

RCMW-FSP

October 2015



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Cover Painting from
Aeromodeller August 1960

For the Model Bulder and Flyer - October 2015 Issue



Full
Size
Plans



Time for another issue of RCMW. Fall is on the way here in west central Illinois with some of the trees dropping leaves early and the squirrels are frantically gathering acorns for the winter. Soon will be a great time to start building those winter projects so you can be ready for next year.

As always, our roving reporter Bob Aberle brings you a report on the NEAT Fair held in mid September in upstate New York. You get it first here in RCMW and probably won't see it for a couple of months in the other mainline model magazines. That's one of the many advantages of an online magazine.

Next is JEFE a world championship Team Racer that beat all of the competition in the 1960's. This plan and a batch of other Team Racer plans that may be published occasionally were donated by Laird (Doc) Jackson.

A few issues back we published FIZZ WIZZ, a cute little Free Flight model by Aubrey Kochman from a 1962 issue of American Modeler (Air Trails). Our regular contributor, Bob Aberle has been pretty busy, not only with the NEAT Fair report but also coming up with a version of FIZZ WIZZ adapted to electric power and Micro RC controls.

There has been a resurgence of interest in small Tow Line Gliders, with lots of folks in California and Britain launching them using Hi-Start or Bungee instead of running (we're all getting older). Elbert Weathers, better known for his MYSTERY MAN, WESTERNER and PACIFICOASTER designs, contributed this 30" span Glider for the August 1939 issue of Flying Aces magazine. He said it was a great flier so give it a try.

Every modeler known about the late Earl Stahl whose list of published designs fills up an entire page or more. One of his early designs was this rubber powered endurance ship that he called the HI CLIMBER. It originally appeared in the August 1939 issue of Flying Aces and the plan was redrawn and reprinted in the April 1984 issue of Model Builder. We've reprinted the Flying Aces construction details along with the Model Builder plan.

Bob Palmer, "Mr. U-Control Stunt" had his stunter MARS published in the August 1952 issue of Model Airplane News. It became a classic because of its good looks and excellent performance. Other designs followed but this was one of his early ones.

As usual, the last two pages of our issue has details on the digital magazine collections we have currently available. We're working on the oldest issue first because those are the ones most likely to be hard to find and eventually disappear.

With that in mind we are working on digitizing the back issues of the British magazine Aeromodeller. The 1950 and 1960 issues are in the computer but not yet converted from scans to PDF files so it will be another couple of months until those 240 issues are ready for distribution.

We're missing a few issues from the 1940's and nearly all of the issues from 1935 to 1940. If you or someone you know has them, please contact me. Don't let these issues disappear

Hot News ! Report on the 16th Annual NEAT Fair by Bob Aberle

If you are a regular RC MICRO WORLD (RCMW) reader and save every issue, I would urge you to go back to my two previous NEAT FAIR reports. They appeared in the October 2013 and 2014 issues.

Administrative details will not be part of this 2015 report, so that we can concentrate strictly on the planes and fliers. Present and future NEAT FAIR information can always be found at this overall website ---

www.neatfair.org

The 2015 NEAT FAIR was held the weekend of September 18, 19 and 20, which is a little later than last year. The Event Director (actually the NEAT FAIR founder), Tom Hunt is also president of the host SEFLI (pronounced SEE-FLY!) club (Silent Electric Fliers of Long Island).



Here's Tom making an announcement on the flight line

This is our 16th year if you can believe. The location for this event has always been the Peaceful Valley Campground, near Downsville, upstate, New York. Directions, accommodations, fees and event schedules can be found on the previously mentioned website.

Once again we had a very successful event thanks to near perfect weather with sun, no rain and moderate winds. Many modelers now come early, like Monday and Tuesday and stay the entire week. That is perfectly acceptable.

The total number of registered pilots this year was 359. There were 15 vendors, most of who were selling their various hobby products. I would guess that we had several thousand visitors during the week of the fair.

The following photos will give you a feeling for the number of people who attended this NEAT Fair.



We are always pleased that the AMA executives support our NEAT Fair efforts every year. Attending this year, to name just a few were Bob and Jo Anne Brown, (AMA President and his lovely wife), Gary Fitch, Executive VP, Eric Williams our District-II VP and Reid Condon, Asst VP District-II.



The AMA shared this large tent with the Bergen County RC Club. Meetings and lectures took place in this tent all day long on Saturday.



In this photo Bob Brown is in the left foreground. His wife Jo Anne behind him. At the right foreground is Eric Williams and behind him is Reid Condon.

We were treated to a big surprise at the start of the Saturday noon flight demo. District-II VP, Eric Williams presented NEAT Fair Director, Tom Hunt with the prestigious AMA award known as the AMA FELLOWSHIP.



Tom Hunt at the left is holding his plaque and Eric Williams is on his right.

Because we are RC MICRO WORLD, this report concentrates on micro and small parking lot size aircraft. The outdoor flying field at the campground is divided up as follows --- helicopters and E3D aircraft on one end of the field, small size, micro and park fliers at the other end and general aircraft up to quarter scale and more in the center.

The center of the flying field is where the headquarters tent is staked. A stream that runs along one edge of the field is dedicated to hydro flying.

Although not limited to only this, almost all flying was done with 2.4 GHz spread spectrum radio systems. Because of this, RC transmitters need not be impounded. Flying can go on from sunrise to sunset and even beyond with lights installed on the models.

The only limitation in flying is to have to wait your turn at any one of the flight stations. Each pilot is allowed a 10 minute duration flight.

Traditionally each year all flying stops at noon time for a one hour period on each of the three days. While you eat your lunch a variety of demonstration flights are made by noted expert fliers. Event Director, Tom Hunt, announces each plane and pilot throughout the demonstration period.

Keep in mind that while all of this is going on, the various vendors are open for hobby supply sales at good prices. There is also a swap shop area, inside a building, where more good deals are made.





Last but not least the SEFLI club sells all kinds of NEAT FAIR shirts, hats and jackets. Throughout the day and at regular intervals prizes are raffled off. A ton of donated products are given away.

ABOUT the INDOOR FLYING

Besides all the activities at the campground, there is a major indoor event that is held at the local Downsview High School gymnasium located approx. 10 minutes from the campground.

There are actually two indoor sessions. On Friday the gym was open for our use from 6:00 to 10:00 PM. This is just for fun or sport flying. By the way, all models flown indoors must have been built by the pilot. No RTF models were allowed at either indoor session. RTF models outdoors at the campground is OK.

All indoor activities are directed by noted Model Aviation Micro columnist, and US Airways Captain, Joe Malinchak. If you care to reach Joe, his e-mail address is ---

joemal@echoes.net.

Then on Saturday the gym was available to us from 2:00 to 10:00 PM. At around 7:00 PM general flying stopped for an hour while the expert micro pilots demonstrated their latest designs.



Special awards were presented on the Saturday evening. The categories were “BEST MICRO AIRCRAFT”, “BEST CARTOON SCALE MODEL” and “BEST MICRO SCALE”.

The BEST MICRO AIRCRAFT award went to Adam Woodworth for his Imperial Speeder Bike from the movie Star Wars. Space wouldn't permit a detailed description of this “craft”, but Adam was kind enough to allow me to

publish his e-mail address, should you have any specific questions. It is as follows ---

ajwoodworth@google.com.



