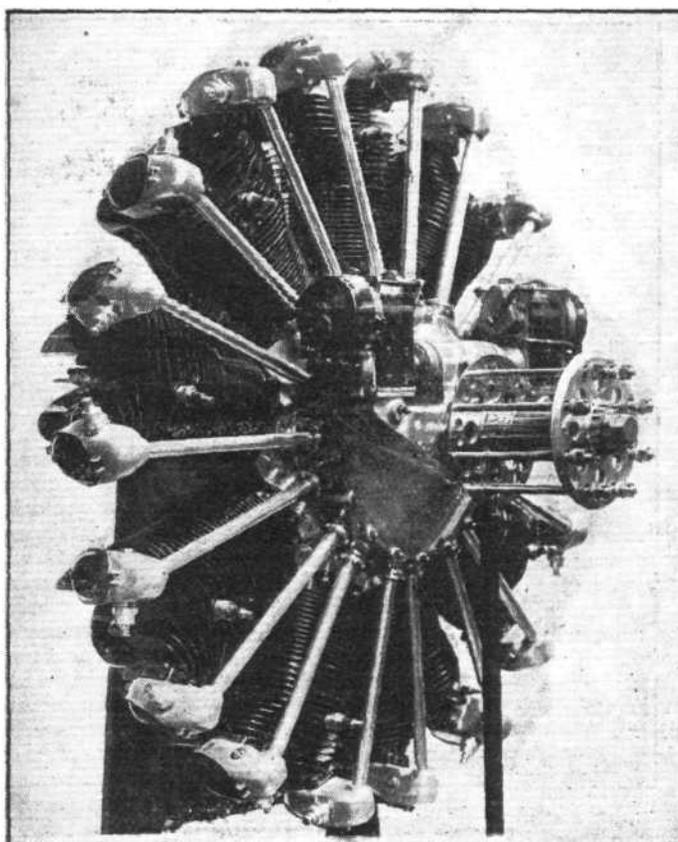


cylinder are provided, but one bevel-driven camshaft only is used for each bank of cylinders, the pairs of inlet and exhaust valves being fitted one valve on each side of the shaft. The pairs of inlet and exhaust valve stems are operated by the transverse portions of a T-shaped taper fitted between each pair, the cam contacting with the top surface of the head of the T, the stem forming a plunger which forces oil to the valve parts. The valve gear of each cylinder bank is, of course, totally enclosed by an oil-tight cover. Six Zenith carburettors are provided, four for the outer banks, each feeding two cylinders, and one at each side of the centre bank supplies the four vertical cylinders. Ignition is provided by two Ducillier magnetos, these having horizontal distributors.

The 18-cylinder broad-arrow type 18 Kd. engine develops 650 h.p. at 2,000 r.p.m. The comparative length and weight (1,320 lbs.) of this engine appears to make the extra 50 h.p. (as compared with the previously described engine) a somewhat doubtful advantage, or alternatively it shows the economy in weight of the monobloc design, each bank of cylinders in the larger engine comprising six separate units having sheet steel jackets welded to the barrels, the construction being similar to that of the early Rolls-Royce engines. The bore and stroke are 120 mm. and 180 mm., the compression ratio being 6:1. The airscrew shaft is gear driven through the epicyclic type of reduction gear previously mentioned, the ratio being the same, namely, 0.647:1. The arrangement of the auxiliary drives and valve gear is similar to that of the type 12 Ed. 12-cylinder 450 engine. The three gear-type oil pumps are, however, fitted at the rear end of the crankcase. Four Zenith carburettors are employed, these all being fitted outside the outer banks, those on the port side being of duplex type to supply the centre bank of cylinders, in addition to the port bank.

