**HANDLEY PAGE 0/100 and 0/400**

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B**RITISH naval aviators took an interest in bomb-dropping from aeroplanes at an early date. In January 1912, even before the Naval Wing of the Royal Flying Corps came into existence, Lt. H. A. Williamson, R.N., submitted to the Admiralty a paper in which he proposed the use of aeroplanes operating from a parent ship for the detection of submarines; and a further proposal made by him was that submarines should be attacked by means of delayed-action bombs dropped from the aircraft. Later in 1912 a dummy 100 lb bomb was dropped by Cdr. C. R. Samson from a Short pusher biplane to determine the effect which the releasing of such a weight—very considerable in those days—would have on the trim of an aircraft.

Experiments were continued by the Air Department of the Admiralty, and in March 1913 Lt. R. H. Clark Hall, a naval gunnery lieutenant, was appointed for armament duties with the Naval Wing. In December 1913 experiments were carried out to determine the minimum height from which bombs could be dropped by an aircraft without risk of damage from the explosions. At that time no bombs of suitable weight were available, but floating charges containing from 2 to 40 lb of explosive were detonated electrically from a destroyer while Maurice Farman floatplanes were flown at various heights over the explosions.

At the time of the outbreak of war the only bomb available for use from British aircraft was the 20 lb Hale, of which the R.N.A.S. (as the Naval Wing had become on July 1st, 1914) possessed the imposing total of 26. One or two 100-pounders had been made by the Royal Laboratory at Woolwich, and a number of 6in shells were hurriedly fitted with tail-vanes and converted into bombs. A few days after the declaration of war successful trials were carried out with an incendiary bomb invented by Lt. C. R. Finch-Noyes of the R.N.A.S. The incendiary and the Royal Laboratory 100-pounder went into production, followed later by the Hale 100 lb bomb and the Royal Laboratory 112-pounder.

Since officers of the Naval Wing and R.N.A.S. had been largely responsible for the early development of bomb-dropping in this country, it was not inappropriate that the Air Department of the Admiralty should also be, to some extent, responsible for the aircraft capable of delivering the missiles in quantity. The coming of war focused attention on the possibility of using bomb-carrying aeroplanes for Oversea patrol, and the official requirements defining a machine for work of that kind were made known in December 1914, in what must have been one of the earliest specifications ever issued for a Service aircraft. It called for a twin-engined aeroplane with a crew of two, capable of carrying six 112 lb bombs at a maximum speed of at least 72 m.p.h.

Before the outbreak of war Mr. (now Sir Frederick) Handley Page had become convinced of the advantages inherent in large aeroplanes, particularly when heavy loads had to be carried. Only the outbreak of hostilities had prevented the completion of the Handley Page L.200, a large biplane with a 200 h.p. Salmond engine, designed for an attempt on the Transatlantic flight. Mr. Handley Page took his proposals for a large twin-engined bomber to Commodore (later Rear-Admiral Sir) Murray F. Sueter, then Director of the Air Department of the Admiralty, who was considerably impressed by the potentialities of the design. The original concept was of an aeroplane having a somewhat shorter nose than the machine had when it was actually built, and the first thoughts on the power-plant were for two Beardmore engines. Commodore Sueter wanted something really potent, however, and asked Mr. Handley Page to provide—the phrase is now classic—"a bloody paralyser" of an aircraft. Mr. Handley Page and Mr. G. R. Volkert revised the design accordingly, and were rewarded with an order to proceed with construction.

Work began at once and continued, seven days a week, until the first Handley Page bomber, designated 0/100, appeared a little less than a year later. This achievement is all the more remarkable because the designers had no previous experience in the construction of large bomb-carrying machines upon which to draw. Nor had anyone else, for that matter. The machine was originally designed to have two 150 h.p. Sunbeams, but two 250 h.p. Rolls-Royce engines were substituted. The engines were mounted in armoured nacelles with the fuel tanks, also armoured, immediately behind them. At one time during its early career the prototype 0/100 had an enclosed cabin for the pilot in the nose of the fuselage, but this collapsed during the machine's first cross-country flight from Hendon to Eastchurch, and was thereafter discarded.

Great secrecy was observed when the 0/100 made its debut. The machine was transported from Cricklewood to Hendon during the darkest hours of the night of December 17th-18th, 1915: several yards of fencing had to be removed to enable it to get into the aerodrome. It was the largest practical aeroplane which had been built in the country up to that time.

The 0/100 first took the air at 1.51 p.m. on December 18th, 1915, and development for Service use began. In January 1916 the first prototype went to Eastchurch for official trials, and in July of that year an 0/100 created a sensation by climbing to 7,000ft with its pilot (Mr. Clifford B. Proodger) and 20 passengers. In the course of development various modifications were made, including the removal of much of the armour plate. Fundamentally, how-