Here are photos of Adam with his Imperial Speeder Bike and a flight shot.

BEST CARTOON SCALE award was also won by Adam Woodworth for his C-130 foam aircraft with four motors. This plane flew incredibly well around the gymnasium. It has four 7 MM brushed motors, 140 square inches of wing

area and weighs approx. 50 grams (1.75 ounces). Adam molded the parts for this plane from Depron foam material.



Here are C-130 static and flight shots.

BEST MICRO SCALE

Paul Stamison received this award for his 1/24th scale model of the Avro 504K biplane that was built from a Jin Woo Choe kit. All the details on this plane can be found on Jin's website ---

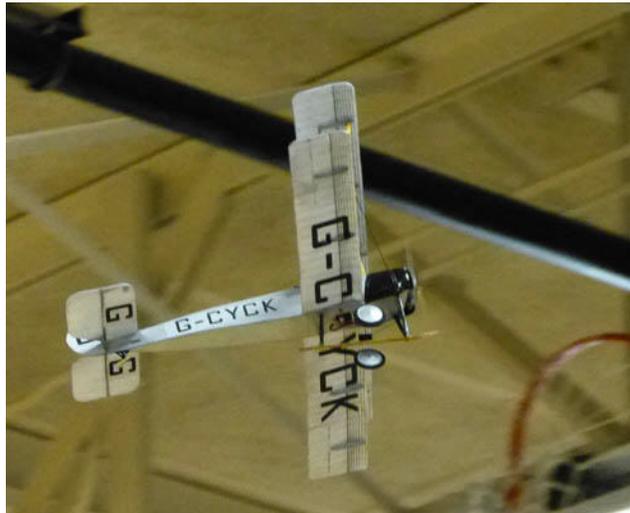
<http://www.jingmodels.com/product/avro-504k-124-scale/>

Paul's e-mail address is ---

paulstamison@gmail.com.



Paul Stamison at left holding his Avro 504K biplane and Indoor Event Director, Joe Malinchak on the right.



Here's a shot of the Avro in flight.

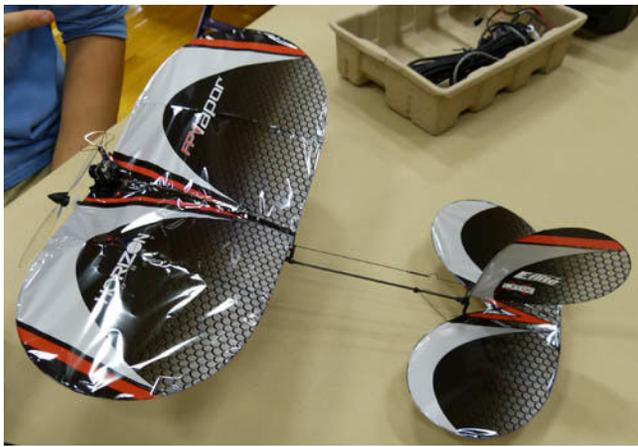
Just a word about my photos. They are inserted right into the text. As such the text provides the identification of each model. For the most part no captions are needed. The best part of this format is that you don't have to continually go to the end of the text to identify each photo.



Joe Malinchak had a new 1/72 scale T33 jet powered by a 20 mm electric ducted fan using a 2.5 ohm 6 mm motor. Weight is 6.2 grams with a 30 mAh LiPo battery.



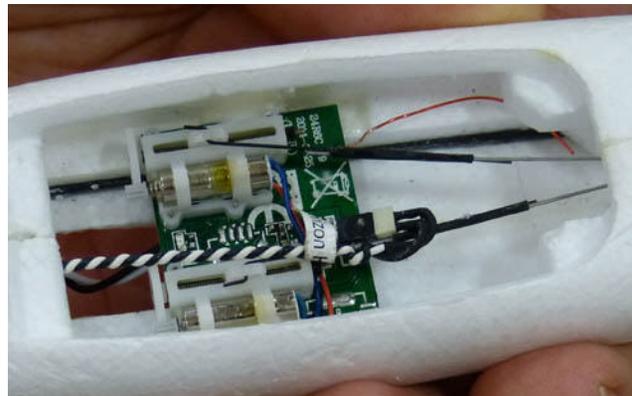
Joe also came up with this diorama using two of his micro Corsair fighters.



Gordon Johnson and his son Sam, flew the new Horizon ParkZone VAPOR FPV which they had just bought that afternoon. The plane itself was only around \$80.00, but the big expense item is the viewing screen that displays what the aircraft is actually seeing. The viewing screen was a FAT SHARK with head tracking that cost \$450. So the total investment to get started is over \$500. Sam's first flight was absolutely perfect. He loved it! He also flew it the next day outdoors at the campgrounds. This is definitely the way of the future for micro RC enjoyment.



Bob Johnson of Fond du Lac, Wisconsin constantly modifies aircraft for his own fun. In this case he took the ParkZone Whipit, which is a hand launched glider and added a ParkZone P-51 electric motor.

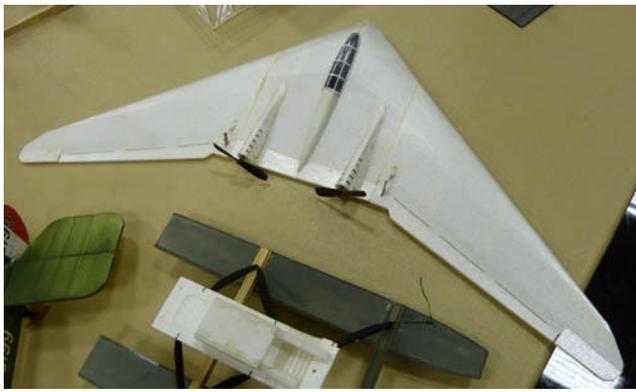


He learned that the brick that comes with the Whipit contains a brushed motor ESC. The cable on the P-51 motor is long enough to reach the connector on the rear of the brick. I can tell you that the indoor performance of this modified plane was excellent. Very slow flier and very stable! The brick is accessed from a bottom hatch cover.



Don Belfort adapted a 1947 Earl Stahl scale rubber free flight model for modern day electric powered micro RC. Plane employs a Hobbico brick and two Hobbico sub-micro servos in the wing to operate the ailerons. Motor is a ParkZone P-51 powered by a 160 mAh Li-Po single cell. 20 inch span and a total weight of 2.0 ounces.





James Basin of Westfield, NJ is a pioneer micro aircraft enthusiast, no question about it. For years James has traveled all over the country flying and promoting micro RC electric and CO2 powered model aircraft. This first model is a scaled down Joe Wagner, DAKOTA biplane built from a Bob Selman kit. Weight 32.6 grams total.

