

CONFIGURATION

Side exhaust, front intake two stroke, aluminium piston in plated liner, plain shaft bearing, Schnuerle ported, rear main needle.

DISPLACEMENT

2.49 cc

BORE

15.2 mm

STROKE

13.7 mm

WEIGHT

138g

STATED POWER

0.41BHP / 17,000 rpm

RPM RANGE

2,500~18,000

PROP RANGE

7" x 4" ~ 9" x 5" tested

FUEL

20% oil
5 -15% nitro methane
methanol

PROP. SHAFT THREAD

M5

SUPPLIED WITH

Glow plug, muffler, instruction book, decals

by Brian Winch

Engine review

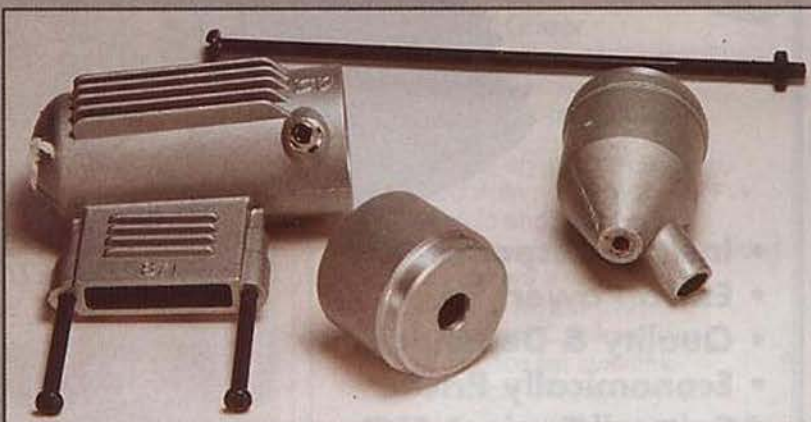
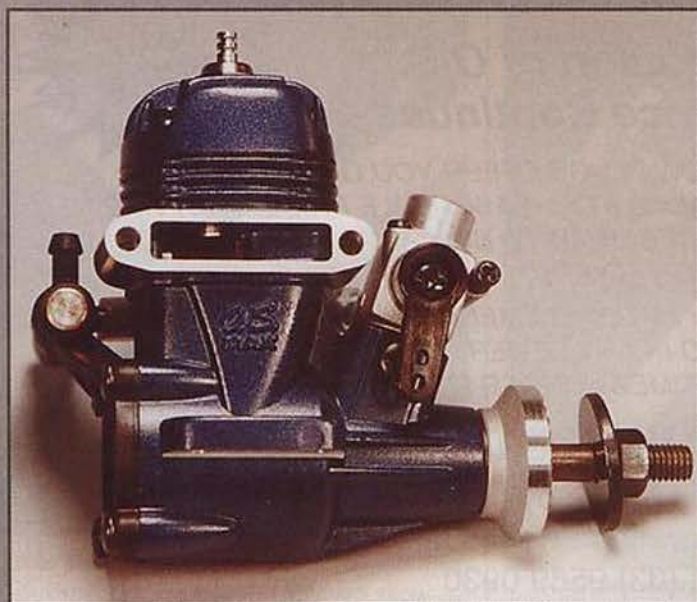
O.S. MAX 15LA



