

**From: Bill Mohrbacher
The Tiny Engines Storm America**

Note: In the late 40s-early 50s the 3 major model airplane magazines were Air Trails (AT), Flying Models (FM), and Model Airplane News(MAN). Very similar or identical ads ran in all 3. For the purpose of this article, I am using almost exclusively references to MAN.

Even though he had already used a glow plug as early as 1908¹, Ray Arden didn't market one until 1947. He had passed some around at the Nationals that year and finally advertised them in the Nov. 1947 MAN.



shipped. The boys are wild

New! Revolutionary!
first application to small engines
The ARDEN GLOW PLUG
ACTUAL SIZE

Designed for ARDEN engines
...
Replaces your spark plug.
Eliminates batteries, coil, condenser, engine timer, wiring - and resulting ignition troubles.
Your engine will start easier, and

will produce equal or greater power output.

Ask your supply dealer or write for information

MICRO-BILT INCORPORATED
DANBURY, CONNECTICUT
MAN Nov. 1947: 41.

Now a model engine could be run without a set of points, condenser, coil, and heavy batteries. All of this equipment was weight the model had to carry into the air and that generally meant models had to be rather large. Of course diesels could do the same thing, but although there were several excellent diesels in the USA, they just didn't catch on as they did in most of the rest of the world. But now since models could be smaller, engines could also be smaller.

In 1948, a Boeing machinist, Elmer Larsen, designed a tiny .049 glow engine. Larsen made a small number of these for modelers in the Seattle, WA area, but never commercially produced them. There were two versions, a "Royal 05" and a long nosed "Royal 05 Scale".



**One of Elmer Larsen's unmachined castings for a Royal 05
Bob Einhaus collection**



Larsen Royal 05 (rear) and Royal 05 Scale (front)

Bob Einhaus collection

As you see, the Royals used Arden glow plugs and the plugs give you a good idea of the size of the engines. Larsen may have had thoughts of commercializing his tiny masterpieces, but future developments changed his plans:



Here it is

The WORLD'S SMALLEST PRODUCTION MADE GLOW IGNITION ENGINE

K & B

Infant TORPEDO

Another SENSATIONAL new first for K & B!

And what a first! The revolutionary new, INFANT Torpedo is the first engine of its size on the market. It opens up an entirely new field of modeling undreamed of only a few short months ago. Now you can fly indoors or out... your backyard or in the wide open spaces... anywhere. And the price, including a sturdy stamped aluminum prop, is only \$7.95. What a BUD!

And what a BABY... so small you can cradle it in the palm of your hand... yet it's the easiest to start little engine you have ever seen. The new K & B INFANT Torpedo... one source of power and performance. This exciting engine has a new type radial easy-to-install mounting, readily adaptable to rubber band and CO₂ etc now on the market. It's a 2-cycle rotary valve, K & B Hotpoint-Plug ignition type engine. Bore is .281"; stroke .331" and the displacement only .020 cu. in. Little, yes, but the INFANT will turn up better than 10,000 RPM.

And, of course, each INFANT is factory tested and carries the same familiar Torpedo guarantee. What a BABY! What a BUY!

***No Bigger Than An Ordinary Kitchen Match**

Only \$7.95 INCLUDING PROPELLER

LOOK FOR THIS attractive display at your dealers

K & B MANUFACTURING CO.
6901 EASTERN AVE., BELL GARDENS, CALIFORNIA

First MAN ad for the Infant .020

MAN Jan. 1949: inside rear cover.

Working on his own time since 1947, Lud Kading, the "K" of K&B, had designed a glow engine the size of a kitchen match. He was trying to see how small he could make a glow engine that was reliable². The Infant .020, .281" x .332" B&S was the fruit of his labor. The engine was machined from bar stock, no castings. Advertised in 1949, the engine was on dealers' shelves for Christmas 1948.

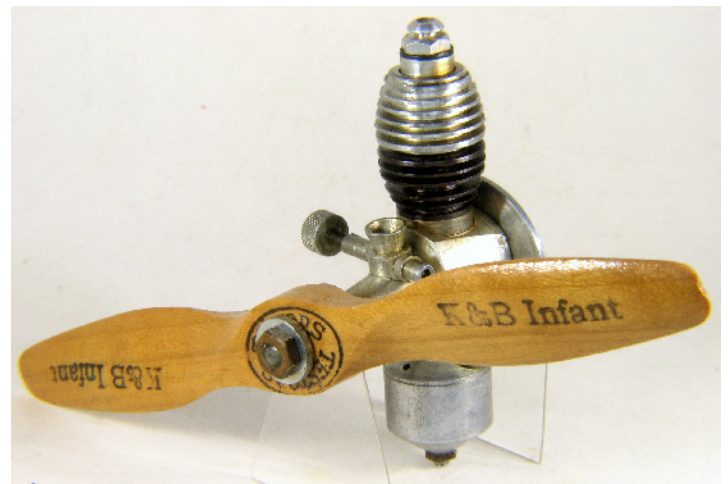
K&B must have already had a glow plug of their own, as Lud used it in his first experimental engines and the engine illustrated in the ad shows a hex type plug. The actual glow plug Lud designed sat on top of the cylinder, captured by a head ring that clamped it tight; the glow plug was actually the top of the combustion chamber. This feature had to figure prominently in its success. Many designers and experimenters have found eliminating the tiny volume between a plug's threads and the gasket significantly improves performance. Thimble Drome's glowheads and the new glow plugs that seal with a taper seat at the bottom of the plug attest to this.

The Infant was sold with a stamped aluminum prop. The story I heard was someone at K&B realized there were actually no props made that were suitable for the .020s. That might discourage sales and disappoint customers! So a 4 1/2" diameter propeller was designed, stamped from aluminum, and included with the engine.

The Infant was a huge success. Almost immediately plans for .020 sized model started appearing in magazines. Testors, who had an .09 sized ukie trainer, the TC-2, scaled it down "for use with Infant-type, very small bore glow engines" in the form of the "BABY TC-2". Along with the BABY TC-2, Testors who had a line of propellers, brought out a 5 1/2"D x 3P, just for .020 engines.



K&B INFANT .020 with original aluminum prop



K&B INFANT .020 with TESTORS prop



LESS THAN 2 HOURS!
BABY TC-2
CONTROL LINE MODEL AIRPLANE KIT



IMPORTANT...

