

**Army Regulation 700-132
OPNAVINST 4731.2
AFI 21-131**

Logistics

Joint Oil Analysis Program

**Headquarters
Departments of the Army,
the Navy,
and the Air Force
Washington, DC
26 March 2014**

UNCLASSIFIED

SUMMARY of CHANGE

AR 700-132/OPNAVINST 4731.2/AFI 21-131
Joint Oil Analysis Program

This major revision, dated 26 March 2014--

- o Updates the Joint Oil Analysis Program organization (para 1-5).
- o Updates Joint Oil Analysis Program goals and policies (chap 2).
- o Adds an internal control evaluation (app B).

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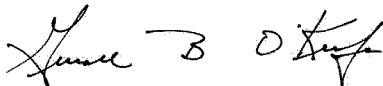
Logistics

Joint Oil Analysis Program

By Order of the Secretary of the Army, Navy, and Air Force:

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History. This publication is a major revision.

Summary. This regulation specifically defines Joint Oil Analysis Program policy, goals, and responsibilities.

Applicability. This regulation applies to the Active Army, Army National Guard/Army Guard of the United States, and the U.S. Army Reserve, unless otherwise stated. It also applies to the Active Services and the Reserve Components of the Army, the Navy, and the Air Force. During mobilization, chapters and policies contained in this regulation may be modified by the proponent.

Proponent and exception authority. The proponent of this regulation is the Deputy Chief of Staff, G–4. The proponent has the authority to approve exceptions or waivers to this regulation that are consistent with controlling law and regulations. The proponent may delegate this

approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this regulation by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

Army internal control process. This regulation contains internal controls and provides an internal control evaluation for use in evaluating key internal controls (appendix B).

Supplementation. Supplementation of this regulation and establishment of command and local forms are prohibited without prior approval from the Deputy Chief

of Staff, G–4 (DALO–MNZ), and the appropriate Department of the Navy and Department of the Air Force headquarters.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Deputy Chief of Staff, G–4 (DALO–MNZ), 500 Army Pentagon, Washington, DC 20310–0500.

Distribution. This publication is available in electronic media only and is intended for command levels C, D, and E for the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve. Also, it is intended for all command levels of the Air Force and Navy.

*This regulation supersedes AR 700–132/OPNAVINST 4731.1C CH–1/AFI 21–131(I), dated 28 July 2008.

Contents (Listed by paragraph and page number)

Chapter 1

Purpose, *page 1*

Purpose • 1-1, *page 1*

References • 1-2, *page 1*

Explanation of abbreviations and terms • 1-3, *page 1*

Responsibilities • 1-4, *page 1*

Joint Oil Analysis Program organization • 1-5, *page 1*

Chapter 2

Joint Oil Analysis Program Goals and Objectives, *page 2*

Joint Oil Analysis Program goals • 2-1, *page 2*

Joint Oil Analysis Program objectives • 2-2, *page 3*

Appendixes

A. References, *page 4*

B. Internal Control Evaluations, *page 5*

Glossary

Chapter 1

Purpose

1-1. Purpose

This publication prescribes policies, responsibilities, and goals for the Joint Oil Analysis Program (JOAP) for the Army, Navy, and Air Force.

1-2. References

Required and related publications and prescribed and referenced forms are listed in appendix A.

1-3. Explanation of abbreviations and terms

Abbreviations and terms used in this regulation are explained in the glossary.

1-4. Responsibilities

a. Secretaries of the Army, the Air Force, and the Navy will—

(1) Administer an effective oil analysis program that will accomplish the goals and policies of this regulation.

(2) Issue supplemental guidance to this regulation to implement Service participation in JOAP and to promote maximum participation and cooperation.

(3) Designate an oil analysis program management office to execute the oil analysis program and participate in the JOAP.

(4) Ensure that all appropriate planning documents (for example, strategic plan, budgets, facilities, manpower, and maintenance) include requirements for JOAP.

(5) Coordinate oil analysis research, development, test, and evaluation projects and studies among the Services to avoid duplicate efforts with regard to the improvement, enhancement, augmentation, or replacement of existing analytical testing techniques, and ensure inter-Service agreement on JOAP study objectives and methodology.

(6) Ensure oil analysis laboratories provide oil analysis support to the other Services within their capabilities according to this regulation and the JOAP Manual (NAVAIR 17-15-50 (Navy), TM 38-301 (Army), T.O. 33-1-37 (Air Force), and CGTO 33-1-37 (U.S. Coast Guard (USCG))).

(7) Designate an office of primary responsibility and provide a primary and an alternate member to the JOAP executive committee.

(8) Provide resources to implement this regulation.

(9) Determine the applicability of oil analysis techniques and related evaluation criteria for its equipment and lubricant products.

