

ABSTRACTS OF PATENT SPECIFICATIONS.

(Specially abstracted for the Journal by W. O. Manning, F.R.Ae.S.)

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AEROPLANES—CONSTRUCTION.

448,705. *Improvements in and relating to Aircraft Tailplanes.* Coats, A. G., Gloucester House, Park Lane, London, W.1, and Hafner, R., Mantlergasse 47, Vienna, 13, Austria. Dated December 12th, 1934. No. 35,705.

In the case of aircraft having rotatable wings or any aircraft descending at large angles of incidence, it is stated that tailplanes of normal design become unstable. It is therefore proposed that the whole of the tailplane shall be rotatable about a horizontal axis so that it may have the same angle as the air flow. As this angle may be large an automatic slipping device is fitted so that if, after attempting to land, the pilot changes his mind, the tailplane automatically returns to the normal position under the action of the slipstream.

AEROPLANES—GENERAL.

448,344. *Improvements in Aeronautical Machines of the Annular Aerofoil Type.* Porter, J. R., Whatley Road, Clifton, Bristol. Dated December 8th, 1934. No. 35,310.

The aircraft proposed has two circular aerofoils, looking like a ring in the front view, each of which contains circular nacelles which are curved longitudinally. The inner sides of the aerofoils form the sides of a circular fuselage.

ARMAMENT.

447,931. *Improvements in or relating to the Mounting of Guns on Aircraft.* The Fairey Aviation Co., Ltd., Cranford Lane, Hayes, Middlesex; Lobelle, M. J. O., Ludlow, 298, Langley Road, Langley, Bucks; and Trotter, J. C., 488, Cheetham Hill Road, Manchester. Dated February 5th, 1935. No. 3,731.

It is proposed to fit a gun mounting in the nose of an aeroplane fuselage. The mounting is contained in a cone-shaped nose piece which continues the curves of the fuselage. The nose piece is so mounted that it can be rotated on

a horizontal axis, and it has a slot through which the gun can be fired. The gun is mounted on a U-shaped piece contained within this nose piece and the gun pivot itself is carried on an extension which is outside the nose piece. The U piece is mounted on a horizontal cross axis and can be rotated on this axis. The mounting may be driven by an electric motor through a friction gear.

CATAPULTS.

450,265. *Improvements in or relating to Arrangements for Launching Aircraft.*
Salmon, P., Royal Aircraft Establishment, South Farnborough, Hants.
Dated March 7th, 1935. No. 7,125.

This specification refers to the launching of flying boats by means of a catapult mounted on a special vessel. At one end of this vessel a closable dock is provided into which the flying boat can be floated, there are also means for causing the flying boat to engage with the launching gear of the catapult, which latter is mounted on the deck. The dock may be raised or lowered in the water or the trim of the vessel may be altered or water may be pumped out of the dock.

CONTROL OF AIRCRAFT.

448,343. *Improvements in and relating to the Operation of Flaps on Aircraft.*
Automotive Products Co., Ltd., Brock House, Langham Street, London,
W.1, and Brown, F. V., of the same address. Dated December 6th,
1934. No. 35,085.

In the case of the jack and pump device, referred to in British Specification No. 428,252, it is proposed to add a pressure relief valve controlled by an adjustable spring, so that the flaps can return to an inoperative position when the pressure in the system reaches a predetermined figure. The pump used may be of the reversible flow type to actuate the operating unit in both extension and contraction.

448,827. *Improvements in or relating to Control Surfaces for Aircraft.*
McMahon, A., 28, Hellington Street, Edinburgh, Scotland. Dated
December 19th, 1935. No. 35,188.

It is proposed to use for aircraft control members tailplanes and elevators only. These have a dihedral angle and are adopted to be rotated as a whole by a manually operated control. To change direction the tailplanes are rotated as a whole and the elevators are operated.

448,025. *Improvements relating to the Control of Aircraft.* Tyannetakis, G. P.,
Hotel Ersi, Old Phaleron, near Athens, Greece. Dated August 27th, 1934.
No. 24,687. This application has become void.

In order to provide lateral control in aircraft, it is proposed to replace the usual ailerons by separate planes which are arranged either above or below the wing at some position approximating to the centre of the chord. These planes extend along the wing and are of normal aerofoil section, preferably symmetrical, and are of high aspect ratio. Control is effected by altering the angle of these planes through the usual controls.

DESIGN AND CONSTRUCTION.

