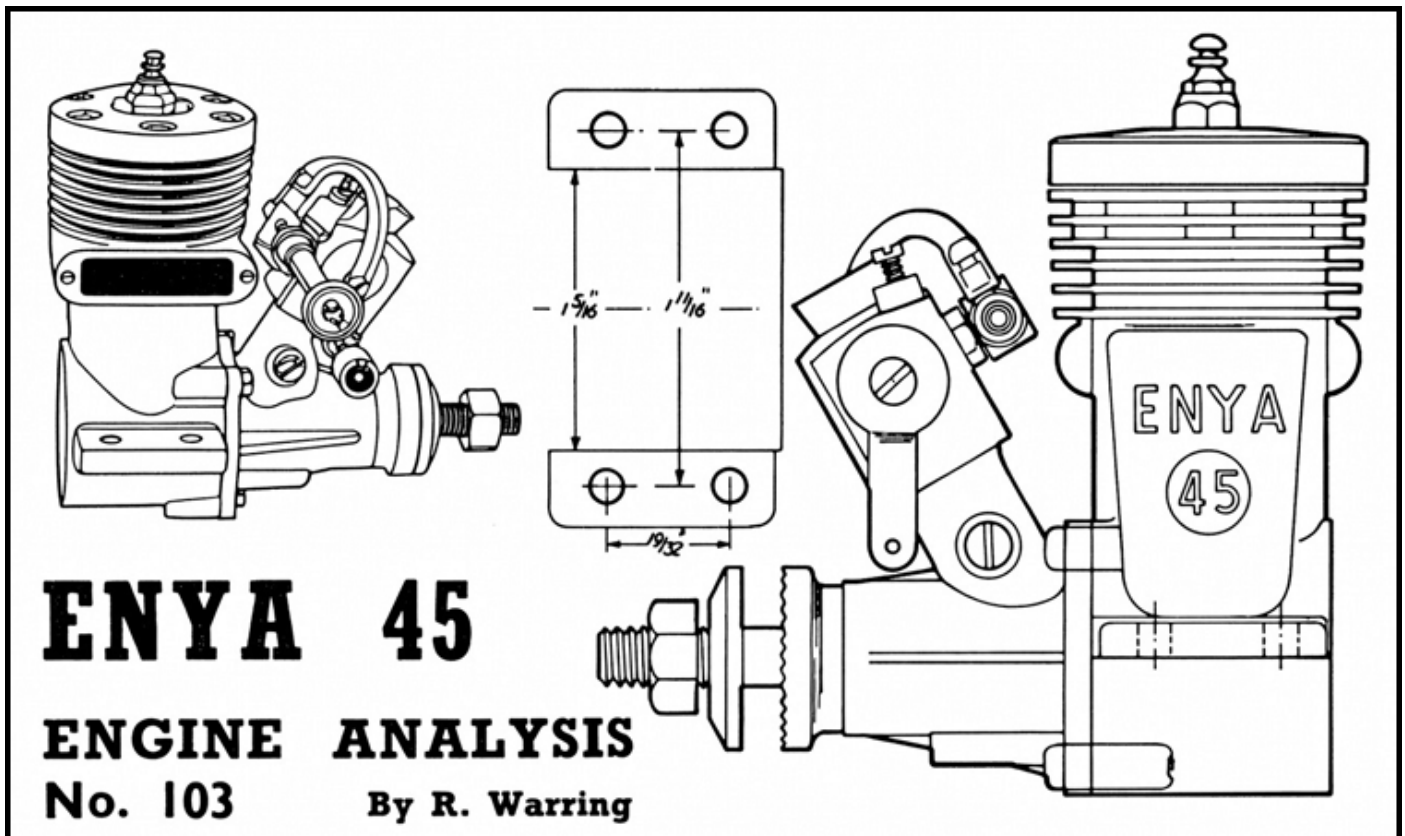


Enya 45-TV R/C



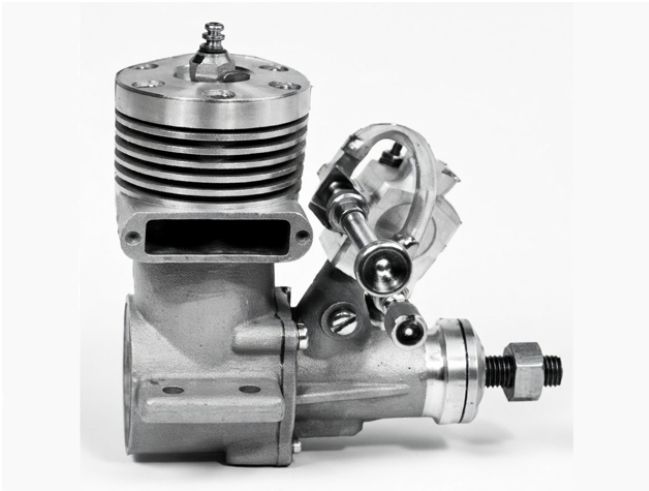
THE ENYA 45 R/C is derived from the earlier "35" and is virtually identical externally with the exception of the solid turned head replacing the finned head on the smaller capacity motor. Internally both the bore and stroke have been increased to boost the swept volume by some 1.5 c.c. and at the same time the compression ratio has been decreased slightly. The result is a somewhat more powerful engine for the same weight, and one which is quite happy to run on "straight" fuel mixtures, although a little nitromethane or equivalent additive does improve the running characteristics somewhat.

