

## 100 Years of World Class Aircraft from Kingston-upon-Thames by Chris Farara, Hawker Association

This was the story of the Kingston aircraft factory (Kingston-upon-Thames, in Greater London) from 1912, and the legacy associated through the firms that bore the names of 'Tommy' Sopwith and Harry Hawker and culminated, through amalgamation, into the British Aerospace site which finally closed in 1993. It was told through some 96 slides that ensured no significant design of any period was overlooked. The lecture followed a chronological path and interspersed factory, characters and products. To attain brevity in this report, these three elements are summarised separately.

**Factory** – the Kingston Roller Skating Rink was acquired by Sopwith in 1912, and was used as a design and manufacturing plant, with airframes assembled and flown from Brooklands. By 1914 the company had to acquire larger premises at nearby Canbury Park Road in which production of early WW1 aircraft types was conducted. Even this proved inadequate to meet demand and the Government built a further large factory at Ham: about 1 mile north of Kingston. Although it was Government-owned, the Sopwith Company managed the site. In 1920, when Sopwith was wound-up, and replaced by H.G. Hawker Engineering, a much reduced workforce was located in the Canbury facility to conduct design and production. Assembly was located at Brooklands. This closed in 1938 and the company opened a satellite factory and aerodrome at Langley (near Slough). In 1948 Hawker acquired the Ham Works, and chose to centre all Kingston based activity there. Three years later Dunsfold in Surrey - some 20 miles south - was acquired from the MoD to replace Langley and it remained the factory-associated aerodrome until 1998. Meanwhile, in the late-50s a new office frontage was added at Ham and it became the long-term factory which operated until 1993. On closure it was regarded as worthy of preservation, but as there was a similar-style building by the same architect in the borough, it was not listed, and is now a suburb area where only plaques remind residents and visitors of the area's use for almost a century.



The Kingston factory (the Ham Works site) as it appeared after 1958 when a façade incorporating the new Head Office and Design Office had been completed.

**Characters** – T.O.M. (Thomas Octave Murdoch) Sopwith (born 1888) started flying in 1910 and by 1912 had formed, with engineer/mechanic Fred Sigrist and others, the Sopwith Aircraft Company. The company prospered, but was charged for excess profits tax after WW1, so Sopwith had to refinance the firm. In so doing he paid up all debts and registered a new company, H.G. Hawker Engineering. It was still run by Spowith, but named after board member Harry Hawker (born 1889), an Australian who had been Sopwith's most trusted test pilot from its earliest days. Hawker died in an aircraft crash in 1922 (not in a Sopwith type). It was the following year that the Hawker team recruited Sydney Camm as a designer. He was later knighted (as was Tom Sopwith) and his name became synonymous with Kingston designs, where he was Chief Designer until 1965. The lecture also summarised the work of Ralph Hooper, who designed the unique P1127 vertical take-off and landing research aircraft. It was subsequently developed into the Harrier jump-jet by John Fozard. The last Kingston-based design, the US Navy T-45 Goshawk jet trainer project (this was a considerable Hawk derivative) was led by Gordon Hodson.

When production was discontinued at Kingston, redundancies were numerous, but many team members moved to Dunsfold and British Aerospace at Farnborough. Some moved to Brough, in Yorkshire, where the Hawk manufacturing facility was relocated.



Sir Sydney Camm, designer of Hawker types from biplanes to Jet fighters over 40 years, and Sir Tom Sopwith, seen together in 1953.

**Products** – The Sopwith lineage was vast with many related designs. A large number were illustrated by the presenter. These are categorised in roughly chronological order.

The elegant Bat Boat flying boat (co-built with Sam Saunders, a yacht builder whose flying boat facility was on the Isle of Wight) was the starting point, and it led to a float-version of the Tabloid which won the Schneider trophy for Britain, and the first national win, at Monaco in 1914.

Sopwith designed and built what would become legendary fighters in WW1, the Pup, 1½-strutter, Triplane and Camel being the most well-known types.

In the early interwar years there was an unproductive dalliance with civil aircraft, but lack of interest soon drove production to military types, and the biplane fighters such as the Hart and the Hind, and later the Fury, which all set a standard for clean fuselages combined with wings that were simple but practical and combined ease of handling with good gun-platform stability.

In 1935 the first example of Sydney Camm's Hurricane fighter was flown. This monoplane fighter used the newly developed Rolls-Royce Merlin engine (then still called the PV-12) and, as Hawker's Management Board underwrote long lead-time supplier contracts, deliveries of the type started in 1937. This was crucial to having aircraft, trained crews and supporting infrastructure in place before the Battle of Britain (1940). Many design variations were produced, and by the end of WW2 the radically different, but still lineage-related Typhoon and Tempest were in operation and excelled in ground-attack duties. The Napier Sabre-powered Typhoon first flew in 1940, and the thinner-wing Tempest followed in 1942.



First production Hawker Hurricane at Langley in 1937

Hawker jet designs showed Sydney Camm's eye for clean lines, and service aircraft included the Sea Hawk (1948) and Hunter (1951).

The considerable success of the firm meant that post WW2 Tommy Sopwith was able to create the Hawker Siddeley Aircraft group through the acquisition of Gloster, Avro and Armstrong Whitworth (and Armstrong Siddeley engines) , and this later became a part of the HS Group, which also included de Havilland).

The P1127 (1961) was designed by Ralph Hooper, and its derivative, the Harrier (ordered in 1966) was the world's first all-jet vertical take-off and landing (VTOL) aircraft to enter full squadron service. It was followed by the Sea Harrier for the Royal Navy, and the Harrier II/AV8B, a joint US/UK project in the 1980s. This was a Harrier derivative with airframe and systems updates. The P1182 Hawk trainer first flew in 1974 and was the last indigenous design to reach production, but the lecture also looked at projects such as the P1154 supersonic VTOL (1960s) and the P1216 (early 1980s) which addressed many of the lessons learned from the earlier design. Neither of these aircraft were flown, but knowledge from them, and the UK DERA-operated Vectored-thrust Aircraft Ad Harrier and Hawk derivatives. Examples of both types remain in service, and the Hawk is still in production. instrumental to the on-going US/UK F-35 Lightning II program. The scale of the enterprise, recording that since 1912 over 4500 aircraft had been designed and built by Hawker designs.



Chris Farara's comprehensive coverage was warmly received, and the audience of about 130 people provided an enthusiastic endorsement of a presentation that had been packed with information throughout.

*Lecture notes by Mike Hirst*