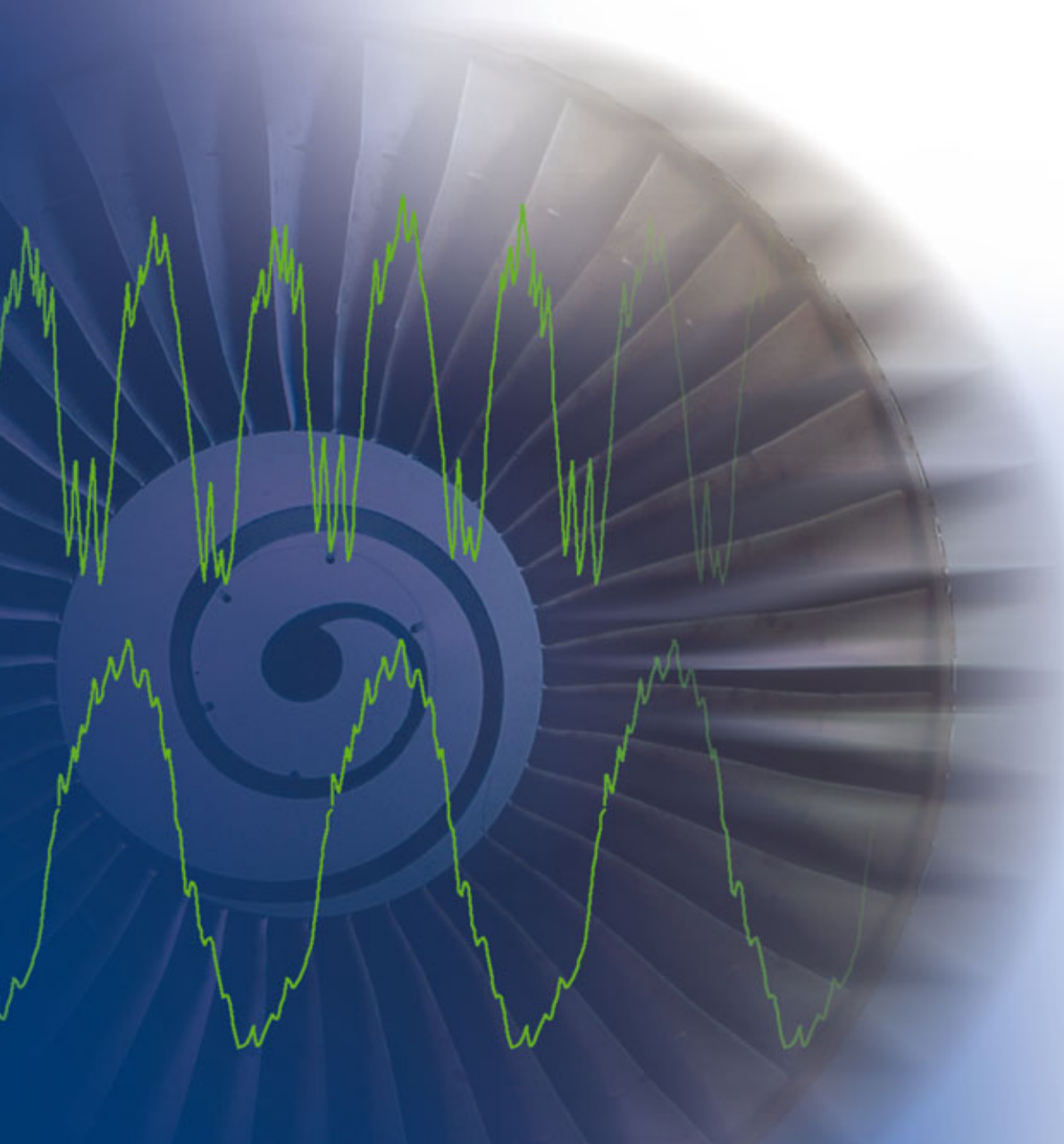


Vibro-Meter

Balanced engines: achieved EVM solutions



MEGGITT
smart engineering for
extreme environments

Cold fan trim balance

Engine vibration monitoring solutions

For more than three decades, Vibro-Meter has been the leader in aircraft engine vibration monitoring technology. We have the in-house capability and experience to provide the complete system including transducers, cabling, signal conditioning, data processing and integration with aircraft systems.

Having been involved from the beginning of airborne engine vibration monitoring (EVM), we know what it takes to supply and support systems.

And because our systems are on space vehicles, in industrial installations, nuclear facilities, ships and submarines, we can meet the most stringent safety and reliability standards.