450,276. *Improvements in Aircraft Control Gear.* Handley Page, Ltd.,
Lachmann, G. V., Volkert, G. R., and Dare, W. J., all of 40, Claremont
Road, Cricklewood, Middlesex. Dated May 14th, 1935. No. 14,116.

This is a mechanism for operating aircraft controls, such as ailerons or flaps, where the control surface is moved backwards at the same time that its angle is increased. In one example the flap is hinged to the rear of a member which is slidable in the wing by a system of links the ends of two of which are also

attached to the flap. Another link operates the two links first mentioned as well as the slidable member, and as a result the flap is moved backwards and depressed. In another example the flap is carried on links, only the slidable member being omitted. In the case of a slotted flap the slot may be closed when the flap is in its normal position.

450,395. *Improvements in and relating to Structures Formed of Metal or Fabric Sheetings.* Lamb, C. F., 4, Cleveland Square, St. James' Street, London, S.W.1. Dated October 9th, 1934. No. 16,163.

In order to attach thin sheets of metal or fabric to the wings, etc., of aircraft, it is proposed that the sheet be thickened at the edges by welding a piece in place or by spraying the part with metal. The thickened edges may be on one side only of the sheet, may be drilled for screws or the like, or the sheets may be bent for attachment purposes, the thickened edges then acting as a lock. The joints between the sheets may be sprayed with metal after assembling.

447,577. *Improvements in Folding Self-Supporting Cantilever Wings for Aircraft.* The Blackburn Aeroplane and Motor Co., Ltd., Seaplane Base, Brough, Hull, E. Yorks, and Bumpus, F. A., Elloughton, Brough, Hull, E. Yorks. Dated May 29th, 1935.

In order to fold the wing of a cantilever monoplane against the fuselage of the machine it is proposed to hinge the stub wing and the main wing together by means of a hinge having an obliquely inclined axis. Aft of the hinge there is an external junction face which forms approximately a part of the surface of a core. The front connection of the wing to the stub wing is of normal design.

447,459. *Improvement in or relating to Aircraft Wings.* Dornier Metallbauten, G.m.b.H., and Dr. Ing. C. Dornier, Friedrichshafen, Lake Constant, Germany. Convention date (Germany), August 30th, 1934.

It is proposed to construct aeroplane wings by using two spars connected by braced frames arranged as in Warren bracing. The covering is arranged by triangular plates which are attached to the spars and to the braced frames.

447,520. *Improvements in or relating to Spars for Aircraft Wings.* Short Bros., Ltd., and Gouge, A., both of Seaplane Works, Rochester, Kent. Dated May 31st, 1935. No. 15,822.

The spar described has T section flanges which are connected together by tubular members arranged as in a Warren girder. The T heads are shaped to the camber of the wing and the skin is riveted direct to them. The tubular members have fittings made of H section metal where the legs of the H have been bent to conform with the interior radius of the tube. These are then riveted together and the fitting and the flanges are connected by gusset plates.

449,148. *Improvements in or relating to Aircraft.* Grandjean, A., 51, Avenue Alphan, Sainte Maude, France (Seine). Dated September 14th, 1934. No. 26,450. This application has become void.

It is proposed to lift an aircraft in the air by forming within its fuselage a sort of wind tunnel through which air may be induced by a fan. In this tunnel a number of aerofoils are arranged, and it is the action of the induced flow on these which, it is stated, cause the machine to rise. The incidence of the aerofoils may be changed and there is also a honeycomb in the tunnel while a propeller is fitted for forward propulsion.

- 448,249. *Improvements relating to Internally Trussed Structures which are Capable of Flexing Longitudinally.* Grant, C. H., 51, Prospect Street, New Rochelle, Westchester, Now York, U.S.A. Convention date (U.S.A.), December 9th, 1933.

This is a device for altering the camber of aircraft wings. The ribs are constructed with an arrangement of linkages, one end of which is slidable so that by movement of a control point the camber of the wing is altered. The top surface of the wing is flexible while the underside is composed of panels which slide on each other.

- 448,324. *Improvements in and relating to the Construction of Frame Members for Aircraft.* Martin, J., Higher Denham, Uxbridge. Dated December 7th, 1935. No. 33,990.

It is proposed to construct a spar for aircraft by using tubes running longitudinally connected by members so as to form a type of lattice girder. The spar may be triangular or square in section, etc. The bracing members are attached to lugs attached to the tubes.

