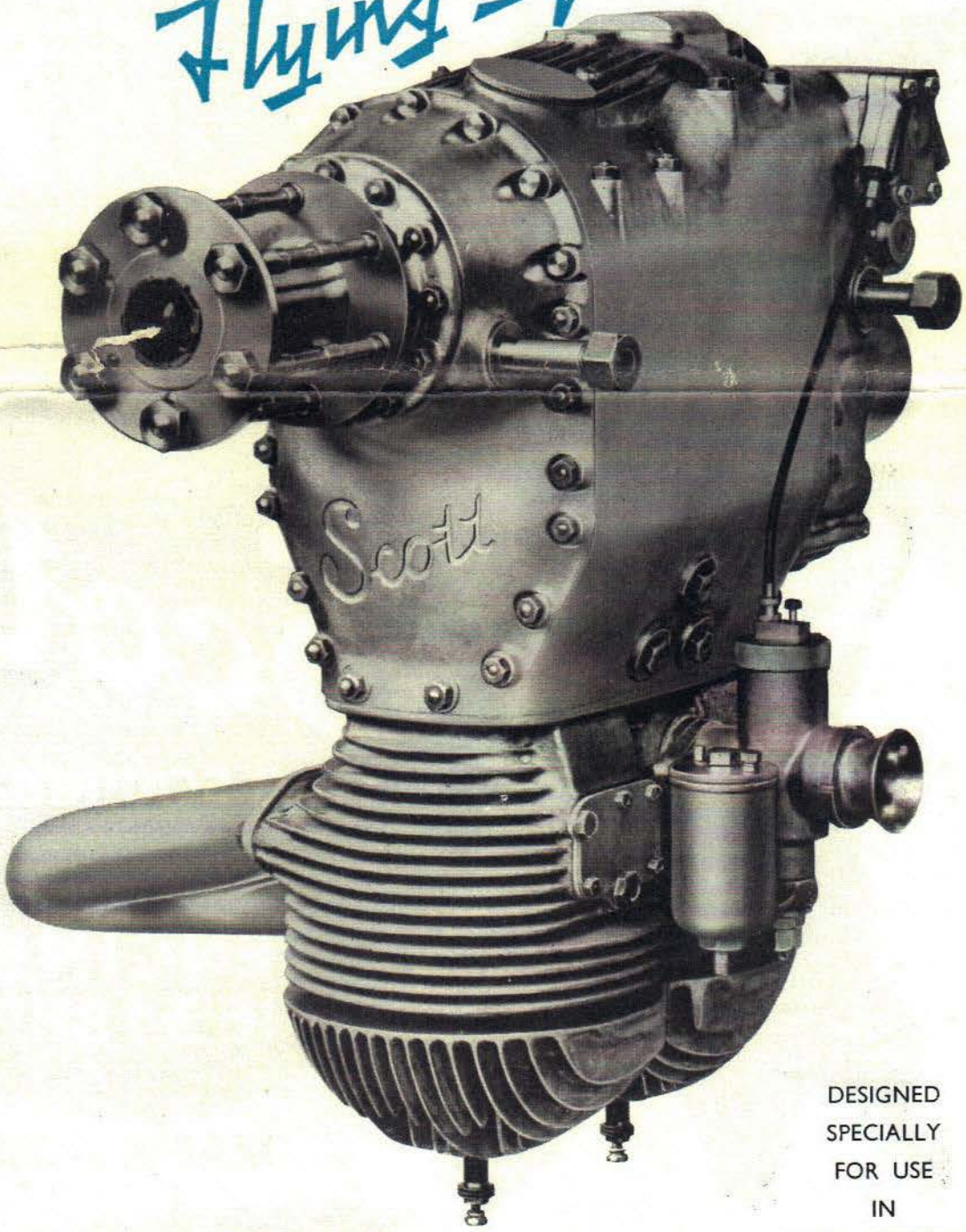

Scott
FLYING SQUIRREL LIGHT
AERO
ENGINE
16/34 BHP
MARK A.2.S

THE Scott Flying Squirrel Aero Engine is not a motor cycle engine but is a serious attempt to manufacture an engine suitable for Ultra Light Aeroplanes and the Owner Pilot.

