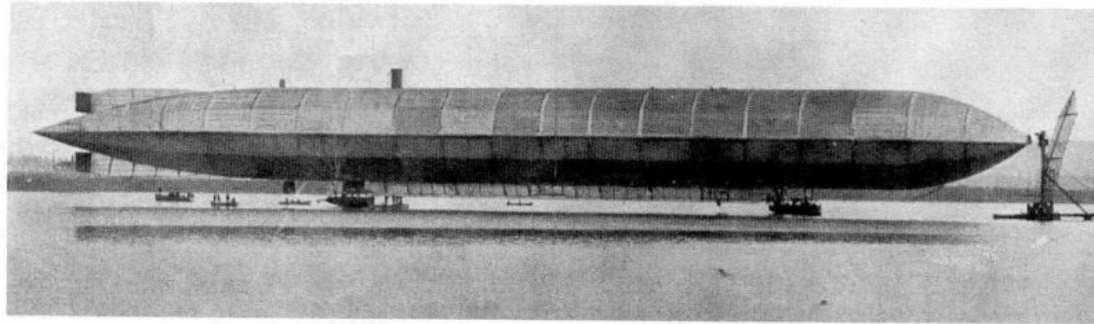


HMA "MAYFLY" - COURTESY WOLSELEY CAR CLUB NSW JULY 2016

HMA No. 1 ("THE MAYFLY")

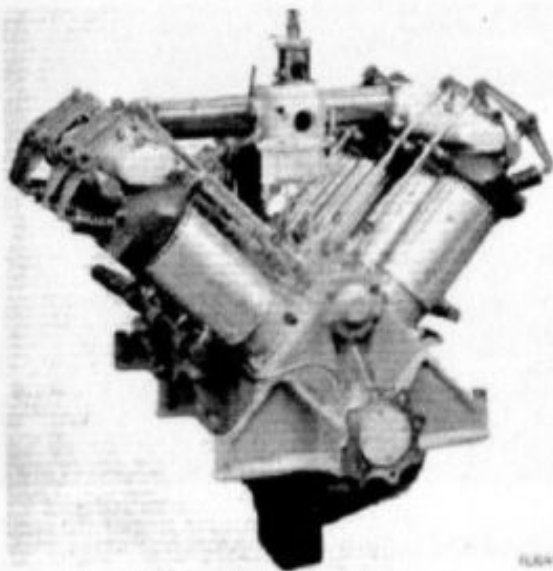


His Majesty's Airship No. 1 was designed and built by Vickers, Sons and Maxim at their works in Barrow-in-Furness, Cumbria, England, as an aerial scout airship for the Royal Navy. It was the first British rigid airship, and its construction was a direct attempt to counteract the German airship programme. Invariably referred to as the Mayfly, the airship's official name was actually HMA Hermione, after the HMS Hermione, a cruiser that was to act as the airship's tender.

The Mayfly story begins in July of 1908, when Captain Reginald Bacon, the Royal Navy's Director of Naval Ordnance, recommended the Navy should acquire an airship to compete with the success of the German rigid airships designed by Count Ferdinand von Zeppelin.

The British Government agreed to allocate £35,000 to the Admiralty for the building of a "dirigible balloon" and, in March of 1909, Vickers, Sons and Maxim submitted that they could construct the ship for £28,000, not including the gas-bags and outer cover, for which the Admiralty was to provide contractors.

Vickers further agreed to erect a constructional shed at their own expense in return for a ten year monopoly on airship construction. The contract was awarded to Vickers on 7 May 1909, with design responsibility divided between Lieutenant N. F. Usborne of the Admiralty and C. G. Robertson of Vickers;. The ten year monopoly clause was refused.



The 160 h.p. V8 Wolseley engine

Mayfly was similar in design to contemporary Zeppelins, but was 66 feet longer and had 50% greater volume, to give greater lift. Mayfly was to be capable of being moored on water, carry wireless equipment, be capable of 46 mph for 24 hours and carry a crew of 20 in comfort. The mooring point was to be to a mast and Mayfly was the first rigid airship to be fitted with the mooring equipment in the nose of the ship.

After trying a number of different materials, it was decided that the frame be made from metal, the metal used being a new alloy called duralumin, which had the benefit of being both light and strong. The hull was made up of 40 transverse frames spaced 12 ft 6 in (3.8 m) apart, some being cross-braced by wires. The frames were connected by twelve longitudinal girders and a triangular section keel below the main structure. It was claimed that the design would have much less wind resistance than contemporary Zeppelins.

The outer cover was made from treated silk, with the upper half treated to reduce heat absorption by adding aluminium powder to the coating, giving a two tone effect, with the underside being primrose yellow and the top the colour of aluminium.

The two gondolas were constructed of mahogany and were watertight, as the craft was intended to be moored on water. There were provisions for telephone communication between the two gondolas. Each gondola contained a Wolseley 160 hp water-cooled V-8 engine. The engine in the front gondola drove a pair of four-bladed propellers mounted on outriggers and geared to rotate at half engine speed. The rear one drove a single two-bladed propeller mounted at the rear of the gondola. Equipment to recover water from the exhaust gases was fitted to replace the weight of fuel as it was consumed.