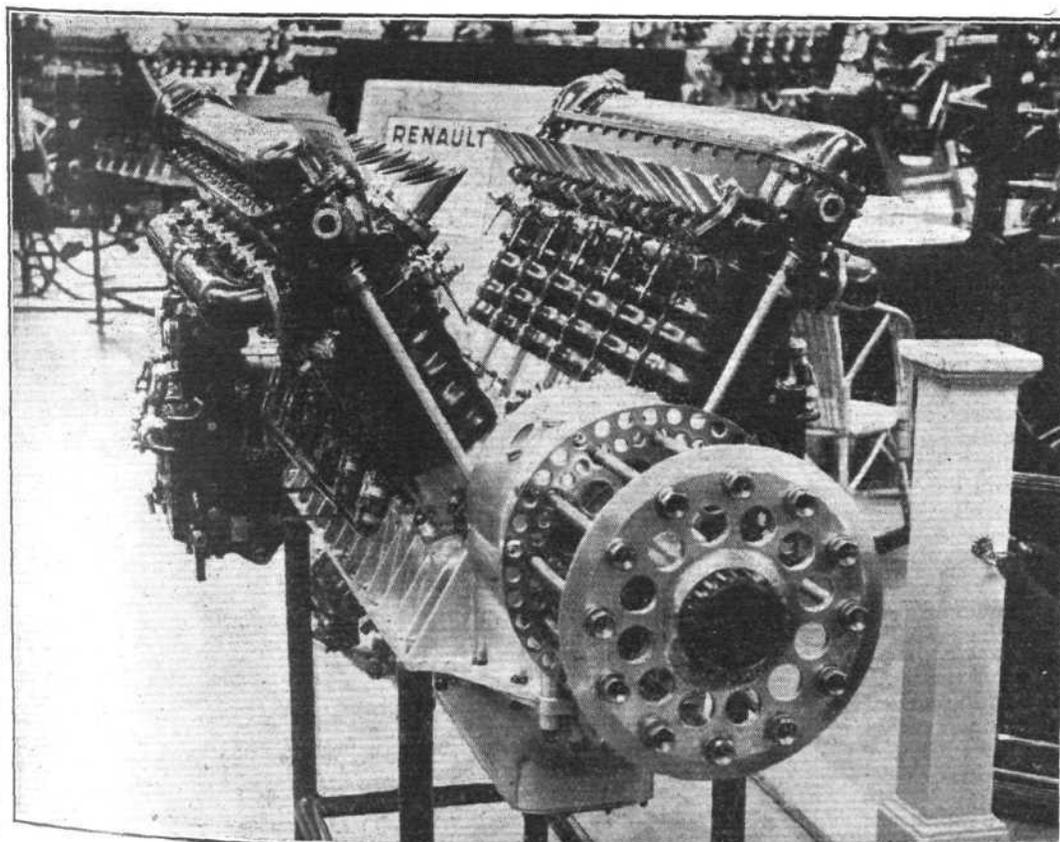
Renault

Six engines are being shown by the Renault firm on the Stand of the French combined exhibit, four being of the old twelve cylinder water-cooled, 60° V-type (two geared and two direct-driven), and two new air-cooled engines, one of which is a 250-h.p. nine-cylinder radial, whilst the other is an 80-h.p. four-cylinder-in-line air-cooled light 'plane engine. The last two are, of course, the more interesting of the group. The radial engine has a bore and stroke of 125 mm. and 150 mm. respectively, the normal output being 250 h.p. at 1,700 r.p.m., the airscrew being direct-driven. The cylinders are of composite construction, having steel barrels and aluminium heads, the valve seats being of bronze. Two inclined valves are fitted in each head, the inlet and



The new Renault 9-cyl. radial develops 250 h.p. at 1,700 r.p.m.

exhaust ports both facing rearwards. The valves and rockers are enclosed in duralumin housings which are bolted to facings provided on supports formed integral with the heads. Each rocker spindle is provided with a Tecalemit greaser which is fitted to an extension of the spindle, this forming a chamber holding a reserve of lubricant. The rocker housings are fitted with pressed detachable cover plates, which are secured by spring clips. The two sparking plugs are located horizontally



The 500 h.p. Renault geared engine