In order to obtain maximum performance from the BABY TC-2, use a Testors 5/16" x 3P wood propeller with .020 cu. in. engines or an 8D x 4P propeller on .099 cu. in. engines.

Testors' BABY TC-2 is an accurately scaled-down version of Testors' popular TC-2 TRAINER. It has been carefully engineered to meet the requirements of the beginner, and serves the purpose of initiating the novice into the exciting Control Line model airplane hobby. The BABY TC-2 is designed for use with the new, inexpensive, very small bore, glow plug type engines and is also suitable for use with carbon double type engines. The wing span is 18" and the overall fuselage length is 16". All necessary parts, except the power plant and propeller, are furnished in the kit. Wooden parts are completely pre-lubricated, and hardware and wire parts are precision shaped and bent ready for use.

The advanced modeler will find the BABY TC-2 suitable for use with glow-plug type engines of .099 cu. in. displacement. As the model flies much faster with this size engine, it is recommended that the novice use the smaller engines of approximately .020 cu. in. displacement until thoroughly familiar with the flight characteristics of the airplane.

The BABY TC-2 can be flown with conventional control lines indoors! Where space is limited, the airplane can be allowed to fly by itself with the controls locked in neutral position. This is accomplished by running a single wire from the wing to a heavy object located in the middle of the room.

Can be flown indoors!

TESTORS BABY TC-2 and Infant prop ad
MAN Apr. 1949: inside front cover.

The Infant was a sound design and a very nice handling and running engine; a perfect engine to introduce tiny engines to modelers.

Other manufacturers had not been sleeping. In June of 1949 Herkimer announced the OK CUB. This was the first *commercially produced* .049; Elmer's groundbreaking Royals were custom made.

OK used the Arden plug, not yet selling their own. This was also the first time an OK engine was called a "CUB".



Scores Again!

New "OK" CUB

Here's a "natural" for free-flight and 'trot-line flying! Just look at all these features of the new "O.K." CUB:

- Easy to install
- Radial or lug mounting
- Small frontal area
- Weighs only 1 1/2 oz.
- Displacement is a low, low .049
- Using a 5 1/4" prop, it develops up to 15,000 RPM

This high power, on a weight ratio basis, results from the unique and patented port design which provides radial fuel injection . . . higher turbulence . . . more effective scavenging.

Like all "O.K." engines, the new CUB gives you all the qualities of a full-scale engine—easy starting, reliability, wearability, long range and economical speed. All built in by "O.K.'s" skilled engineers.

ONLY

\$5.95

including Glow Plug



AVAILABLE NOW . . . at your dealers

Herkimer's OK CUB, the first commercial .049
MAN June 1949: 37.



1949 OK CUB .049 (with Arden glow plug)

The next month Mel Anderson showed up with his Baby Spitfire .045. Actually the West Coast News column in the June MAN talked about the Baby Spit; we can say the CUB and Baby Spit were out at the same time.

The first Baby Spitfires used a 1/4" x 32 K&B glow plug. The little engine came with a rear mounted tank and radial mounting lugs. This required a large

hole or long standoffs of some kind to mount the engine. Mel solved this issue later.



ACTUAL SIZE

HIGH QUALITY AT A LOW PRICE

\$7.95

COMPLETE WITH GLOW PLUG & TANK

Baby Spitfire!

BUILT BY MAKERS OF WORLD FAMOUS ANDERSON SPITFIRE

Tomorrow's Engine Today!
Tuned to Modern Flying.
Weight 1 ounce less Glow Plug
.045 cu. in.
At Dealers Everywhere

Manufactured and Guaranteed by
MEL ANDERSON MANUFACTURING CO.
1819 THIRD AVENUE LOS ANGELES 4, CALIFORNIA

Mel Anderson's Baby Spitfire .045
MAN July 1949: 47.



1949 Anderson Baby Spitfire .045
(with K&B glow plug)



INFANT – Baby Spitfire – OK CUB

So in the first 7 months of 1949, modeling was revolutionized. This revolution had an effect on all parts of the model aviation industry and fast! Props, kits, and fuel were all needed for the midgets. Several manufacturers already had 6" props that work with the CUB. Rev-Up came out with 5x2 and 5x3 props for the Infant and Baby Spit. Johnny Clemens, future AMA President, had an early ad with all three midgets and props for them.

Small planes, especially small control line planes, don't require as big a field as their larger brothers. A plethora of pint sized ukies started showing up in construction articles. A boy needed a fat wallet to build and fly the "big jobs", but not so with these new engines. Too, these little guys weren't quite as intimidating to operate as say a big barking 29.

Radio gear wasn't quite light enough for these ships yet.

MAN July 1949: 42.

Free flight was another matter. Full sized ships scaled down very nicely. Austin-Craft scaled down Paul Gilliam's legendary Civy Boy and offered it in two sizes.



Austin-Craft's

Civy Boy 24 and 31

for the new
Baby Engines

Sensational flying miniatures of Paul Gilliam's famous Civy Boy 74, Class C Free Flight AMA record holder, and 1948 Western Open Class C Free Flight champion. These new ships are already the talk of model-wise flyers.

CIVY BOY 24. Span 24". Wing area 88 sq. in. Designed for K & B Infant. Wt. with engine, 2 oz. **\$1.35**

CIVY BOY 31. For Anderson Baby Spitfire, small diesels, and Herkimer CO2. Wing area 155 sq. in. 4 1/2 oz. with engine **\$1.65**

MAN July 1949: 49.

Meet the GLOW PLUG that...

**LICKED
20,000
TESTS**

It took 20,000 black tests to come up with this amazing new "O.K." Glow Plug. And 20,000 tests can't be wrong! The new "O.K." Glow Plug is tops — BETTER 3 WAYS!



**COSTS ONLY
49c**

On all new O.K. Gubs.

1 MORE GUTS — stands up under continuous operating conditions.

2 BETTER SPEED RANGE — high grade glow element makes engine start fast — accelerate easily — operate over wide range of speeds.

3 LONGER LIFE — has endurance found only in high priced, platinum glow plugs.

**It's 100%
UK**

*Two types. SHORT for Cub, Bantam and other engines using 1/4-32 short. LONG for Hot Head, Mohawk Chief and other engines using 1/4-32 long.

