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**INFRASTRUCTURE**

# Turning old into new

Two business campuses are set to make Wales the UK's centre for UAV testing and training of military maintenance specialists

**MURDO MORRISON**

Wales has got used to finding new uses for redundant infrastructure, whether opening museums at former collieries, or call centres and business parks where once stood smokestack factories.

"Adapting and surviving is something we've always had to do here," says Mark Norris, head of aerospace at the Welsh Assembly Government, whose job it is to promote the country's aerospace sector and to attract investors.

**PAINFUL DECISIONS**

Wales has often been at the painful end of business decisions made elsewhere, from the closure of mines and foreign-owned assembly plants to the Ministry of Defence's decision in 2006 to shut its defence repair facility at the St Athan Royal Air Force base, near Cardiff. It came just a year after the opening of a 45,000m<sup>2</sup> (485,000ft<sup>2</sup>) six-bay superhangar to maintain a fleet of BAE Systems Harrier GR7s and Panavia Tornado GR4s.

The assembly government was left holding the baby – in this case the whole 140Ha (345 acre) airfield of which the RAF was interested in keeping only a small part and dealing with the fallout of 450 civilian maintenance jobs being lost.

Salvation arrived when two years ago the MoD handed the Qinetiq-led Metrix consortium the contract to build and run the main facility of its new tri-service Defence Technical College at St Athan. Construction work on the campus – which will incorporate the superhangar – is scheduled to begin next year, opening in 2014.

The assembly government is confident the training school will encourage other tenants to move to a planned aerospace park on the rest of the air base, using some of the smaller redundant hangars and units and keeping the runway active. Isle of Wight-based airframer Britten-Norman has a base to maintain its Islander-based Defender special mission variants, while Bond Air Services houses the Eurocopter EC135 helicopter it operates for two local police forces at St Athan.

On the isolated west coast of Wales, the as-

sembly government has been for five years luring the unmanned air systems community to set up shop – temporarily or permanently – at ParcAberporth, another former military camp next to the Qinetiq-run MoD missile firing range overlooking Cardigan Bay.

The site's selling points include access to restricted airspace, a pool of former military support personnel and purpose-built business units. The assembly government owns the business park that sits alongside the privately run West Wales airport.

In a bid to market the site, the assembly government has run an unmanned systems conference, exhibition and flying display at ParcAberporth every summer since 2004. However, funding for the event has now dried up. "Running the event every year was not sustainable in the long run," says Norris. "However, it has done its job to get us on the UAV map."

Big name tenants have begun to trickle into ParcAberporth. Italian company Selex has a base there and plans to fly its Falco tactical UAV there this year. Thales UK and its partner Elbit Systems have flown the Elbit Hermes 450 at ParcAberporth and will use the facility there to test its WK450 Watchkeeper variant being developed for the UK.

The park also has the offices of the ASTREA (Autonomous Systems Technology Related Airborne Evaluation and Assessment) project, which brings together many of the major unmanned systems developers, academics and government representatives, and aims to come up with ways of opening UK civil airspace to UAVs.

Some have been disappointed that Parc-



ParcAberporth is a centre of excellence for UAV development

Aberporth has not brought mass employment to an economically challenged area of Wales. ParcAberporth has been a "slow burn", admits Norris. "It's not the type of project that creates instant jobs."

However, by creating a UK centre of excellence for UAV development, it has "embedded knowhow", he says. "The critical thing is using it as a lever and bringing in intellectual property." ■

**EMPLOYMENT MURDO MORRISON**

## EADS CENTRES ON SKILL IN NEWPORT

Airbus in Broughton may be the biggest aerospace employer in Wales, but almost as vital to the sector are parent company EADS's sites in Newport, which employ 1,400 people – most in high-skilled engineering and technical jobs – and arguably support several times that number in academia and the supply chain.

EADS's presence in the small south Wales city began when it bought secure communications specialist Cogent in 2001, transforming it from a purely defence supplier into a much broader specialist in integrating communications, cryptology and surveillance

**"We can attract graduates coming out of Welsh universities"**

**TONY BAGNALL**  
EADS Newport head of operations

systems for public sector customers.

Part of EADS's Defence and Security division, it relocated last year from the other side of Newport to a £35 million (\$51 million) campus at Celtic Springs, which it shares with a unit of EADS Innovation Works, the European giant's new global network of seven research

and development facilities or technical capability centres.

