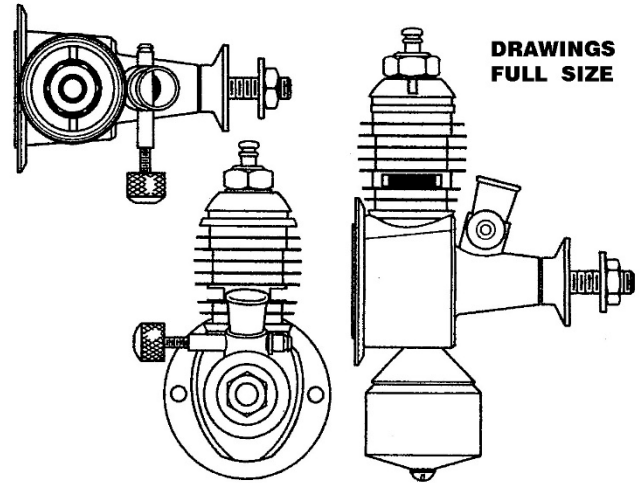
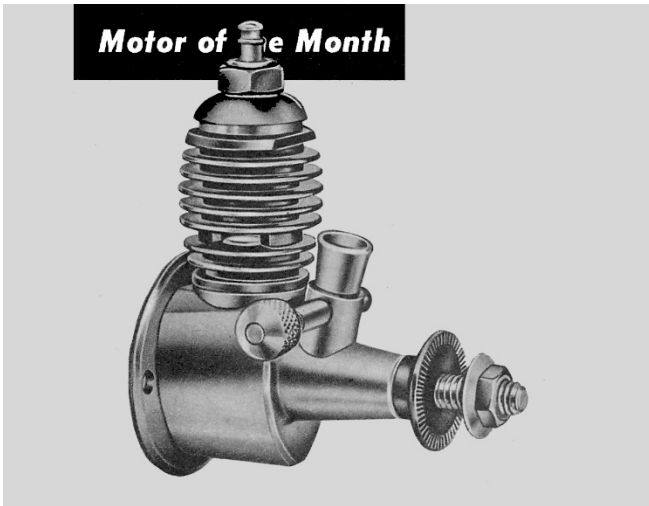


K&B Torpedo .049



Not to be outnumbered by the Three Bears, K&B Mfg. Co, has completed its three Torpedo's. A Torpedo must be a smaller animal than a bear because it starts at the .049 size and goes down, including the Torpedo Junior and the K&B Infant. All three engines look very much alike, being machined from aluminum bar stock rather than the usual aluminum castings. Special glow plugs were used in the two smaller engines, but the new .049 has a conventional short plug. Motor mount dimensions are the same on all three engines.

A top speed of 15,300 rpm was obtained with the glow plug supplied by the manufacturer. Hot mechanics from the speed circle could probably improve on this by opening the bypass ports slightly. The large rotary valve and crankshaft opening should be adequate for higher rpm. Base compression is very high, and this would help to feed fuel at increased speed.

Sport, free flight, and stunt enthusiasts will be impressed with consistent running during flight. The eight-inch fuel level test is the highest for any small engine, and compares well with engines in the .030-.049 displacement bracket. This means the engine will continue to run steady when fuel flow changes due to centrifugal force, changing air pressure at tank vents, or other disturbances in flight that usually cause an engine to slow down.

The test was started with a 6/3 propeller. After two hours of running, the engine was still tight and it would overheat when adjusted slightly lean. It showed very little change from its new condition. However,

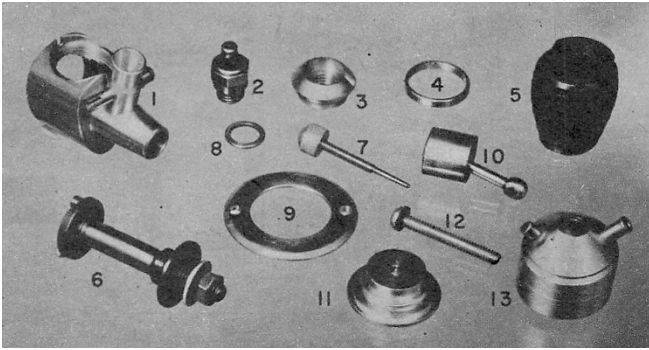
changing to a 5½/3 plastic propeller produced some fast results. Speed continued to increase for five minutes, then the engine was thoroughly broken in.

This high-speed break-in did not hurt the engine in any way, as it retained a good compression seal and still ran well on a large propeller. Both the Baby Torpedo and the .049 Torpedo have the rare quality of running well at high speed and still remaining tight enough for slow-speed use, such as a free flight ship. During the test, starting was very easy whether the engine was cold or red hot from a hard run.

Half-A engines started out a short time ago as a mere novelty, but they caught on fast and every manufacturer was in a hurry to get one on the market. As long as it ran well enough to pull a small airplane customers were satisfied. However, recent tests for AT Motor of the Month articles show a sudden jump in the performance and design of the A/2 engines. Many of the tricks used in larger models such as a low stroke bore ratio, special port designs, and lightweight parts are being used to increase speed and power. Mechanical construction is improving with such details as pressure die castings, steel bushings, and many hardened steel parts.

It appears that a complete round of new miniature engines has started, and we will probably hear from most of the leading engine manufacturers in a short time. Half-A classes should show a big advance during the next flight season.

K&B Torpedo .049



Torpedo .049 Engine Data.

Performance. Bare weight, less tank: 1.37 oz.

Propellers - 6/3 wide blade wood plastic, 10,800 rpm;
5/4 wide blade wood, 12,500 rpm; 5 1/2 /3 plastic
13,700 rpm; 5/3 wood, 15,300 r pm. Fuel: any hot
blend. Fuel level test: 8" at 12,500 rpm.

Design Data. Displacement: .049 cu. in. Class: A /2.
Stroke: 0.380. Bore: 0.406 Stroke-bore ratio: 0.935.
Compression ratio head: 5.8. Compression ratio base:
1.62. Port area intake .0154 sq. in.; bypass 0.00523 sq.
in.; exhaust 0.0370 sq. in. Ignition: Torpedo glow plug
(short).

Construction Features. Bearings - crank shaft:
aluminum; crankpin: aluminum: connecting rod, ball
joint; aluminum & brass.

K&B hits the top of the Half-A (AA) Class with a worthy
addition to their stable of racing steeds.

.049 K&B Torpedo Parts Illustrated.

.049 K&B Torpedo Parts Illustrated			
Part	Material	Size (in.)	Wt. (oz.)
1. Crankcase	Aluminum		.28
Needle valve body	Brass		
2. Glow plug	Steel	1/4-32 Thread	.10
3. Cylinder head	Aluminum		.05
4. Cylinder spacer	Aluminum		.01
5: Cylinder	Steel	.406 bore x .863 long	.31
6. Crankshaft	Steel hardened & ground	.218 dia.19
Drive washer	Steel	.558 dia.09
Front washer	Aluminum	.386 dia.01
Nut	Steel	8-3202
7. Needle valve	Brass	2-5603
8. Glow plug washer	Copper		.01
9. Mounting flange	Aluminum	13/32 dia.	.04
10. Piston	Steel-hardened, ground lapped	.406 dia. x .367 long ..	.14
11. Back plate	Aluminum	3/4 dia.09
12. Tank bolt	Steel	4-4003
13. Tank		3/4 dia. .. 13/16 long }	.14
Scale weight			1.54
Less tank			1.37