

1. Rolls-Royce, Beardmores and Liberties.
2. Hispano-Suiza direct drive, Le Rhone, Clerget and B.R. 1 and 2.
3. The 220 geared Hispano-Suiza.
4. Machine shops, tool shop, fitters, gas plant and heat treatment, chemical laboratories and rest room.
5. Pumps, magnetos and carburettors, electricians, foundry, power house, tin and copper welders, carpenters and painters.
6. Stores, motor transport, O.M., drawing office and H.Q.

The procedure is the same in each engine group. Every engine on receipt from the unpacking shed is sent to its respective group.

It is then completely stripped and each part washed and examined. Faulty parts are sent to their particular subdivisions for repair and replacement. The various parts are then collected in the erection shops. This, by the way, is one of the longest jobs. In the Rolls-Royce engine there are over 3,000 parts, while 2,000 may be taken as a fair average for all types. Minute accuracy is required to eliminate all play, and many parts after being trued on machines to  $\frac{1}{1000}$  in. are finally scraped by hand. The work of erection takes two men from 14 to 21 days for each machine.

After rebuilding, the engine is passed to the tuning shop and thence to the test house. After running for an hour on the brake test it is returned to the finishing section of the erection shops, re-examined by the inspection depôt,



## HONOURS

THE King has been pleased to give orders for the following promotion in and appointment to the Most Excellent Order of the British Empire, in recognition of the services of the following officers during the War:—

### O.B.E.

Lieut. H. J. WAGG, R.N.V.R.—For valuable services as Second in Command of the Anti-Aircraft Telephone Staff at General Headquarters, Great Britain.

### M.B.E.

Shipwt. Lieut. A. C. SMITH, R.N.—For valuable services as Barrack Master, Cranwell Air Station.



### The "Atlantic" Knights

IN last Friday's *Gazette*, formal announcement was made of the knighthoods of the Order of the British Empire conferred on Capt. John William Alcock, D.S.C., late R.A.F., and Lieut. Arthur Whitten Brown, late R.A.F., "in recognition of distinguished services to aviation in connection with the successful flight from St. John's, Newfoundland, to Clifden, Co. Galway, on June 14-15, 1919."

### "N.C. 4" Pilots Arrive Home

UPON the return to the United States on the transport *Zeppelin*, of Commander Read and the other American Atlantic flyers on June 27, arrangements were made for the vessel to be met and escorted into harbour by aeroplanes and airships. The reception programme had to be much modified by reason of rain and mist.

### Atlantic Vickers-Rolls for Holland

AT the Air Exhibition at Amsterdam the Vickers-Rolls aeroplane in which Sir John Alcock and Sir Whitten Brown made their crossing is to be on view. During the exhibition an aerial service, which is to be maintained afterwards, between Paris and Amsterdam, should do much to keep interest alive in the show.

### The Aerial Defence of London

UNVEILING at Poplar on June 23 a memorial erected to the 18 children who were killed in Upper North Street school in the daylight raid on June 13, 1917, Maj.-Gen. E. B. Ashmore, who has had charge of the aerial defence of London, said that after the last raid, although he did not like to prophesy, he did not think the Germans would try to get to London again. Between May 19, 1918, and the Armistice he had devised a new system of defence, four times as strong as the previous defences. After the defences were started two more day raids were made with a view to reaching London. One was stopped at Southend, and the other at Ramsgate, and at the latter place the guns shot down two of the raiders.

So far as the night raids were concerned, he himself at one time looked as though he would be hanged, but the Government spared nothing in the way of guns and searchlights. London, however, owed its defence more particularly to the gallant boys who flew by night, and so splendidly did they

packed and re-issued to an aircraft depôt for supply to squadrons.

Although absolutely no precaution is neglected or trouble or necessary expense spared to ensure faultless running, typical economies are introduced whenever possible. For instance, all gas for the various heat treatments, etc., is generated in a special plant from waste oil and petrol. Scrapped iron is melted down in the foundry and re-cast. White metal for bearings is also melted down and cast into ingots for refuse, but this babbit metal is never used twice for aero engines. The ingots are passed on to the base depôt for M.T. use there. Perhaps an unnecessary precaution—since it has not been conclusively proved that babbit metal suffers by re-casting—but where lives may depend upon such details the R.A.F. takes no chance.

An interesting feature is the indicator board in the chief engineer's office, which tells at a glance how many engines are under repair, where each one is and how many are ready for issue. Another board in the production office keeps track of every job which comes to the shop apart from the actual engine repairs—such as orders for spare parts, etc.

One thing strikes one forcibly, that it has been possible to build up—under all the difficulties of active service—an organisation rivalling in efficiency the most modern shops laid down under peace time conditions at home. It is an achievement of which the R.A.F. may well be proud.

The King has been pleased to approve of the following award to the following officer in recognition of his gallantry and devotion to duty in the field:—

### D.S.O.

Lieut. H. O. LONG, No. 3 Sqdn., R.F.C. now R.A.F.—For most conspicuous gallantry and ability during June and July, 1916. He initiated low-flying attacks on troops, transport, and trains far beyond the enemy lines. He also brought down several enemy aeroplanes. These flights were carried out alone and unescorted. He did splendid work.

do their work that two squadrons were made up to do night bombing work over the lines in France.

The balloon aprons which were erected in certain localities were also found very serviceable. Accordingly on May 19, 1918, when seven machines were brought down, this finally decided the Huns and they left London alone and turned their attention to Paris, which they afterwards raided 16 times.

### From Plymouth to Buenos Aires

THREE flying men from South America, Capt. Angel M. Zuloaga (commander), Capt. Annibal Briguega (navigator), and Eng. Ambrosio Taravella (mechanic), are visiting London with a view to completing preparations for a flight from Plymouth to Buenos Aires via Portugal and Africa, some 8,000 miles, the Atlantic crossing, representing about 1,500 miles.

The flight may be made in an F 5 flying boat if one can be purchased from the British Government.

### Roses Dropped by Parachute

AMONG the many gifts received by Queen Alexandra one which gave her great pleasure was a bouquet of Alexandra roses brought to her in a decorated car from Hyde Park, where it had been dropped, by means of a Guardian Angel parachute, from a Handley Page bombing machine piloted by Lieut.-Col. W. S. Douglas, M.C., D.F.C. Through her private secretary Queen Alexandra sent the following telegram to Messrs. Handley Page: "Queen Alexandra wishes me to thank you for the beautiful bouquet of roses which you have so kindly sent her, and which Her Majesty is interested to know was dropped in a parachute in Hyde Park and despatched to her by car. Queen Alexandra was pleased to see the splendid aeroplane circling round Marlborough House this morning."

### Milan-Venice Airship Service

IT is reported from Milan that the airship service between Milan and Venice has been inaugurated. The dirigible "F.6" left Buggio, near Milan, with 30 passengers on board, on June 23, while at about the same time the "N. 14" left Campalte, near Venice, carrying 20 passengers. Both airships are said to have made the journey successfully.