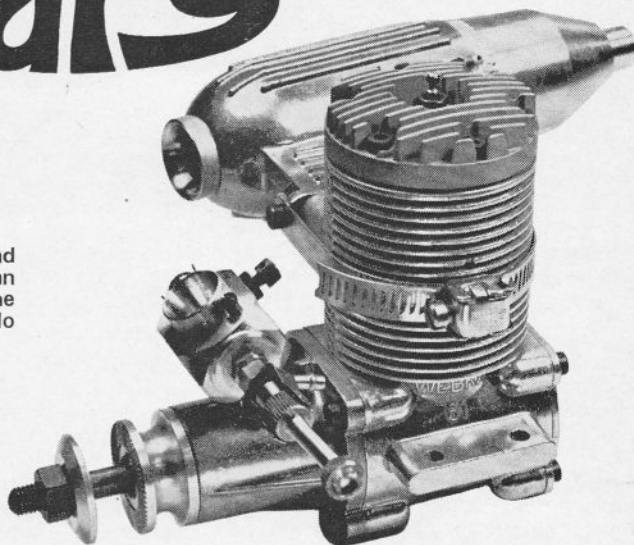


**Peter
Chinn's**

RADIO COMMENTARY MOTOR



Left: Webra Speed-61 R/C. Very powerful and capable of turning a 14 x 6 almost as fast as an O.S. 80. Manufacturer's (right) silencer for the Webra Speed-61 is an air-scavenged type. No power loss at normal speeds but very noisy.



ton) Ltd., 9-11 Station Road, Erdington, Birmingham B23 6UB, to whom all enquiries should be directed.

Webra Speed-61 Tested

This engine, production of which began last year at the newly established Austrian Webra factory at Enzesfeld, was designed by Peter Billes who was responsible for the HP (Hirtenberger-Patronen) engine range over the period 1969-72, including the design of the HP 40 series and the development of the original Paul Bugl designed HP 61. It is this connection which accounts for the unmistakable similarity in design and appearance of the Webra 61 to the HP 40F.

Webra's other (German built) 10 c.c. R/C motor, the very successful Blackhead 61 was, of course, designed by the late Günther Bodemann. Some Bodemann features are still to be found in the Speed-61 (for example, the Webra TN type carburettor, the prop drive assembly and the pressed-in crankpin)

but there is little else to relate the Speed 61 to the Blackhead. Both engines have a 24 x 22 mm. bore and stroke, a 15 mm. o.d. shaft and front rotary-valve induction, but so do most other 10 c.c. R/C engines.

The most obvious way in which the Enzesfeld Webra differs from all previous Webra motors is in its use of a Schnuerle scavenged cylinder. The design of the cylinder casing, liner and piston is very much in line with the HP 40 layout. The cylinder block, which is integral with the crankcase barrel, is finned below the exhaust duct as well as above it and is fitted with a hardened steel cylinder-sleeve. The latter has a centrally bridged exhaust port timed to open and close at 71 deg. each side of BDC. The two angled main transfer ports, fed from fore and aft channels in the main casting, are open for 60 deg. each side of BDC and the third port, its top edge inclined to direct gas flow upward, is uncovered for 55 deg. each side of BDC. This

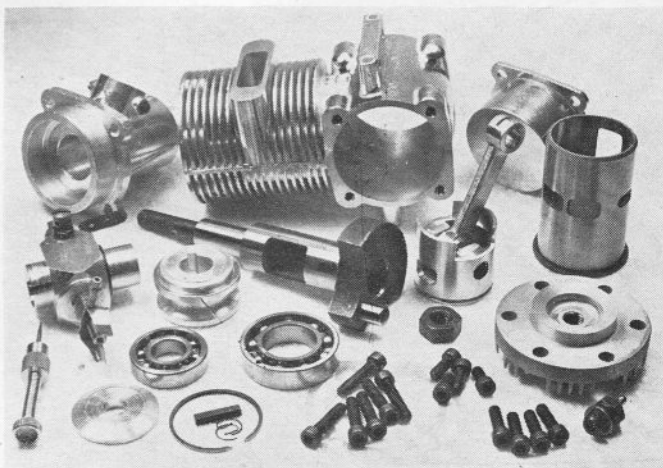
MANUFACTURE of the Meteor 60 R/C engine, previously made by Jim Herbert and distributed by Keith Jones, has been taken over by the Wismore Engineering Company Ltd. of Erdington. D. J. D. Rowe, a director of Wismore, who is also a keen modeller and a member of the Sutton Coldfield Radio Control Flying Club, has advised us that the past few months have been spent in investigating materials and treatments and in re-tooling the engine for volume production.