(10) Provide for inter-Service participation in contracts to procure and support JOAP equipment.

(11) Provide equipment, supplies, and training for instructors at the Defense JOAP Training Course (J3AZP2A752 003) for Service-specific testing.

(12) Distribute the JOAP Manual.

b. JOAP-certified laboratory lab operators will—

(1) Provide nonreimbursable routine support to all Department of Defense and USCG transient customers and permanent customers in the laboratories' assigned areas of responsibility. JOAP coordinating group members may authorize customers to use their Service's laboratory if additional workload does not interfere with the existing workload.

(2) Provide inter-Service support only when JOAP-certified. Only qualified operators and evaluators will perform inter-Service work. Service program managers will establish their own policies for using non-JOAP-certified laboratories.

(3) Ensure that laboratory response time meets the operational requirements of customer service. If the laboratory response time or total turnaround time fails to routinely meet inter-Service customer service operational requirements, the JOAP coordinating group must review and resolve the issue as established by the JOAP executive committee in JOAP Manual.

(4) Ensure that aeronautical samples have precedence over all other routine samples.

(5) Ensure that a maintenance recommendation resulting from an oil analysis finding is communicated to the customer. For samples with normal results, return of the processed DD Form 2026 (Oil Analysis Request) will serve as notification of completion of sample analysis. For samples with abnormal results, the laboratory will advise the owning unit of the laboratory recommendation either in person or by telephone within 24 clock hours of sample receipt for aeronautical samples and within 72 clock hours of sample receipt for nonaeronautical samples, weekends and holidays excluded in accordance with JOAP Manual.

1-5. Joint Oil Analysis Program organization

a. The JOAP ensures timely and accurate oil support and other fluid-wetted component analysis support to Army,

Navy, and Air Force customers through the strategic location of all oil analysis laboratories and through the standardization of procedures, data elements, analytical instrumentation, and diagnostic techniques. The JOAP uses oil analysis as a maintenance diagnostic tool to—

(1) Determine the internal condition of aeronautical and nonaeronautical engines, transmissions, and gearboxes, and their oil-wetted components through the analysis of used lubricating oils, hydraulics, grease, and fluids. Its goal is flight safety, enhanced equipment readiness, reduced maintenance costs, and the extension of component life.

(2) Determine the suitability of lubricants and fluids for continued use, resulting in savings and early detection of harmful conditions that, if not corrected, could promote premature component failure.

b. The JOAP is comprised of the JOAP offices of primary responsibility, JOAP executive committee, and the JOAP coordinating group.

c. Chiefs, JOAP offices of primary responsibility will—

(1) Be responsible for the Services' oil analysis policy, strategic planning, and participation in the JOAP.

(2) Provide inter-Service policy coordination and management oversight.

(3) Establish an inter-Service memorandum of agreement (MOA) that specifies the JOAP tasks that the Services elect to perform in a collaborative effort. This MOA will assign programmatic and financial responsibilities for each task to a specific Service for execution.

d. The JOAP executive committee will—

(1) Rotate the committee chair among the Services (Army, Navy, and Air Force) every 2 years.

(2) Provide headquarters-level review on all inter-Service matters requiring resolution.

(3) Review the JOAP tri-Service MOA, the bilateral MOAs, and Joint policy within 30 days of receipt of recommendations for changes from the JOAP coordinating group and take action, as appropriate.

(4) Ensure all appropriate planning documents (budgets, facilities, manpower, and maintenance) include requirements for the collaborative JOAP tasks.

(5) Review Service recommendations and determine what new technologies and equipment will be implemented as the standard for the JOAP community.

(6) Resolve disagreements among the Services on JOAP-related matters.

(7) Elevate issues to the JOAP offices of primary responsibility, as required.

(8) Charter working groups for special tasks or surveys, as required.

(9) Coordinate establishment of JOAP laboratories to avoid duplication.

(10) Ensure data compatibility among the Services.

(11) Establish a minimum frequency for transfer of inter-Service data to ensure timely availability to end users.

e. The JOAP coordinating group, which is comprised of the oil analysis program managers from each Service, will—

(1) Meet semi-annually or more frequently, if required, to ensure overall progress is consistent with the JOAP manual.

(2) Coordinate Service oil analysis efforts and requirements and resolve inter-Service disagreements.

(3) Elevate disagreements to the JOAP executive committee, if necessary.

(4) Consolidate tri-Service requirements for JOAP-related analytical instruments.

(5) Review and recommend changes to the JOAP tri-Service MOA, the bilateral MOAs, and Joint policy to the JOAP executive committee annually in February.

(6) Exchange ideas on technological advancements. This includes, but is not limited to:

(a) Developing, publishing, maintaining, and distributing documents such as oil analysis test reports, equipment evaluation reports, program directories, newsletters, and other documents.