The construction shed and hangar was designed by Vickers and built at their Naval Construction Yard in Barrow, on piles driven into the basin floor. There was a float on which the airship was constructed and which was able to be taken out of the shed with the airship. The shed was not completed until June 1910.

On Monday 22 May 1911 the completed Mayfly was removed from the shed for trials. It was towed stern first from the narrow shed, then gradually swung and attached to a mooring mast mounted on a pontoon. Nine officers remained on board to conduct engine trials, but these trials were cut short due to radiator problems. The next day, the airship withstood winds of 45 mph (72 km/h) and for the two nights it was out of the shed, searchlights were trained on it so that any movement could be observed. Tests showed that the removal of fixtures weighing three tons was needed before the airship could become airborne.

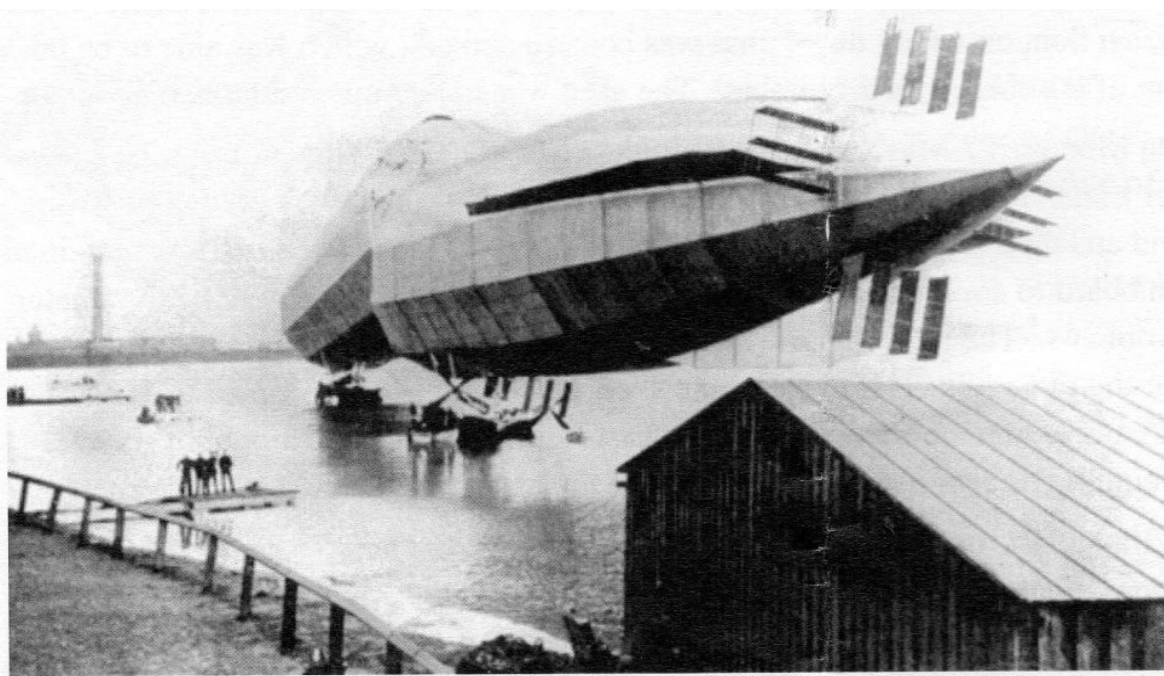
With ballast, fuel and some equipment removed, the airship floated for approximately five hours with both gondolas around 3 feet out of the water.

One of the modifications to reduce weight was the removal of the external keel. Hartley Pratt, a draughtsman working for Vickers, warned that this was a mistake, but he was ignored. Other changes included the water recovery apparatus and altering the positions of the gondolas so that the heavier forward gondola was moved to the aft position.

On 24 September 1911 it was decided to move Mayfly from the hangar to fully test the craft. Just as the nose cleared the hangar door, a gust of wind caused the ship to roll. It was righted, but as it was being swung round, there were cracking sounds amidships and it broke in two. There were no fatalities, and the wreck was returned to the shed the same day.[

A Court of Inquiry' found that no-one could be blamed for the incident, and that it would be reasonable to agree that the squall was to blame. Unofficially, one Naval officer observed that the airship was pulled in half by the handling party when someone forgot to release the lines that tethered the bows of the ship.

By late 1911, Winston Churchill had become the First Lord of the Admiralty. Churchill was dismissive of airships, favouring instead heavier-than-air aircraft. This change of official attitude to lighter-than-air craft meant that no attempt was made to repair the Mayfly and she was left to rot in her shed.[



Specifications

Crew: 20

Length: 512 ft in (156.1 m)

Diameter: 46 ft in (14.6 m)

Volume: 660,000 ft³ (18,800 m³)

Empty weight: 44,000 lb (19,900 kg)

Useful lift: 48,000 lb (21,800 kg)

Powerplant: 2 × Wolseley 160 hp (each driving 2 propellers), 147 hp (110 kW)
each each

Performance (theoretical only, as the craft never flew)

Cruise speed: 42 mph (68 km/h)

Range: 1,090 miles (1,750 km)

Endurance: 24 hours

Service ceiling: 1,500 ft (460 m)