

aspect ratio, and from the drawings it will be seen that this appears to have been done, the wing span being no less than 18.7 m. (61 ft. 4 ins.), while the chord is 1.2 m. (3 ft. 11 ins.), giving an aspect ratio of 15.6. It is a matter for surprise that such a wing structure has been possible for a reasonable weight, and that sufficient controllability has been obtained.

From the accompanying curve the gliding angle of the Darmstadt "Konsul" can be ascertained under varying conditions. The curve indicates that normally, *i.e.*, in still air, the "Konsul" has an optimum gliding angle of 1 in 21.4, at a speed of 14.8 m. per second (48.5 ft./sec. = 33 m.p.h.). This figure is, of course, extraordinarily good, and probably marks the maximum ever attained by any glider. For the "Konsul" it is found that when flying with a following wind of 10 m./sec. (32.8 ft./sec. = 22.3 m.p.h.), and in a rising current of .5 m. per sec., the best gliding angle is something like 1 in 160 and occurs at a speed of 13.2 m./sec. The worst condition is, of course, gliding against a wind and in a down current. If the head wind is blowing at 8 m./sec. and the down current is .4 m./sec., the best gliding angle is 1 in 10.6, at a speed of 20 m./sec. (44.5 m.p.h.).

THE construction of the "Konsul" is of special interest, as it might have been thought well-nigh impossible to build such a wing with sufficient rigidity against torsional stresses. The manner in which it has been done reflects credit on the designers. The monoplane wing, which is in three sections, of which the centre section is of 8 m. (26 ft. 2 ins.) span, is built up on a single spar, reinforced against torsion by covering the entire leading edge with three-ply wood. In the centre section the spar is of box section, while in the ends an I-section spar is used. As will be seen, the wing does not taper greatly in chord, but it does taper considerably in thickness, and the angle of incidence diminishes towards the tips so as to get a better load distribution and increase the aileron effect.

An interesting feature of the "Konsul" is the inter-

connection of rudder and ailerons. This has been employed in order to increase the controllability, which, as a matter of fact, is reported to be quite satisfactory. For small rudder angles the ailerons are not affected, but once the rudder exceeds a certain angle the ailerons are automatically brought into play to assist the turn. Only in this way could controllability be obtained with such large span and comparatively small rudder leverage.

THE aileron control is so arranged that, when right rudder is put on, the right aileron moves up through a considerable angle, whereas the left aileron moves down through a much smaller angle. In other words, the action of the ailerons of the Darmstadt "Konsul" is very similar in principle to the de Havilland patented differential aileron control, which, for one thing, forms a convenient form of aileron balance, and also has the advantage of reducing the tendency to swing the machine into a spin, owing to the great drag on the lower aileron set up when no differential movement is provided. In the glider, however, the ailerons, in addition to their differential action, are connected to the rudder, which is not, of course, the case in the de Havilland system.

THE fuselage is of oval section, with sharp edges top and bottom. It is covered with three-ply, and the undercarriage consists of a single central skid, enclosed in fabric and sprung by rubber cords. The "Konsul" is somewhat faster than the designers had expected, partly because the weight was greater than had been anticipated, and partly, it is thought, because the wing fabric sagged considerably between the ribs, the section being heavily cambered, and therefore the value of K_L somewhat smaller than that of the sections upon which the design estimates were based. Nevertheless, we think the Akademische Fliegergruppe Darmstadt deserve the very greatest credit for their machine, especially when it is remembered that financial difficulties were very great indeed. We wish to goodness there was more of the Rhön spirit in this country.

Personals

Married

Flying Officer JOHN MALCOLM GLAISHER, D.F.C., R.A.F., son of the late Henry Glaisher and Mrs. Glaisher, of Blackheath, was married on December 27, at the Chapel Royal, Savoy, to NORA GLADYS EDITH LEAH CLELAND, daughter of the late HUBERT DAVIES, of Johannesburg.