(b) Conducting and participating in meetings and symposiums and coordinating with other agencies, civilian companies, universities, and other countries for the purpose of technological exchange and reporting on emerging technologies.

Chapter 2

Joint Oil Analysis Program Goals and Objectives

2-1. Joint Oil Analysis Program goals

The JOAP was instituted to—

a. Maximize inter-Service use of oil analysis through consolidation of laboratories; coordination of support; and standardization of instrumentation, analytical techniques, data, forms (Department of the Army (DA) Form 5991-E (Oil Analysis Request), DD Form 2026, DA Form 2408-20 (Oil Analysis Log), and DA Form 3254-R (Oil Analysis Recommendation and Feedback)); and customer laboratory procedures.

b. Enhance jointness, reduce cost, and combine missions where feasible.

c. Provide nonreimbursable routine support to all Department of Defense and USCG transient customers and permanent customers in each JOAP-certified laboratory's assigned area of responsibility.

2-2. Joint Oil Analysis Program objectives

The JOAP was instituted to—

a. Improve the operational readiness and economy of military equipment through the use of oil analysis, a condition-monitoring concept that relies on the detection and measurement of wear-metals and the determination of a lubricant's physical properties.

b. Collect and analyze oil analysis trend data to increase the effectiveness of oil analysis techniques in the diagnosis of potential equipment failures.

c. Provide wear-metal and lubricant physical property data to the various weapon systems managers and others, as required.

d. Test, evaluate, and promote new and emerging techniques, technologies, and equipment for oil analysis.

e. Ensure all Army, Navy, and Air Force oil analysis plans and operations are integrated to provide standardized laboratory techniques, procedures, data, calibration standards, analytical instruments, and inter-Service oil analysis support to all military departments, where practicable.

Appendix A References

Section I Required Publications

NAVAIR 17-15-50/TM 38-301/T.O. 33-1-37/CGTO 33-1-37

Joint Oil Analysis Program Manual (Cited in paras 1-4a(6), 1-4a(12), 1-4b(3), 1-5b(5)(b), and 1-5e(1).) (Available at <https://www.natec.navy.mil>.)

Section II Related Publications

A related publication is a source of additional information. The user does not have to read it to understand this regulation.

AFI 21-124

Oil Analysis Program (Available at <http://www.e-publishing.af.mil>.)

AR 25-30

The Army Publishing Program

AR 750-1

Army Materiel Maintenance Policy

DA Pam 750-8

The Army Maintenance Management System (TAMMS) Users Manual

TB 43-0211

Army Oil Analysis Program (AOAP) Guide for Leaders and Users

Section III Prescribed Forms

This section contains no entries.

Section IV Referenced Forms

Unless otherwise indicated, DA forms are available on the APD Web site (<http://www.apd.army.mil>) and DD forms are available on the OSD Web site (<http://www.dtic.mil/whs/directives/infomgt/forms/>).

DA Form 11-2

Internal Control Evaluation Certification

DA Form 2028

Recommended Changes to Publications and Blank Forms

DA Form 2408-20

Oil Analysis Log

DA Form 3254-R

Oil Analysis Recommendation and Feedback

DA Form 5991-E

Oil Analysis Request (Generated electronically in SAMS-I/IE)

DD Form 2026

Oil Analysis Request

Appendix B Internal Control Evaluations

Section I Joint Oil Analysis Program (Army, Navy, and Air Force)

B-1. Function

The function covered by this checklist is the JOAP.

B-2. Purpose

To assist Army, Navy, and Air Force senior leaders in evaluating key internal controls. It is not intended to cover all controls.

B-3. Instructions

Answers must be based on the actual testing of key internal controls (for example, document analysis, direct observation, sampling, and simulation). Answers that indicate deficiencies must be explained and the corrective action identified in supporting documentation. These internal controls must be evaluated at least once every 5 years. Certification that the evaluation has been conducted must be accomplished on DA Form 11-2 (Internal Control Evaluation Certification).

B-4. Test questions

- a.* Have JOAP personnel at the appropriate levels been assigned and properly trained?
- b.* Are JOAP personnel executing JOAP for those items listed in governing directives and policies?
- c.* Are units sending maintenance feedback to laboratories?
- d.* Are supported units properly responding to laboratory recommendations?

B-5. Supersession

This evaluation replaces the evaluation for JOAP previously published in AR 700-132.

B-6. Comments

Help make this a better tool for evaluating internal controls. Submit comments to the Deputy Chief of Staff, G-4 (DALO-MNZ), 500 Army Pentagon, Washington, DC 20310-0500.

Section II Joint Oil Analysis Program (Organization)

B-7. Function

The function covered by this evaluation is the JOAP.

B-8. Purpose

To assist the JOAP organization in evaluating key internal controls. It is not intended to cover all controls.