Plug midget motor club, but it
MAN Nov. 1949: 36.

Up until now engine manufacturers had been using Arden (especially East coast), O&R, or K&B glow plugs. Charles Brebeck of Herkimer designed his own plug and arranged with Ben Shereshaw and Henry Swanson (Shereshaw and Swanson Co., now Swanson Associates) to manufacture the OK glow plug³. So now Herkimer could join O&R and K&B as engine builders who used their own brand of plugs in their engines. 1949 had been a busy year for the OK introduces its Glow

wasn't over yet!

Here it is — Torp Jr.!

**THE ENGINE THAT'S
LOADED WITH
DYNAMITE**



**.035 PROVES STANDOUT
IN CLASS AA**

You, the Modelers of the world have clamoured for a larger Infant engine and now K & B has brought it to you. The Torp Jr. is designed for all types of flying, Free Flight, U-Control, Stunt Speed and Scale. Put it thru the paces, see the power, the climb, the speed. The Torp Jr. has the horsepower output equal to larger size engines in the Infant type class. You know what that means. Weighing but 1 1/16 ozs. the Torp Jr. will turn up to 15,000 R.P.M. with a standard brand 5" diameter prop. Same size mounting ring makes the Torp Jr. interchangeable with the .020 Infant. What more could you ask...the Torp Jr.

has everything you want in a model engine. And best of all...the same high quality materials and workmanship you've learned to expect from K & B are guaranteed in this new engine.

EASY STARTING...

Complete testing in both factory and field proves the Torp Jr. to be easy starting. Just a flip of the prop and this new "little giant" roars into action.

\$5.50

And look at this price complete with fuel tank and K & B Glo-plug

K & B

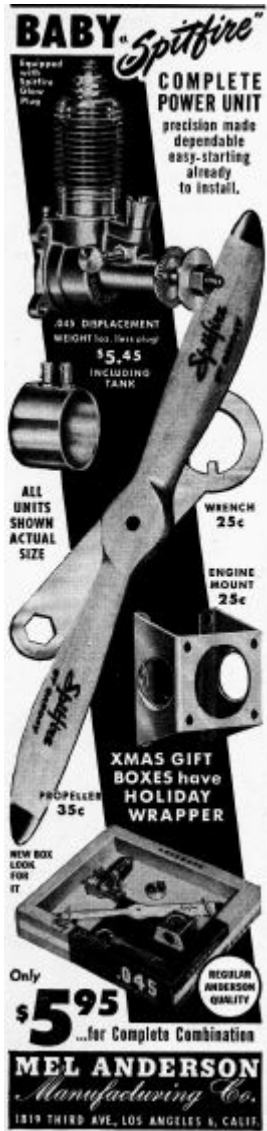
MANUFACTURING CO.

6901 Eastern Avenue, Bell Gardens, California

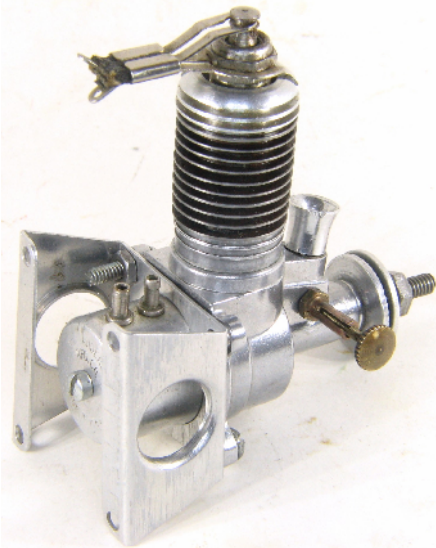
Torp Jr. .035, the Infant's big brother

MAN Dec. 1949: 45.

With competition in the AA or A/2 (as the midget engine class was starting to be called) market heating up, K&B scooped the field again with their excellent Torp Jr .035. It would fit where an .020 had been used, but gave a little more power. Parts weren't interchangeable with the .020, but you almost had to have them side by side to tell the difference.



The Infant and Baby Spitfire had started out at \$7.95 with the Cub at \$5.95. In Nov. 1949 Anderson dropped the Baby Spitfire price to \$5.45 with K&B dropping the Infant cost to \$4.95. Competition was benefitting us modelers. And in time for Christmas Anderson came up with a "bundle" shown at the right. The Baby Spitfire with its tank and the new "Spitfire" glow plug was \$5.45. For \$.50 more, \$5.95 it sold with a wrench, a Spitfire propellor, and an aluminum engine mount that cured the .045's mounting dilemma. And all of this in a nice holiday gift box.

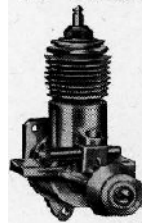


Left: Baby Spitfire with the new SPITFIRE glow plug, connector, and engine mount
Right: Anderson bundle ad MAN Dec. 1949: 48.

Now that it was possible to make an engine as small as an .020, the lower limit on displacement was set. The .09 and .099 displacement engines were made by several manufacturers. Charles Brebeck at Herkimer, in addition to being a gifted designer was also an astute business man. He may have thought modelers might want tiny engines other than the .020, .045, and .049. The .020 was a good free flight and free flight scale engine. It would fly a control liner, but was really a little small for that use. Maybe that's why K&B made the .035.

Develop up to 15,000 RPM!

.049-.074 CUB



only
5.95

Incl. famous
"OK" Glow Plug

Take your choice of power application. For indoor flying, free flight and sports flying—the .049 Cub is tops. For free flight, sports flying, stunting and speed flying—you can't do better than the .074 Cub. Low wind resistance thanks to small frontal area. No installation limitations, either—use either radial or lug mounting.

Unique patented port design provides radial fuel injection—higher turbulence—more effective scavenging—to give you higher power on weight ratio basis.

OK CUB .074

MAN DEC. 1949: 57.

Herkimer sold engines worldwide. Outside the USA, engines tended to follow metric sizes; .5ccm, 1ccm, and 1.5ccm, corresponding to .030, .060, and .09 in³. The CUB .049 had a .390" x .415" bore and stroke. By using the .049's stroke and lower crankcase dimensions and increasing the bore to .478", Herkimer had an .074; in between the .049 and .09 and close to 1cc. And maybe hedging their bets, Herkimer also designed an entirely new .099, close to 1.5cc and sized to compete with the other American .099s, Arden, McCoy, etc.