FOREWORD

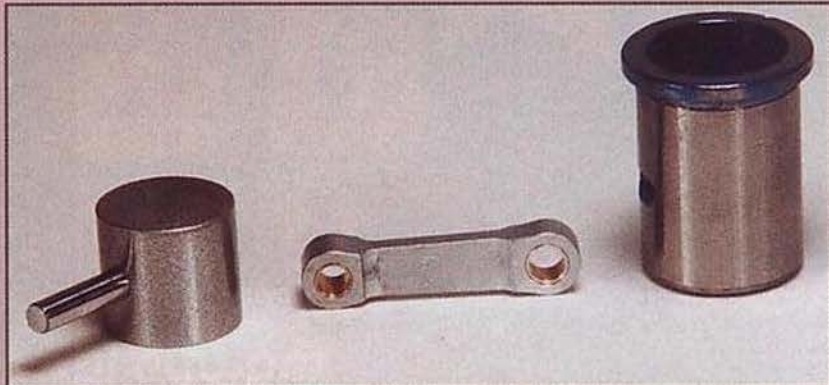
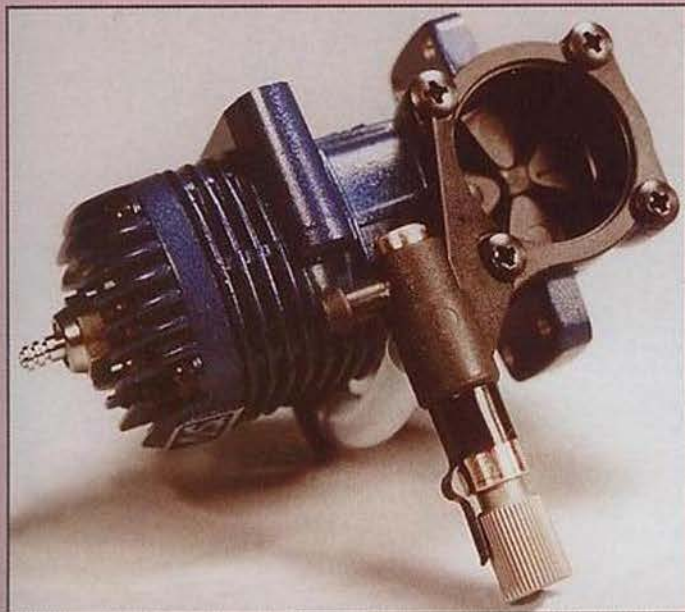
I recently asked readers for their opinion of my style of engine reviewing. I was quite pleased that the replies were very positive with a few small suggestions. One suggestion from several readers was that I report on the smaller engines available around the 1.5 to 3 cc sizes. On being notified of this request the O.S. company were first off the mark with a 10FP. At the time I was surprised they did not provide a .15FP as this is a very popular size. Now I know the reason! Stewing away in the boilers at the devel-

opment section of the factory was this little humming bee. It appears to me that O.S. have a very smart policy of keeping a new engine well under wraps until proven and a large batch have been made ready for shipment. Suddenly the new engine is on the market, being reviewed and grabbing the major share of the market before the clone makers jump in with their copies. Modellers keen on the smaller size models and multi engine aircraft will be quick to see the benefits of this little hummer with its outstanding performance envelope, almost no maintenance needs, reliability and, as all the Bluey series, low cost for a complete, ready to use engine. Readers who have been with me for the past LA reviews would realise that I am keen on this range of engines. As model engines are my main facet of the hobby I like many types for different reasons. The LA series appeals to me for reasons of quality, reliability, quiet running, no maintenance, no expected failures and low cost. Oh yes, I also like the blue colour and the new shape. The fact that they have bronze



Above: Tidy assembly held in one piece by a single bolt. Undo the nut before loosening the bolt head.

Left: The exhaust looks like a grin from the old Minstrel's show. Note the large throttle arm for ease of attachment.



Above: All the good bits. Note the 'blank wall' of the liner - no boost port.

Left: The rear cover is quite strong and the gussets inside assure shape retention.

bushes instead of ball bearings appeals to me for certain reasons. I have no reason to



The glow plug almost monsters the little head.

dislike ball bearing fitted engines due to the fact that I understand that form of bearing and can quickly recognise impending problems. This is not so for many non engineering type modellers and I, sadly, see the result of collapsed ball bearings in engines sent to me for repair. Quite often the engine comes from a modeller who has a limited budget and an engine rebuild is a strain on the wallet. For modellers who simply want a reliable engine that requires nothing more than fuel and an occasional glow plug I advise - go for a Bluey. Use a good filtered fuel and the only problem you need consider is how you twiddle the sticks on the TX - certainly not the engine pulling your model.

I've given this one a good work out, checked the results and stripped it down to see what makes it tick. Let's see what's inside then I'll tell you how it hummed.

OUTSIDE

The outside bit, the maincase, is simply a miniature version of the now proven and recognised LA series with the blue overcoat. A note here. Apparently some US modellers weren't too keen on the blue

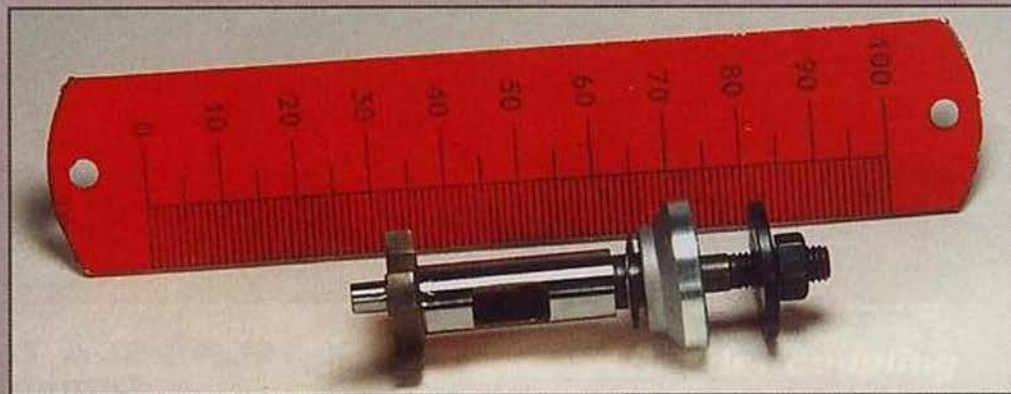
colour so a silver version is available in that country. Horses for courses!

