

## THE AD.1. NON-RIGID AIRSHIP



"Truth in Advertising," or advertise with "FAAX". (FLIGHT Photos)

**W**E are now able to give full particulars of that very interesting little airship, the AD.1, which was recently seen at Cramlington Aerodrome during the Newcastle Air Pageant.

The AD.1, which is built by the Airship Development Co., of 39, Victoria St., London, S.W.1, at their Cramlington Airship Station in Cumberland, is the first privately-owned ship to be built here since the war and is, in fact, one of the few airships that have ever been built privately in this country.

The uses to which such a ship can be put are, of course, very many and such work as Forestry inspection, Fishery control, police patrols, aerial photography, aerial survey, training of airship pilots and crews, aerial advertising and joy-riding are all within its scope and in some respects it is definitely more suited to the work than are heavier-than-air craft. It can safely fly at low altitudes and can cruise at a very slow speed, in fact, if necessary it can almost hover, which, for survey work where the flora or geological strata have to be examined closely, is obviously a great advantage as compared with an aeroplane. Aeroplanes have been used for advertising purposes but their high speed and the danger which attends their flight over populous areas inhibits their use to any great extent; with such a ship as the AD.1, however, these drawbacks are removed and she can fly with complete safety at a low altitude and low speed anywhere and, moreover, the space available for display on the hull, which, in this case, is a panel on each side, 76 ft. long and 24 ft. deep, is far and away larger than anything that can be used on ordinary aeroplanes. For joy-riding she should offer

considerable attraction. With a saloon car and a pusher engine the passengers would enjoy comfort and freedom from noise, which should give them a different aspect of flying to that obtainable in an aeroplane.

The A.D.1 is, in the main essentials, the same as the wartime "*Blimp*," which was so successful in coastal and anti-submarine patrols, but in place of the water-cooled engine which was then used, she now has an air-cooled 75-82 h.p. A.B.C. Hornet, and also all parts, such as suspension cables, have been greatly strengthened.

The envelope is built up from panels of extra strong, two-ply rubberised, aluminium doped fabric and the seams are double stitched, lapped, cemented and taped to ensure absolutely gas-tight joints. The fabric is of a special kind with particularly low permeability and great strength, and the rubber proofing between the plies minimises the gas diffusion; while the aluminium doping guards against superheating, with its consequent rise of pressure, and also prevents the sun's rays perishing the rubber proofing or even the fabric itself.

The outer face of the two-ply fabric is laid on the bias and the envelope is made up with alternate rings of left and right-hand biased fabric; this not only localises any "wound" in the envelope, but also prevents twisting of the hull under stress.

The shape of the hull in a ship of this type is maintained by the pressure of the gas inside the envelope, which in the AD.1 is about equal to a 25-m/m. head of water, and to prevent the nose "cupping in" and losing its streamline shape it is ribbed with shaped wooden members, which are wrapped with glued tape and laced on to the envelope; these ribs are also carried back



Mr. R. H. Schlotel, the A.D. Co.'s Maintenance Engineer, gives comparative size to a view of the tail units. (FLIGHT Photo.)