The Enya 45 is by no means outstanding in power output, but of an acceptable order for a "45" radio engine. The main feature, in any case, is the throttle control which is of quite complex design and relatively bulky. It features twin needle valves, plus the usual barrel-type valve rotated by the throttle arm. The rear needle valve controls the main jet for normal (high speed) running settings and the forward needle controls the low speed jet. The rear jet hole opens into the carburettor bore opposite a grooved passage on the barrel with a central hole. This jet remains open only over the top part of the throttle movement. Further rotation of the barrel then blanks it off, bringing the low speed jet into action as the only effective passage for the fuel supply. The only other adjustment is a screw which can be adjusted to stop the barrel rotation to establish the optimum low speed (barrel valve closed) setting.

The throttle works extremely well and maintains two-stroke running over almost the whole of the adjustable speed range. Consistent low speed running of the order of 2.500 to 2.800 r.p.m. can be held without faltering or danger of cutting. It is certainly comparable in performance and flexibility with any barrel-valve exhaust flap link throttle, and better than many.

All test running was completed with the Enya plug, as fitted, although this was eventually burnt out. General handling characteristics of the Enya appear to be good and starting is easy, provided the engine is not excessively flooded. In this case it is liable to kick-back sharply. Despite the heavily counterbalanced crankshaft a fair level of vibration was evident when running, although this would probably not be troublesome in an installation.

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Possibly the weakest part of the design is that the mounting holes are relatively close spaced, but adopting "plate" mounting (rather than bolting direct to bearers) should minimise the risk of the lugs being broken in a crash landing. From the adjustment point of view both the forward needle valve and "fast" position of the throttle arm are dangerously near the propeller.

Apart from the throttle unit, design and construction are straightforward. The cylinder/crankcase unit is a very nice pressure die casting housing a relatively thin soft steel liner. Exhaust and transfer ports are purely rectangular, diametrically opposed and with some 90 per cent, overlap. The transfer passage is formed in the casting. No gasket is used to seal the liner which is simply held down by the head attached with six Phillips head screws. The piston is of cast iron machined to relatively thin walls and carrying a plain deflector on the head. The gudgeon pin is hollow with brass end pads and the forged light alloy connecting rod is bushed at the big end. Fits and finishes are extremely good.

The $\frac{1}{2}$ inch diameter hardened steel crankshaft is carried in a die-cast front housing fitted with a bronze bush. This housing attaches to the front of the crankcase with four Phillips head screws and seals on a gasket. The crankshaft port opening is rectangular $\frac{1}{2}$ in. by $\frac{5}{16}$ in. and the $\frac{1}{4}$ in. diameter crankpin is hollow. The front of the shaft steps down to $\frac{1}{4}$ in. diameter, with the dural propeller driver fitting on to a taper length immediately forward of the front of the bearing. The front housing unit incorporates a stun intake

tube into which the throttle unit fits and is held in position with a screw on either side. The throttle body is machined from dural with the barrel valve of brass. Jet assemblies which screw into the throttle body are plated brass. The two needle valves are not interchangeable as different taper needles are required the main jet being an annular orifice and the slow speed jet a "wall" hole.

Summarising, we rate the Enya 45 R/C a very good general-purpose radio control engine for large "multi" models, with a particularly good and effective throttle, it is an extremely well made and finished engine, with a lot of attention given to obtaining "optimum" fits and running clearances. It appears to need a fair amount of running in to develop consistent performance, when it is quite happy running on straight fuels. Peak performance on test was reached at just over 12.000 r.p.m., which is the usually accepted figure for R/C work.

Propeller - r. p. m.

Propeller	R.P.M.
10 x 6 Top Flite nylon	10.700
11 x 4 Top Flite nylon	11.000
12 x 6 Tornado nylon	9.000
12 x 5 Tornado nylon	9.900
12 x 4 Tornado nylon	10.500
12 x 4 KK nylon	11.000

Fuel: Non-nitrated R/C glow fuel (25 per cent, castor, 75 per cent, methanol, plus additives).

Displacement: 7.36 c.c. (.449 cu. in.)

Bore: .874 in.

Stroke: .748 in.

Weight: 10 ounces

Max. power: .55 B.H.P. at 12.400.

Max. torque: 52.5 ounce-inches at 7.800 r.p.m.

Power rating: .075 B.H.P. per c.c.

Power-weight ratio: .056 B.H.P. per ounce

Material specification:

Cylinder/crankcase unit: pressure die casting in light alloy, sand-blast finish

Cylinder liner: mild steel

Piston: cast iron

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Con. rod: light alloy forging

Crankshaft: hardened steel

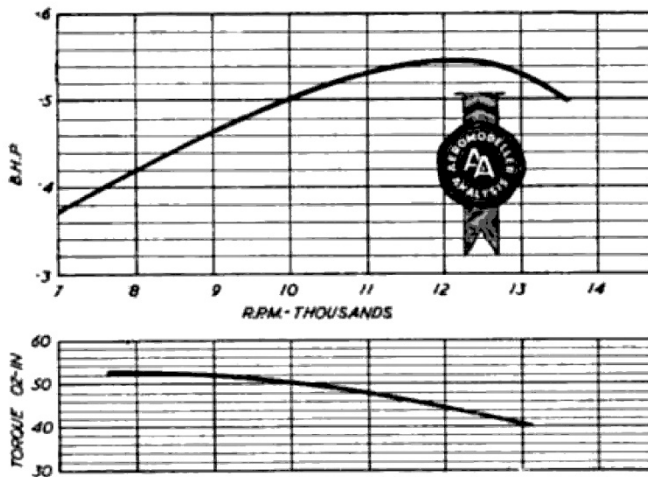
Main bearing: plain (bronze bush)

Front bearing unit: pressure die casting in light alloy

Cylinder head: plain type, machined from dural

Throttle body: machined from dural

Barrel valve: brass.



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