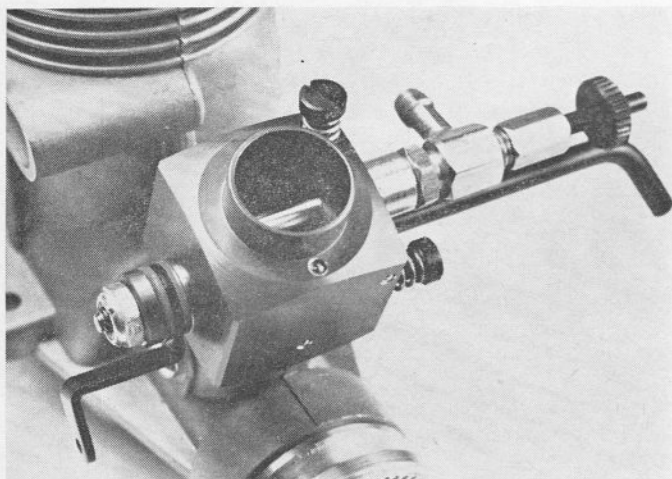
Wismore's version of the Meteor will have the Kavan carburettor as standard equipment (this was an option on the original version) but, except for the actual casting of diecast components, all other manufacturing processes will be carried out on Wismore's premises. A small pre-production batch of engines has already been built but all these have been exported. On the home market it is expected that the price will be such as to make the motor highly competitive in relation to imported 10 c.c. R/C engines.

A marine version of the Meteor will continue to be offered and it is planned to introduce, later, a smaller motor in the popular .40 cu. in. class. The Meteor 40, on which development work is now being carried out, will also be available in a marine version.

To handle sales and service, Wismore have formed a subsidiary company: Meteor Model Engines (Erding-

Parts of the Austrian-built Webra Speed-61. In design and construction it is totally different from Webra Blackhead 61 made at Webra's Berlin factory.





The Canadian 'Tarno-Carb'. Simple friction clutch on throttle arm enables push-rod travel to override throttle limits without stalling servo.



Tarno carburettor with throttle valve removed showing O-ring seals and 'clutch' parts. Extended manual control arm on opposite side enables throttle to be operated without switching on radio.

latter is fed from a small chamber in the surrounding casting which is charged from the crankcase via a rectangular window in the piston skirt. The flat crown piston has a single, pegged, conventional ring and a 6 mm. gudgeon-pin couples it to a forged connecting-rod bronze bushed at both ends. The pressure diecast cylinder-head features a 4 mm. squish-band surrounding a shallow bowl shaped chamber.

The crankshaft has a 15.0 mm. main journal, a 9.52 mm. dia. front journal and a 6.0 mm. solid crankpin. The gas passage through the shaft is 11.1 mm. bore and is fed from a rectangular value port timed to open for 190 deg. of crank angle, closing at 45 deg. ATDC. The shaft runs in an English size ball journal bearing at the front ($\frac{3}{8} \times \frac{7}{8} \times \frac{5}{16}$ in.) and a metric (15 x 28 x 7 mm.) bearing at the rear. The prop driver is fitted to the shaft end with a square sunk key.

The Webra TN carburettor has the 8 mm. i.d. choke that is now standard on the latest Blackhead, giving a fairly generous effective choke area of approximately 35 sq. mm.

