

**BY ORDER OF THE COMMANDER  
56TH FIGHTER WING (AETC)**

**LUKE AFB INSTRUCTION 21-124**

**3 AUGUST 2011**

**Maintenance**

**JOINT OIL ANALYSIS PROGRAM (JOAP)**



**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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(Col Deborah J. Liddick)

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This instruction implements AFD 21-1, *Air and Space Maintenance*. It establishes procedures and responsibilities for ensuring the accurate procurement, processing, analysis, delivery, and documentation of oil samples taken at regular intervals on all aircraft engines and oil servicing carts. It is applicable to all maintenance organizations requiring JOAP support by Luke AFB JOAP laboratory (lab). Compliance with this instruction is mandatory for all affected units in the 56th Fighter Wing (FW). This publication does not apply to Air National Guard (ANG) or Air Force Reserve Command (AFRC) Units. This instruction involves the 161st Air Reserve Wing (ARW) as a backup support agency. 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 Forms 847 from the field through the appropriate functional's chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. Additionally, if the publication generates a report(s), alert readers in a statement and cite all applicable Reports Control Numbers in accordance with AFI 33-324.

**SUMMARY OF CHANGES**

**This publication has been substantially revised and must be completely reviewed.**

**1. Responsibilities:** Commanders, maintenance superintendents, and supervisors are responsible for ensuring compliance with this instruction.

## 2. Procedures:

### 2.1. General Practices:

2.1.1. Each section or unit responsible for supervision of maintenance on aircraft (i.e., aircraft engines, ground turbine generators, and aircraft ground equipment, etc.) will appoint a JOAP monitor. The JOAP monitor is the contact point for all JOAP related maintenance actions. Individual's name, grade, section, and phone number will be sent to the JOAP lab, and data will be updated as personnel changes occur. NOTE: A JOAP monitor should be made available on each shift when JOAP lab support is required. JOAP lab personnel will provide initial training for JOAP monitors. The JOAP monitors will attend all scheduled meetings with the NCO in charge of the JOAP lab to discuss any JOAP related problems, issues, and training.

2.1.1.1. Oil servicing carts will be sampled every 7 days (exception: off-station carts will be sampled every 15 days). Samples will be submitted to the JOAP lab along with DD Form 2026, **Oil Analysis Request**, accompanying each sample. The DD Form 2026 will be properly annotated with the oil cart serial number, type oil, date/time sample taken, and contact information no later than 2400 hours on the Friday prior to the next weeks flying.

### 2.2. Aircraft Maintenance Units (AMU) to include Transient Alert Flight, 56th Equipment Maintenance Squadron (56 EMS):

2.2.1. Each AMU, responsible for taking samples will ensure that sample intervals derived by the applicable MDS -6 technical order are followed and delivered to the JOAP lab (bldg 966). All redcap samples will be annotated as such, and delivered to the JOAP lab. Aircraft on "CODE E" will not fly until sample results have been called in to the Maintenance Operations Center (MOC).

2.2.1.1. Each AMU JOAP monitor or representative will attend the quarterly combined Propulsion/JOAP working group meeting.

2.2.2. Provide information on oil changes, engine installation, and oil wetted engine component changes to the JOAP lab and Engine Management. AMU maintenance supervision will ensure that the JOAP lab is notified immediately by use of DD Form 2026 when an engine is installed (rollback and reinstallation of the same engine for the purpose of facilitating of maintenance (FOM), will not require oil sample at this time). Oil samples will be taken upon completion of engine installation run with the DD Form 2026 annotated with the words "ENGINE INSTALL RUN" in the remarks section of the form.

2.2.3. All base aircraft going cross-country will have a computer generated copy of the current oil analysis trend completed by the JOAP lab. Printout will be inserted in the aircraft forms (AFTO Form 781). Computer generated printout with all additional sampling data will be returned to the JOAP lab along with the first oil samples after the aircraft returns.

2.2.4. Each AMU will take JOAP samples when any of the following conditions occur:

2.2.4.1. Any engine on a special redcap sampling.

2.2.4.2. Any JOAP lab requested sample.

2.2.4.3. Anytime an engine is involved in a aircraft mishap.

2.2.4.4. Any functional Check Flight due to engine change or major maintenance.

2.2.4.5. Initial run after engine installation.

### **2.3. 56 EMS JOAP lab will:**

2.3.1. Provide JOAP support during scheduled flying hours with telephone standby coverage available through 56 FW MOC on weekends and holidays.

2.3.2. JOAP personnel will immediately notify MOC and Propulsion Flight Chief when an oil sample indicates a confirmed abnormal trend.

