

The Victor at the Imperial War Museum

Taking restoration in hand

Would we have won back the Falklands without long-range air-to-air refuelling by the V-bomber fleet? Handley Page Victors were critical to RAF bombing missions in 1982.

One example of the Victor is XH648. It saw action during proxy war incursions in Indonesia in 1962-63 countering the threat from the USSR. Afterwards refuelling pods were fitted under each wing and XH648 served as a fuel tanker before retiring to the Imperial War Museum Duxford.

The bomber had a top speed of 600mph and a range of 6,000 miles, and was powered by four Armstrong Siddeley Sapphire turbojet engines and later Rolls-Royce Conway turbofans.

Curators at IWM are now restoring this historic aircraft to tell future generations about the technology, politics, horror and excitement of air warfare in the mid-20th century.

If restorers repair a corroded part with the same alloy they avoid causing more damage. Knowing precisely the material in a component also helps determine provenance and tell the full story of the aircraft. They have been using a state-of-the-art X-ray fluorescence (XRF) materials analysers, the Niton XL5 and the Niton XL3 955, to identify materials.

The bomb bay doors, elevator skins, drag chute doors and magnesium ribs have been cleaned and treated for corrosion. The magnesium skin of the aileron fixed trim tab was badly corroded, this has been remade.

Today's aerospace manufacturers need to analyse the advanced metals, non-metals and composites used in modern aircraft too. Niton analysers can verify these materials accurately, avoid mistakes and prevent product failure. A handheld instrument allows the user to work on the shop floor, in the hangar or out on the airfield.

Niton analysers, with their large area silicon drift detector, detect titanium down to 10 ppm and magnesium down to 750ppm.



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Since 9/11, the demand for accurate materials analysis by aerospace, defence and security has increased dramatically. This has led to huge leaps forward in the technology and capability of handheld in situ spectroscopy. Spectroscopy can detect chemical hazards accurately and verify the specialist, stronger, lighter alloys in aircraft parts for positive materials identification (PMI).

Each year 500 aircraft are scrapped. To reuse parts, materials must be identified. Handheld analysers help aircraft breakers recycle at end of life, with some parts and materials ending up at Duxford.

The Handley Page Victor is firmly embedded in our culture and history. Niton instruments are helping to tell its story.

To learn more about the Victor visit www.iwm.org.uk. And for further information on our analysers go to www.nitonuk.co.uk.

The Niton XL5 Analyser

Top performance alloy verification for in situ QC, failure analysis, safety inspection 10x faster, 3x more precise

Technical specification

Weight 1.27 kg

Dimensions 243 x 208 x 68 mm

Tube Ag anode 6-50kV max, 500 uA max 5 W max

Detector Geometrically Optimised Large Area Drift Detector GOLDD typical resolution 150 eV-185 eV

System Electronics iMX6 quad core ARM A9 800 MHz 80 MHz ADC ASIC fo digitalr signal processing 4096 channel MCA 512 MB internal system memory/4 GB storage

Display Tilting, colour, touch-screen display

Standard Analytical Range >30 elements from Mg to U

Data Storage Internal >20,000 readings with spectra

Data Transfer USB, Bluetooth™ Wifi

Global Positioning GPS data included with sample information

Security Password -protected user security

Modes General Metals, Precious Metals, Coatings, Mining, Soils, Electronic Alloys, Plastics, Industrial Lead in Paint, Spectral Fingerprint, TestAll™

Data Entry Touch-screen keyboard User-programmable pick lists

Standard Accessories Integrated CCD camera Locking shielded carrying case Two 6-cell Li-ion battery pack 110/220 VAC battery charger/ AC adaptor PC connection cables (USB) NitonConnect PC software Safety lanyard Check reference material samples

Optional Accessories 3 mm small-spot collimation Portable test stand Belt holster Hotfoot jacket HotWork standoff



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