

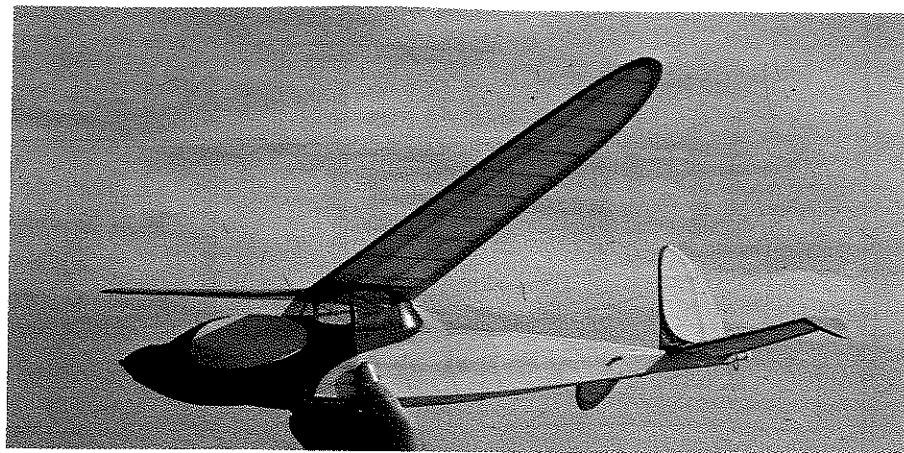
'my SPARKY'

OLD TIMER Model of the Month

Designed by: Ed Lidgard

Redrawn by: Al Patterson

Text by: Ed Lidgard



Old Timer fans who are into rubber power will really enjoy this presentation, as will newcomers who want to learn some of the tricks of the trade. Several contest events are already planned around this model.

• Would you believe that the Sparky kit has been on your hobby shop's shelves since 1940? The box looks better now, but the contents are virtually the same as originally produced by Comet Model Hobbycraft Corporation, Chicago, IL 60609. It could be the longest continuously produced free flight kit.

Let me tell you how Sparky came into being. It took a bit of talking at Comet but with Carl Goldberg's help, management gave me the go ahead. Most kits suffer some constraints the manufacturer imposes and Sparky had them too. Most of them involved the use of a sawed balsa propeller. If anyone ever develops a way to make a good prop out of one of these devices, I'd like to hear about it. BUT, remember that was 41 years ago and that is all there was. Most modelers can not carve a propeller from a block . . . even today. So these props were the best available.

Not too long after Sparky went into production, I found myself in the Air Force going to mechanic's school with old friend, Clarence Mather. In Texas as an instructor, I had time to build models and fly on the weekends with a nice bunch of modelers in Wichita Falls. My CO had some ideas about tidy rooms. In pleasant defiance, I made two wood

boxes that fit under my raincoat and overcoat. One held models and one held supplies.

Now, how do you put two or three models in a box 26 inches long, 17 inches wide and 5 inches deep? Simple! Everything comes apart.

A few changes have been made to the kit in these four decades. For the benefit of modelers who enter Sparky in Old Timer contests, these changes need to be clarified to prevent any disputes. First, the sub-rudder was removed at some unknown date. The model looks better with the sub-rudder, and the drawing of the sub-rudder is included in this article. It would be reasonable for contest directors to accept either, since both have been produced and then built in good faith.

Originally, a machine-cut balsa propeller was included in the kit. Today a 9-1/2 inch diameter, 9-1/2 inch pitch plastic propeller is supplied. This is the same propeller required for P-30 competition free flight models. They are really nice props. Some are not balanced, but it's easy to detect the wee lump on a blade and to scrape it off to make the blades balance.

Unfortunately current kits have this fine propeller that has a .050 hole in it

and the propeller shaft is made from .062 wire. Also unfortunate is Comet's lack of concern to change to the proper size wire. So off to your hobby shop for .045 or .047 music wire and bend your own.

The partial paper spinner shown in the kit just won't work, so use a block of balsa. This fine magazine will have a detailed article by this author in a later issue that shows how to make a spinner.

Some wood supplied may be too soft for a sturdy nose block, so replace with your own, or add two layers of 3/32 balsa to the front of the one shown in the kit. See the sketch for details.

