

16 October 2012

The Schneider Trophy Contest 1913-1931

Mike Marsden, former Head of Wind Tunnels at Filton.

This presentation encapsulated the daring, the technologies, and the politics of the Schneider Trophy. The competition was introduced by Jacques Schneider, who envisaged an annual event with water-borne aircraft flying a multiple-lap course covering 350km (217.4 miles) at the highest speed possible. Organisations represented their nation to win an annual prize plus their nation's right to host the next competition. The ultimate prize was the Schneider Trophy, to be awarded to the first nation to win three competitions consecutively.

The first competition was held in 1913 at Monaco, and was won by a French contestant flying a floatplane variant of the Deperdussin Coupe. As he was the only pilot to complete the course France hosted the competition in 1914. The lecture was based on a chronological review of the competition events. These are listed below, with information on each winner.

Date	Location	Winning Aircraft	Nation	Pilot	Average speed
1913	Monaco	Deperdussin Coupe Schneider	France	Maurice Prevost	45.71 mph
1914	Monaco	Sopwith Tabloid	U.K.	Howard Pixton	86.83 mph
1915-18	no contest				
1920	Venice, Italy	Savoia S.12	Italy	Luigi Bologna	106 mph
1921	Venice, Italy	Macchi M.7bis	Italy	Giovanni de Briganti	117.85 mph
1922	Naples, Italy	Supermarine Sea Lion II	U.S.A.	Henri Biard	145.72 mph
1923	Cowes, U.K.	Curtiss CR-3	U.S.A.	David Rittenhouse	177.27 mph
1924	no contest				
1925	Baltimore, U.S.A.	Curtiss R3C-2	U.S.A.	James Doolittle	232.57 mph
1926	Hampton Roads, U.S.A.	Macchi M.39	Italy	Mario de Bernardi	246.49 mph
1927	Venice, Italy	Supermarine S.5	U.K.	Sidney Webster	281.66 mph
1928	no contest				
1929	Calshot Spit, U.K.	Supermarine S.6	U.K.	Richard Waghorn	328.64 mph
1930	no contest				
1931	Calshot Spit, U.K.	Supermarine S.6B	U.K.	John Boothman	340.08 mph

Summary of the winning contestants throughout the Schneider Trophy 1913-31

The speaker examined each race individually: the highlights only are reported here.

1914 – The French had not expected competition, but the UK's Tommy Sopwith won in his dual float Tabloid.

1919 - At Bournemouth. Italian Guido Janello recorded the fastest time, in a Savoia S13, but this was declared void, as he had flown inside a marker pylon. Although not awarded the prize money, as he was the only contestant to finish, Italy hosted the next event.

1920 – Italian Savoia and Macchi aircraft were both supremely competitive and the Savoia S12 won.

1921 - On home ground, and in Venice for the second year running, the Italians again took the prize, this time the winning aircraft being a Macchi M.7.

1922 – The Italians had only to win to secure the trophy, and they were at Naples, but Britain broke the Italian run of successes, when the Supermarine Sea Lion logged a winning speed that was just 5mph faster than the best Italian competitor.

1923 – The race, at Cowes, drew USA contestants for the first time. The streamlined Curtiss CR3 biplane introduced innovations such as surface-cooling radiators, used a metal (aluminium) propeller and won the competition. Only three aircraft finished.

1925 – A two year gap had permitted more innovative designs. The UK took the Gloster III and the Supermarine S4 to Baltimore, the Italians took the Macchi M33, and the Americans rolled out the Curtiss R3C. The European efforts were in vain, and the US test pilot Jimmy Doolittle won convincingly.

1926 – At Hampton Roads in Virginia the Italians challenged America with five examples of the Macchi M39. This sleek low-wing monoplane, that the speaker noted was about the lowest drag coefficient design imaginable in its era, won at an average speed of 246 mph.

1927 – In Italy again, the homeland aircraft were challenged strongly by the British, while the Great Depression prevented American participations. The UK Supermarine S5 used the well-proven Napier Lion, had a wire-braced wing and had surface cooling for the water and the oil systems. Italian hopes were pinned on the Macchi M52, but it was the Supermarine S5 that proved best, winning at an average speed of 282mph.

1929 – Another two-year gap and Cowes hosted, but contestants operated from Calshot. In the Supermarine S6, the UK used the new Rolls-Royce V-12 'R' engine, with a powerful concocted fuel, and the Italians challenged with two types: the up-rated Macchi M52R and the newer Macchi M67. Only the S6 (329mph) and the Macchi M52R (284mph) finished.

1931 – Again Cowes and Calshot co-hosted the meeting. The Italians had designed a colossal engine: two V-12 engines in tandem, that delivered power through contra-rotating two-bladed metal propellers. The sleek aircraft had to be a formidable challenger to the UK's Supermarine S6B. Having not been given governmental support, it had been developed using £100,000 of personal support from Lady Houston. Just 10 days before the meeting date the French and Italians requested a one-year postponement. It was up to the UK to deliver a response, and it was decided that as the UK development has been underwritten by a public donation, there should not be a postponement. The contest was not a race as such, as the Supermarine S6B, flying the circuit alone, logged an average speed of 340mph.

The Schneider Trophy was duly presented to the UK, and is now in the Science Museum. Sadly Jacques Schneider had passed way in 1928, and never saw his challenge completed.

In the course of the lecture the speaker discussed engine developments, much of the political interest (or lack of it in some cases), especially in the UK and Italy, and gave time to discuss problems confronting designers and pilots: such as visibility from the small, and over spray-swamped cockpits – the effect of propeller gyroscopic effect that led to one float digging into the water during take-off – and 'unstick' issues, upon which the speaker noted that a choppy sea was essential for take-off, as a glassy-flat sea could prove impossible.

The presentation was concluded with a review of benefits attributable to the Schneider Trophy competition, and in the question and answers session penetrating questions proved to be hard to find as the speakers coverage has been so thorough and enjoyable. A vote of thanks generated warm applause from the 70 or so attendees.

Notes written by Mike Hirst, RAeS Loughborough Branch