- 448,343. *Improvements in and relating to the Operation of Flaps on Aircraft.* Automotive Products Co., Ltd., Brock House, Langham Street, London, W.1, and Brown, C. V., of the Company's address. Dated December 6th, 1934. No. 35,085.

It is proposed to actuate the flaps by means of a hydraulic jack. In the pipeline conveying the liquid to the jack a pressure relief valve is provided, adapted to open when the jack is subjected to a predetermined pressure and to allow the jack to approach its inoperative position.

ENGINES.

- 447,283. *Improvements in Cowling for Liquid-Cooled Internal Combustion Engines.* Ellor, J. E., Grandell, South Drive, Chain Lane, Mickleover, Derby. Dated November 15th, 1934. No. 32,898.

In this arrangement it is proposed to use a radiator of horseshoe shape fitted below the engine. The exhaust gases are collected from the manifolds by pipes which may be of D shape and are fitted so as to be flush with the cowling, while the gases themselves are discharged through nozzles placed in cowling behind the radiator through a type of venturi so as to increase the air flow through the radiator. An oil cooler may be formed in the outer wall of the radiator tunnel, and alternative arrangements are described for attaining the same results.

- 449,139. *Improvements in Aircraft Propelling Devices.* Trabucien, J. J., 36, Avenue d'Iena, Paris, Seine, France. Convention date (France), December 4th, 1934.

The apparatus described consists of a gear driven by the engine which drives two propellers, mounted coaxially, in opposite directions and which, it is claimed, eliminates torque on the aircraft. The gear described is of the floating type and consists of a bevel when driven by the engine which drives two or more planetary bevels mounted on a rotatable spider. These in turn drive two smaller planetary bevels which drive two bevel sun pinions which, respectively, drive the two propellers in opposite direction.

- 447,968. *Turbo-Compressor for Air-Cooled Aircraft Engines.* Société Rateau, 40, Rue du Colisée, Paris, France. Convention date (France), February 16th, 1935.

The arrangement described is suitable for a two-row radial air-cooled engine. The exhaust gases are collected by tubular exhaust pipes in the usual manner,

and there are two exhaust turbines driving air compressors situated behind the engine. Each exhaust turbine and its compressor is arranged radially, the exhaust turbines being behind the cylinder heads and the compressors inside the cowling.

448,523. *Improvements relating to the Arrangement of Lubricant Reservoirs for Aircraft Engines having Cowlings.* Armstrong Siddeley Motors, Ltd., and Fell, L. F. H., both of Armstrong Siddeley Works, Park Side, Coventry, Warwickshire. Dated January 11th, 1935. No. 1,004.

It is proposed to arrange the oil sump of an air-cooled radial engine so that it fits in place of a piece cut out of the cowling. The outer wall of the sump may form part of the cowling and may have radiating fins which latter may be in a passage leading to the air intake of the carburettor.

ICE FORMATION.

449,532. *Means for Automatically Preventing Detrimental Ice Formation in Aircraft.* Swan, A., Griffith, A. A., and Helmore, W., all of the Royal Aircraft Establishment, South Farnborough, Hants. Dated December 21st, 1934. No. 36,607.

This specification refers to means whereby any known method of preventing ice formation in aircraft can be brought into action automatically when ice formation conditions are present. The device proposed consists of two apertures facing forward in the case of an apparatus intended for use on aircraft wings. Each aperture is connected by a pipe, one to each side of a flexible diaphragm which is normally inactive as there is equal pressure on each side of it. But one aperture is considerably smaller than the other, and it is stated that in ice forming conditions the small aperture becomes quickly blocked. When this happens the pressure on each side of the diaphragm becomes unequal and the diaphragm moves. This movement can be caused to actuate the prevention mechanism either directly or via a relay. A similar device is described for use in connection with carburettors.

MISCELLANEOUS.

442,009. *Improvements in or relating to Propeller Wheels.* Smith, H. A., Haseltine, Lake and Co., 28, Southampton Buildings, Chancery Lane, London, W.C.2. Dated July 25th, 1934. No. 21,782. (Communication from Zegers, A., Edificio La Mutual de la Armada, 9, Piso, Oficina, 1, Santiago, Chile.)