As a guide to kit builders and My Sparky, my choice of wood weights are listed here.

Propeller	12 to 14 lb. per cubic foot
Longerons	12 lb.
Uprights	10 lb.
Trailing edges	10 lb.
Leading edges	10 lb.
Kit ribs	10 lb.
Sliced ribs	12 lb.
Nose wood6 lb.
Kit spars	10 lb.
Sliced rib spars	12 lb. or spruce

It's always good practice to look at a piece of sheet wood with a strong light behind the wood. You will be able to see the variations in density which roughly translates into variations in strength. More light will penetrate the softer wood. It is particularly important that leading edges and trailing edges are matched. Flex them in your fingers to make further comparisons. Sure, you will break some due to weaker areas of the pieces you have cut and you may overdo the testing.

Gluing is important. The space age adhesives such as Hot Stuff and Jet certainly speed up construction. Joints tend to be a bit brittle. This is no problem except at rib joints to leading and trailing edges and fuselage uprights. The solution is to apply a coat of Tite-bond as a second coat after assemblies are finished. Neither of these adhesives shrink when setting or drying. Model airplane cement does shrink. It's great for gluing ribs in tissue covering to save

Continued on page 88



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after the flyaway, was instrumental in meeting the girl he later married. He says he doesn't hold a grudge against the motor. Haw!

Incidentally, for a few of you Johnny-come-latelys, Alan sez the instructions for the English motor call for paraffin. Don't be deceived, as they are simply talking about kerosene! (paraffin based fuel). Sure could get into a heap of trouble!

In closing off, Wall says the only other diesel engine available at that time, was the ED 2cc with a slotted head. You needed a penny or screwdriver to adjust the compression. Every so often this stuff went into the prop!

OBIT NOTICE

Tom Cope, SAM 8, writes to inform

one and all that he has lost his best buddy, Don Dodd, who lost his battle to cancer after two years (much longer than the prognosis of six months).

Don was one of those modelers who started with Orwicks and Sailplanes, early days of radio, modern flight, and finally, total dedication to old timers. The last really big O/T meet in the Northwest in 1974 was the product of Dodd's enthusiasm. This Seattle contest drew contestants from Canada and all northern U.S. States. Lotsa trophies and merchandise!

Probably the biggest thing the boys are going to miss is the sense of humor Don Dodd enjoyed. Nothing like trading abusive remarks, wisecracks, etc. Don once said to Tom, "Those Oregon boys must really love me. They started throwing insults before I could even get out of my car." That said with the biggest grin you ever saw.

A perpetual trophy is being made up to honor Don, in recognition of all his contributions to this hobby we love so well. Don is one of those fellows who only come along once in a lifetime.

THE WRAP-UP

There have been a considerable number of letters inquiring if this columnist is going to again stage the Old Timer Events at the Nationals. Yes, sir! The schedule is as follows: R/C Assist O/T, Wednesday, August 5; O/T Controline, Thursday, August 6; and the big day, Friday, for Free Flight, August 7, followed by the Awards Banquet that night.

The columnist has been holding back on this not to detract from the National SAM Champs being held at Taft on June 30, July 1, and 2. Next issue we will cover everything in a little more detail!

Sparky Continued from page 33

patch . . . other than that, it's just not as good as the other adhesives. Epoxy is great for reinforcing critical areas and five minute field repairs, but slower than Jet or Hot Stuff and the joints generally weigh more. (The newer thick cyano's may be the answer. wcn)

Each adhesive has its virtues, so learn them and use them selectively for best results.

Sparky is covered with good tissue. The grain runs spanwise on wing and tail but in the girth direction on the fuselage. Careful sanding with 220-grit on a block of wood before covering will improve appearance of the finished covering. Use straight nitrate dope to attach the tissue. Coat the structure first. If you attach the tissue with dope, add another coat as you go from rib to rib, etc. Some prefer to pre-coat the structure and attach the tissue by brushing thinner on the tissue. The thinner penetrates the tissue and attaches it to the structure. Both systems work. I use both. Some point out that the thinner procedure is neater and you do not end up with dope all over your fingers from rubbing the doped tissue. Treat each section with care to have the tissue taut. Often you will cut the larger pieces of tissue off and start by overlapping on a rib or upright to avoid wrinkles. Covering with damp tissue is a big help on the wing tips and a must for the aft cabin areas. Spray with water to tighten. Replace wrinkled areas. The dope will not tighten wrinkles. Overlap the tissue around the leading and trailing edges at least 1/16. In grasshopper areas this is a must. Grasshoppers love balsa wood and they can mess up a nice model in a hurry.