"Spitfire" GLOW PLUG



WITH THE NEW **"Spitfire" COMBINATION CONNECTOR**
It combines Positive and Negative in a single clip
PLUG only . . . 49¢
CONNECTOR . 15¢
ANOTHER SPITFIRE ACHIEVEMENT!!

Shows Double Size
Fits any engine with standard 1/4" 32 thread
PURE PLATINUM FILAMENT
Brighter Glow

MAN Jan. 1950: 45.

Anderson started the year with a stand alone ad for their "Spitfire" glow plug and Spitfire connector that allowed a quick way of attaching the starting battery without the danger of shorting out alligator clips. Now all 3 midget makers had their own glow plug.

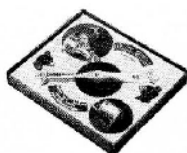
Things were quiet for a while. Modelers were buying and flying the small engines and manufacturers were watching what was going on. Seeing Anderson's combination package and possibly having corresponded with E. G. Ingram, OK brought out their combination.

"OK" CUB COMBINATION PACKAGE

Answer to a novice's prayer! Includes your displacement choice "OK" Cub Engineer **plus** propeller, wedge type gasoline tank and neoprene tubing. All you need is fuel . . . and you're ready to set her zooming!

.049 only \$5.75 .074 and .099 only \$6.75

OK Combination Package
MAN July 1950: 45.



And in the same issue, they introduced their "Power Kit" and O.K. CUB Glow Fuel. The kit contained all the fully machined parts to build a Cub .049, including OK's own new die cast tank, an aluminum "Spin Starter", and a plastic propeller. The tank would bolt onto the engine's radial mount and still allow radial mounting. The Spin Starter was a notched aluminum pulley around which a chord was wrapped. Pulling the chord pulled the engine around a couple of revolutions to start it. The propeller was custom made for OK by Kaysun, probably the first plastic 1/2A prop on the market. The inside rear cover of MECA Bulletin #285 shows the power kit. The glow fuel was one more item to increase profits.

**Assemble it yourself...
SAVE \$1.20**

**OK .049 CUB
POWER KIT**

Contains all parts needed to build a complete .049 CUB plus accessories needed to power your plane.

ONLY \$4.75

- Precision-Made Parts — guaranteed to fit
- Easy to Assembly — ready to run in 15 min.
- Instructions Included — anyone can build it

KIT CONTAINS

.049 CUB	value \$4.95
Combination engine mount and fuel tank, neoprene tubing	value .50
Spin starter	value .25
Propeller	value .25
Total Value	\$5.95
Cost of Kit	4.75
You Save	\$1.20

**Dynamite in every drop!
"OK" GLOW FUEL**
75¢ pint

A methanol base fuel, heavily fortified with nitrates and proper lubrication ingredients for . . .

- Easier Starting!
- Higher Speeds!
- Smoother Operation!
- Longer Engine Life!

Ask your Dealer about these special "OK" products

HERKIMER **TOOL & MODEL WORKS INC.**
907 Harter St., Herkimer, N.Y.

OK POWER KIT
MAN July 1950: 63.

Beginning on page 32 of the June 1950 MAN, Edward G. Ingram, MAN's engine guru for some years, had an article "The Midget Engines". Here is one of the first times we see "1/2-A" used to describe them. Here he test ran the K&B Infant and Torp Jr., the Baby Spitfire, and the OK Cub .074 and .099 and the McCoy .098. He described the engine construction and materials, starting procedures peculiar to small glow engines, test ran them, and provided a specification table with dimensions. I don't know why the Cub .049 wasn't included and why the McCoy .098 was. The McCoy was a relatively new engine (1949) and maybe he had it to compare with the Cub .099. One of the improvements Ingram suggested was for the manufacturers to package their engines with wrenches, neoprene, tanks, and suitable propellers as these weren't readily available in all locations. When

the article was written it was little more than a year since they came on the scene.

K&B came out with their own 1/4 -32 glow plug and a "slip on" glow plug connector. They recognized as did the others, that glow plugs burned out and selling replacement plugs could generate many dollars! And glow plug connectors were (and to this day are) used by nearly anyone running an engine, so they could help the profits.

WHAT'S NEW?



A NEW K&B GLOW PLUG

Here's a completely new K&B Glow Plug, designed to give your engine top performance.

Made of a new alloy material, for higher conductivity and low battery drain, this new K & B Glow Plug has electronic welded construction, genuine platinum element and a completely new type of insulation to stand terrific heat.

Months of research and testing have proved to us that the new K & B Glow Plug is the finest in the field. Popularly priced.

1/4 -32 thread
Short type plug

49¢



K&B SLIP ON CONNECTOR

Now for the first time a glow plug to battery connector to fit all makes of glow plugs on any engine from .020 to .074 and some .099's.

Simple to operate, the new K & B Slip On Connector is designed for maximum efficiency, and gives a positive connection to insure easier starting.

You'll get more for your money with the K & B Slip On Connector. See your dealer today!

19¢



Open a little farther . . .
but still no clue
to what's going on
behind K & B's door



MANUFACTURING CO.
224 East Palmer St. • Compton, Calif.

K&B glow plug and Slip On Connector MAN Aug. 1950: inside rear cover.

And then in September 3 new engines hit the market. Mel Anderson did some redesigning of the Baby Spitfire adding a sturdier needle valve assembly and integral diecast tank under the engine. This no doubt lowered production costs and allowed him to put the "Spitzzy" .045 on the market for \$3.95. It was sold in a combination package just as E.G. Ingram had suggested.

INTRODUCING "SPITFIRE'S" LATEST and FINEST



"Spitzzy" .045
DISP.
Another "SPITFIRE" Product

More POWER than any Engine its Size
America's Volume Engine
Manufacturer's Answer
To Your Demands



COMBINATION PACKAGE
• ENGINE • FUEL TANK • GLOW PLUG
• COMBINATION CLIP • PROPELLER
• PROP WRENCH • MOUNT BOLTS •

MEL ANDERSON Manufacturing Co.
1819 THIRD AVE., LOS ANGELES 4, CALIF.

Regular ANDERSON Quality

ALL FOR ONLY \$3.95

Anderson Spitzzy .045 Combination Package MAN Sept. 1950: 38.