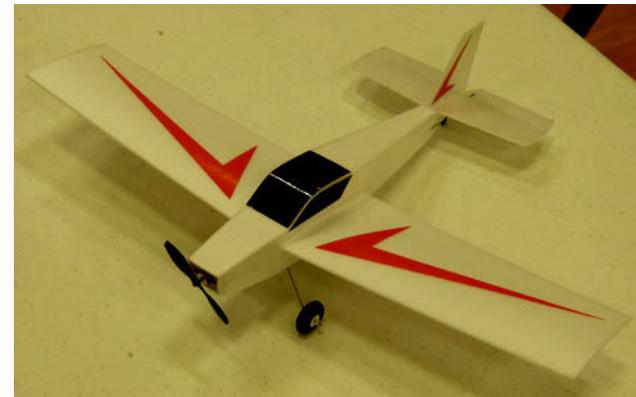
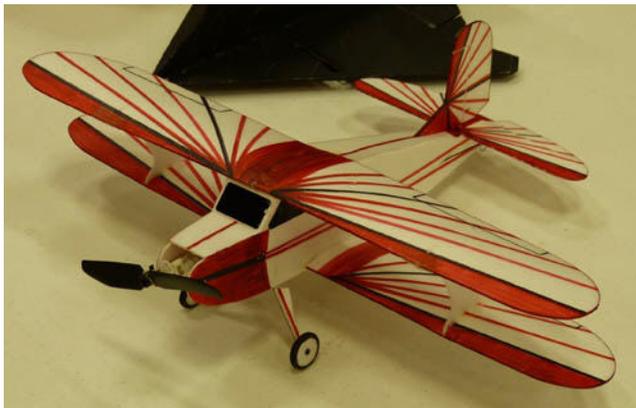
This website will provide all the details ---

<http://www.bsdmicrorc.com/index.php?productID=918>



Jin Woo Choe had two of his 1/35 scale Horten VII flying wings on display. He offers a kit for \$45 that includes two 7mm motors, propellers, "Y" connector, vacuum formed canopy and turtledeck. A fast and smooth flyer!

<http://www.jingmodels.com/product/horten-vii-135-scale/>



His next model is the RED-E which is another Bob Selman product. It is described on this website ---

<http://www.bsdmicrorc.com/index.php?productID=1047>

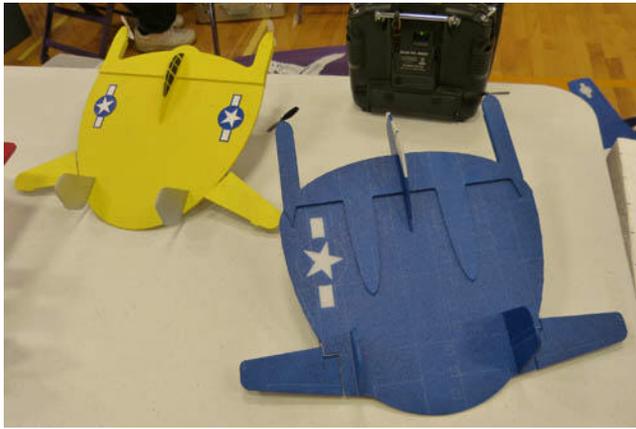
Wing span is 14 inches total model weight 14 grams (about a half ounce). It employs a direct drive 7 mm motor. The plane is available RTF with everything except a battery for \$100. A kit version is also offered at \$30.



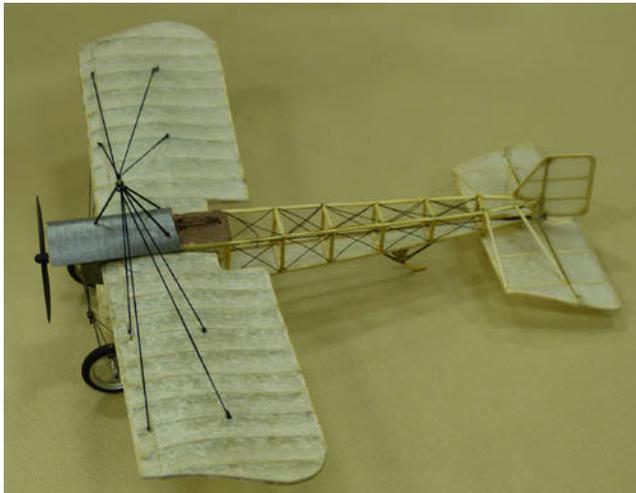
Paul Stamison, our Micro Scale winner had several other planes that he flew. The first shown is a Stevens AeroModels all balsa "RE-RUN". It uses the 8 mm geared motor from the Horizon ParkZone micro Aeronca Champ. A cute plane and a good flier.



The second plane is a flying wing design called the "STING RAY". It uses the ParkZone P-51 motor. Paul indicated that this type plane has been used by local clubs for certain contests. You might want to contact Paul for the details and possibly obtain a copy of his contest rules.



Adam Woodworth – came up with a fantasy scale model of the late WWII experimental aircraft known as the FLAP-JACK. Adam built his two version using Depron foam sheet material. The plane employs two 7mm direct drive motors. Servos are the Hobby King micro 1.8 gram variety along with a Del Tang micro receiver. The blue plane is the Vought XF5U, while the yellow version is the Vought V-173. Both planes flew very well indoors.



Gary Klein from Connecticut had this truly beautiful 1911 Sommer Type E/Type F Monoplane. It had a 10 inch span and weighed only 19 grams. It was constructed from stick and tissue with bamboo longerons. A direct drive motor was

employed. You can Google this plane and obtain a load of technical details on the original. Gary's e-mail address is ---

gklein74@yahoo.com



And last but not least, I had to show my ParkZone UMX PT-17 Stearman biplane. Because it was RTF I couldn't fly it indoors, but I did put in some nice flights outdoors on the Sunday morning, before the winds got strong. This plane has full four channel control and is truly easy to fly. Most impressive!

OUTDOOR ACTIVITIES

Paul Conti of Staten Island, NY, had this stick/sport model of his own design. It has a 23 inch span, weighs just 4 ounces and employs a "250" size motor. An interesting side note, this model was constructed exclusively with basswood, not balsa.



Grumman J2F Duck amphibian. I didn't get the builders name but the interesting fact here is that the centrally located main float was taken from a Flyzone BEAVER aircraft. Then the rest of the structure was scratch built around the float. A real neat construction job. Weight was estimated at around 30 ounces.

Next is Bob Johnson's J-Bug. This was Bob's outdoor contribution to the NEAT Fair. He modified a standard "J-BUG" to a shoulder wing configuration. Model weighed 3 ½ ounces. Roughly a 20 watt motor. Most interesting, Bob



Sawn-Craft Japanese ZERO-24. This is an all foam E3D type aircraft. Wing span is 24 inches. Wing area 132 square inches, weight 106 grams (4.5 ounces). They have quite a few planes in their inventory so you might want to look up their website at ---

www.Sawn-Craft.com



Tom Hunt's Tumblewatt. This design is constructed strictly from sticks. There are no wing ribs, just caps that are bent over the spars. It is no longer available in kit form, but Tom can supply plans at \$12.00 per copy. The plane has a 26 inch span, 208 square inches of wing area and weighs in the 12-14 ounce range.

tomhunt@optonline.net



used two pieces of 2 mm Depron for each wing panel. These pieces were "sandwiched" together with the help of Aerospace Composites Laminating Resin, applied very thin. After overnight curing you have a perfect wing airfoil shape that does not require spars or ribs. I've tried to encourage Bob to publish his wing technique.



Bob Aberle's Boeing L-15 fantasy scale model. I designed this plane about a half dozen years ago. It was published in FLY-RC magazine and later kitted by Aerocraft. The kit is no longer available, but the plans are. Despite its odd configuration this plane flies well and is easy to build. The owner of this particular L-15 at NEAT did a beautiful job with the assembly and finishing.