Let's build My Sparky.

Everyone has habits about what is built first, second, etc. So do I. However, for this model, some sequences make others easier. The wing, if completed before the fuselage, makes it easier to check out

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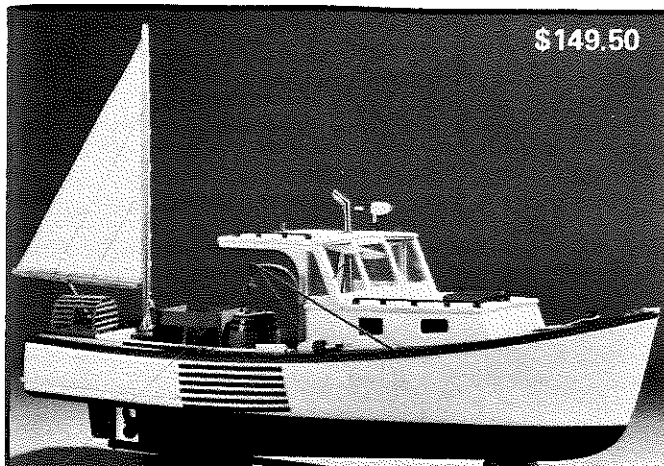
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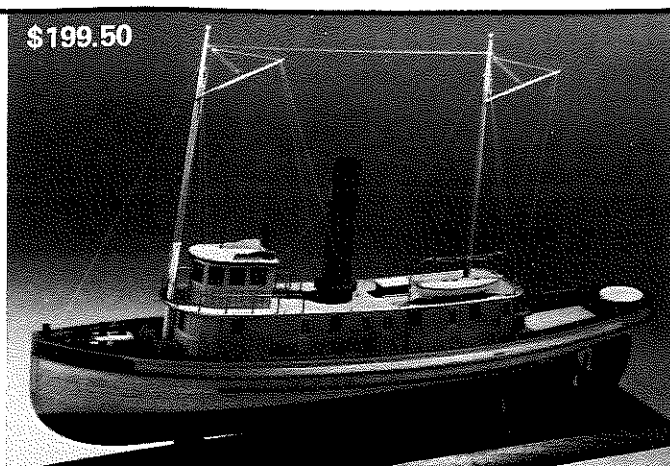
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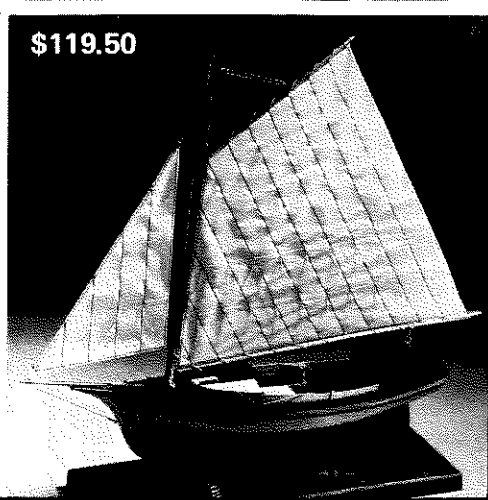
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the wing fit on the cabin. Making the propeller with hinge permits checking the folded propeller on the fuselage nose. If it's too snug, it's easier to correct before covering the fuselage. A completed rudder is desirable when completing the center section of the stabilizer so that the tubes can be inserted and the fit checked out before covering. The dethermalizing fittings and tube key are best checked out thoroughly before covering the fuselage.

Construction details given here will follow the sequence just discussed.

