to AFI 21-101.

3.8. Provide engine serial number and transportation control numbers (TCN) to HQ PACAF/A4MYE for all shipments within 24 hours after engine has been shipped.

3.9. Obtain HQ PACAF/A4MYE Command Engine Manager approval before transferring PACAF serviceable/repairable engines between commands.

4. Engine Management Element (Operating Wing):

4.1. Maintain engine records IAW T.O. 00-20-1.

4.1.1. Transfer all data from the engine work packages into CEMS and the automated history within 10 days after receipt.

4.2. Provide the CRF all available EHM/CETADS/TEMS data, weekly time remaining forecast and six month forecast.

- 4.3. Provide direct oversight to Engine TCTO management. Coordinate directly with Command Engine Manager and MAJCOM FAMS on potential waivers of TCTO compliance timeline (“when to accomplish”).
- 4.4. Order all O/I-level TCTO kits (within their maintenance capability) upon release of the applicable TCTO.
- 4.5. Provide all requested data for use in reports/charts.
- 4.6. Meet all applicable requirements of AFI 21-101 and CAF Supplement to AFI 21-101.
- 4.7. Provide engine serial number and transportation control numbers (TCN) to HQ PACAF/A4MYE for all shipments within 24 hours after engine has been shipped.
- 4.8. Obtain HQ PACAF/A4MYE approval before transferring PACAF serviceable/reparable engines inter/intra commands.
 - 4.8.1. Obtain HQ PACAF/A4MYE approval for all engine shipments to the AOR, Red Flag, Distant Frontier, Green Flag and any other PACAF deployments where engines are being moved.

Section C—Support Equipment

5. General:

- 5.1. The applicable weapon system allowance standards will be used as the source for support equipment authorizations by both the operating wings and the CRF.
- 5.2. Every effort will be made to return the transportation trailers to the base of origin. All trailers must be serviceable prior to engine shipment.

JAMES T. SILVA, GS-15, DAF
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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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

AFI 21-101 AFGM1, *Aircraft and Equipment Maintenance Management*, 26 July 2010

AFI21-101 CAFSUP I, *Aircraft and Equipment Maintenance Management*, 11 July 2012

TO 2J-T56-56, INTMD -- *Turboprop Eng, Models T56-A-7B, -15, (Allison Gas Turbine Div, GMC)*, 01 October 2012

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*, 15 June 2011

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AF— Air Force

AFB— Air Force Base

AFMAN— Air Force Manual

AFRC— Air Force Reserve Command

AFRIMS— Air Force Records Information Management System

AFSOC— Air Force Special Operations Command

AMC— Air Mobility Command

ANG— Air National Guard

CEMS— Comprehensive Engine Management System

CETADS— Comprehensive Engine Trending and Diagnostic System

CRF— Centralized Repair Facilities

EHM— Engine Health Monitoring

IAW—In Accordance With

IMT— Information Management Tool (IMT's have converted to "Forms")

LLO— Logistics Liaison Officer

LRU— Line replaceable units

MIS— Maintenance Information System

OPR— Office of Primary Responsibility

PACAF— Pacific Air Forces

QEC— Quick Engine Change

RDS— Records Disposition Schedule

TAC— Total Accumulated Cycles

TCN— Transportation Control Numbers

TCTO— Time Compliance Technical Orders

TEMS— Turbine Engine Monitoring System