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BAE Systems at Warton – Going from Strength to Strength

The second of three reports by Andrew Harris about the work of BAE Systems in our region

On the 5th September 2017 it will have been 75 years since Warton Aerodrome and its facilities acquired national and international significance which in different ways it has maintained ever since. Back in 1942 it started to receive and process military aircraft from the USA which – with Burtonwood at Warrington – very largely created the strength which enabled the allies to defeat Nazi Germany. In recognition of its crucial role the leading US Army Air Force (USAAF) General Jimmy Doolittle later dubbed it 'The World's Greatest Air Depot' as by the end of the war it had processed 10,068 aircraft and overhauled more than 6,000 aero engines.

After the war English Electric moved its flight testing from Samlesbury (see the March 2017 edition of the Lancashire Magazine) to Warton and this successively involved the Canberra – Britain's first jet bomber - then the iconic Lightning, TSR-2, Jaguar, Tornado and the Eurofighter Typhoon which continues to this day. But Warton is more than runways and test flying.

Due to international competition and the soaring cost of increasingly sophisticated combat aircraft the British military aircraft industry consolidated over the years and finally in 1999 BAE Systems was formed. This accounted for most of the old famous names like Avro, De Havilland, English Electric, Hawker, Short, Supermarine and Vickers and put a lot of 'eggs in one basket' – BAE Systems. As the Strand Road factory had closed in 1992 and BAE Systems at Samlesbury increasingly concentrated on manufacturing aircraft parts and components, Warton became the dominant centre of British military aviation. But could they adapt to new trends and compete with the rest of the world?

BAE Systems at Warton inherited a great tradition and made it greater. Moving on from the successful Tornado

LEFT: Warton aerodrome and works seen from the north. The A584 is in the foreground with the River Ribble in the distance.
BELOW: Inside the Warton works: the Typhoon production line.

the company has achieved orders and upgrades for the Typhoon which first flew in 1994 as a fighter. Responding to new demands BAE Systems has - with their international partners in Germany, Italy and Spain – developed the aircraft to fulfil fighter and ground attack roles in ever better ways through its four-nation consortium, Eurofighter. More orders followed with the RAF depending on the multi-role Typhoon to replace the GR4 ground attack version of the Tornado shortly and with the new F-35B Lightning II stealth fighter providing the front-line strength of our air force for many years to come.

The evolution of the Typhoon is impressive. Moving from the original Typhoon to the Phase 1 Enhancements (P1E) Multi-Role to Deep Attack then P2E Beyond Visual Range and P3E Fast Moving Air to Surface versions makes the latest Typhoons unrecognisable. Your columnist wishes they could just be called Mark 1, 2, 3 and so on but the changes are too subtle and bespoke for that. Supervisor John Sowerbutts is justifiably proud of the Typhoon when showing your columnist around the production line, as pictured. The logistics, detail and tolerances are stunning. The aircraft is up there with the best in the world and it's made here. We can all be as proud as John and all his colleagues.

The Typhoon is state-of-the-art with futuristic avionics – aviation electronics – plus 80% lightweight carbon fibre with some titanium thrown in. For those who think we don't make aircraft the way we used to there is the Hawk. It first flew in 1974 – as did the soon to be retired Tornado – yet it's all-British, there have been more than 1,000 orders from 18 countries, is still going strong and is an unqualified success story. Best known as the aircraft flown with style by the Red

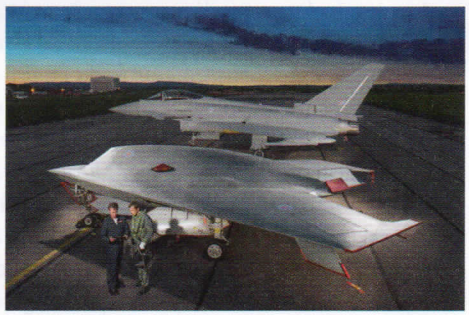
Arrows, its latest versions are made at Warton although 50% of the parts come from Brough, near Hull and – as with all aircraft – many components from engines to ejector seats come from specialist suppliers. Supervisor Garth Woods is also proud of the Hawk. Guiding your columnist along a more traditional production line we saw the 1,000th fuselage with its 100,000 rivets. Taking 34 months from order to flying, the result is valued by air forces around the world as a fast and nimble training aircraft – and for combat if needed. Production of the Hawk was resumed about five years ago after a break of seven years. It is still a winner and continues to attract orders.

So much for the past and the present but what of the future? In a fiercely competitive market where politics counts as much as aircraft performance and cost BAE Systems at Warton seem to recognise that they are only as good as the last order they have received. In this nerve-racking business there are four reasons to have faith in the future –

• The current aircraft types continue to attract orders. The UK, Germany, Italy and Spain are all using their influence and links to achieve sales. The Hawk continues to be a trainer of choice in this market and the under-the-skin updates which lie beneath its airframe ensure it remains as cutting edge today as when it first flew.

• The current aircraft types can evolve to stay competitive and relevant. Your columnist was much-impressed by the commitment of BAE Systems to enhance the capability of the Typhoon which is already a well-proven aircraft. The P3E version will keep the Typhoon in the market for many years to come. As many NATO countries will have to increase their commitment to defence to placate the USA, BAE Systems is well placed to meet this need. This may well benefit

BOTTOM LEFT: A nearly complete Typhoon at Warton.
MIDDLE LEFT: Just in case you thought it was easy!
TOP LEFT: After all the construction work it flies . .
TOP: The Hawk production line at Warton.
ABOVE: The Hawk flying; one of the most successful aircraft of all time.



RIGHT: The present and the future? The Taranis with the Typhoon behind. MAIN: The TARANUS alone: with which BAE Systems is going boldly into the future.

the economy of the North West by maintaining and increasing jobs in our region.

• Due to the success of the Jaguar, Tornado and Typhoon programmes BAE Systems has gained much experience of working in partnership with other countries and their aircraft consortia. This creates great potential for the future as evidenced by Turkish Aerospace Industries – or TAI – asking BAE Systems to collaborate on the first development phase of an indigenous 5th generation fighter jet for the Turkish Air Force. Known as the TF-X, current plans envisage more than 250 being produced in Turkey from 2023. BAE Systems' involvement is expected to support more than 400 jobs in short term but – more importantly – BAE Systems is well-placed to contribute many parts and components possibly involving other UK suppliers like Martin Baker (for ejector seats) and Rolls Royce for engines. Well done BAE Systems.

• BAE Systems is also far-sighted and constantly looking to develop new technologies. Just one of the projects BAE Systems is involved with is the Unmanned Combat Aircraft System (UCAS) demonstrator TARANIS – named after the Celtic God of thunder. The project aims to push the boundaries of technology demonstrating the feasibility and utility of an UCAS. Understandably information about TARANIS is extremely limited as it is a highly sensitive project.

The aerospace industry is fiercely competitive, astonishingly complex, forever changing to meet new challenges and requirements and the stakes are high. There are no guarantees about the future of Warton but BAE Systems offer two successful types of aircraft, evolving versions of them, partnership working on cutting-edge projects like the TF-X and a stake in the coming world of unmanned aerial vehicles. Warton is going from strength to strength.

Andrew Harris (www.andreweharris.co.uk) gratefully acknowledges the help provided by BAE Systems Senior Communications Advisors David Coates and Debbie Stott in the preparation of this article. All pictures are courtesy of BAE Systems. The concluding part of this trilogy will feature the production of nuclear submarines by BAE Systems at Barrow-in – Furness.