WING

The complete outline is glued together over a Saran plastic covered plan. Block up the trailing edge with a piece of 1/32 balsa set under the front 1/32 of the trailing edge. The trailing edge is cut to its triangular shape before gluing down. I hope you have matched the strength of these pieces.

At this point it is wise to build the wash out into the tips. Washout is decreased incidence that permits the tips to avoid stalling until after the main area of the wing. This makes the model more stable. From the indicated point, raise the trailing edge and part of the tip 1/8-inch. It will be necessary to crack the main piece of trailing edge to do this and to adjust the fit of the joints of the wing tip sections. You may want to cut a piece of 1/8 balsa and shape it in a triangular way to give a nice flat surface for the glue joints between pieces. Reinforce the

cracked trailing edge with Hot Stuff or Jet. (It penetrates cracks.)

Now cut an airfoil template. Rubber cement or contact cement the plan template to a piece of thin metal. When dry, cut and file to shape accurately. Check against the airfoil on the plan.

Cut the 1/16 square bottom sliced ribs first. Keep the cuts parallel. Use a light to be sure you do not cut any SOFT ribs (light areas). Be sure they are ALL the same DEPTH. Cut these ribs to length by trimming from the trailing edge only. Cut them all to fit. Leave them in place, then go along and apply just a wee bit of Hot Stuff. Be sure each rib is touching the plan at the leading edge and the 1/32 shim under the front of the trailing edge.

Cut the top rib slices and trim them to fit in the same way the bottom slices were trimmed. When gluing them in (observe the sketches), set the top slices to the side of the bottom slices at the trailing edge, and parallel to them.

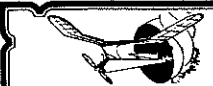
At this point, measure the space between the ribs and cut a set of MATCHING 1/16 balsa or 1/16 spruce spars. Now you will find the error of your ways if the ribs aren't 1/16 deep and all equal in thickness! Slide the spar in and check it for fit. Before gluing the rib slices, shim up the four top slices on the right panel 3/64 inch. These are marked on the plan. This is a way of providing more lift on the right wing for purposes of keeping the Sparky from banking too steeply while climbing under power.

Most models are warped to provide more angle of incidence on the right side. This is OK and you may prefer to do it. Both work. My method is easier to check out for consistent maintenance. Remember, My Sparky is a HIGH POWERED model.

Now cut 18 sliced upper ribs only 1-7/16 inch long, using only the leading edge of the template. Glue them onto the spar and leading edge. When dry, place each wing half onto the plan of the other side and trim the portion in back of the spar to the length shown on the plan. Now round the rib slice on the top surface at the place you just cut it.

Sand the panels carefully with 150-grit sandpaper and a block to remove all projections that will show under the covering. Taper the trailing edge at the tip and round the leading edge. Look at each wing panel from the tip and you will see each rib and be able to detect any that do not match the curve of adjacent ribs. Replace any that are too low. You can't add on by sanding! Re-coat each glue joint with Titebond. You may try diluting the glue with 1/3 water and brushing it on. (You may also get an argument from Carl, Bill, Bob, and Hugh about the necessity! wcn)

Do both panels look OK? Now you are ready to join the wing panels. You may prefer to have a one-piece wing. We will discuss that construction first. It works as well as a two-piece wing and is a lot easier to build.



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To assemble the panels, place one flat on your work board with protective plastic under the center and hold it down. My favorite method is to use push pins with the point pushed through a 1/2-inch square of soft balsa. Pin down a block or a sheet of balsa to hold the tip of the other panel 7 inches above the work surface. Make it secure and level with the work surface. Trim the spars, leading and trailing edges to a no-gap fit with the panel resting on its support. Cut doublers 1-1/2 inches long from hard 1/16 balsa or 1/32 plywood. Trim them to fit the spars and glue into place. You may choose to use clamps to hold the surfaces together. Try spring clothespins if you don't have fancy ones. Add 1/8 inch triangular shaped doublers to the leading and trailing edges. Cut a center rib

from hard 1/16 balsa and cut notches in it for the spars and doublers just glued in, and glue it in place. When dry, remove the hold-down pins and sand the doublers.

