

in the cowling; the axis of the airscrew shaft is, also, lower down.

The cylinders of the "8" are, as before, steel forgings machined all over, with steel water jackets and detachable aluminium cylinder head blocks containing inlet and exhaust passages, valves and valve actuating mechanism. The pistons are of aluminium alloy, fitted with two gas and two scraper rings. Hollow gudgeon pins of large diameter are provided fixed in steel bushes.

There are two inlet and two exhaust valves per cylinder, each fitted with two coil springs and operated direct by overhead camshafts driven through bevel gearing by vertical shafts from the crankshaft (at the rear end). The whole of the valve mechanism is enclosed within a detachable aluminium case.

The connecting rods are machined from special high grade steel; the master rod, coupled to the pistons of the vertical block of cylinders, is formed with lugs on either side, to which are attached the short auxiliary rods for the pistons of the right and left groups of cylinders. The big ends are white metal lined, and the anchor pins and other parts work in bushes of ample size.

Machined from a solid steel forging, the crankshaft has its four throws in one plane, and all journal bearings are of large diameter and bored out. The forward end is extended to carry the airscrew boss. The shaft is carried in six substantial roller bearings and a thrust ball bearing is provided to take the thrust of either a "Pusher" or "Tractor" airscrew. The direction of rotation of crank and airscrew is anti-clockwise viewed from front.

The crankcase and oil sump is of aluminium suitably stiffened at all necessary points, and having arms on either side for attachment to the aircraft engine mounting. The crankcase rear end cover contains the two scavenge pumps, the pressure oil pump and the drive for the camshafts, magnetos, water and oil pumps. The water pump is of the centrifugal type, mounted at the rear end of the engine and running at crankshaft speed. Its spindle is fitted with a gland and

a screw-down greaser. Water is delivered through a separate outlet to each of the three cylinder blocks.

There are three oil pumps, two suction and one pressure type, driven at half engine speed through gears. The suction pumps are connected to the sump, and the pressure pump takes oil from the supply tank through a suitable filter.

Lubrication is by pressure throughout to the big-ends, gudgeon-pins, and bearings of the camshaft. The cylinder walls and crankshaft bearings are lubricated by oil escaping from the big-ends and gudgeon-pins. The valve tappets and cams are lubricated by oil escaping from the camshaft bearings, which drains into the sump and is delivered thence to the supply tank by suction pumps. An adjustable pressure-relief valve is incorporated in the system.

Three single carburettors, Napier system, are provided, the bodies of which are of aluminium and water-jacketed. The gas-inlet pipes to the induction on the cylinder-heads are of steel, and also water-jacketed. Altitude-control cocks are fitted and are interconnected with the throttle control.

Ignition is by two special B.T.-H. 12-cylinder magnetos, rotating anti-clockwise, mounted on platforms at the rear end of the engine. Special distributors are fitted to facilitate starting by hand. Metal-braided ignition cables, carried in aluminium troughs, are employed for conveying the current to the sparking-plugs. Advance and retard links and levers are interconnected.

If required, the engine can be fitted with a gas distributor for use with the Bristol-type starter unit.

The oil consumption of the "Lion 8," taken on the Air Ministry two-hour endurance test, must be between 7 and 15 pints per hour. This consumption may also be stated as a maximum of 0.038 lb. per b.h.p.-hour on the two-hour test. The fuel consumption will not exceed 0.55 pints per b.h.p.-hour at full load and normal speed. This consumption is equivalent to 0.527 lb. per b.h.p.-hour with a fuel of specific gravity of 0.765.

The overall dimensions of the engine are: length to centre of airscrew, 5 ft. 1 in.; width, 3 ft. 6 ins.; height, 3 ft. 3 ins.

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LIGHT 'PLANE CLUB DOINGS

London Aeroplane Club

The Club which was closed down for a week during the Christmas holidays, re-opened on December 31 last. For the week ending January 2, 1927, the flying during the three days amounted to 20 hrs. 35 mins.

The following members received flying instruction: L. C. Davey, B. Roxburgh Smith, J. J. Hofer, Miss Fletcher, Miss Spooner, E. J. B. King, J. H. Saffery, G. H. Saxon Mills, H. O. Guggenheim, C. G. Miesiegas, D. H. P. Esler, N. H. M. Watkins, H. Solomon, O. J. Tapper, E. G. Denton, A. R. Ogston.

The following members made solo flights:—O. J. Tapper, B. Roxburgh Smith, C. E. Murrell, G. Terrell, E. S. Brough, A. G. D. Alderson, H. Spooner, K. V. Wright, J. H. Saffery, A. R. Ogston, N. J. Hulbert, D. H. P. Esler, S. O. Bradshaw, G. H. Craig, N. H. Jones. Mr. C. D. Barnard and Mr. R. W. Reeve, the De Havilland Pilots assisted during the week with the flying instruction.

Joy rides were given to the following members:—Miss Terrell, H. J. Greenland, Mrs. Hunt, Miss Wilson, L. C. Davey, Dr. Cook, Mrs. Cook, C. H. Swann.

The total flying time for the month of December was 68 hrs. 30 mins. The total flying time for the six months ending December 31, 1926, was 863 hrs. 55 mins., made up as follows: Dual instruction, 441 hrs. 15 mins.; solo flights, 293 hrs. 50 mins.; joy rides, 55 hrs. 10 mins.; test flights, 73 hrs. 40 mins.

The total number of flights made during that period was 2,137.