B-9. Instructions

Answers must be based on the actual testing of key internal controls (for example, document analysis, direct observation, sampling, and simulation). Answers that indicate deficiencies must be explained and the corrective action identified in supporting documentation. These internal controls must be evaluated at least once every 5 years. Certification that the evaluation has been conducted must be accomplished on DA Form 11-2.

B-10. Test questions

- a.* Is required laboratory equipment being programmed, funded, and procured?
- b.* Are JOAP laboratory operations adequately funded?
- c.* Are laboratory instruments and personnel properly certified?
- d.* Are weapon systems and sampling intervals evaluated at least annually and regulatory guidance revised accordingly?
- e.* Is the JOAP equipment component list being reviewed and approved annually?
- f.* Are MOAs, instructions, and policies being updated to reflect approved changes?

B-11. Supersession

This evaluation replaces the checklist(s) for JOAP previously published in AR 700-132.

B-12. Comments

Help make this a better tool for evaluating internal controls. Submit comments to the Deputy Chief of Staff, G-4 (DALO-MNZ), 500 Army Pentagon, Washington, DC 20310-0500.

Glossary

Section I Abbreviations

DA

Department of the Army

JOAP

Joint Oil Analysis Program

MOA

memorandum of agreement

USCG

U.S. Coast Guard

Section II Terms

Certification

The process to approve laboratory instruments for JOAP use. Instruments will meet or exceed minimum performance criteria established by the correlation program.

Certification program

A program managed by the JOAP Technical Support Center in coordination with the Service's oil analysis program management office to ensure that laboratories meet JOAP certification requirements.

Correlation program

A program in which all JOAP-certified laboratories receive and analyze correlation samples to confirm that all spectrometers produce results on a continuing basis to meet inter-Service and intra-Service analysis requirements.

Correlation sample

A sample of oil, synthetic or mineral, used to monitor instrument capability to produce desired results.

Customer

Any activity authorized by the Service program manager to submit samples to and receive oil analysis results and recommendations from a JOAP laboratory.

Evaluation criteria

Information used by oil analysis laboratories in the evaluation of oil analysis results. Evaluation criteria are composed of some or all of the following: wear-metal limits, wear-metal trends, decision tables, physical test limits, component part composition, component diagrams, and specific comments related to the particular component from which an oil sample is taken.

Inter-Service customer

An activity within one of the Services that has oil analysis support provided by another Service's laboratory.

Joint Oil Analysis Program-certified laboratory

An Army, Navy, or Air Force oil analysis laboratory operating according to JOAP regulations. It must be certified according to established JOAP procedures and provide oil analysis support to the other Services within its capabilities.

Joint Oil Analysis Program Manual

A Service manual (NAVAIR 17-15-50/TM 38-301/T.O. 33-1-37/CGTO 33-1-37) containing consolidated and standardized procedures, methods, and evaluation criteria used by oil analysis laboratories and customers.

Joint Oil Analysis Program spectrometer

An atomic emission spectrometer meeting specifications, approved by the JOAP coordinating group and used to detect and measure designated wear-metals contained in lubricating oils and other fluid samples.

Joint Oil Analysis Program offices of primary responsibility

The Army, Navy, and Air Force lead agents responsible for inter-Service policy coordination, problem resolution, and management control over their respective Service's oil analysis programs.

Non-Joint Oil Analysis Program laboratory

A laboratory that is not part of the Services' oil analysis program that may or may not participate in some portions of the JOAP. A non-JOAP laboratory cannot be JOAP-certified through the JOAP certification program. Use of non-JOAP laboratories will be at the discretion of the individual Service's program managers.

Physical property analysis

Analytical procedures used to determine the suitability of a lubricant or fluid for continued use. Tests include analyses for water and fuel contamination, fluid viscosity, and solids contamination and other tests required by the cognizant equipment engineer.

Response time

The elapsed work hours from the time that an analysis request is received in the oil analysis laboratory and required processing is completed. Laboratory processing is completed when the sample analysis is evaluated and, if required, action is taken to notify the customer of a maintenance recommendation.

Spectrometric analysis

A technique used to measure wear-metal content and other elements from oil-wetted component.

Spectrometric calibration standard

A mineral oil that contains known quantities of specific organo-metallic compounds, has a controlled viscosity and flash point, and is used to calibrate and standardize spectrometers. The JOAP coordinating group must approve standards composition.

Turnaround time

The interval encompassing the period from the time the sample is taken until an answer (maintenance recommendation and request for resample) is received by the customer. Turnaround time requirements may vary for individual customers.

Viscosity calibration standard

A fluid of known viscosity used by oil analysis laboratories to standardize the viscometers used in the performance of physical property tests.

Section III**Special Abbreviations and Terms**

This section contains no entries.

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