Wasp .049

DISPLACEMENT



**.LIGHTER
.SMALLER
.MORE POWERFUL**

5.75

COMBINATION PACKAGE
INCLUDES ENGINE, WASP GLOW PLUG, CLIP, TANK, MOUNT AND WRENCH

ACTUAL TESTS SHOW AN INCREASE UP TO 2,000 R.P.M. OVER EXISTING ONE-HALF "A" CLASS ENGINES



In response to the thousands of requests for a small model engine from our model friends throughout the world, we are happy, and a little proud to announce that the new baby is now ready!

The amazing performance of the WASP .049 will thrill even the most exacting model enthusiast. This engine is the result of over twenty years experience building better model engines.

Why tell you more? Better rush right down to your nearest hobby shop and take a look at one.

After you have seen it and heard it run we will let you be the judge.

We will do all we can to see that one is ready for you.

ATWOOD MANUFACTURING CO.
PICO, CALIFORNIA

Atwood Wasp .049 MAN Sept. 1950: 51.

Renowned engine designer Bill Atwood had started out with Mel Anderson in the 1930's Baby Cyclone days. In the late 30's each went their own way⁴. Mel designed the Super Cyclones and Spitfires. Bill designed the Phantoms, Bullets, Crowns, Phantom Torpedos (later sold to John Brodbeck, the B of K&B), Champions, and Triumphs. Then as we know, Mel put his Baby Spitfire on the market. In less than a year in

Sept. 1950, Bill Atwood announced his Wasp .049. This little jewel was sold as a combination package (as was now becoming a standard) with its own glow plug and accessories. The Wasp's performance dominated all other .049s at that time; a tribute to Bill Atwood's design experience.

And K&B adapted their Infant design to their larger Torpedo .049. Instead of a captive glow plug, it used a standard K&B 1/4"-32 glow plug and was sold in a complete package. Later K&B ads would of course tout its performance, but the Wasp had relegated the other .049s to sport engine status.



L-R Wasp .049, Spitzy .045, TORPEDO .049

K&B TORPEDO GOES TO THE Top of the Class

\$5.95*
combination package

with their New .049

YOU'LL GO TO THE "TOP OF THE CLASS" TOO, WHEN YOU BUY THIS NEWEST OF ALL ENGINES, THE TORPEDO .049

Here's an engine designed to meet and defeat all competition in Class 1/2 A. Make no mistake, she's a sure contest winner... and if you fly for sport, think of the fun you'll have with this newest of all model engines. You won't be disappointed when you fly the Torpedo .049. This easy starting engine can be depended on to give you maximum performance at all times.

It turns 12,000 to 13,000 r.p.m. depending on the make of the 6" x 3 p. propeller. Comes equipped with the new standard 1/4"-32 thread K & B Glow Plug. Engine mounting interchangeable with the K & B Infant and the Torp Jr. Be one of the first to fly the Torpedo .049, the newest member of K & B's "family of champions". Your dealer has yours today! See him!

SPECIFICATIONS — bore, .406; stroke, .380; displacement, .049; bare weight, 1 1/8 oz.

***Here's Good News!** Due to the constant demand from you modelers, the Torpedo .049 comes as a combination package, complete with a 6" x 3 p. propeller, the new K & B Slip On Connector, fuel tank, fuel line, and two service wrenches, at a cost of only \$5.95.

The Door is Still Opening
Did you think the teaser was for the .049?
We thought you would wait and see what it's for!

K&B MANUFACTURING CO.
224 East Palmer Street • Compton, California

K&B TORPEDO .049
MAN Sept. 1950: inside rear cover.

In October we were introduced to the iconic Jim Walker AJ Firebaby, beloved by hundreds of flyers as their first airplane. The ad shows it as the plane less engine, but very quickly it was advertised with the Baby Spitfire. With either version, you got a "slow-motion" propeller. This was a stamped aluminum 5" diameter prop much like the one supplied with the K&B Infant. It had a low pitch that you used when learning to fly. As you progressed you just twisted more pitch into the blades to fly faster!

So Completely Finished You Can Fly It Out of the Store!

Jim Walker FIREBABY

New "SLOW-MOTION" PROPELLER

lets you learn to fly gradually, eliminates dizziness while you become accustomed to U-Control flying! Easily adjusts from slow to high speed.

Built to Stand Punishment!
The Firebaby can "really take it". The motor mount, wing mount, and rudder are unbreakable metal. The flexible wing holds up in rough weather flying. Landing wheels are sponge rubber with metal hubs. Due to their light weight and flexibility, Firebabies have been known to withstand dozens of crashes without major damage.

Available soon complete with motor, \$7.50.

AT YOUR DEALER'S \$2.50
Ready-to-Fly

Jim Walker AJ AIRCRAFT CO.
1166 N. E. 31st Ave. Portland 12, Oregon

The Legendary FIREBABY
MAN Oct. 1950: 1.



Author's Firebaby, later version with OK CUB 049X

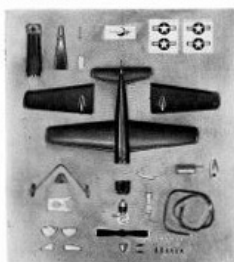
Also highlighted was the Allyn Skyraider, a tiny all plastic plane supplied with the K&B Torp Jr. It had no moving controls; it just flew around a pole on a tether or a line held by an aspiring pilot.



ALLYN SALES Co. Douglas Skyraider Torp Jr



IN FLYING MODELS
THE DOUGLAS NAVY SKYRAIDER PYLON MODEL KIT
Powered by the SENSATIONAL NEW K & B TORP JR. ENGINE



This outstanding "VALUE PACKED" Allyn Kit includes:
 * DIE PRECISION MOLDED PLASTIC PARTS
 * BUILT-UP LANDING GEAR with ALUMINUM WHEELS - RUBBER TIRES
 * INSIGNIA DECALS
 * PROPELLOR & ALUMINUM SPINNER
 * K & B TORP JR. ENGINE
 * K & B "SNAP-ON" CLIP
 * FROOM BUILT-UP TANK
 * BATTERY WIRE
 * PLASTIC FUEL LINE
 * SWIVELS and ALL NECESSARY SCREWS, WASHERS and NUTS
 * PICTURE & SPEC. SHEET OF ACTUAL SKYRAIDER
 DOUGLAS NAVY SKYRAIDER — Less Engine, Spinner "Snap-On" Clip & Battery Wire \$3.50

Ask your dealer for other outstanding "VALUE PACKED" Kits by

ALLYN SALES CO. • 6425 McKINLEY AVE. • LOS ANGELES 1, CALIFORNIA

MAN Oct. 1950: 55.

