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**Maintenance**

**OIL ANALYSIS PROGRAM (OAP)**



**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction establishes areas of responsibility to ensure maximum effectiveness of the Oil Analysis Program for identifying impending failures so corrective action can be taken to minimize in-flight failures and to improve engine and gearbox life. It implements AFRPD 21-1, *Managing Aerospace Equipment Maintenance*. References AFRCI 21-101, *Aircraft Maintenance Guidance and Procedures*, AFI 21-105, *Aerospace Equipment Structural Maintenance*, AFI 21-124, *Air Force Oil Program*, and T.O. 33-1-37, *Joint Oil Analysis Program Laboratory Manual*. This instruction applies to all organizational maintenance, propulsion and support equipment section personnel of the 419th Fighter Wing.

**SUMMARY OF REVISIONS**

This document is substantially revised and must be completely reviewed.

**1. Procedures.** Instructions for sampling, documentation and obtaining sampling supplies are specified in AFI 21-105 and AFI 21-124.

**2. Responsibilities .** The responsibilities for the OAP are outlined in AFI 21-105, AFI 21-124, and AFRCI 21-101.

2.1. Propulsion Flight Chief:

2.1.1. Is designated OAP monitor and oversees the entire program.

2.1.2. Develops procedures for ensuring a message is sent to the respective AFMC OAP monitor when an engine or major component is sent to depot as a result of oil analysis. Send an information copy of all messages to the supporting OAP laboratory, AFRC/LGMAB, and OAP management office (SA-AMC/MMEI).

2.2. Fighter Squadron Maintenance Flight Chiefs. Are designated as assistant monitors and perform periodic checks to ensure samples are received at the support laboratory within an acceptable time, and the forms are accurate.

2.3. Crew Chief:

2.3.1. Samples the engine of the F-16 aircraft. Samples are taken as soon as possible after engine shutdown and before oil servicing.

2.3.2. Red capped samples are taken when requested by the OAP laboratory. OAP samples are also taken on an engine after a functional check flight, due to engine change or major engine maintenance. Samples are sent by the most direct means available.

2.3.3. Prior to cross-country flights, the crew chief inserts the following statement into the AFTO Form 781A, **Maintenance Discrepancy and Work Document**: "F-16 oil sample required after first flight of the day. Results will be known prior to the next flight. This aircraft will not be flown two consecutive sorties without an oil sample taken and results known." OAP records will accompany the aircraft on all cross-country flights.

2.4. Propulsion Flight Personnel. Newly acquired engines and engines requiring jet engine intermediate maintenance (JEIM) are sampled after initial run and/or test cell run. All samples drawn from engines undergoing test cell runs following JEIM are red tagged by propulsion flight personnel and carried to the OAP laboratory by the most direct means available. A minimum of three oil samples are taken on all engines run on the test cell that has had the oil system drained and serviced with new oil.

2.5. Engine Tracking Section. Includes the nondestructive inspection (NDI) laboratory on the 30 day records check for aircraft to ensure correct engine serial numbers, and oil change data are shown on the DD Form 2027, Oil Analysis Record. This requirement may be satisfied by a phone call from the engine tracking section to the NDI laboratory.

2.6. Debrief/Dispatch Section (DDS). Establishes clear lines of communications between NDI/OAP laboratory, DDS, flying squadron maintenance (FSM), propulsion section and other units responsible for OAP administration. OAP administration includes:

2.6.1. An oil sample tracking system established within the DDS as prescribed by AFRCI 21-101.

2.6.2. Notifying flightline and propulsion flight supervisors when an installed engine is restricted from operation or is placed on special sampling. These supervisors coordinate a course of action and are responsible for appropriate aircraft form entries.

2.6.3. Providing positive procedures to ensure aircraft under special surveillance are flown only on local flights and that red cap oil samples are processed.

2.7. Oil samples are delivered to the OAP laboratory by the flightline section or the propulsion section, and in the most expeditious manner according to availability at time of sampling.

**3. Training Requirements** . All affected maintenance personnel (2A3X3B, 2A6X1A and 2A7X2) are trained on the OAP as soon as possible after assignment to the unit.

#### **4. Back-up Support:**

4.1. During Normal Day to Day Operations. The 419 FW NDI lab is the primary with the 388 FW unit as back-up.

4.2. If both units at Hill AFB are inoperable, the JOAP samples will be taken to Mountain Home AFB, Idaho for processing.

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