With the superfine finish of the machined sections the case is almost a piece of jewellery with the contrast of colours and shapes. Looking in the rear of the case you can see the two fuel passages going up the bore of the barrel, the thrust face of the front housing and the rear section of the two part bronze bearing. Simply, the shaft is well supported by two bronze bearing sleeves and a centre section of hard wearing aluminium alloy to

on the top of the liner is assisted by a soft aluminium gasket.

INSIDE

Again all mini sized bits with the peppery (silicon content for long life) piston which is from a permanent mould, 3mm hollow gudgeon pin with a superfine finish and Teflon rub pads, fully machined conrod with bronze bushes both ends as well as oil holes and the substantial brass liner with a hard surface coating, port alignment slot in the rim, directionally



Small dimensions but big on engineering quality.

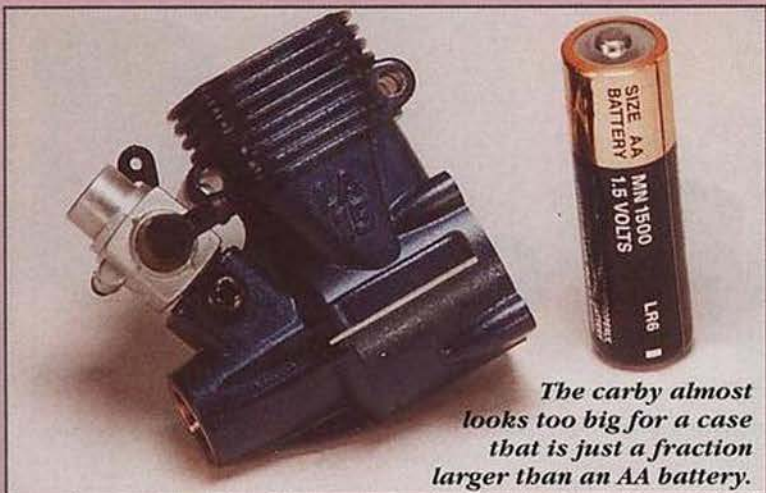
give maximum support, sealing and still provide the minimum of drag for super free running.

The mounting lugs are very substantial, exhaust manifold is the through bolt style for muffler retention and the carby is the common OS style of two Phillips head bolts threaded into the carby spigot. Very light - very strong.

The rear cover is a composite material - incorporating a very substantial mounting bracket for the rear mounted main mixture needle. The inside of the cover has angled webs to maintain shape under operating conditions.

The cylinder head is a cute little bit with its mini size hemispherical combustion bowl and angled squish band. Sealing

angled ports and no boost port. In a future review of the 65LA, which I am currently doing, I shall go into detail about the lack of boost port in the engine (stay tuned) so I will only touch on it a little here. The Schnuerle porting was originally designed with two only ports - one on either side of the exhaust port. This was to give an economic fuel supply to the cylinder with a flow pattern that would lead to a good pattern of flame front under combustion. It also eliminated the waste of fuel out the exhaust with cross flow induction wherein the fuel port was directly opposite the exhaust port. Somewhere along the line the boost port was added by some designer and it has become commonly standard. There has always been doubt with some



Carby ARC

	RPM
0°	15,200
5°	14,500
10°	13,600
15°	12,400
20°	10,300
25°	6,200
30°	2,700

Propeller Figures

		RPM
Taipan	7 x 4	17,650
APC	8 x 4	15,200
	(idle)	2,700
Tornado	7 x 6	15,000
APC	8 x 6	13,100
APC	8 x 7	11,000
APC	9 x 5	10,950
	(idle)	2,400

Consumption with APC 8 x 6 propeller at 13,100 rpm on 30cc fuel - 4 mins/15 secs.

engineers as to its value if any and here, at least with this series of engines, we have proof that it is not needed. This is borne out by the excellent performance figures of the engine from starting through to top r.p.m. As to the parts covered in this section, yes, usual high quality we have learnt to expect from O.S.