On page 35 of the November 1950 MAN, Lee Scott had an excellent review on the Spitzzy with some interesting information on then modern production techniques. The "Hobby Counter" column on page 38 in the same issue of MAN reported on three new Ready To Fly control line planes available for Christmas. The aforementioned Firebaby and Skyraider, and a new one by the Mack brothers; the Aeromite. Powered by the Baby Spitfire .045, this was a sleek all plastic control liner.



Aeromite ad appearing in a Dealer magazine
Details unknown

This was Wen Mac's first plane. Bob Holland, who worked with Bill Atwood, told an interesting story about the Baby Spitfire at MECA's EXPO III in 2002. Anderson wanted to be sure all their engines would start easily as the contract with Wen Mac was critical. So they test ran every engine before sending them out. Unfortunately the glow plugs were defective and most wouldn't light after the first run! This caused Wen Mac all kinds of problems as the Aeromites had been widely distributed for Christmas by dealers, Sears, etc. After that faux pas Wen Mac used Atwood's Wasp .049 until they began to use their own engine. Christmas 1953 I became the proud owner of a Wasp Aeromite, my first gas model!



Baby Spitfire powered Aeromite, details unknown
Note the 2 long filler tubes and central mounting bolt

And finally to end 1950 OK announced their OK CUB .039. Keeping the Cub .049's .390" bore and shortening the stroke to .334" they had a new engine. Sold as was now usual in a combination package, the .039 could compete with the Torp Jr when an .049 wasn't required.

Beginners... Now you can afford a GAS ENGINE!

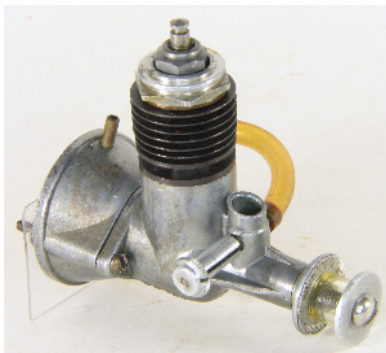
New OK CUB .039

No more rubber-powered models for you fellows who thought you couldn't afford an engine! Here's a brand new "Hull A" CUB designed especially for small weekly allowances. Its sensational low price (only \$4.45!) includes glow plug, prop and tank. No worries about performance either — its got the famous Easy Starting and Trouble-Free Operation built into every guaranteed CUB! Now you too can enjoy the thrills of powered flight . . . ask your dealer about the new beginners CUB .039.

only \$4.45

Complete with glow plug, starting pin, prop and tank

MAN Nov. 1950: 45.



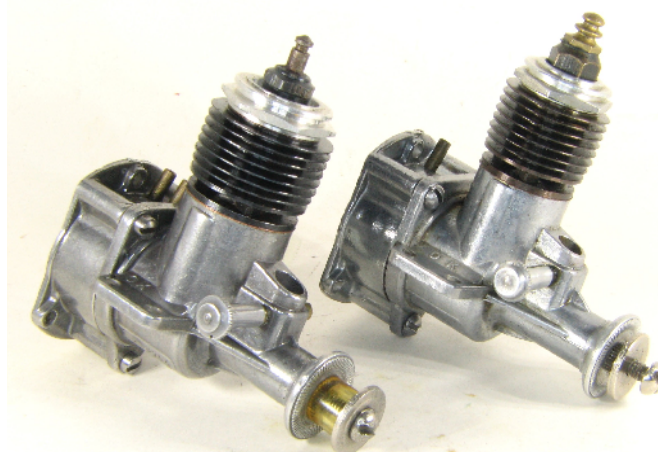
OK Cub .039

Ending the year OK Cub advertised some accessories separately that previously had only been sold in the combination packages.

"OK" CUB ACCESSORIES

Propeller Spinner . . . fits all Cubs .15¢
 Starting Pulley fits all Cubs .25¢
 Engine Mount and Tank . . . fits
 .049 and .074 Cubs50¢
 Mounting Bracket099 Cub only .50¢

MAN Nov. 1950: 44.



Cub .074 (L) and .049 (R) with new diecast tanks



OK Cub .099 with radial mounting bracket

And Joe Mutty had a fine review of the Cub .039 on page 35 of the December 1950 MAN. Running on OK fuel, he got 11,500 on a 5½ - 4 Kaysun plastic prop and 15,500 on an un-named smaller props.

Les McBrayer started off 1951 on page 35 of the January MAN with a good review of the Torpedo .049, complete with test run results. On a 5½ x 3 Kaysun plastic prop he got it up to 14,000 rpm and 16,800 on an Air-O single blade!

Mel Anderson must have been watching Brebeck's moves at Herkimer and in March of 1951 put his Royal Spitfire .065 onto the market, maybe to compete with the OK CUB .074.

A NEW KING IS BORN...



**Royal
"Spitfire"**

**ROYAL
"SPITFIRE"
\$795**
GAS DISP.

- ENGINE
- MOTOR MOUNT
- WRENCH
- PROPS
- FUEL TANK
- MOUNT BOLTS
- CONV. CLIP

PERFECTION
Will out perform any class 1/2A Engine. The ultimate in engineering skills, tried and proven materials, plus the highest standard of workmanship have produced the truly remarkable... ROYAL "SPITFIRE"

Available at Dealers Everywhere

**MEL ANDERSON
Manufacturing Co.**
1814 THIRD AVE., LOS ANGELES 15, CALIF.

MAN Mar. 1951:36



Royal Spitfire .065 with accessory mounts

Duro-O-Matic finally entered the 1/2A scrap with their Baby Mac .049. With its McCoy trademark red head, jet black cylinder, and tumbled case, it was one of the prettiest engines of the era.

Here it is! The smallest McCOY ever built.
Easy Starting; Longer Life; Dependable,
as only a McCOY can be. When you see it,
run it, fly it—you will agree
it's a "bulls-eye" for the greatest
value in the model field.

