

SOAP for Aviation Systems

Quality Assurance through Condition Monitoring

Aviation Analysis

WEARCHECK'S LABORATORY AUTHORIZATION INCLUDES PRATT & WHITNEY, HONEYWELL/GARRETT, TEXTRON / LYCOMING, SAFRAN / TURBOMECA, AND AEROSPATIALE. WEARCHECK IS A MEMBER OF THE SPECTROMETRIC OIL ANALYSIS LABORATORY ASSOCIATION (SOALA).



OVERVIEW

- Avoidance of In-Flight Shutdowns (IFSDs)
- Reduction in unscheduled maintenance
- Increase in equipment reliability
- Reduction in maintenance costs
- Minimization of installation errors
- Verification of maintenance service plan claims

BENEFITS

Quality assurance is the primary governing aspect of your business. When safety is paramount to your daily operation a condition monitoring program is an inherent part of your procedures. Oil and wear particle analysis is the most widely accepted method of condition monitoring, in use today, for aviation systems. It is no wonder why most OEMs recommend, or insist, upon some form of oil and wear particle analysis.

Oil and wear particle analysis is a combination of spectrometric, ferrographic, and filter analysis. When used as part of your quality assurance program, oil and wear particle analysis will detect abnormal wear modes in aviation systems, long before the wear can lead to any serious damage. WearCheck's analysis will indicate when components are near failure. This gives you time to plan maintenance. Worn components can be replaced at your local facility avoiding rental, and shipping charges. In flight shutdowns, as a result of failed critical components, are avoided, as WearCheck's analysis pinpoints the wear signatures of rolling element bearings, gears, splines, and other critical components.

WearCheck's filter and ferrographic analysis utilizes the morphology of wear particles to detect specific wear modes. Avoid installation errors, and rapid failures, when analysis detects cutting wear from misaligned components. WearCheck's oil and wear particle analysis will allow you to realize a reduction in the cost of equipment maintenance, and an increase in aircraft availability and reliability.

WearCheck's oil and wear particle analysis is effectively used today for a broad range of aviation systems including jet turbine and turbo props, reciprocating engines, helicopter rotors, gearboxes and transmissions and aircraft hydraulic systems.

Contact a WearCheck technical representative to recommend the proper testing package for you application. WearCheck offers a comprehensive selection of oil and wear particle test kits to cover your specific needs.



**WEAR
CHECK**

THE LEADER IN OIL ANALYSIS









SOAP for Aviation Systems

Quality Assurance through Condition Monitoring



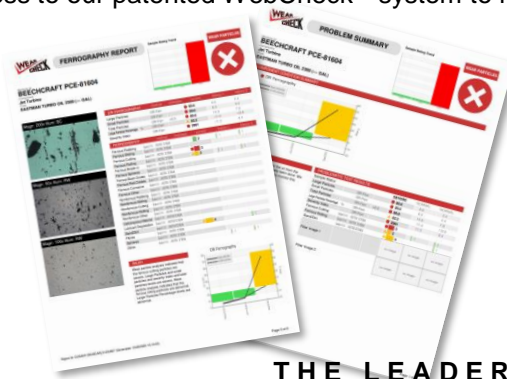
TESTING METHODS

AVI-1 AVI-2 AVI-3

	ICP Analysis ASTM D5185	SOAP analysis determines the parts per million (ppm) of all wear metals (Fe, Cr, Ni, Pb, Cu...), contaminants (Si, Na, K...), and additives (Ca, P, Zn, Mg, Mo...).	●	●	●
	Viscosity ASTM D7279	Determine the viscosity of the oil at 40°C and/or 100°C to determine if oil is still within specification. High viscosity can indicate oxidation, low viscosity can indicate contamination, improper make-up oil or the presence of fuel.	●	●	●
	Visual Screen In-house method	A picture of both the oil color/clarity and the bottom of the sample bottle are taken, and any level of contamination, visual oil problems or visible wear debris of the oil is recorded. Any unusual debris triggers a Filter Debris Patch.	●	●	●
	Acid Number (AN) ASTM D974	Determines overall acidity of the oil which is an indication of degradation. Single best test to determine change-out interval of the oil.		●	●
	Water (KF) ASTM D6304	Determines level of moisture or water contamination present in the oil. POE oils are especially sensitive to water contamination, and moisture present in the oil can shorten the life of rolling element bearings through hydrogen embrittlement.		●	●
	Particle Count ASTM D7647	Determine cleanliness levels of oil. High particle count levels can indicate gross contaminant ingress, wear, filter by-pass or all of these issues.		●	●
	Filter Debris Analysis (FDA)	Microscopic analysis of the trapped debris from the oil filter. Morphological analysis of the wear particles reveals specific components that are wearing and the cause of the wear.		●	
	Ferrogrography ASTM D7690	A detailed morphological analysis of the wear debris particles suspended in the oil. Ferrogrography can determine the type of wear process and cause of wear in a lubricated system.			●

WearCheck Aviation Analysis includes everything to set-up a complete program. When you purchase a WearCheck Aviation Analysis program you will receive the necessary sample kits. All WearCheck analysis programs include laboratory testing, sample diagnosis and recommendations, sample report, and access to our patented WebCheck™ system to manage your analysis program.

Kit	Recommendation
AVI-1	Gasoline reciprocating aircraft engines
AVI-2	Aviation hydraulic systems Oil & Filter analysis for jet turbines/turboprops
AVI-3	Oil analysis for jet turbines/turboprops



WEAR CHECK

THE LEADER IN OIL ANALYSIS

© 2021 WearCheck. All Rights Reserved. All illustrations, photographs and specifications within this literature are based on the latest service information. Discuss actual service with a local WearCheck agent for complete accuracy. For information on additional options, contact your WearCheck agent. All service and product brand names are WearCheck trademarks.

WearCheck USA. 501 Madison Ave., Cary, NC, 27513 **Tel** 919-379-4102 **Toll-free** 1-800-237-1369 **Fax** 919-379-4050 **URL** <http://www.wearcheck.com>
WearCheck Canada Inc. C8-1175 Appleby Line, Burlington, ON, L7L 5H9 **Tel** 905-569-8600 **Toll-free** 1-800-268-2131 **Fax** 905-569-8605 **URL** <http://www.wearcheck.ca>

WC-AVI-ANALYSIS-2021-04-13