TWO PIECE WING (not for beginners)

Starting again with the two completed panels, block up both wings so the tips are 3-1/2 inches above the work surface. Cut two 1/32 hard "C" grain balsa center ribs without spar notches. See the plan. No undercamber on these ribs. Trim the spars, leading and trailing edges so they fit with no gap, with the two ribs in place.

Make a rib-holding device as shown on the plan to hold the ribs firmly together and vertical. Use pins in addition, if necessary. Be sure you have the ribs drilled and the 1/16 short dowel already glued in to align the two ribs permanently. Now glue them in place, being careful that they don't glue to each other! Use plastic film if necessary.

When dry, remove and bend the wires that take the tension loads that hold the panels together. Two points are critical: 1) The point of contact between the wire with the hook and the wire with the "U"-bend must be precisely on the line of the bottom surface of the rib; 2) Silk and glue the wires carefully and well.

Add the scalloped 1/32 sheet on the upper camber (use lightweight "A" grain and the two 1/32 strips to the bottom surface as shown on the plan). Check the hooking and dowel fit, sand and cover.

PROPELLER

The propeller block is shown. It is 12 inches in diameter and that is the largest ever used. Higher pitch props were tried, and you may prefer to, but I liked the rocket climb and over 30 second motor run this prop gave me.

There is so much information to be presented on the prop, spinner and alignment that you'll have to wait for the article to appear in a future issue of this magazine.

The rudder construction is well illustrated. You won't have any trouble here if you keep the dowels parallel. If you do not make the rudder removable just extend the leading edge and trailing edge to the bottom of the stabilizer rib, add some balsa braces, a sliced rib on either side of the rudder, and cover.

The stabilizer is made like the wing, except that the tips are cut off, trimmed to a flush joint and glued on at a 45° angle downward. Add the dethermal-

izer wire before covering and glue it well (epoxy).

FUSELAGE

Use tough, straight-grained balsa or 3/32 spruce squares. Remember spruce is heavier. Those of you familiar with the kit will see I've added an extra 3/32 sq. or 1/16x1/8 between the rear wing peg and the top nose rear former. It's ugly but it overcomes a stress riser behind the former. The upright 3/32 sq. also has a heavy thread going around the wing attachment dowel, down the balsa, and the front of the former. The multiple rear peg holes are for C.G. adjustment without adding weight. Stabilizer attachment and dethermalizer fittings are combined. You may want to simplify and use a dowel through the fuselage, hooks on top of the stab and standard keys. It's all OK. Do what you know works. But do light the fuse!

GROUND CHECK FOR FLIGHT

1. Check the wing for flatness and equal washout at the tips. Use dry heat, carefully, over your stove, and appropriate twist to correct. Let it set and recheck before flying.

2. Be sure the rudder flat side (left side) lines up with the center line of the fuselage. It and the stab should be flat . . . no warps.

3. Use two No. 8 rubber bands to hold the wing on. If you use my D/T system, use one heavy D/T band.

4. Be sure the wing fits the cabin snug; the stab is snug and has the zero incidence shown.

5. Install a motor, adjust the rubber tensioner to hold up the slack rubber and check the balance point against plan location. Move rubber or add weight to properly locate the balance point.

6. Add about 3° RIGHT thrust (prop tilts to the right); NO DOWN THRUST.

FLIGHT TEST

1. Glide model. Do it enough to do it smoothly. No stall or dive should occur. If it does, move the rear motor peg to move the balance a wee bit. You should get about a 50-foot glide.

2. Adjust the glide direction to a broad left turn. The cambered rudder should do this. If other than a minor rudder trim is needed, recheck the rudder location and the wing for warps.

3. Wind in 100 turns and launch at a 10° upward angle. The model should make the beginning of a broad right turn. Since the model uses a long motor

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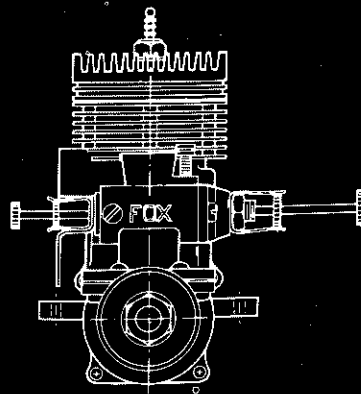
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and the tensioner stops the prop suddenly, you will get a dip and possibly a slight stall as the model transitions from power to the slower glide speed. Be more concerned with the power pattern at first, until you get up high enough to work on the glide.