Membership.—The membership of the club at December 31, 1926, was: flying membership, 209; associates, 105.

46 members hold the "A" licence and of these 30 have been trained entirely by the Club.

Club Equipment.—The Club has now four D.H. "Moths," and three spare engines. All the engines have been converted to dual ignition and have the strengthened crankcases.

Ground Engineer.—William Moss has been appointed Ground Engineer and started his duties on Saturday last.

Mr. S. L. F. St. Barbe continues to make good progress and has now left the Hendon Cottage Hospital.

Hampshire Aeroplane Club

REPORT for two weeks ending December 31, 1926:—The following members received instruction: Lieut. Heinemann, 1 hr.; Everett, 50 mins.; Shepherd, 40 mins.; Dickson, 25 mins.; Fry, 20 mins.; Southcliffe, 20 mins.; Stokes, 10 mins.; and Lieut. Gordon, R.N., 15 mins.

The following members had joy rides:—Miss Moves, Mr. Simmonds, Jnr., Masters Fossey and Loveday. The last-mentioned are two of Commander C. B. Fry's "Mercury" boys, who received their flights as prizes in connection with their training.

The soloists were:—Messrs. Simmonds, 1 hr. 35 mins.; F/O. Mellor, 1 hr.; Preston, 45 mins.; Fry, 30 mins.; Bowen, 10 mins.; Rumble, 20 mins.; and Keeping, 15 mins.

Total flying time, 10 hrs. 35 mins. Instruction flying, 4 hrs. Passenger flying, 2 hrs. Solo flying, 4 hrs. 35 mins.

It is less than five months since the club received its two "Moths" and

now, at the commencement of a new year, it is interesting to look back and review what has been accomplished in those few months. Over one thousand separate flights have been made, many of them involving five or six landings; 164 solo flights have been carried out by club members, eight pupils who had never previously flown an aeroplane have been taught to fly, and are now flying solo, and lastly, our chairman, Mr. O. E. Simmonds, has qualified for his "A" licence.

As previously reported, a dinner was held early in December, and the club house establishment fund which was opened at that function has steadily grown to over £500 total. Sir Charles Wakefield, with his usual generosity and air "mindedness," has subscribed £250, and many other donations have been received. Amongst those who have come forward to help the club achieve its object of fitting up a really attractive country club house are the following:—

The President, Lord Louis Mountbatten, £50; Sir Charles Wakefield, £250; Commander J. Bird, £50; Air Vice-Marshal Sir Sefton Branceker, £10; the Directors of the Supermarine Aviation Works, Ltd., £50; Lieut.-Col. R. E. Crichton, £5; Capt. Wilson, £5; Flight-Lieut. Crawford, £1; Mr. R. Bishop, £5; Mr. McKechnie, £2; Miss Manning, £2 10s.; F. O. Clarkson, £2 10s.; Mr. Waite, £1 1s.; Mr. Townsend, £5; Mr. P. Potts, £5; Mr. Taylor Matthews, £5; Mr. K. Lee-Guiness, £50; Mr. R. J. Parrot, £5 5s.

On Friday, 24th inst., Mr. Simmonds flew up to Croydon with Mr. Mansbridge as passenger to discuss engine topics with A.D.C.'s. In spite of a 30 m.p.h. head wind, and bad visibility, the trip was made in 90 mins. Unfortunately the engine was so moved at returning to its birthplace that the rear ball race cracked and an immediate operation was considered necessary. A.D.C.'s very sportingly tackled the job straight away, and by working overtime on Christmas Eve had the machine ready by Thursday morning, when Capt. Thomson collected it and flew it back to Hamble. We are indebted to the ball race for expiring when the club was closed down.

Newcastle-upon-Tyne Aero Club, Ltd.

REPORT for week ending January 2, 1927.—Total flying time, 16 hrs. 37 mins. (on "Moth"). Dual, 7 hrs. 45 mins., solo (Training) 1 hr. 5 mins., solo ("A") 6 hrs. 57 mins., Joyrides, 35 mins., tests, 15 mins. Avro, 1 hr. 40 mins.

Gales have again been the rule, otherwise a considerably larger amount of flying would have been completed, as there was a good attendance of members during the week.

The following members flew under instruction with Mr. J. D. Parkinson:—Mr. J. Stewart, Mr. F. L. Turnbull, Mr. J. M. Kennedy, and Mr. A. Bell.

Mr. J. D. Irving, Mr. J. M. Kennedy and Mr. H. D. Mathews flew solo.

The following "A" pilots flew with passengers:—Mr. R. N. Thompson with Mr. Thirlwell and Mr. Pike; Dr. H. L. B. Dixon with Mr. Robson; and Miss Howard, Mr. H. H. Leech, Lord Ossulston, Mr. C. Thompson, with Mrs. Heslop.

Mr. J. M. Kennedy was "launched" on the 27th, putting up a good show.

Mr. and Mrs. J. D. Irving very kindly presented an oil stove and carpet for the office, which are much appreciated. It is regretted that this was not acknowledged in a previous report.

Aero Golfing Society

At the annual meeting of the Society held at the Royal Aero Club on Thursday, December 30, 1926, the following officers were elected for the year 1927:—

President—Lieut.-Colonel J. T. C. Moore-Brabazon, M.C., M.P.; **Captain**—C. R. Fairey; **Hon. Treasurer**—Lieut.-Colonel Sir Francis K. McClean, A.F.C.; **Hon. Secretary**—Harold E. Perrin.