This specification describes a wheel carrying vanes intended to be completely immersed in the fluid in which it is to be used for propulsion. The vanes are arranged to turn about an angle of 90° in appropriate portions of the wheel periphery by means of an eccentric cam ring which actuates rods, which, in their turn, act on cam-shaped projections on the blades. There are also pins to limit the turning of the blades.

PARACHUTES.

449,324. *Improvements in Parachute Packs for Aviators.* G.Q. Parachute Co., Ltd., Quilter, R. C., and Gregory, J., all of 17, Stoke Road, Guildford, Surrey. Dated December 21st, 1934, No. 36,745, and May 24th, 1935, No. 15,154.

In this pack it is proposed that the cone or cones which co-operate with the eyelets on the closure flaps of the pack to hold the latter closed are attached to the base of the pack as distinct from to one of the closure flaps. The pack may be employed as a seat pack or adopted to be fitted to the person of the pilot, and is arranged by means of a number of compartments to be flexible so as to be convenient to wear.

PERFORMANCE.

- 448,737. *A Method of and Apparatus for Navigating Aircraft during Landing.* Siemens Apparati und Maschinen Gesellschaft mit beschränkter Haftung, 4, Askaniischen Platz, Berlin, S.W.11, Germany. Convention date (Germany), May 19th, 1934.

This specification deals with fog and similar landings and is concerned with the navigation in the vertical sense only. The distance of the point at which the landing is begun from the landing point is determined by measuring the time taken by the aircraft to fly over a path of reference, say, two signals. Afterwards the altitude of the aircraft is controlled in accordance with a predetermined altitude time curve which is independent of the wind velocity prevailing at the time.

ROTOR CRAFT.

- 447,066. *Improvements in or relating to Rotating Wing Aircraft.* Coats, A. G., Gloucester House, Park Lane, London, W.1, and Hafner, R., Mantlergasse 47, Vienna, 13, Austria. Dated November 9th, 1934. No. 32,339.

In the case of aircraft with rotating wings it is stated that difficulties arise with the clutch gear when the rotor is being accelerated. It is proposed to avoid these difficulties by the use of a dog clutch in combination with a fluid flywheel. Arrangements are made so that the wheel brakes must be on when the clutch is connected, though the brakes can be applied without operating the clutch.

- 448,703. *Improvements in or relating to Aircraft Fuselages.* Coats, A. G., Gloucester House, Park Lane, London, W.1, and Hafner, R., Mantlergasse 47, Vienna, 13, Austria. Dated December 12th, 1934. No. 35,702.

This fuselage is intended for aircraft of the autogiro type in which the angle of incidence of the fuselage during descent may be large. It is proposed, therefore, to arrange that vertical sections through the fuselage shall be of streamline form. It is also proposed to fit slots and flaps to the lower portion of the fuselage and there may also be split flaps arranged along the top. The rudder hinge is sloped forward.

- 448,704. *Improvements in or relating to Rotative Wing Aircraft.* Coats, A. G., Gloucester House, Park Lane, London, W.1, and Hafner, R., Mantlergasse 47, Vienna, 13, Austria. Dated December 12th, 1934. No. 35,703.

It is proposed to construct the cabane carrying the hub of the rotor of a rotative winged aircraft with three struts, the rear two being fixed to the hub bracket and hinged to the top of the fuselage, while the front one is pivoted to the hub by a ball and socket joint and is also hinged to the fuselage. It is claimed that the arrangement facilitates the transmission of the torque when the rotor is power driven.

- 448,349. *Improvements in or relating to Rotative Wing Aircraft.* Coats, A. G., Gloucester House, Park Lane, London, and Hafner, R., Mantlergasse 47, Vienna, 13, Austria. Dated December 12th, 1934. No. 35,704.

In the case of a helicopter it is desired that each blade shall be connected to the hub by a torsionally flexible radial tension member and a method of fixing this member is described. At the outer end it is screwed into the blade, an inner extension of which is screwed externally and split, a normal nut being screwed on in order to lock the parts together. In the attachment at the inner end the end of the torsion member itself is screwed and split, the locking being accomplished by wedging this screw apart by means of a taper plug.

442,013. *Improvements relating to Aircraft.* Kay Gyroplanes, Ltd., Kay, D., and Dyer, J. W., all of 18, Atholl Crescent, Edinburgh, Scotland. Dated July 27th, 1934. No. 22,019.