The Webra silencer that is available as an extra for this engine uses the body casting of the Type 1100/61 expansion chamber unit designed for

the Blackhead but with an enlarged i.d. tailpipe and a large forward vent tube to reduce power loss. On the example examined, the total escape area for the gases was some 255 sq. mm. — four times that of the original design. The method of securing the silencer to the engine is also different. It now uses a strap around the cylinder instead of two screws through the ends of the exhaust duct. This certainly does not look as neat, but makes for a more secure attachment, less prone to loosening through vibration. As with all strap type fittings, care should be taken not to overtighten it as this may distort the cylinder.

On test, we found the Speed 61 to be pleasant handling and very powerful. It was, in fact, one of the two most powerful R/C 60's that we have handled to date, with a gross bhp (unsilenced) 15 per cent above that of the Blackhead on the same fuel and very much higher maximum torque than had previously been encountered with a production engine of this size.

Typical prop revs recorded on test, using 5 per cent nitromethane fuel, were as follows:

9,500 rpm on a	14 x 6	Top Flite maple
11,000	" "	13 x 5½ Top Flite standard
11,900	" "	12 x 6 Top Flite maple
11,600	" "	11 x 7½ Bartels epoxy-glassfibre

11,700	" "	11 x 8	Top Flite maple
12,600	" "	11 x 7	Top Flite maple
13,800	" "	11 x 6	Top Flite maple
14,300	" "	11 x 6	Power Prop maple

These figures were recorded with the silencer installed, although it makes little or no difference to the engine's power output whether the silencer is fitted or not. Identical figures, in fact, were recorded on load speeds of up to 13,000 and the gain with the silencer removed was only 100 r.p.m. at 14,000 and 200 r.p.m. at 15,000.

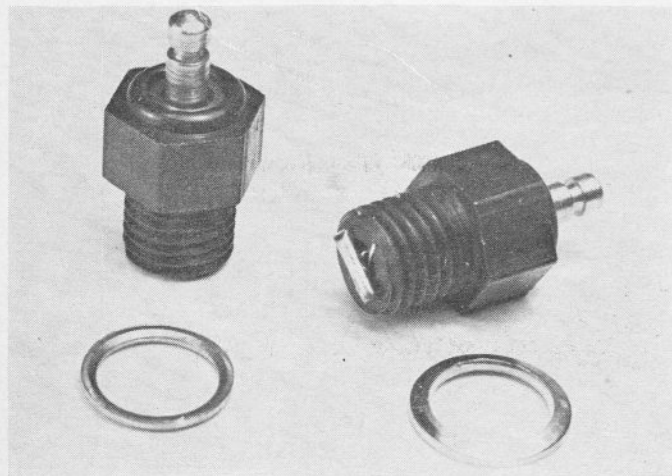
As one would suspect, the 'silencer' is there only to satisfy the rules: it does precious little to quieten the Speed 61's raucous voice.

Perhaps even more impressive than the Speed 61's top-end power is what its high maximum torque does for the performance on big props. It is a good R/C 60 that, unsilenced, will turn a 14 x 6 Top Flite maple prop at over 9,000 r.p.m., yet the Speed 61 bettered this by no less than 500 r.p.m., a remarkable improvement that could be invaluable to the scale enthusiast struggling to find enough thrust, within the F.A.I. 10 c.c. limit, to get an 11-pound scale model of high wing loading, off the deck.

Running qualities were good. Response to the Webra TN throttle was very satisfactory, the engine ran steadily and, despite one or two suggestions to the contrary, we found that the Speed 61 was at least as smooth running as the average .60.

So what are the snags? There have been complaints that the Speed 61 drinks fuel and needs a bigger tank than the average aerobatic contest model can accommodate. Obviously an engine capable of delivering 15-25 per cent more power than most R/C .60's used to date, is bound to consume more fuel in doing so. We ran a fuel consumption check on the Speed 61 and did not find its thirst to be excessive when related to the power output.

At nearly £40, less silencer, the Speed 61 is quite expensive and it is also a little heavier than most of its contemporaries at 16.4 oz., or 20.3 oz. with silencer. Again, these are penalties



British-made Taylor glow plug in standard and recently-introduced R/C version. Tests have indicated that these are very good plugs. Manufactured by Chas. Taylor, noted British control-line exponent for more than 20 years.