The last photo on the previous page is Don Belfort's Kwik Fly-180. This plane was built from plans developed by Andy Kunz. It is powered by a ParkZone "Beast" two cell electric motor. Weight is only 3.1 ounces. Wing area 100 square inches. Manzano has a laser cut short kit for this plane which they call the "NEO-180".



Thayer Syme showed off this new Quad Wing design, that will may be published soon in a new FLYING MODELS magazine. As you can tell by the name this plane has four separate wings totaling 277 square inches of area. Total weight is 7 ounces. It employs a Rimfire 250 motor on two cells. Beautiful construction!

GENERAL AIRCRAFT (OUTDOORS) WORTH MENTIONING

My report is now winding down. I just wanted to highlight several of the aircraft flown outdoors at the noon time time demo sessions.

The winner of the best model at the show award went once again to Adam Woodworth so Adam basically won awards for both his outdoor and indoor flying.



Both of his new 2015 outdoor entries were covered with this one award. One plane was a modified Hobby King Durafly EFX racer to which Adam added a quad (4 motor) power system. With this configuration he was able to take off vertically (V/STOL) and then transition into forward flight. The reverse was true on landing. I've already provided Adam's e-mail address earlier in this report. If you were serious about duplicating his efforts, I'm sure he would answer your questions. Here are two photos of the V/STOL Racer.

His other design we call the "X" wing. It has two sets of wings at right angles to each other. The gyrations this planes goes through in flight is unbelievable. Again contact Adam if you are really interested in duplicating this design.



Although we have seen it for the past couple of NEAT Fairs, Adam flew his big ducted fan jet. It is now all painted and looks very realistic. This jet can go to extremes, both fast and very slow. You have to see it to believe it.



Don Belfort's Miles Atwood Racer won Best Scale. This plane has been around for a few years, but this time Don really put it through its paces. Model weight is 9.5 pounds and the area is 1,000 square inches. Beautifully crafted!



Last but not least, we had a large Space Shuttle model and carrier. I didn't get the modelers name, but the flight performance was just right on. It flew great! The Shuttle separated at altitude and glided in for its own landing. Most impressive!

SUMMARY COMMENTS

That's a wrap for the 16th annual NEAT Fair. I hope after reading this report that you will consider coming and joining us next year.

Again the overall website for the event is

www.neatfair.org

There will be many more photos on that site within a short time. Next year the NEAT Fair (No. 17) will be held approximately in the middle of September 2016. The exact date will appear on the website soon.

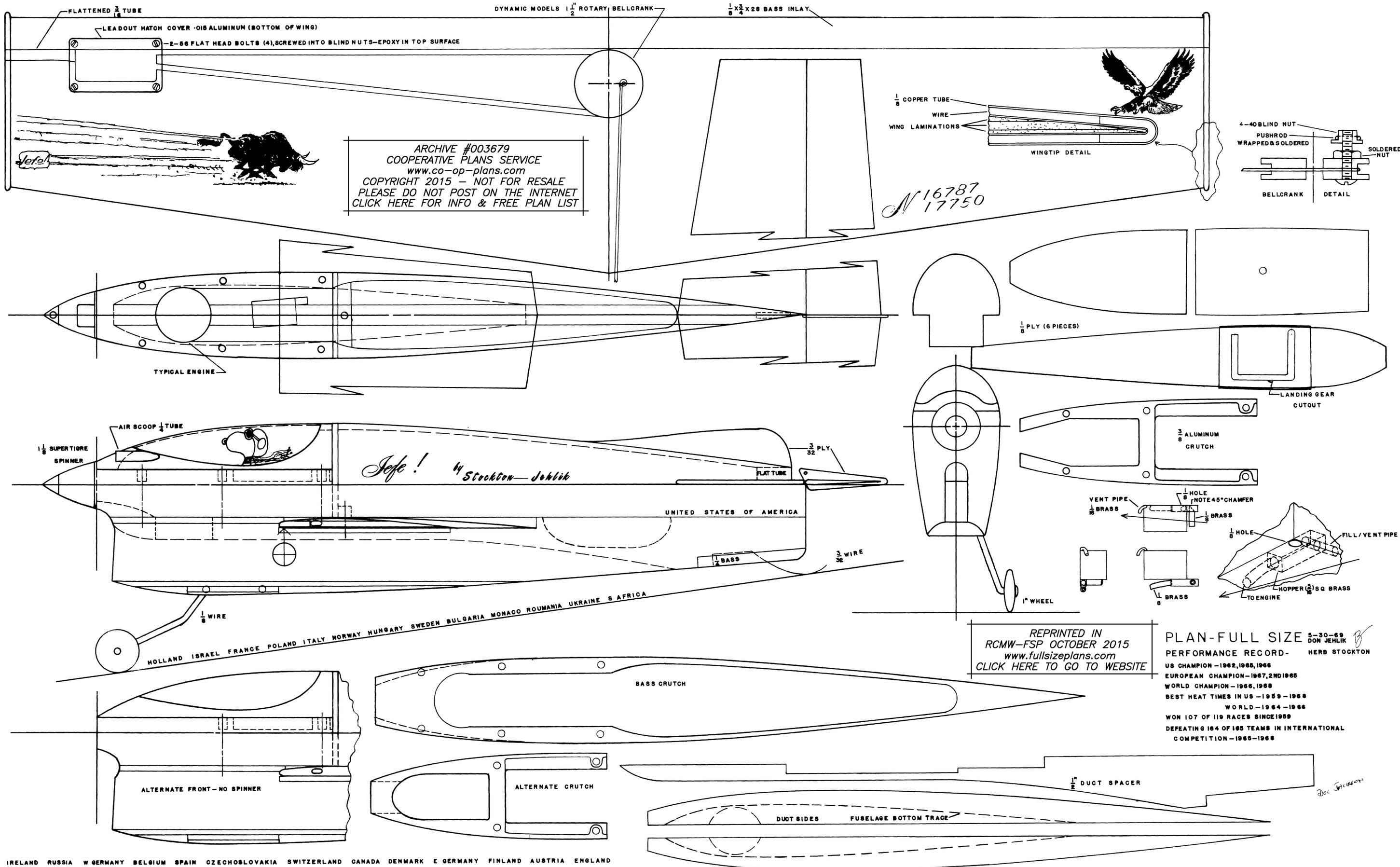
Motel accommodations are somewhat limited so make your plans early. Camping at the site is always available. There are several food vendors that do an excellent job for breakfast, lunch and dinner.

Pre-registration for pilots usually starts around March 2016, but keep a check on the website.

If you have any questions on my report you can always e-mail me at ---

baberle@optonline.net

Bob Aberle, AMA215



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 BEST HEAT TIMES IN US - 1959 - 1968
 WORLD - 1964 - 1966
 WON 107 OF 119 RACES SINCE 1959
 DEFEATING 164 OF 165 TEAMS IN INTERNATIONAL
 COMPETITION - 1965 - 1968

IRELAND RUSSIA W GERMANY BELGIUM SPAIN CZECHOSLOVAKIA SWITZERLAND CANADA DENMARK E GERMANY FINLAND AUSTRIA ENGLAND

PLAN DONATED BY LAIRD (DOC) JACKSON

FIZZ-WIZZ

by
Bob Aberle

AUBREY KOCHMAN's "FIZZ-WIZZ-176"

Originally a CO2 powered free-flight, now enlarged with RC and electric power, scaled up to 176 sq.in. And weighing 8.4 ounces

BACKGROUND

Once again I used plans that appeared in RC MICRO WORLD, as my inspiration for a new construction article.