This specification refers to aircraft of the autogiro type in which the incidence of the blades of the rotor is variable. Arrangements are made so that the rotor may be spun up by the motor with the rotor blades at negative angles and that the incidence of the blades may be increased and the motor disconnected so that the machine may be made to jump off the ground. A description is given of the control mechanism which consists of a pawl and ratchet device so that the angles of incidence of the blades, the engine clutch and dog clutch are interconnected so that when the incidence has been adjusted to a predetermined position it automatically brings about the withdrawal of the clutch.

442,014. *Improvements relating to Aircraft.* Kay Gyroplanes, Ltd., Kay, D., and Dyer, J. W., all of 18, Atholl Crescent, Edinburgh, Scotland. Dated July 27th, 1934. No. 22,020.

Aircraft rotors of the autogiro type are referred to, and it is proposed to rotate the rotor by the engine until the necessary speed is attained and then to disconnect the engine. The engine-driven pinion engages with a gear wheel on the rotor hub and is arranged so that it can be swung into or out of mesh with the gear wheel by movement in a curved path the plane of which is parallel to the plane of rotation of the wheel, the arrangement being such that the setting of the pinion and gear wheel in the vertical direction relative to the rotor hub supporting structure remains undisturbed at all times.

448,560. *Improvements in or relating to Power Transmission Mechanism for Aircraft.* Yoxall, J., York House, Deganwy, North Wales, and Propello Inventions, Ltd., 105, Cheyne Walk, Chelsea, London, S.W.10. Dated December 14th, 1934. No. 35,947.

In aircraft of the autogiro type it is stated that considerable trouble occurs owing to the burning of the elements of the clutch situated between the rotor and engine, owing to the considerable degree of slipping necessary. In order to obviate this it is proposed to transmit the power through a hydraulic coupling having two or more rotatable elements, one being connected to the engine, the other to the rotor. A dog clutch is also fitted.

SEAPLANES.

448,581. *Improvements in or relating to Floats for Flying Machines.* Masaji Nojiri, 29, Komagome Sakashila-cho Hongo-ku, Tokyo, Japan. Dated April 30th, 1935. No. 12,815.

This specification describes a seaplane float which is arranged to be collapsible in flight with the object of reducing the air resistance of the aircraft. The float is of prismatic shape and the front and rear walls are movably connected with the top and bottom walls and the two side walls are movably connected with the bottom wall, which is attached to the hull by struts. An envelope is within the float so that the pilot can expand the float when desired.

UNDERCARRIAGES.

447,448. *Retractable Landing Gear for Aeroplanes* Société d'Inventions Aéronautiques et Mécaniques, S.I.A.M., 1 Route des Alpes, Fribourg, Switzerland. Convention date (France), February 4th, 1935.

This arrangement relates to improved retractable landing gear for aeroplanes of the type in which a wheel describes two rotational movements about two distinct axes, the two rotations being combined and proceeding simultaneously and the resultant movement being determined by the presence of a member of

constant length which connects a fixed point on the aeroplane with a fixed point on the leg. The landing gear has a single jack of the double acting type which affects the two rotational movements in both directions or a separate jack may be used for each.

448,104. *Improvements in the Braking of Aircraft.* Bendix Aviation Corporation, 105, West Adams Street, Chicago, Illinois, U.S.A. Convention date (U.S.A.), August 31st, 1933.

In this arrangement the wheel brakes are applied through the rudder bar. The latter, in addition to the usual rudder control cables, is connected by means of links to an arrangement of pistons working in cylinders. These are normally connected by passages so that the liquid with which they are filled can flow from one to the other during flight so as not to interfere with the rudder operation. When it is desired to use the brakes pressure is induced in the system by the operation of additional pistons by manual control, at the same time the passages connecting the cylinders are cut off. The result is that pressure is supplied to the brakes equally when the rudder bar is central, but when the bar is moved the brakes are applied unequally.

447,573. *A New Braking System for Aeroplanes.* J. M. Cabellos de Oropesa, 113, Calle de San Bernardo, Madrid, Spain. Convention date (Spain), December 20th, 1934.

It is proposed to arrange an endless chain in the tail of an aeroplane and to revolve this backwards when the aeroplane has landed. It is stated that the result will be to pull the machine up quickly, without compensating disadvantages.

447,610. *Improvements in or relating to Retractable Undercarriages for Aircraft.* The Fairey Aviation Co., Ltd., Cranford Lane, Hayes, Middlesex, and Ordidge, F. H., Soircroft, Croft Gardens, Ruislip. Dated October 18th, 1934, No. 29,839, and March 22nd, 1935, No. 9,031.

