

## JetSCAN<sup>®</sup> Engine Health Monitoring

*JetSCAN<sup>®</sup> is the proven solution to essentially eliminate bearing-related engine failures.*

Bearing wear is a significant contributor to the maintenance cost and downtime of modern gas turbines. Buried deep within the engine, bearings are difficult to monitor with the usual methods. By taking traditional oil-debris analysis techniques to a higher level of intelligence, JetSCAN delivers fast, consistent, accurate and timely warning of impending bearing failures.

### The power of JetSCAN

JetSCAN combines powerful analytical, data-interpretation and trending tools within a single, turnkey unit. Its strength is its ability to determine the condition of oil-wetted engine components and identify impending failures. Acting on that insight enables you to significantly reduce or even eliminate the risk of in-service failures.

Advanced scanning electron microscope and energy-dispersive X-ray technologies are used to analyze samples collected at regular intervals from magnetic chip detectors and oil filters. Embedded expert knowledge of the engine design is then applied, enabling JetSCAN to deliver a full evaluation and interpretation of the analytical data and a “fly / no fly” recommendation.

JetSCAN is able to differentiate between benign anomalies and conditions that require action. That significantly reduces the need to remove engines for inspection, avoiding expense and downtime.

### Proven in use

JetSCAN is in use by 14 air forces worldwide, including the United States Air Force, the United States Navy, the United States Marine Corps, and the Royal Air Force. Successful outcomes reported by customers include

- Eliminated class “A” mishaps due to bearing or bearing-related failures
- Reduced non-recoverable in-flight shutdowns to zero
- Doubled time interval between inspections

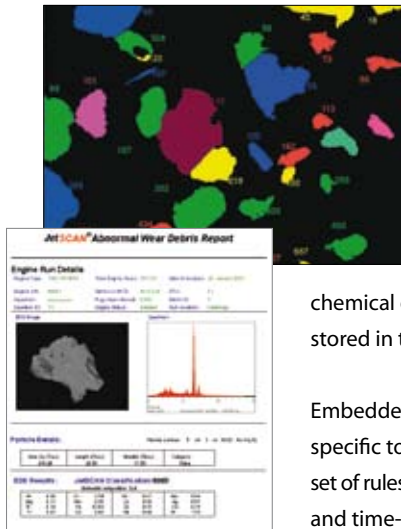


### Benefits realized with JetSCAN

- *High level of accuracy in identifying impending bearing-related failures*
- *Significant reduction of in-flight events*
- *Increased aircraft availability and operational readiness*
- *“Definitive” laboratory answer available quickly at organizational / intermediate or depot level*
- *Multiple engine type analysis capability on single JetSCAN system*
- *Requires no specialized knowledge or experience to operate*

## JetSCAN® Engine Health Monitoring

JetSCAN's advanced failure prevention minimizes your risk and reduces your maintenance costs.



JetSCAN is a self-contained, automated analysis system that combines scanning electron microscope and energy-dispersive X-ray technologies with custom-designed diagnostic software. It monitors wear debris collected on magnetic chip detectors and filters and develops characteristic physical and chemical data for each individual particle. The data is stored in the system's integral database.

Embedded expert, manufacturer's knowledge specific to the engine or system defines a complex set of rules and criteria for accurate recommendations and time-to-failure estimates.

JetSCAN requires no specialist knowledge or experience for use. Based on an intuitive user interface and high levels of automation, the process ensures objective, reproducible results.

Easily deployable, the system operates in a wide variety of environments without expensive site support. This ensures that monitoring is not sacrificed when engines operate away from their normal base. Following delivery to your location, the JetSCAN unit can be unpacked and actively monitoring engines within minutes.

Comprehensive and continual technical support is provided to JetSCAN's global users via 24/7 toll-free number and web portal.

JetSCAN offers the fast, objective and expert solution for condition-based wear debris monitoring.

*Reduce failure risk and cost and increase your aircraft's operational availability with JetSCAN®.*

JetSCAN® was jointly developed with Carl Zeiss SMT. JetSCAN® is a registered trademark of Carl Zeiss SMT.

### JetSCAN features

- Individual chemical analysis of all debris particles
- Fast and intelligent filtering; analyzes only particles of interest
- Complex dimensional measurement of all particles, including size, shape, form and structure, surface roughness and more
- Full, engine-specific risk assessment logic applied to data interpretation
- Automatically-generated diagnostic summary and detailed reports
- Simple user control and pre-run calibration / repeatability checks
- Fast response with accurate results
- High-impact case with integrated wheels, handles and fork-lift points for easy deployment
- Applicable for both fixed-wing and rotary-wing aircraft
- Fast, easy physical set-up
- Wide environmental tolerances
- Built-in self-inspection and diagnostic capabilities

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