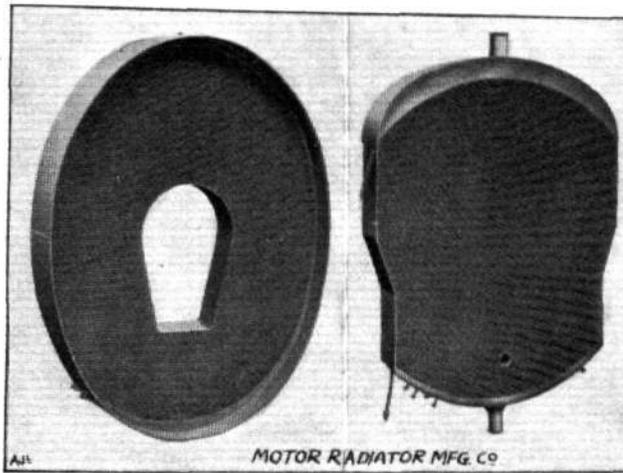


The Birmac Model Aeroplane Co. (7), 124, West Green Road, Tottenham, London, N. Undoubtedly a great deal can be learnt from model aeroplanes, but for the amateur who has built or bought a model and finds it is not always easy to fly it to gain that information. The above Company, however, have some really good little flyers on view on their stand which are easy to handle, so that it is possible for one to get a good idea of how an aeroplane flies. The great feature of these little models is that they are cheap, ranging from a shilling upwards. For the more advanced model aviator are some well-made accessories for models, such as wheels and propellers (Avanti hand-carved).

The Integral Propeller Co., Ltd. (21), 1B, Elthorne Road, Upper Holloway, London, N. Two very interesting exhibits are to be seen on this stand apart from the large array of standard Integral (Chauvière) propellers. Perhaps the most important of the two exhibits referred to is M. Chauvière's variable pitch propeller. In its present form it is only suitable for dirigibles, but we understand that it may be adapted for aeroplane work later on. The advantages of a variable pitch propeller, especially for dirigible work, are obvious. The method in which this new propeller operates is as follows:—The propeller is mounted on a fixed plate, bearing an internally toothed ring engaging with three planet wheels, which in turn mesh with a toothed wheel on the propeller boss. This latter wheel actuates, through worm gearing, each of the blades, but only if the fixed plate be rotated a certain amount, for it will be seen that under normal conditions when the propeller revolves, the wheel on the boss, through the medium of the planetary wheels, is carried round with the propeller. The necessary movement of the plate to vary the pitch of the blades is obtained by means of a rack and pinion gear, operated from the nacelle of the dirigible. The other device consists of a "quick expelling nut," which greatly facilitates the fitting and removal of the propeller on to the engine shaft. Briefly, the boss carrying the propeller, which slides on the coned engine shaft, has an internally threaded portion to receive the nut. The latter is also internally threaded so as to screw on to the engine shaft, but the threads in each case are opposite, *i.e.*, left and right,

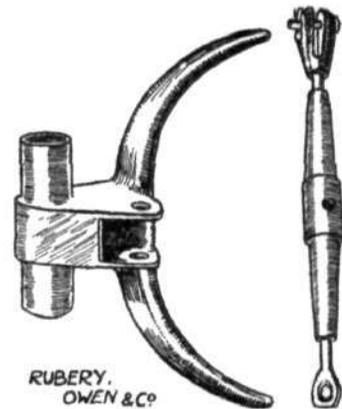
or right and left, according to the direction of propeller rotation. The boss with the propeller is first slid into position on the engine shaft, and the nut is screwed on to the latter to an extent previously ascertained by adjustment. The nut is then locked with the boss by means of a spring clip, and is thus firmly and safely secured.

The Motor Radiator Manufacturing Co. (36), Warwick Road, Greet, Birmingham.