Several months back, Roland ran a plan for an Aubrey Kochman CO2 powered free flight model. This plane was called the "FIZZ-WIZZ" and originally appeared in a 1962 issue of American Modeler (Air Trails).

The plane had a 28 inch wing span and 140 square inches of wing area. Power was supplied by an OK Cub (Herkimer) CO2 motor that operated from CO2 soda bottle cartridges. I found the lines of this plane very appealing and that is what prompted this construction article.

CHANGES MADE to ORIGINAL

Just to give you an idea of the size, this is a photo of me holding the updated version of the FIZZ-WIZZ.



Usually my designs are reduced in size from the original. In this case I increased the plane from 140 square inches of wing area to 176. The wing span was increased from 28 to 32 inches. Here are several photos of the finished product.



Normally I make several standard design changes. I've learned a lot by designing 64 micro/parking lot aircraft over the last ten years.

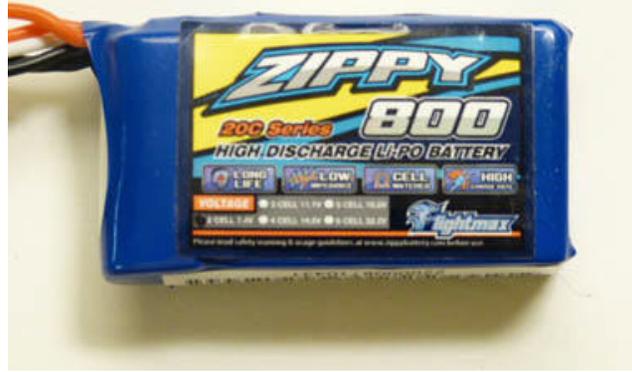
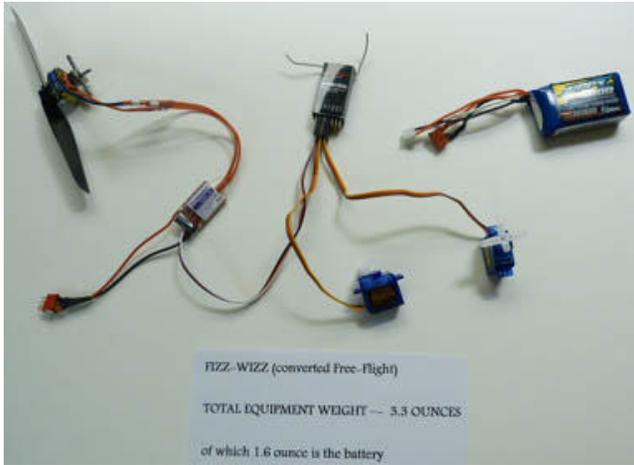
In this case the nose was slightly lengthened. I added area to the stab and the vertical fin and reduced the dihedral angle since free-flight models usually had considerable dihedral.

But I also tried something new with this design. I usually employ a flat sheet balsa stab. This time I added an airfoil shape to the stab. By doing this I was able to move the CG location a little more aft. In turn, I didn't have to extend the nose very much.

I came up with an easy way to add the airfoil to the stab which I will discuss later. The resulting plane, at under 8.4 ounces turned out to be a wonderful sport flyer. Best of all – it just looks good!

RADIO and POWER SYSTEMS

This is the complete RC and Power System for the FIZZ-WIZZ. Total weight as you see it is 3.3 ounces.



CONSTRUCTION NOTES

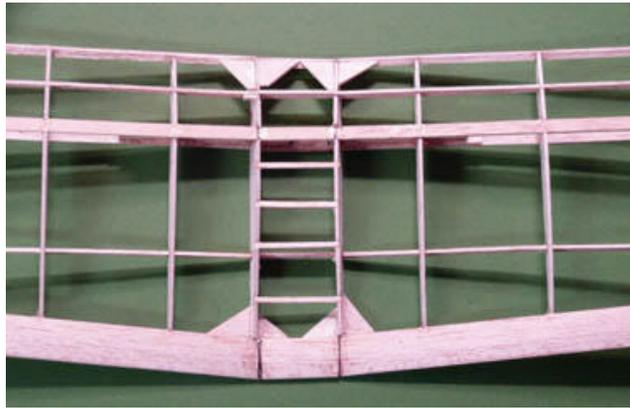
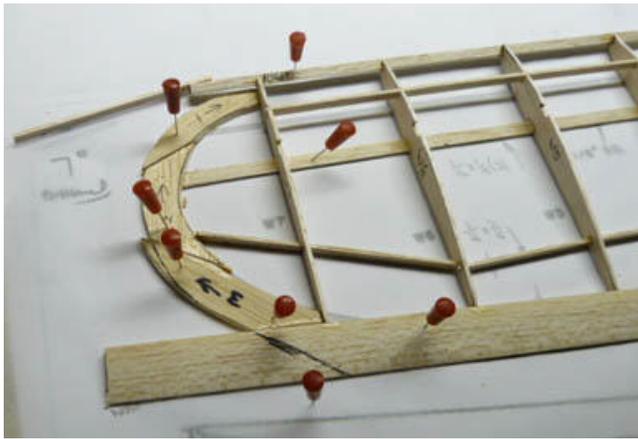
I always start construction with the wing. I make up my own "kit" as you can see in the next photo.



Let me give you a few tips at this point. I prefer to use spruce or basswood for my wing spars. In my case the two main spars and the rear spar were fashioned from spruce. If you can't find spruce or basswood, I suggest you substitute very hard 1/16 inch balsa.

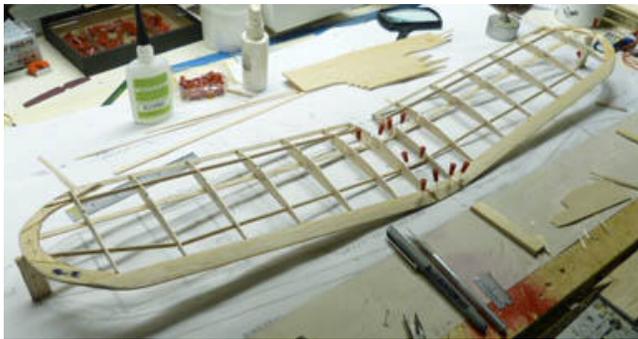
Most of my designs employed constant chord wings, which means that all the ribs are identical size. On this model the design called for a taper in the wing trailing edge. This makes it necessary to cut out ribs of different lengths. But I assure you that it was still an easy job. The next few photos show the wing assembly sequence.





Next install a main spar that tapers from the center to the tip. At the center it is 3/16 (standing up). That spar gets progressively thinner as it approaches the tip where it blends into the 1/8 inch tip.

Next bend ribs from 1/16 medium to soft balsa (1/16 x 1/4) over the spar. This creates an airfoil for the stab. A rear spar gets added later on. Keep in mind that no ribs are necessary.