2.3.3. When engine maintenance or removal is required due to oil analysis, the last 10 oil analysis readings will be printed up at the JOAP lab and sent to the appropriate repair activity.

2.3.4. JOAP samples not identified as quick turn or redcap will be analyzed on a “first in, first out” priority. F-16 aircraft samples will take priority over all other samples except redcaps.

2.3.5. Update oil change times as they occur using Integrated Maintenance Data System (IMDS).

2.3.6. JOAP personnel will immediately notify the AMU through MOC when an error is found on the DD Form 2026. Upon notification, the AMU will correct the error as soon as possible. Errors not corrected prior to the next flying day will appear on the weekly error listing.

2.3.7. Attend the quarterly combined Propulsion/JOAP working group meeting. The following information will be briefed by the base JOAP Monitor or designated representative:

2.3.7.1. Number of JOAP samples processed, as well as percentage of DD form 2026 errors, average response times, samples that exceeded response time standard of 75 minutes, number and percentage of aircraft not sampled as required by applicable technical order, and number of JOAP laboratory recommendations as well as those confirmed by physical findings (Hits).

### **2.4. 56th Maintenance Operations Squadron (56 MOS) Engine Management Branch (EMB) will:**

2.4.1. Monitor the JOAP status on spare engines.

2.4.2. Prior to release of spare engine, review AFTO Form 781K, Aerospace Vehicle Inspections, Engine Data, Calendar Item Inspection, and Delayed Discrepancy Document and CAMS to ensure all required oil analysis information is correct.

### **2.5. Maintenance Operations Center (MOC) will:**

2.5.1. Immediately notify owning organization of any test indicating oil contamination or bad JOAP results reported to them by the JOAP lab.

2.5.2. Immediately inform the JOAP lab of any changes to the published flying schedule. The JOAP lab, in turn, will notify MOC of all test results so that aircraft can be released for any additional flights.

2.5.3. Ensure only local flights or reduced load operations are flown on aircraft with engines that are on surveillance (CODE E).

2.5.4. Notify the JOAP lab when scheduling changes during the day require an aircraft to be quick turned.

2.5.5. Mark the flying schedule board to show all aircraft JOAP results.

**2.6. 56th Component Maintenance Squadron (CMS), Propulsion Flight will:**

2.6.1. Initiate a message to the appropriate Air Logistics Center when an engine or component is removed as a result of oil analysis, and the engine or component is returned to depot. The message will contain a complete identification of equipment and the specific reason for removal. Informational copies will be sent to the following:

2.6.1.1. Owinging Command.

2.6.1.2. Supporting JOAP lab (e.g., 56 FW Luke AFB, AZ) (MXMFN).

2.6.1.3. Air Force Materiel Command (AFMC) : Oklahoma City Air Logistics Center (OC-ALC) : Aerospace Sustainment Directorate (OC-ALC/GK) : Propulsion Sustainment Division (OC-ALC/GKG)

2.6.2. Fill out the remarks portion of the DD Form 2026 after teardown recommendations ("T"CODE) are completed and return the form to the JOAP lab within 7 workdays for data processing to the JOAP Technical Support Center, Pensacola, FL.

2.6.3. Provide the JOAP lab, through IMDS, information on all maintenance actions performed on oil-wetted components.

2.6.4. Attend the quarterly combined Propulsion/JOAP working group meeting.

**3. 161st Air Reserve Wing (ARW):**

3.1. The 161st ARW is designated as the backup laboratory for Luke AFB. When support is required, the 56 EMS Nondestructive Inspection Lab will provide sufficient qualified technicians to support oil analysis operations. The 56 EMS JOAP lab supervisor will notify the 161st ARW JOAP Lab supervisor by phone if support is required. The 161st ARW Commander may direct the 161st ARW JOAP lab to become self-sufficient to support its contingency operations.

JERRY D. HARRIS, JR.  
Brigadier General, USAF  
Commander

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

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

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

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 781K, *Aerospace Vehicle Inspections, Engine Data, Calendar Item Inspection, and Delayed Discrepancy Document*

DD Form 2026, *Oil Analysis Request*

***Abbreviations and Acronyms***

**AF**—Air Force

**AFI**—Air Force Instruction

**AFB**—Air Force Base

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRC**—Air Force Reserve Command

**AFRIMS**—Air Force Records Information Management System

**AMU**—Aircraft Maintenance Units

**ANG**—Air National Guard

**CTO**—Central Tagging Operation

**EMB**—Engine Management Branch

**FW**—Fighter Wing

**JOAP**—Joint Oil Analysis Program

**MOC**—Maintenance Operations Center