

# Royal Aircraft Factory C.E.1

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|                        | <b>C.E.1</b>                           |
| <b>Role</b>            | Patrol flying boat                     |
| <b>National origin</b> | <a href="#">United Kingdom</a>         |
| <b>Manufacturer</b>    | <a href="#">Royal Aircraft Factory</a> |
| <b>Designer</b>        | William Farren                         |
| <b>First flight</b>    | 17 January 1918                        |
| <b>Status</b>          | Prototype                              |
| <b>Number built</b>    | 2                                      |

The **Royal Aircraft Factory C.E.1** (Coastal Experimental 1) was a prototype [British flying boat](#) of the [First World War](#). It was a single-engined [pusher configuration biplane](#) intended to carry out coastal patrols to protect shipping against German [U-boats](#), but only two were built, the only flying boats to be designed and built by the [Royal Aircraft Factory](#).

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### Design and development

In February 1917, Germany restarted [unrestricted submarine warfare](#) against Britain, France and their allies, resulting in heavy losses to unescorted merchant shipping. There was a shortage of maritime patrol aircraft as the large [Felixstowe F.2 flying boats](#) had not yet entered large scale service, and the [Royal Aircraft Factory](#), despite the fact that most of its aircraft were intended for land service with the [Royal Flying Corps](#), decided to design and build a coastal patrol flying boat, the **C.E.1** (Coastal Experimental 1) to help combat the U-boat menace.<sup>[1][2]</sup>

Work started on the C.E.1, designed by William Farren, in July 1917, with two prototypes being built. It was a single-engined [pusher](#), of similar layout to the pre-war [Sopwith Bat Boat](#), but considerably larger, with a wooden hull featuring a single step, and the tail surfaces carried on tailbooms above and behind the hull. The aircraft's [two-bay biplane](#) wings folded rearwards for storage. The crew of two sat in tandem open cockpits, with a planned armament of up to three [Lewis guns](#) on pillar mountings, while bombs could be carried below the lower wings.<sup>[3][4][2]</sup>

The first prototype, powered by a 230 hp (172 kW) [RAF 3 V12 engine](#) driving a four-bladed propeller was completed at Farnborough late in 1917, being sent to [Hamble](#) near [Southampton](#) for final assembly and initial flight testing on 25 December.<sup>[5]</sup> The C.E.1 made its maiden flight, piloted by its designer, on 17 January 1918. After modifications to its controls it was sent to the [Port Victoria Marine Experimental Aircraft Depot](#) on the [Isle of Grain](#) for service trials in April, being quickly followed by the second prototype, which was powered by a 260 hp (190 kW) [Sunbeam Maori](#) engine. Trials showed that the C.E.1 was inferior to the larger and more powerful twin-engine Felixstowe flying boats, and no production followed, the two prototypes being used for hydrodynamic experiments to validate test data obtained from model tests in a test tank at the [National Physical Laboratory](#).<sup>[6][2]</sup>