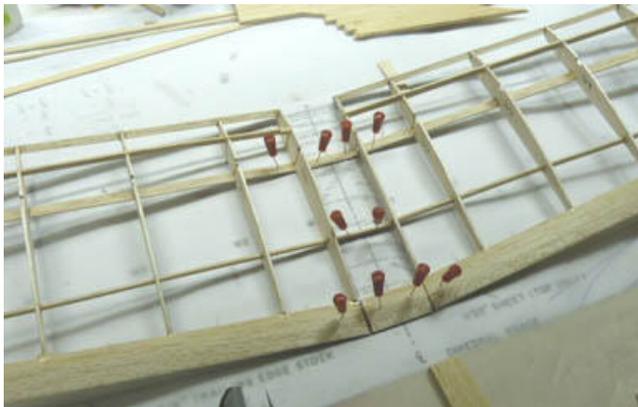


Here is the completed wing ready for covering with Solite iron-on material.

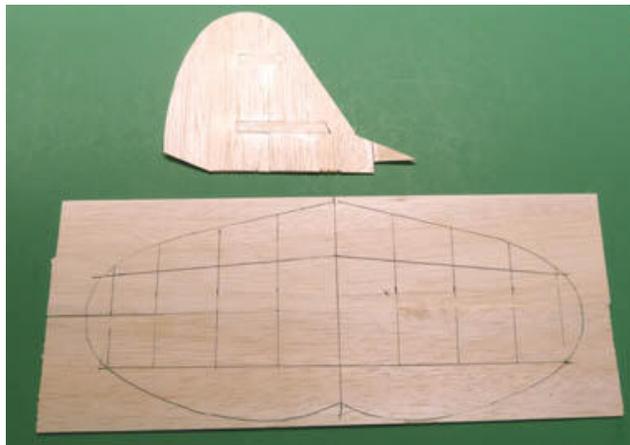


When installing the two center ribs make provision for the vertical fin that goes between these two ribs after the stab is covered.

Now we get to that special stab construction that I referred to earlier. Lay out 1/16 medium balsa on your building board and then draw the stab outline on to that balsa.



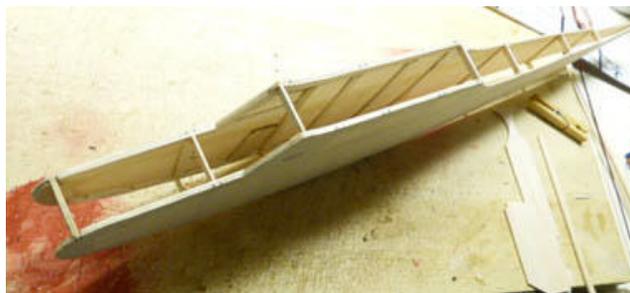
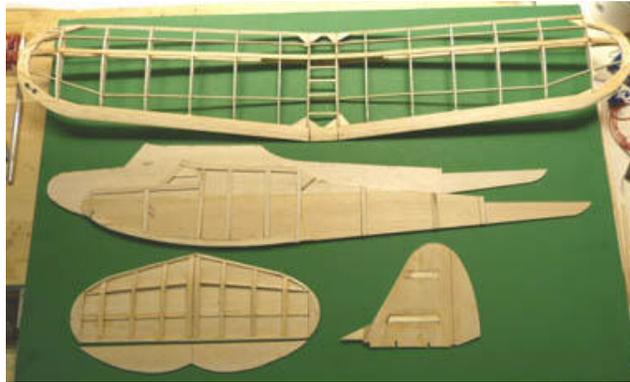
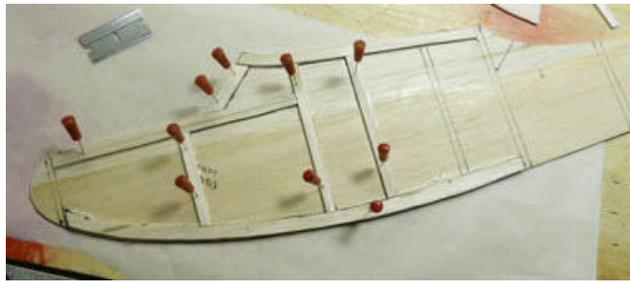
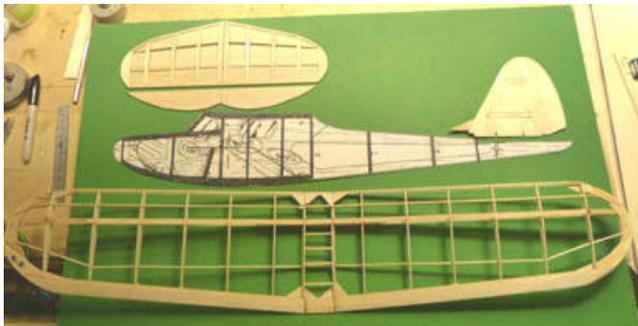
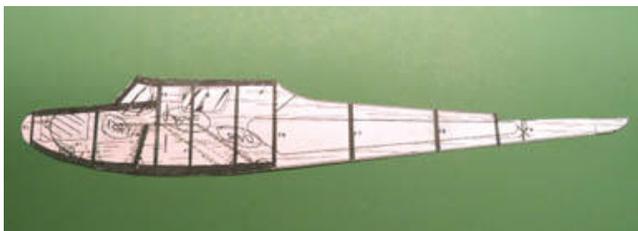
Several hardwood strips are placed at the top, center section, to prevent the rubber bands from penetrating the wing)





Now we move on to the fuselage. I use manilla file folders and attach plan copies with rubber cement to use as templates. The sides are cut from 1/16 inch medium balsa.

I also added several doublers and reinforcing stringers to the inside surface of both fuselage sides. Remember you need one left side and one right side. This should be very straight forward.



The fuselage takes shape with the added cross pieces

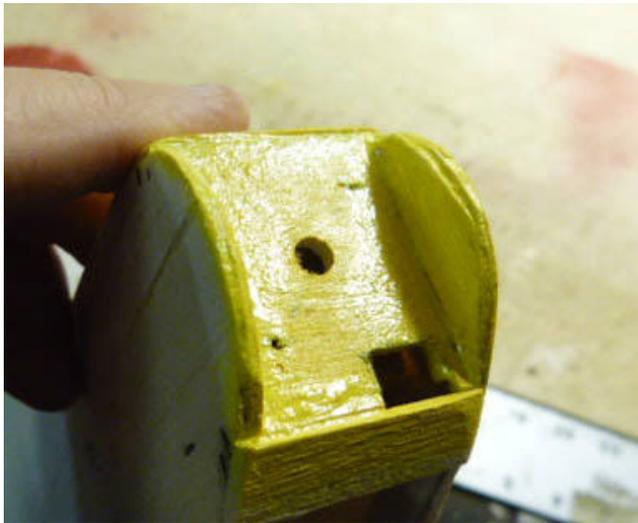


Next the battery compartment is fashioned from 1/16 balsa. The battery will be accessible from the top. You will end up mounting the ESC to the bottom of the battery compartment floor.