The retractable chassis described has a landing wheel carried by two members, one of said members being pivoted on a fixed portion of the aircraft and the other to a block movably secured on a guide, the second member being substantially perpendicular to the guide when the undercarriage is fully extended. The guide has a rack and the block has a pawl so that on lowering the undercarriage the pawl rides freely over the rack. Means are provided for disengaging the pawl when retracting the undercarriage. Various different modifications are described.

449,702. *Improvements relating to Brake Control Mechanism for Aircraft.* Bendix, Ltd., King's Road, Tyseley, Birmingham, and Lambert, A. W., of the same address. Dated February 20th, 1935 No. 5,406.

This specification describes an arrangement by which the instructor in a dual controlled aircraft can take over the control from his pupil when desired. In the case of the pupil's brake control, the instructor can, by moving a separate control, unlock a plunger operated by the pupil from a barrel which is connected with the brake. The brake can then only be applied by the instructor.

449,728. *Improvements in or relating to Undercarriages for Aircraft.* Ceskomoravská-Kolben-Danek Co., Ltd., 36, Palackého, Prague X, Czechoslovakia, and Jaroslav Slechta, 399 Obvodová, Prague IX, Czechoslovakia. Convention date (Czechoslovakia), September 29th, 1934.

The undercarriage described consists, in front view, of two members, one projecting from the underneath part of the fuselage, the other from its side. The characteristic of the device is that the latter member is connected to a shock-absorbing device of normal type which is contained completely within the hub of the wheel.

448,983. *Improvements in Undercarriages for Aircraft*. Dr. Ing. N. C. F. Porsche, G.m.b.H., Kronenstrasse 24, Stuttgart, N., Germany. Convention dates (Germany), November 2nd, 1934, and November 3rd, 1934.

This device relates to undercarriages employing torsion springs and means are provided for retracting the undercarriage without increasing the tension of the torsion springs. Hence in retracting the undercarriage it is only necessary to lift the weight. In one example the torsion spring acts as a pivot for retracting the undercarriage, which is claimed to reduce the number of required parts. Retraction is allowed through the abutment of the torsion spring being adjustable, say, through gearing. When the undercarriage is extended the spring abutment is rigidly fixed, which is also the case when the undercarriage is retracted.

REVIEWS.

GUIDE FOR FLYING INSTRUCTORS.

Published by the Guild of Air Pilots and Air Navigators of the British Empire. Price 5/6.

As the Guild of Air Pilots has been entrusted by the Air Ministry with the task of enquiring into the competency of flying instructors and of granting certificates to those who are approved, it has been thought necessary to issue a handbook on the subject. The result is that there is now available an excellent little work on flying tuition which could be read with advantage by the pupils as well as by the instructors.

The book is full of information and hints concerning piloting in all its phases. Detailed directions concerning the handling of aeroplanes under all conditions are given, as well as advice about what to do in emergency. The whole is obviously the essence of the experience of many competent pilots.

There are, at the same time, one or two matters which should be reconsidered when a second edition is called for. On page 7 it is stated that the possession of a Guild certificate entitles a holder to obtain an instructor's endorsement on his licence; on page 4 it is stated that the certificate is taken by the Air Ministry merely as evidence of competency. It is presumed that the latter is correct, as it may happen that facts are known to the Air Ministry which may make it undesirable for a particular person to instruct, in spite of technical competency. On page 23 the effect of dihedral angle on a sideslipping aeroplane should be noted. Under these conditions the outer wing has its incidence angle increased and the inner wing has the same angle reduced, and banking follows automatically. On page 26 it is stated that airscrew pull, the speed of the aeroplane, and the lift of the wings, are forces. Speed is not a force.

These are, however, faults which are not serious and are easily corrected and they do not alter the fact that the book is the best manual on practical piloting which has yet appeared.

FLIGHT TO-DAY.

By J. L. Nayler, M.A., F.R.Ae.S., and E. Ower, B.Sc., F.R.Ae.S.
Published by Oxford University Press. Price 3/6.

This book is very welcome. When two well-known aeronautical experts like Messrs. Nayler and Ower write a book with the specific intention of conveying aeronautical information to the ordinary man, it is natural to expect that the information will be accurate and that it will be displayed without frills.

Whether the general public will insist on having their appetites whetted for aviation information by references to giant air liners, battleships of the air,