**McCOY
Baby "MAC" .049**



**a Real McCOY
for only \$5.95**

You will never know,
how wonderful engine performance can be,
until you fly a Real McCOY

Available at all Fine Hobby Stores

DURO-MATIC PRODUCTS COMPANY
HOLLYWOOD 38, CALIFORNIA

MAN Mar. 1951: rear cover.



Baby Mac

Page 38 of the Apr. 1951 MAN had an engine review of the Royal Spitfire .065. It was sketchy on details such as what prop was used to get the 13,500 rpm, but was still interesting.

In improved Spitzzy was shown in May, the Spitzzy Sr .045. The main differences from the Jr. were the stronger crankshaft and longer, higher capacity tank. Also, their Nitromic glow fuel was shown.

the NEW 1951 "Spitzzy" SENIOR .045

- Increased Power
- Hotter Ignition
- High Compression Brass Head Holds Heat
- 2 1/2 Times More Fuel Capacity
- Heavier Crankshaft
- Improved Carburation

\$5.45 Complete Combination Package

NITROMIC Glow Fuel 85¢ A PINT OF POWER

CLEANS AS IT RUNS

COMBINATION PERFECT POWER

MEL ANDERSON Manufacturing Co.
1819 THIRD AVE., LOS ANGELES 19, CALIF.

MAN May 1951: 47.



Spitzzy Sr. (L) Spitzzy (R)

The Baby Mac was the subject of the July 1951 MAN staff (no name) engine review. It was one of those that seemed to list data given by the manufacturer with no actual running or teardown.

1/2A engines were now firmly esconced, magazines and ads were full of new accessories, new kits, and new designs. 1/2A events were being held as modelers, especially free flighters enjoyed yet another competition class.

The Atwood Wasp .049 was the engine to beat since it was introduced in the fall of 1950. Now in the fall of 1952, it looked like other manufacturers were going to challenge.

First out was L.M. Cox in August of 1952 with their Thimble Drome Space Bug .049. This radical new design used rear reed valve induction, large bypass ports between the exhaust ports, a large "stunt" tank that would run inverted and for minutes longer than competitors' tanks. It was very easy starting and could run in either direction. The first ad showed a 1/4-32 glow plug as the real heads weren't ready. The ads 2 months later showed the now world famous Cox glowhead. The Space Bug would prove to be a serious challenge to the wasp

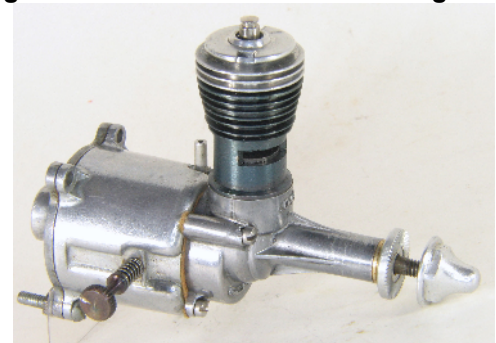
Now Thimble-Drome
Takes to the Air...
THE FIRST REALLY DIFFERENT ENGINE SINCE THE GLOW PLUG

NEW THRILLS IN 1/2 A PERFORMANCE

LOOK! all these Features in one engine for only \$6.95

1. Sounds that will exceed your wildest hopes.
2. Power... Shuts ships that most .049s will barely fly.
3. Easy starting... even when brand new.
4. No break-in necessary. Install, crank and fly.
5. After flight amazing? Wait until it's had a few hours and really gets hot.
6. Generous sized stunt tank. Shuts, loops, flies upside down with never a miss.
7. Engine mounts with cylinder in up, down, right or left position.
8. No rubber hose or external fuel lines.
9. Air filtered through screen of 10,000 holes per square inch.
10. Needle valve removed from exhaust and propeller... cool, safe to adjust.
11. Equipped with a plastic-coated wood propeller... Smooth for performance... Strong for safety.
12. Quick and easy to take apart and reassemble. Rugged construction requires only reasonable caution.

MAN Aug. 1952: 3. Note the conventional glow plug



Thimble Drome Space Bug .049

In September Cox advertised their own 1/4-32 glow plug. Note Cox was confident enough in their engines and plugs to charge almost 50% more for them than their competitors!

**use Thimble-Drome
HOTSPOT
Glow Plug**

Genuine platinum filament for long life.
Designed for efficient operation in all 1/4 A engines.



at all dealers **65¢**
soon

**Thimble-Drome
SPACE-BUG**

- REALLY easy starting, even when brand new
- SPEEDS to exceed all previous expectations
- POWER to start ship most .049's will barely fly

• Generous sized stunt tank. Engine mounts with cylinder in up, down, right, or left position. No rubber hose or external fuel lines.

• Needle valve removed from exhaust and propeller. Cool, safe to adjust. **\$6.95** incl. prop

L. M. COX MFG. CO. INC.
P. O. BOX 476, SANTA ANA, CALIFORNIA

MAN Sept. 1952: 8.

Mel Anderson was next to bring out an improved performance .049 engine; his beautiful little Royal Baby Spitfire, sold of course in a combination pack. I should note here that in these days competition was such that manufacturers were often buying full page ads (in many cases I have reduced their size here). In the first ad for the Royal Baby Spit, Anderson had two full pages.

DARE TO COMPARE

The New Spitfire


Why experiment with an unknown?
150,000 "Baby Spitfires" sold

\$4.45

Why experiment with an unknown?
220,000 "Spitfire" engines sold

\$4.45

Why experiment with an unknown?
100,000 Royal engines sold



\$4.45

\$4.45

\$4.45

Now!

\$4.45

MAN Sept. 1952: 38.

**THE 1953
ROYAL BABY SPITFIRE
.049**

The World's Finest 2-A Engine

ALL YOURS -- JUST \$4.45
In Comb. P.

*Why Experiment
With an Unknown?*

The New 1953 Royal Baby Spitfire -- Master .049 Engine

Something new has been added to the handsome line of SPITFIRE products. This is a highlight in our long career of engine and model making. We take great pride and pleasure in offering this outstanding new engine — the ROYAL BABY SPITFIRE .049 — the successor to the famous BABY SPITFIRE .045.

Yes! the world's most popular engine — the BABY SPITFIRE, with over 350,000 sold in the last year and a half, is now replaced with the world's finest 2A engine — the ROYAL BABY .049.