The Scott factory is the pioneer of the Two Stroke Engine and has behind it 37 years of experience, during which period great strides have been made in the improvements of engines of the two cycle type. It is the ideal type of engine for Light Aeroplanes because of its even torque. The Scott twin air cooled engine has only five working parts, none of which are subjected to hammer blow action. It has no valves, valve gear or tappets. This is the secret of Scott Simplicity.

SCOTT

Flying Squirrel Engine



£50

Air Screw Hub and Flange (as illustrated) £3 extra Ex Works

DESIGNED SPECIALLY FOR USE IN LIGHT AIRCRAFT

IN the absence of a Petrol Turbine the Scott Engine is supreme. Highly economical, unusually light; coupled with a sturdiness in design, which makes for a high degree of reliability. An inherent feature of Scott Engine design is the ability to maintain the power output at low Engine revolutions, this with the comparatively wide rev. range afforded, provides an ample margin to meet all flight conditions.

SPECIFICATION

CYLINDERS. The cylinders are of light alloy with encast chromidium liners. Special attention has been given to the finning and graduation of wall thickneess in order that distortion may be avoided and an even cooling effect obtained. The ends of the cylinder skirts project into specially shaped recesses in the crank case, and provision has been made for oil drainage, obviating any danger of flooding the pistons.

CYLINDER HEADS are detachable, each being secured to the barrel by six high-tensile steel studs, three of which extend from the crank case. The heads are cast in light alloy and are provided with ample finning in the direction of air flow.

COOLING. The finning of the heads and cylinders has been so arranged that, with the ample area provided, effective cooling is a straightforward matter on any aircraft.

PISTONS. These are in die-cast alloy with Scott patented arrangement of skirt, and gudgeon pin fastening. This arrangement ensures that the area around the gudgeon-pin boss has a greater clearance than the rest of the piston. Three gas rings are fitted but no scrapers. Scraper grooves are provided which effectively control the oil distribution.

CONNECTING RODS. These are of nickel chrome steel forgings, the big-end carrying a large triple-row roller bearing, which provides for the use of high-tensile light alloy cage. The big-end eye of the connecting rod is finned to provide greater heat transfer.

CRANKSHAFT is of "Scott" patented built-up type, two sections being employed, each machined from a solid forging of heat-treated alloy steel. The main bearings, of which there are two, are of the single-row roller type.

CRANK CASE. The crank case is of three sections, cast in light alloy, secured together sandwichwise, the lower joint of the sandwich accommodating the crankshaft assembly, the top section providing the bearing and housing for the propeller shaft and reduction gear.

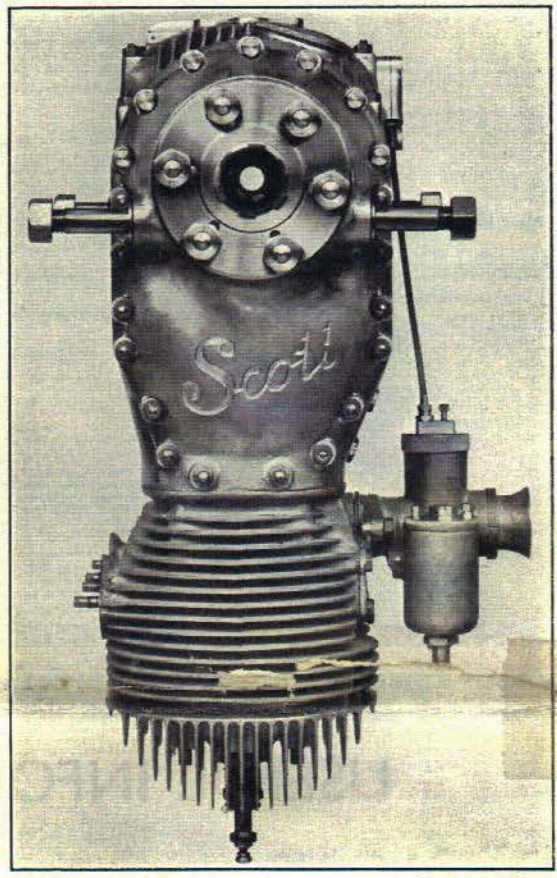
REDUCTION GEAR is of the straight spur type, having a ratio of two to one. The feature of the reduction gear is that the driving pinion is mounted between the two crankshaft sections, and not at the end. This reduces the loading on the cranks and bearings. The reduction wheel, which is splined to the propeller shaft, is machined from solid forging, and the shaft and its gear are dynamically balanced. Lubrication of the reduction gear is by high-pressure oil spray.

