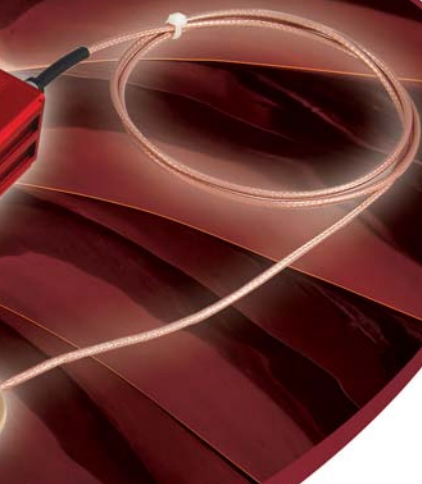




**MONITRAN
TECHNOLOGY**

SENSING THE FUTURE



T3

TURBO TIP TIMER

A Revolution in Blade Health Monitoring



The T³ *A Whole New Way of Looking at Blade Health*

The T³ is an advanced new eddy current probe and driver combination developed by Monitran Technology in partnership with QinetiQ.

It delivers high quality, in-service blade health data and is ideal for use in condition monitoring, predictive maintenance and detection of foreign object damage (FOD) in both ground-based and airborne turbine systems.

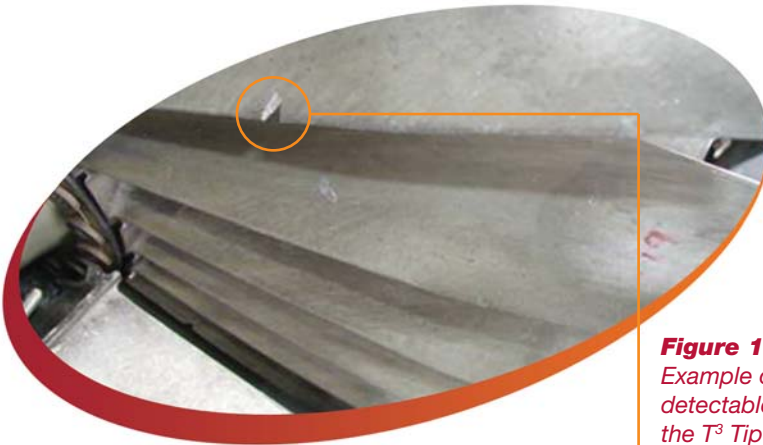


Figure 1:
*Example of FOD
detectable with
the T³ Tip Timer*

The T³ *An Effective Substitute for Optical Systems*

Although accurate, optical systems are notoriously vulnerable to contamination from dust, dirt, oil and other debris. Even rain water can obscure the optical path.

Unfortunately, it is often during times of greatest danger of contamination, for example during an airborne bird strike, that reliable performance of a sensor system becomes essential.



The T³ The Solution to the Contamination Problem

The T³ eddy current probe is immune to these difficulties. It delivers crystal clear data regardless of the degree of contamination. It also performs well at high frequency and in hotter environments, making it ideal for in-service monitoring.

Figure 2 shows how closely the T³ replicates the signal from an optical system. There is effectively no difference between the two traces – but the T³ benefits from the immense advantage that it is immune to contamination.

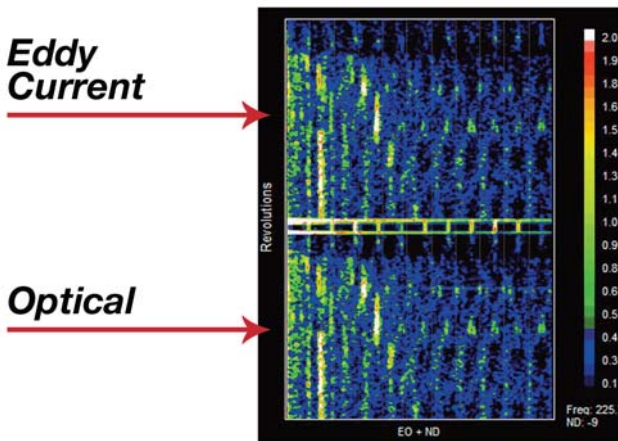


Figure 2: Results from tip-timing trials of the T³ on a Spey RB168-101 engine at QinetiQ's open air engine test facility, Shoeburyness, UK. The T³ produced comparable results to optical sensors even at high frequency, but was unaffected by the rain which contaminated the optical sensors.



The T³ *A Revolution in Blade Health Monitoring*

- Rigorously tested on a wide variety of engines and test rigs
 - High mechanical integrity
 - Equivalent signal quality to optical systems even at high frequencies and temperatures
 - Immune from contamination
 - 'Plug and Play' compatibility with all standard data acquisition and analysis systems
 - Simple installation and connection
 - Three outputs: processed tip pulse arrival time, scaled tip clearance and raw signal
- Compact and cost-effective



Call Monitran Technology now on **01494 816569
to arrange a demo**



The T³ Eddy Current Probe and Driver *At a Glance*

Typical applications

- Monitoring of blade health in ground-based and airborne turbines
- Detection of cracks and breaks in gear teeth
- Detection of twists and eccentricities in shafts

Driver unit weight: 200g max

Dimensions:

Driver unit 62.5 x 29.5 x 78.8mm

Standard Probe

Probe height
(including flange) 16.5mm

Probe diameter 13mm

Flange height 8mm

Flange diameter 25mm

Operating Temperature

Driver

-20°C to +85°C

Probe

-20°C to +250°C (continuous)

-20°C to +300°C (intermittent)





About Monitran Technology

Monitran has been a leading supplier of vibration, displacement and proximity monitoring equipment for over 20 years. During that time the company has established itself as an expert in the field and acquired an unrivalled reputation worldwide for the high quality and reliability of its products.

Now the founders of Monitran have set up Monitran Technology: a new venture that seeks to explore and exploit the growing demand for advanced sensor technology in a wide range of industry sectors – particularly where a substantial element of research and development or joint venture is involved.

Initial projects have made use of recent advances in eddy current technology, while future plans include the enhancement of Monitran's ever-popular range of accelerometers.



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