Two of the radiators exhibited on this stand and shown in the illustration are of the type supplied to the Royal Aircraft Factory. These radiators, and others manufactured by this firm, are of the original honeycomb or Zimmermann type. That is, they are built up, in a frame, of a number of layers of small tubes stacked one on the top of the other. The ends of these tubes are expanded so that there is a space round each tube. The whole stack of tubes is then immersed in liquid solder so that the expanded ends are joined together leaving the opening through the tubes clear. A tank is thus formed through which a number of tubes pass right through; thus it will be seen that, with water inside, a large cooling area is provided in a very small space—about 2 sq. ft. per h.p. Another type of radiator, shown in various forms, is known as the flat tube type, and, as the name implies, is built up of a number of thin flat tubes secured top and bottom into headers.

Rubery, Owen and Co. (17), Darlaston, South Staffs. In view of the increasing use of steel for aeroplane work in this country, Messrs. Rubery, Owen and Co.'s exhibit is of special interest to the aeroplane constructor, for this firm has great experience in steel work, and for some time now have made a speciality of aeroplane work. They have several interesting examples of what can be done in this way—especially so far as welded tubular and pressed steel work. In the accompanying sketch is a specimen, picked at random, of their welding work—in which both the oxy-acetylene and electric systems are employed. Two samples of welded tubular engine mounting are well worth inspection, a load of ½ ton having been applied to one with no ill effects. We also show in the sketch one of the latest pattern wire strainers (R.A.F. pattern) with an exceptionally neat forked end. The Rubery Owen patent aeroplane release gear, which is being used with great success by numerous aviators now, is also shown, in



addition to a very large range of other fittings.

ROYAL FLYING CORPS (MILITARY WING).

WAR OFFICE summary of work for week ending March 13th, 1914:—

No. 2 Squadron. Montrose.—2,806 miles in all were flown by the pilots of this squadron during the week. Practice in reconnaissance work and in landing away from the aerodrome was continued.

No. 3 Squadron. Netheravon.—A considerable amount of reconnaissance work was carried out, including a flight by Lieut. Cholmondeley at 10 p.m. lasting three-quarters of an hour.

No. 4 Squadron. Netheravon.—The officer and N.C.O. pilots were flying daily throughout the week. Capt. Shephard flew at night over Salisbury Plain and tried landing by various lighting arrangements.

No. 5 Squadron. S. Farnborough.—Amongst other flights by the pilots of this squadron, Major Higgins flew the new S.E. single-seater to Netheravon.

No. 6 Squadron. S. Farnborough.—Various reconnaissance flights were made on B.E. and M.F. machines. Major Becke tried the new R.E. machines.

Flying Depôt. S. Farnborough.—Experiments on various lines were continued, the machines used being B.E. and M. Farmans. The workshops and M.T. branch were busy throughout the week.

General News.—The Military Wing suffered a severe loss on Wednesday last by the deaths, as the result of an accident, of

Captain C. R. W. Allen, Welsh Regiment, and Lieutenant J. E. G. Burroughs, Wiltshire Regiment. Captain Allen was piloting a B.E. with Lieutenant Burroughs as passenger when, shortly after leaving the ground, the rudder became detached, thus causing the machine to get out of control and dive to the ground. Both officers were killed instantaneously. Captain Allen had been in the Military Wing since its formation in May, 1912, Lieutenant Burroughs since April, 1913.

A Special Reserve for Mechanics.

IN reply to a question put by Mr. Joynson-Hicks, in the House of Commons, on the 11th, inst., Col. Seely stated that it was proposed to open Category (a) Special Reserve shortly for the enlistment of mechanics, &c., for the Flying Corps. Those enlisted will be called up for a certain amount of training every year.

No. 6 Squadron, R.F.C.

COL. SEELY also stated that there were 14 serviceable aeroplanes in use by No. 6 Squadron of the Royal Flying Corps. They were accommodated in permanent hangars.

Military Wing, R.F.C.

ON Wednesday a question by Mr. Joynson-Hicks drew from Mr. Baker (Financial Secretary to the War Office) the information that there were 75 officers in the five effective squadrons of the Military Wing of the Royal Flying Corps. All of these are flying officers, none being engaged on administrative work alone.