



Case Study

Museums and Conservation
Royal Air Force Museum

Wireless telemetry and remote monitoring

June 2018

BACKGROUND

On April 1st 2018 the RAF celebrated its 100th birthday. To mark the occasion a wide range of events have been organised across the country. Additionally, the RAF museum in London and Cosford have created four new exhibits which reflect the changing roles and capability of the RAF. A transformation of the London site, supported by the Heritage Lottery Fund, will include two new, innovative galleries exploring the first 100 years of the RAF, its roles today and invite visitors to imagine its future contribution and technology. A third new exhibition will focus on the story of the RAF from the Falkland's conflict of the early 80s to current operations. Over 500 previously unseen artefacts relating to RAF history will be on display including logbooks, uniforms, lucky charms and technical equipment.

Preserving History

The RAF museum provides a reminder of the pivotal roles it has played in every decade since it was founded, the themes of the three new exhibits in London: "The first 100 years", "The RAF in an age of uncertainty" and "First to the future" highlight the involvement of the RAF in conflicts and humanitarian programs over the last century and at a very personal level, how important it is to remember these events through its archive of aircraft, equipment and memorabilia. Consequently, it is important that the exhibits are displayed in the best possible

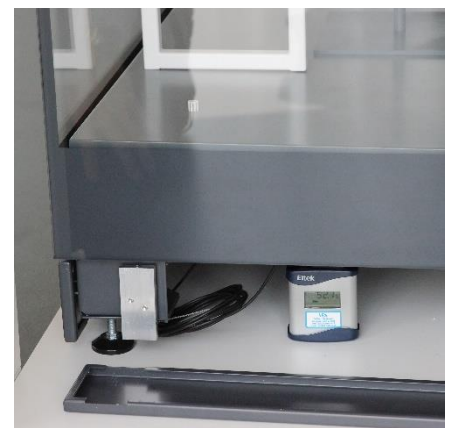
environment and that they are monitored to ensure that the correct conditions are maintained. As members of the Museums Association the RAF museum adopts best practice when it comes to monitoring.

Best Practice

The content of the museum is wide ranging, many items being sensitive to incorrect temperature and humidity levels as well as excessive changes and high cumulative light levels.

The range of exhibits includes aircraft and boats to delicate textiles. One such example is a flying suit that has had extensive

conservation work undertaken on it because stitching, rubber seals and the fabric itself had all deteriorated. Great care was required to preserve the item from further deterioration. The exhibit is now stored in a glass cabinet



and its temperature and humidity monitored using an Eltek GD13E transmitter combined with a RHT10E probe to provide a discreet but precise method of monitoring temperature and humidity.

Eltek equipment has been used to provide a monitoring system to the RAF museum for over 7 years. In 2017, as part of the preparation for the Centenary project, Charlie Marriott the collections care officer at the London RAF museum contacted D-Tech Systems, who are a specialist distributor for Eltek products. Charlie stated that D-Tech provide the expertise for *“providing a practical solution to a nebulous problem”*

Specialist expertise

Danny Gibbs at D-Tech undertook a radio survey of the site and met with Charlie as well as other third-party contractors such as the showcase suppliers to ensure that a well-researched cost effective practical solution was specified. D-Tech took account of the need to provide a solution that could provide up to date results data for both the Cosford and London museums. The type and location of the sensors, repeaters and loggers was agreed and incorporated into the site plans for the new exhibits to ensure that on the day of installation everything would run smoothly.

Support



Eltek products are regularly supplied and maintained by carefully selected specialist suppliers. D-Tech was selected by Eltek for its wealth of experience in the Museums and Heritage sector and its in-depth knowledge of the Eltek product range.

D-Tech provide ongoing support for customers including annual calibrations, routine servicing, and ongoing training and telephone support. With experience of the sector, D-Tech can ensure that the system is set-up as required with the minimum of disruption for the customer.

“Let the machine do the work for us!”

Charlie Marriot has the system set-up for minimum user involvement. Automated reports are sent to various recipients at both the London and Cosford sites on a weekly basis. Threshold temperature and relative humidity settings have been defined and alerts are automatically emailed to ensure any issues are addressed promptly should they ever arise. Eltek has been able to customise the software for the RAF museum so that fluctuations can be monitored without the need to post process logged data on a spreadsheet. *“It’s good that the system and the data are centralised, with automatic updating.”* The Eltek system is fully autonomous and does not lose data in the event of a power outage.

The Future

The system at the RAF museum has just undergone a major expansion, so there are no immediate plans for further expansion, but Lux (light level) monitoring would be one of the considerations and the Eltek system would seamlessly incorporate this capability.

System components

The system installed in London and Cosford consists of a total of 46 sensors in London and a further 16 in Cosford. These sensors measure temperature and relative humidity in

the ambient environment and inside showcases. The software used is Darca Heritage 2, this gives the user the benefit of being able to monitor, control and report on multiple locations all on one package by utilising database technology. The system configuration is such that the user can switch between the data for each location with a mouse click.



GD10 transmitters

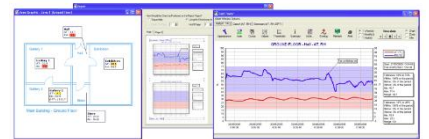


GD13E transmitters



RX250AL

Site-based data acquisition, analysis and reporting software



Darca Heritage 2

Acknowledgements

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