PROPELLER SHAFT is of nickel-chrome molybdenum steel, tubular in section, and is carried in a roller bearing at the gear end, and a deep groove ball race at the hub end. This race is also arranged to take the propeller thrust.

AIRSCREW HUB. This is to B.S. "O" Specification, with a slight modification to the hub diameter. This being 1.625".

SCOTT "FLYING SQUIRREL" DATA

Direction of Rotation of Airscrew.	Anti-clock. Viewed from Propellor.
Bore.	73 mm.
Stroke.	78 mm.
Swept volume.	652 c.c.s.
Compression ratio.	6.8 : 1.
Normal b.h.p.	16.
Normal r.p.m.	3,200.
Maximum b.h.p.	34 at 5,200 r.p.m.
Weight complete.	85 lb. +- or — 5 lb.
Fuel consumption at normal r.p.m.	0.56 lb./b.h.p./hr.
Oil consumption.	0.03 lb./b.h.p./hr.
Oil pressure.	30 to 40 lb. per sq. in.
Oil in circulation.	0.5 gallons.
Length over spinner.	600 mm. (23½in.) approx.
Height overall.	575 mm. (22½in.) approx.
Greatest width.	250 mm. (10⅛in.) approx.



MAGNETO. A standard type of two-spark magneto is fitted, running at engine speed. The drive is taken from an extension of the propeller shaft.

CARBURETTER. A standard Amal carburetter in light alloy is fitted.

LUBRICATION is the patented "Scott" stepped-pressure system. The step-up pump takes oil from the main supply. The oil is then metred by the pump and passed under high pressure to the following points; main bearings, big-ends, cylinder walls. A separate lead is taken off this pump for the pressure oil spray to the reduction gear. The major control, *i.e.*, maximum delivery of this pump is controlled externally, a graduated dial being provided for this purpose. A further control to the pump is inter-connected with the throttle. The object of this control is to vary the metering of oil to the points mentioned above from zero to the pre-determined maximum given by the dial settings; thus the oil is proportional to load and revs. Two scavenge pumps are used in connection with this system, one to scavenge the crank chambers, the second pump drawing oil from the reduction gear casing and returning it to the engine sump. The sump is formed around the outside of the lower half of the crank chambers, the filler orifice being located in a forward top position of the reduction gear cover.

REV. COUNTER DRIVE is picked up from the propeller-shaft and runs at half engine speed in the case of a two to one prop. reduction.

MOUNTING. Four trunnion stubs are provided for mounting the engine.

THE FAMOUS "FLYING FLEA"

Built by Mr. C. F. Brooke, Huddersfield.

Photo, C. H. Wood, Bradford.

USEFUL INFORMATION *Queries and Replies*

Lbs. thrust at air screw.	Bearings will stand 1000 static
Petrol Feed.	By Gravity.
Pump shown on illustration.	Oil Pump.
Is Scott Engine suitable for Pusher type?	Yes.
Is Scott Engine suitable for Tractor type?	Yes.
Is it possible to fit Centrifugal Inertia Starter?	No.
Shock Absorber recommended in assembly of Engine on Chassis?	Yes.
Grade of Petrol recommended.	Cleveland Discol or branded Ethyl No. 1.
Grade of Oil recommended.	Pharmaceutical Castor, Castrol R, Aero Shell, Duckham's N.P.5.
Propeller Hub.	BESA No. 0 modified 1.625" on Hub diameter.
Propeller diameter.	5' 0" Two Blade type.
Propeller Pitch.	4.46 ft.
Hand of Propeller	Left Hand Tractor.
Head of Petrol for Carburetter.	Maximum 3 ft. If more required, please ask our advice.