Although the operations are separate, EADS Defence and Security is a major customer for EADS Innovation Works' R&D – most of the technical centres are situated next to a bigger EADS business. The Newport facilities are part of what head of operations at the centre Tony Bagnall calls "Wales's vibrant economy, creating high-calibre jobs, not just at EADS but throughout academia and at SMEs". This means, he says, that "we can attract graduates coming out of Welsh universities, who don't need to go elsewhere for a job". ■

**MANUFACTURING**

# Survival specialists

Like all SMEs, Wales's small aerospace suppliers have had to develop distinct product offerings to beat overseas competition

**MURDO MORRISON SOUTH WALES**

Every time one of his products explodes, United Aerospace's managing director Gareth Burks is happy. His Pembroke-based company makes two 12kg (26lb) target drones every day for Meggitt, which supplies them to the UK and other militaries to blast apart.

The composite structures manufacturer is one of a number of small and medium-sized enterprises in the industrial belt of south Wales that have survived everything thrown at the region by specialising in quality, niche products. Although Welsh SMEs have been hit by the slump in civil aerospace as elsewhere, with many reporting cashflow tight, there have so far been no casualties in the sector, says Mark Norris, head of aerospace at the Welsh Assembly Government.

On 7 April, the region's SMEs have a chance to promote themselves to the OEMs at the Cardiff Aerolink business networking event, backed by the assembly government. The message to equally cash-strapped OEMs will be that home-grown SMEs are closer to the customer and have the expertise to deliver

upscale solutions that more commodity-oriented competitors overseas do not.

Military sales have helped United Aerospace ride out a decline in demand for its other main product lines, composite frames for premium airliner seats and other interiors structures. About 35% of its business comes from non-aerospace, ranging from wind turbines to large satellite dishes. Diversification has been the result of a hard lesson. "We just survived 9/11 and we wouldn't again put the business at risk from one customer or sector," says Burks.

United Aerospace began as an offshoot of a Formula 1 supplier in Surrey which opened premises in Pembroke in 1999 manufacturing aircraft seating. It was bought out by management five years later. Turnover has grown from £1 million (\$1.42 million) to £3.2 million last year, and there are 80 employees.

Although the company faces competition from China, the Czech Republic and South Africa, Burks says companies there seek volume deals with lower margins: "We want to go up the supply chain and position ourselves as a niche supplier. They aren't interested in finishing, for instance."

TWI in Port Talbot is also part of the growing composite structures sector, although in a different field. A branch of the Welding Institute – an industry-funded, non-profit research organisation established in the Second World War and based in Cambridge – the centre devises methods of non-destructive testing (NDT) manufactured structures, providing the testing system for the manufacturer.

Installed in the former research department of a steel works in 2003 with Welsh assembly government help, aerospace accounts for 60% of its business. Although it develops NDT testing methods for all types of structures, composites are the biggest challenge. "Critical structures have been made out of metal for thousands of years and we've learned how they perform and fail," says regional manager Philip Wallace. "For composites, you have effectively no data because the technology is so new, so we have to build massive safety margins. Because they use sandwich-type structures, one layer may be completely different to the one underneath, so, unlike metal, you may need two or three techniques to find the range of possible defects you are looking for."

The centre has an armoury of equipment offering, among others, thermography, laser shearography, ultrasonics and radiography testing of the tiniest micro structures to giant components such as the Airbus A380 wing-box. It employs just 14 people, but eight are PhD or MSc scientists and the rest experienced industrial engineers.

At Bridgend, Spectrum Technologies is another SME offering a highly specialist product, in its case ultra-violet laser machines that mark the wiring that goes into modern aircraft.

With Boeing Commercial Airplanes, Airbus wiring supplier Labinal, Lockheed Martin, Sikorsky and the US military among its customers, the company – bought by management from the then British Aerospace in 1994 – has been a prolific exporter, benefiting from the ramp-up in output at Toulouse and Seattle in the past few years. Revenues for the last financial year topped £8 million (\$11.7 million).

The latest downturn, however, presents a challenge, although Spectrum has been there before. "We quadrupled in size between 1994 and 2001, but the lights went out after 9/11," says chairman and managing director Peter Dickinson. The company had to downsize drastically, although launching a new "fourth-generation" product in 2004 helped it rebuild.

**"If you don't get the wiring right in the first place you're in trouble"**

**PETER DICKINSON**  
Spectrum Technologies chairman

Its machines are not the cheapest, compared with technology from places like China, but "what we sell is speed and productivity", says Dickinson. Automation cuts the number of people needed in the wiring identification process. Ensuring that wiring is not damaged by the marking process is vital (the traditional method was "hot stamping"). "People still treat wire as fit and forget, but if you don't get the wiring right in the first place you're in trouble," says Dickinson. "The wiring and the marking on it must last the life of the aircraft." ■



Spectrum specialises in wire marking