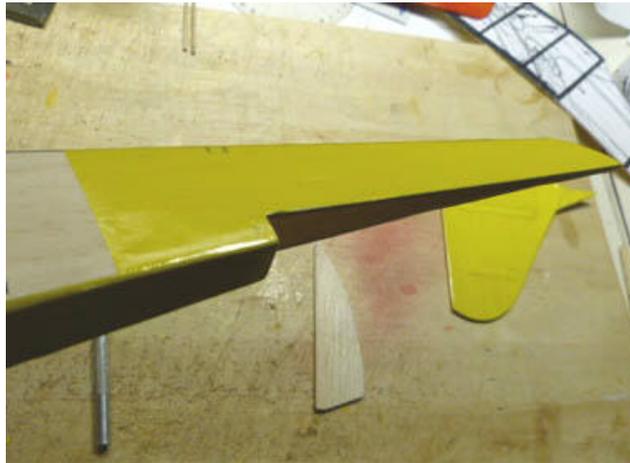




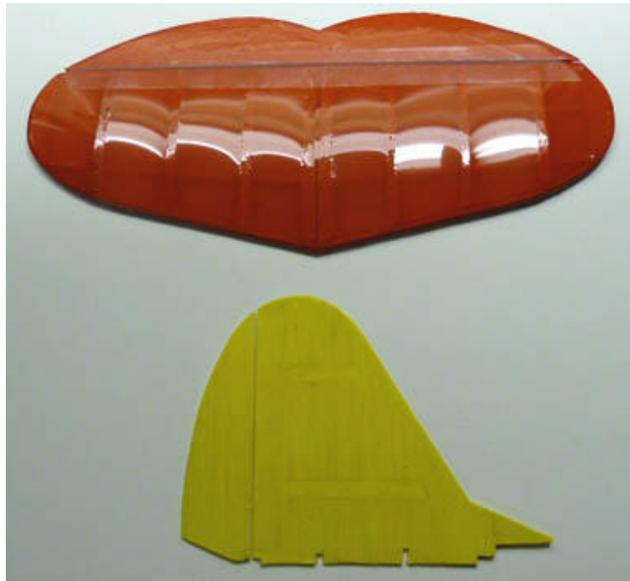
The 1/8 ply firewall is next. Make sure you have a clearance hole to allow the motor cable to reach the ESC.



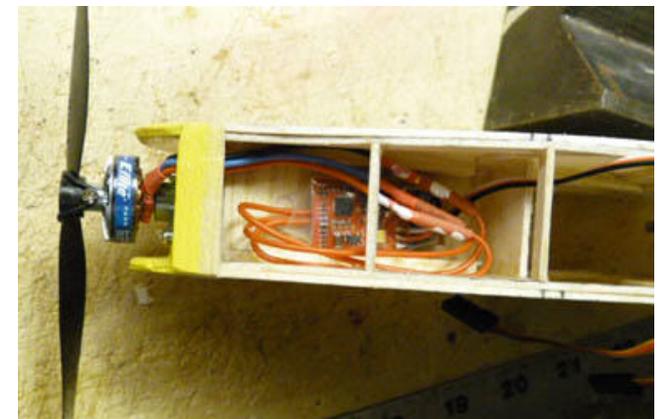
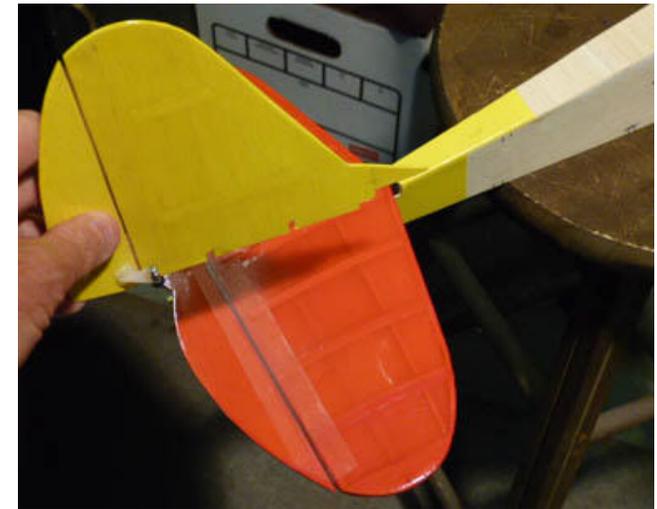
At this point I pre-cover the rear end of the fuselage with my Solite material. This makes it easier when running control rods through the fuselage.



Now cover the stab, elevator, vertical fin and rudder. Attach the rudder and elevator with DuBro electric flyer hinge tape.



The stab and fin are installed using 5 minute epoxy cement. Make sure you align these surfaces with respect to the wing location.



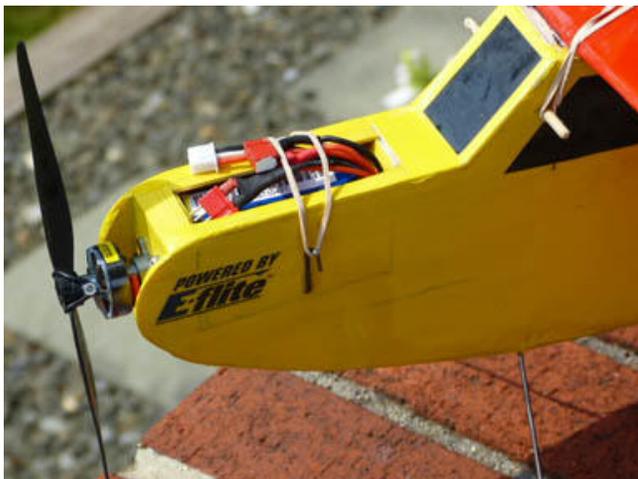
The ESC is mounted behind the firewall and under the battery compartment using double sided tape.



The receiver is mounted right at the wing leading edge again with double sided tape. The two servos are on opposite sides inside the fuselage, behind the receiver.



The plane is next covered with Solite iron-on material and the battery is inserted from the top and held in place with a rubber band.



Here's an overall shot of the finished FIZZ-WIZZ.



This shows the DuBro 1 1/2 inch diameter micro wheels and 1/16 inch diameter landing gear strut.



The simulated windows are cut from 3M adhesive backed material supplied by SR Batteries, Inc. (www.srbatteries.com)

FINAL CG and CONTROL THROWS

The final CG position worked out at 2 1/4 inches back from the wing leading edge. This is about 35%, where normally my CG locations are more like 25%. There was no tendency for the plane to be tail heavy at the 35% mark. So the addition of an airfoil on the stabilizer may have helped. I expect to try this concept more in the future.

Control throws were as follows: the rudder moves 1/2 inch either side of the neutral position, while the elevator is 3/8 inch either side. No expo rate was employed.

FLYING

As usual my flying buddy and club president of SEFLI (the folks who run the NEAT Fair), did the honors of the first flight



We made several flights in at least 10 mph winds, without any difficulty. The FIZZ-WIZZ hand launched easily and landed slowly without any indication of a stall.

It will maintain altitude at half throttle. This will enable 10-12 minute flights on the 800 mAh Li-Poly battery. All in all a wonderful flyer and as I said – it's just cute!



SUMMARY

This is my 64th micro/parking lot aircraft that I have published in RCMW since 2005. Back issues of all of these designs and their plans are available, just contact Editor, Roland Friestad at www.fullsizeplans.com

At 77 I find myself slowing down some what. I may have still a few more designs remaining before I retire. Any body want to encourage me?

Bob Aberle
barerle@optonline.net
Even when in Florida

SPECIFICATIONS

Model: “**FIZZ-WIZZ-176**”

Designed Originally by noted free-flight modeler, Aubrey Kochman. It appeared as a construction article in a 1962 American Modeler (Air Trails) magazine.

The original had a 28 inch wing span and 140 square inches of wing area. For this presentation it was enlarged to a 32 inch span and 176 square inches of wing area.

TYPE

A vintage free-flight design now revisited as an electric powered RC Park Flyer.