The new ROYAL BABY has the highest displacement to its weight ratio of any other engine. It is also smaller and more compact, with the highest R.P.M.

The ROYAL BABY features improved carburetion, the hottest of ignitions and boasts of the highest compression ratio of any engine in its class. Yes, for the finest engine that men and machinery can build — buy the NEW ROYAL BABY .049 engine, just \$4.45 with combination package, at your favorite hobby dealer.

\$4.45
In Combination Package

**MEL ANDERSON
Manufacturing Co.**
1547 W. 15th St., Long Beach 13, Calif.

Only the BEST can be FIRST

MAN Sept. 1952: 39.



Royal Baby Spitfire .049 First models had light blue anodized heads, this is a little later

In October, the Space Bug ad now showed the Cox glowhead.

Do you know?

6.95



This is what you can do with a
Thimble-Drome .049
SPACE-BUG

- 1 Fly a pusher type plane using a standard propeller.
- 2 Avoid torque on multi-motor jobs by running left hand engine with left hand prop in opposite direction.
- 3 Develop 20,000 r.p.m. using a plasticote 5" 3 pitch prop with less than 15 min. break-in time.
- 4 Fly full stunt pattern with many of the planes designed for .09 engines.

AT YOUR DEALER'S
L.M. COX Mfg. Co., Inc.
SANTA ANA, CALIFORNIA

MAN Oct. 1952: 39.

The OK Cub .049X was the last of the performance .049s of 1952. A new design (although similar to the .039), it adopted the short stroke style with a .420" x .360" bore and stroke. Sold in a combination pack, its integral tank radial mounting used the same bolt pattern as the Wasp, Royal Baby Spitfire, and its little brother the Cub .039. Due to the Wasp's popularity there were many designs and kits produced for it. Anderson and Herkimer were savvy enough to take advantage of this.

A NEW CUB FOR THE EXPERT!

OK CUB .049X Combination Package

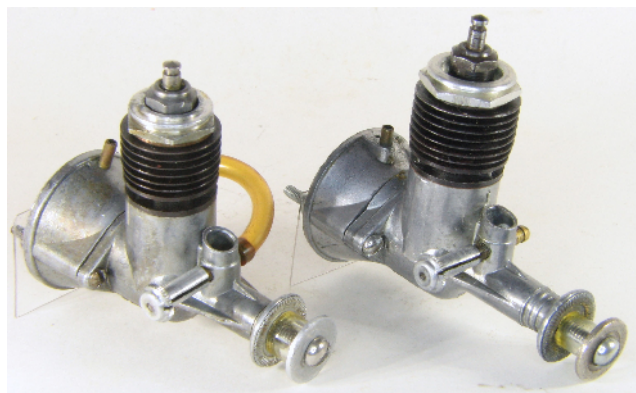
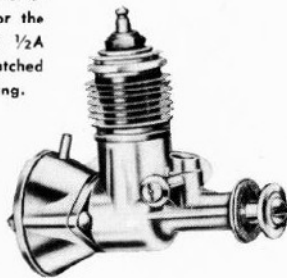
Companion to the famous .049 Cub. Provides higher output due to shorter stroke, larger bore, lighter weight. Designed for the advanced hobbyist. The top performer in the 1/2A Class. Package includes assembled engine, matched prop, extra rear cover, fuel tank, neoprene tubing.

CLASS 1/2A

Displ.049
Bore420
Stroke360
RPM ... 3,000 to 15,000

Price ... only **\$6.25** Complete

MAN Nov. 1952: 33.



OK Cub .039 (L) and .049X (R)

The 1/2A era had started at the end of 1948 with the K&B Infant .020. Two years later, the .049 had become the unquestioned dominant 1/2A displacement. Other manufacturers like O&R, Allyn, Wen-Mac would get in later. The Space Bug was a very strong engine, 16,000 rpm on a 6-3, but the real application for it was 1/2A free flight where its large stunt tank was of no value. The TD Thermal Hopper, on the market in 1953 was even stronger, had no tank, and would eventually displace the Wasp, but for now the Wasp ruled.

WOW!

READ ALL ABOUT IT!

WASP

EXTRA!
MAKES CLEAN SWEEP!

WINS

ALL 1/2A EVENTS!



... at the 1952 "NATIONALS"
National Model Airplane Championships
at Los Alamitos and Santa Ana, Calif.

Yes, WASP .049 engines had a field day and "stole the show" at the official A.M.A. sanctioned 1952 Championships. With contestants from all over the nation competing, WASP-powered planes took first in every 1/2A event, most of the 2nd's, 3rd's, and all other places—and set 2 new A.M.A. records. This against the "stiffest" possible competition ever. Check the partial list below and see for yourself we've proved everything we've been saying about this favorite performance-tested power plant of winning contestants. See your dealer for your WASP today—and join the "winners circle" tomorrow!



SETS TWO
NEW
A.M.A.
RECORDS

Here is How WASP-POWERED Planes Placed:

FREE FLIGHT GAS—CLASS 1/2A—OPEN

FIRST—open place.

FREE FLIGHT GAS—CLASS 1/2A—SENIOR

FIRST—plus other places.

FREE FLIGHT GAS—CLASS 1/2A—JUNIOR

FIRST—plus other places.

FREE FLIGHT GAS—ROW—SENIOR

FIRST place. New record set.

FREE FLIGHT GAS—1/2A—SCALE

FIRST—plus other places.

U. S. NAVY CARRIER—CONTROL LINE

FIRST place (two-engine powered).

P. A. A. LOAD—CLASS 1/2A

FIRST, third and fourth.

P. A. A. CLIPPER CARGO—CLASS 1/2A

FIRST—17 1/4 sec. plus 4 sec. dummy. New record set.

Below is a partial list of known "Winners" compared to the best of our knowledge and belief. Watch for a more complete list in future ads.



ATWOOD MANUFACTURING CO. • PICO, CALIF.

MAN Nov. 1952: inside rear cover.

Notes

¹ Nathan Gordon, "The Ancient Glow Plug," *Model Airplane News* Apr. 1948: 19+.

² Tim Dannels, "K&B Torpedos-Smaller Goes Big Time," *Engine Collectors Journal* 214 Feb. 2013: 4-9.

³ Ted Brebeck, *They Should Have Kept the Bear* (Newport: CARETAKER PUBLISHING, 1995) 40.