4. Continue increasing turns. Make slight adjustments in thrust to get a right spiral climb. With increased altitude, you may find the hand glide trim gave you false readings.

5. If My Sparky does not want to climb, check the angle between wing and stabilizer. It should be 3°. Rough check this by removing the wing and stab. Looking from the rear, you should see the stabilizer platform and wing platform as straight lines when a ruler is 18 inches from the rear of the fuselage and your nose. Adjust with shims if needed.

If the wing is warped, stop, go home (or look for the nearest auto exhaust! wcn) and correct. If you don't, you'll be sorry.

6. Most Sparkies and My Sparky do not require down thrust; just right thrust and only enough to get a right climbing turn.

7. As turns are added, the model will climb steeper and steeper. The main thing to observe is the amount of right bank. If it is too steep, you will not climb well, and with added power may spin in to the right. A bit of incidence (wash-in) in the right panel will correct this. This addition may require a bit of added right thrust.

When the power looks good and the model glides left in smooth circles and you experience a stall under power, then and ONLY then do you put a small shim in to add down thrust. Without a right turning power pattern, the model, with lots of turns, will loop even with the incidence and balance correct.

You are advised to use a protective tube inside the fuselage when winding over 400 turns, so that if the rubber breaks, it will not destroy the fuselage.

You will need a heavy wire or rod at the end of your winder to remove this tube after winding, and a hook on the end of the motor to hold with a rod while you hook up the propeller.

Test a motor outside the model to see how many turns you can put in, so you will know where it will break.

8. How well does it fly?

Motor run: 30 to 45 seconds (six strands of 1/4-inch rubber, 30 inches long, 800 winds).

Altitude: 400 to 500 feet.

Duration: Up to 3 minutes, 45 seconds in neutral air.

9. Remember:

a) Check for warps every time BEFORE you go flying.

b) Test your motors and apply rubber lubricant.

c) Check your keys and wing location before EVERY launch.

d) Light the fuse!

e) Write and tell me about your Mr. Sparky. Ed Lidgard, 24722 Marbella Ave., Carson, CA 90745.

Markings Continued from page 23

of the same letters by stacking several layers of tissue. Straight edged markings are quite easy to cut this way.

Unlike pressure sensitive materials applied with a wetting agent and decals (these will be discussed later), care must be taken to eye-ball cemented markings into their proper locations. Guidelines cannot be used because they will be covered by the cement and will not be erasible. Japanese tissue goes on well with thinned dope. Apply the dope to the top of the marking after it is properly positioned. Tissue has a bad habit of fading (even black!). An obvious but practical solution to this problem is to install a second layer of markings over the first ones when the fading becomes objectionable.

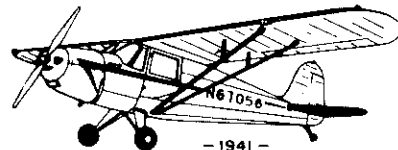
The art of covering super-light models . . . typically Peanut Scale models . . . is an art by itself. However, if you do cover

with pre-shrunk material and use a "wash" coat of very thin dope, tissue markings can be applied as described above.

The most useful pressure sensitive material is mylar backed with a pressure sensitive adhesive. There is a "sticky back" type of Monokote that is a good example of this material. It is best applied by first putting a strong solution of wetting agent over the location where the markings are to be applied. A 20% solution of dishwashing liquid in water works well. Remove the backing and plop the marking on the wet surface. Slide it into position and rub the liquid out from under it using a facial tissue. In this case, guidelines can be drawn into the model using a very soft pencil or drafting tape can be used to assist in properly locating the marking. It is best to coat markings of this type if they are in danger of being fuel soaked.

Decals are handled essentially the same as pressure sensitive material. Plain water is used to soak them off their backing and provides the lubricant needed to position them. Guidelines are more difficult to use with decals because the outer layer of a decal is a transparent material that overlaps the design itself. This material will cover the

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