The crankshaft is very pleasing (many readers will know I have a 'thing' about nice crankshafts) with its unit construction from a solid billet of high tensile alloy steel. Heat treated for strength and long life, chrome like finish on the bearing surface and high quality thread for the prop nut. A spring steel shim is fitted behind the D drive prop driver, prop washer is steel and the prop nut is standard M5 size. You would be really hard pressed to cause damage to this with normal use.

FUEL BITS

The carburettor is the 10G model, specifically for this type of engine with the remote main needle. Idle mixture is by air bleed (a non fiddle area) and the fuel inlet is by a composite nipple angled back to

the rear of the engine. The hardened steel rotor is a very free fit in the barrel and is retained by a small bolt screwed tight - that is, non adjustable for idle speed. Set your idle speed with your radio and have the safety of being able to stop the engine by a flick of the trim. The main needle assembly is of composite material, brass and the hardened steel needle with provision for an extension rod or cable. The performance of the carburettor unit left nothing to desire with smooth, steady idle, rapid transition and broad tuning of the main needle. The main needle position cannot be changed due to the piston clearance flat on the top of the rear cover.

The muffler is the Model 871 fitted with a centre section mute with a purpose designed interior pattern. Exhaust gasses need to be cooled and slowed to reduce the sound and this mute does a very good job. The gasses are swirled about in the mute chamber, broken up by the rods on the inside and cooled by the mass of metal. Quite a lot for a little section. The engine porting and timing is designed to run with this muffler assembly and, in fact,

the steady idle is assisted by the design of the muffler. Don't tamper with it, use it as supplied and just enjoy the engine as it comes.

OUT FOR A SPIN

Okay then, out to the testing workshop and we'll put it through its paces.

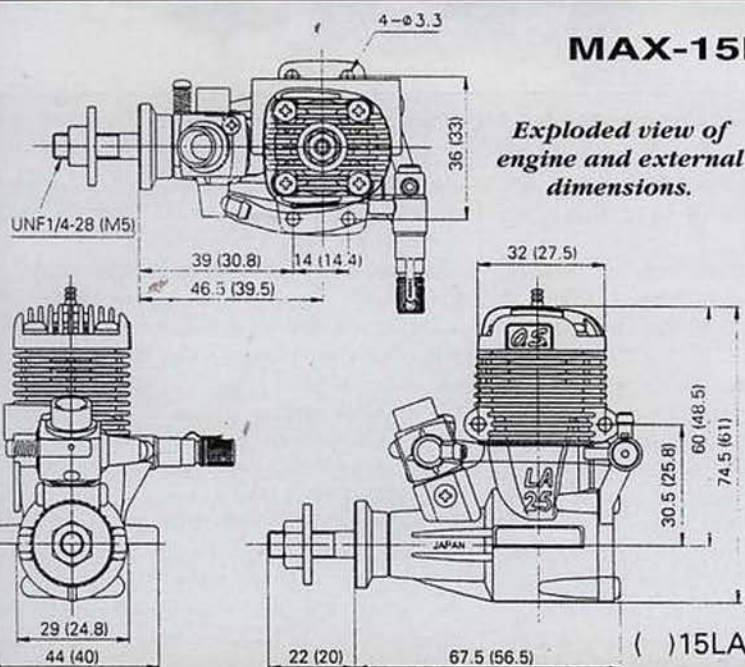
The supplied OS A3 plug was spot on for the engine and it was very happy on the fuel made up of Powermaster oil at 20%, nitro at 10% and 70% of methanol. Temperature at time of test was 20°C with 77% humidity. All starting was by hand - hot or cold - and no more than two flicks were required at any time. First flick straight out of the box and the running was just dead smooth and super quiet. Top class little beastie with applications for general sport flying, fun pylon and certainly ideal for multi engine aircraft.

Engine and Powermaster fuel supplied by Model Engines (Australia) Pty Ltd. the wholesale agents for both products. Your supplies from any good hobby shop.



MAX-15LA/25LA THREE VIEW DRAWING Dimensions(mm)

Exploded view of engine and external dimensions.



15LA SPECIFICATIONS

■ Displacement	2.49 cc (0.1517 cu in)
■ Bore	15.2 mm (0.598 in)
■ Stroke	13.7 mm (0.539 in)
■ Practical R.P.M.	2,500~18,000 rpm
■ Power output	0.41 bhp / 17,000 rpm
■ Weight	138 g (4.87 oz)

25LA SPECIFICATIONS

■ Displacement	4.07 cc (0.249 cu in)
■ Bore	18.0 mm (0.709 in)
■ Stroke	16.0 mm (0.630 in)
■ Practical R.P.M.	2,500~16,000 rpm
■ Power output	0.6 bhp / 15,000 rpm
■ Weight	197 g (6.94 oz)



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