That's why most aircraft and aero-engine manufacturers choose us as their EVM partner when introducing new products and technologies.

For Boeing operators

Vibro-Meter is developing a unique tool designed to provide easy access to some of the advanced information available from the universal engine vibration monitoring (UEVM) or advanced airframe vibration monitor (AAVM). Through close collaboration with airframe and engine manufacturers and airline maintainers, this support equipment is being optimised for the real world of aircraft maintenance and troubleshooting.



For Airbus operators

In response to growing interest from Airbus in on-board fan trim balancing data acquisition and processing, Vibro-Meter has introduced a new generation of EVM equipment for the A320 family, offering many advantages over existing equipment. Surface-mount production technology and the latest digital signal processing (DSP) provides more power and flexibility while improving reliability and reducing the cost of ownership.

The new EVMs have cold fan trim balance software built in, bringing savings on maintenance time and costs.

System set-up is more user-friendly.

More detailed trouble-shooting data is now available, helping maintenance technicians to be more effective and reducing shop processing time.

The Vibro-Meter EVM implementation on Airbus aircraft gives easy access to the trim balancing data from the maintenance display in the cockpit without opening the e-bay door.

The upgrade is very simple: just change the box. No change on the aircraft is needed.



How to save time and money

The fan of a modern high-bypass aero engine is the first point of impact for debris. With the largest diameter and moment of inertia of all the rotating engine components, it has the greatest potential for balance to be degraded. Engine designers allow for routine fan trim balance adjustment by balancing weights around the cone.

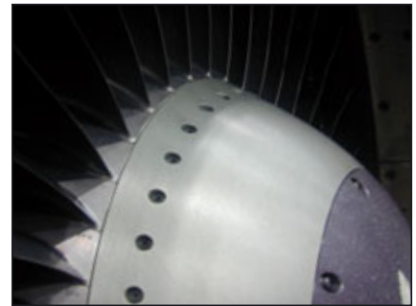
Traditionally, balance vibration measurement data are collected during ground runs. The required changes to the balance weights are calculated and the ground run repeated to verify the results.

Vibro-Meter's modern approach eliminates additional ground runs, dramatically reducing down-time and fuel costs and eliminating noise and exhaust emissions.

The operator can programme our EVM unit to acquire balance data (vibration amplitude and phase) during selected stages of normal revenue flights. The unit calculates the optimum balance adjustments and provides the maintenance technician with instructions to change weights at specific locations. The calculation is reliable and will in normal cases lead to a reduction in vibration. Usually, no additional verification ground run is required.

This simple procedure can be conducted whenever and wherever needed, resulting in lower average vibration levels throughout the life of the engine, increasing its reliability and further reducing operating costs.

By bringing your EVM up to date, you can benefit from these advantages. Vibro-Meter customer support staff will help your fleet run smoothly and more economically, removing the environmental impact and restrictions of unnecessary ground runs.



Changing balance screws on a CFM 56 engine (images courtesy of Deutsche BA)



Vibro-Meter EVM in A320 electronics bay

Customer support

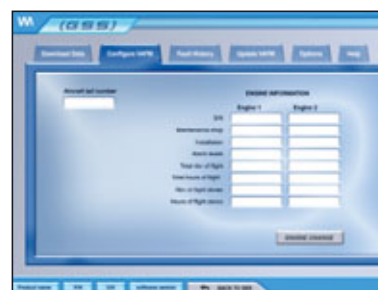
Worldwide presence

To achieve and maintain world-class status, Vibro-Meter has recognised the need to be close to our customers. Fully equipped support facilities on three continents ensure the latest generation of UEVM and AAVM is supported round-the-clock should the need arise. Trained personnel are always close at hand to provide assistance.



Advanced support software

Vibro-Meter is developing a unique tool designed to provide easy access to the advanced information available from the UEVM or AAVM. Through close collaboration with airframe and engine manufacturers and the airline maintainers, this support equipment is being developed for the day-to-day world of aircraft maintenance and troubleshooting.



Training and technical support

Although the functionality of the UEVM differs little from the EVM systems in use today, the AAVM does offer great potential for additional functionality. Our experts are ready to train customers to exploit this potential, providing their operations with more monitoring functions, diagnostics or troubleshooting help.

EN/AS, ISO 9001, ISO 14001 certified.

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Vibro-Meter is a Meggitt group company. Headquartered in the UK, Meggitt PLC is an international group of companies operating in North America, Europe and Asia. Known for its specialist extreme environment engineering, Meggitt is a world leader in the aerospace, defence and electronics industries.

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