THROWER HERRING, R.A.F., son of Mr. and Mrs. Herring, late of "Petra," Weston-super-Mare, was married on December 22, at All Saints' Church, Weston-super-Mare, to GLADYS PRETORIA HIND, daughter of Mrs. Hind, of "Woodcliffe," Weston-super-Mare.

Flight-Lieut. H. V. PENDAVIS, D.S.O., son of the Ven. Archdeacon and Mrs. W. Pendavis, of Fringford, Oxon., was married on December 22, at All Souls', Langham Place, to RUTH MARGARET, daughter of Mr. and Mrs. CHARLES C. CULROSS, of Wendover, Bucks.

FREDERICK PHILLIPS RAYNHAM, only son of the late James Kistruck Raynham, of Hessel, Suffolk, and Mrs. Raynham, Elm Bank, Woking, was married on December 24, at St. Mary of Bethany, Woking, to MARJORY PURVES MACPHERSON, daughter of the late John Ross Macpherson and Mrs. Keane, Oaklands, Woking.

To be Married

A marriage has been arranged, and will shortly take place, between Mr. FREDERIC ALAN PUMPHREY, R.A.F., third son of Mr. and Mrs. Frederic Pumphrey, of Vancouver, B.C., and MURIEL, youngest daughter of the late T. E. PUMPHREY, J.P., and Mrs. PUMPHREY, of Mayfield, Sunderland.

The engagement is announced between Capt. T. G.



Commander Hunsaker in England

THE appointment of Commander Jerome C. Hunsaker to Assistant Naval Attaché at the American Embassy, London, will be welcomed by all connected with aviation. Commander Hunsaker needs no introduction to readers of FLIGHT, to whom his extremely useful work in America will be well known. Commander Hunsaker's post at the Bureau of Aeronautics, Washington, will be filled by Commander Holden C. Richardson, U.S.N., who will also be familiar to our readers. It will be recollected that at the Air Conference at the Guildhall Commander Richardson had some very

THORNTON, M.C., D.F.C., of 9D, Oxford and Cambridge Mansions, N.W. 1, and CATHARINE ELEANOR MARY, second daughter of Mr. and Mrs. J. H. BARTLETT, of 27, Redcliffe Gardens, S.W. 10. The marriage will take place on February 14 at the Servite Church.

Death

Squadron Leader ERIC LEWIS CONRAN, M.C., R.A.F., and late 21st Lancers, who died on January 6 at a nursing home in London, following an operation, was the only son of Mr. and Mrs. Henry L. Conran. His age was 36.

The death is announced of Flight-Lieut. ALBERT EDWARD GENDLE, aged 36, who was attacked by Arabs on the outskirts of Baghdad on December 7. Before the War Flight-Lieut. Gendle was with the South Kensington Meteorological Department, and was selected to form the various observation stations of the R.N.A.S. throughout the British Isles. Later he went to the Air Ministry, where he carried out the meteorological surveys and observations in connection with the transatlantic flights of the "R" type airships and of aeroplanes.

JOHN GWYNNE HOWELL, M.C., late Major, R.A.F., of 9, the Paragon, Blackheath, S.E.3, who died on December 19, aged 32, was the only son of Mr. and Mrs. Howell, of Castlemead Manor, Pembrokeshire.

Item

Lieut. Aviateur CHEVALIER COPPENS, Air Attaché at the Belgian Embassy, has returned to London from the Continent. Captain SILVIO SCARONI, Air Attaché at the Italian Embassy, has returned to London from Italy.



interesting things to say about seaplane hulls and floats.

French Record over 500 km.

ADJUTANT FOINY, flying over the circuit Tours-Chartres-Tours, has succeeded in establishing a new French record over 500 km. His time was 2 hrs. 27 mins. 47 secs., giving an average speed of 203 km. (126 miles) per hour. The world's record over 500 km. is at present held by the American aviator, Lieut. Pearson, whose speed over the 500 km. course was 272 km. (168.5 miles) per hour. Foiny intends to attempt to beat the American record which was established on March 29, 1923.