Wingspan: 32 inches

Wing Area: 176 square inches

Length: 27 inches

Weight: 8.4 ounces

Wing Loading 6.9 oz/sq.ft.

RC GEAR USED

Horizon Spectrum DX-7 transmitter operating on 2.4 GHz, a Spectrum AR500 5 channel sport receiver and two Hobby King HXT 500 5 gram micro servos operating the rudder and elevator.

POWER SYSTEM USED

Horizon PARK-250 brushless outrunner motor, GWS 6 X 3 prop, Hobby King Turnigy 10 amp brushless ESC and a Hobby King Zippy 2 cell 800 mAh (20C) Li-Poly battery (1.6 ounces)

POWER SYSTEM PARAMETERS

Prop: GWS 6 X 3

Motor current: 4.7 amps

Voltage: 7.9 volts (under load)

Power Input: 37 watts

Battery Loading: 5.5C
Power Loading: 69.8 watts/pound
Flight Time: 11 minutes but with some motor throttling expect 12 to 14 minutes.

SOURCE REFERENCES

BP Hobbies - CA cement, CA accelerator, Solite covering material, 5 minute epoxy cement and GWS props
www.bphobbies.com

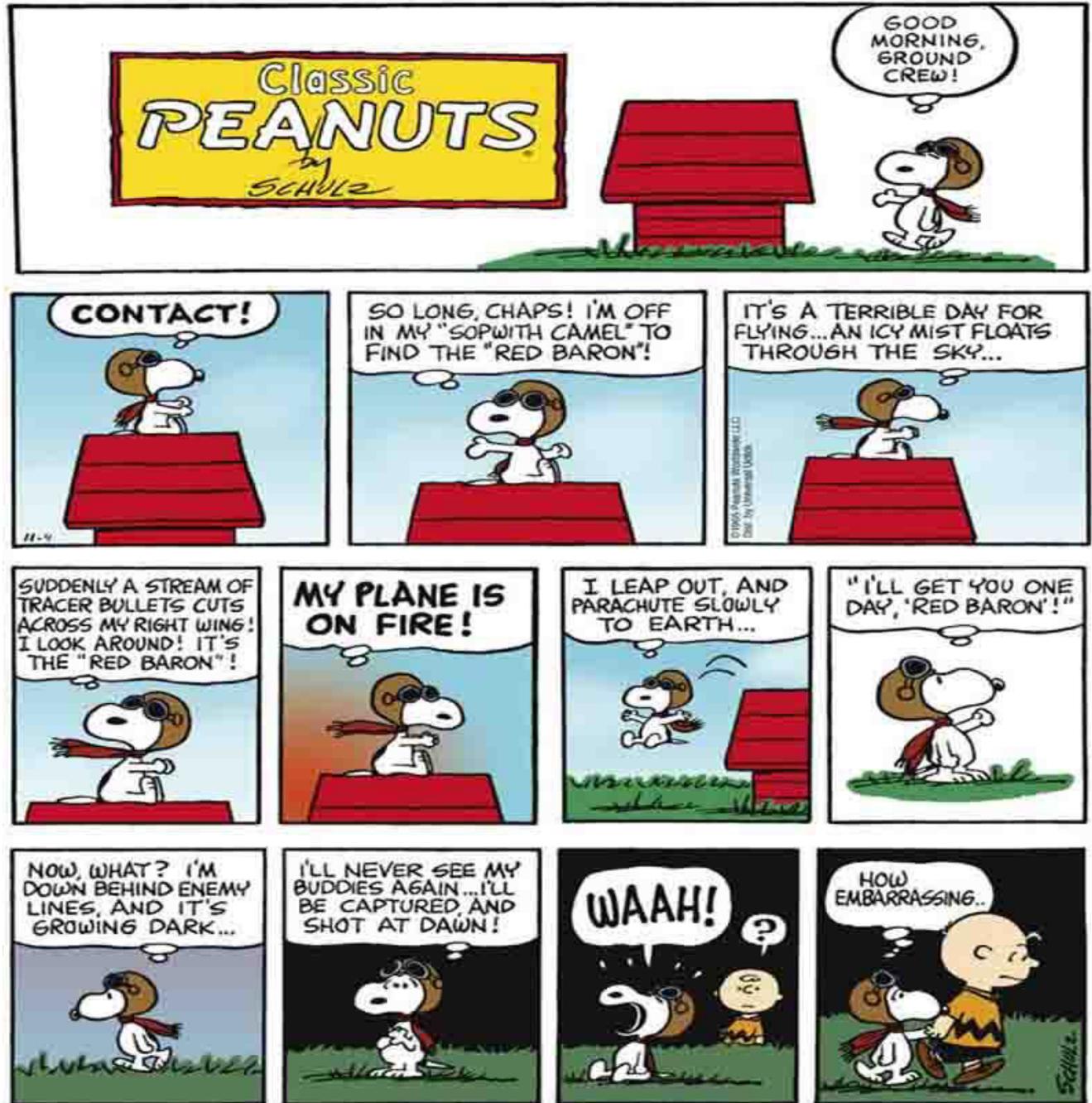
Callie Graphics - AMA license number decals
admin@callie-graphics.com

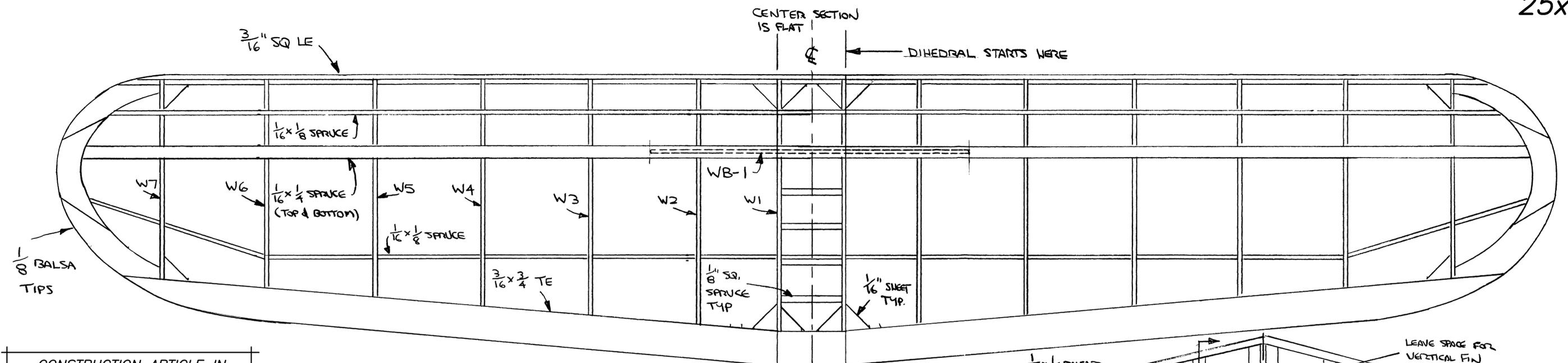
DuBro - 1.50 inch (32 mm) diameter Mini-Lite Wheels (#150MW), micro control horns, mini EZ connectors, electric flyer hinge tape and 1/16 inch wheel collars
www.dubro.com

Hobby King - Two 5 gram servos, 10 amp ESC and a 2 cell 800 mAh Li-Poly battery (as noted in text)
www.hobbyking.com

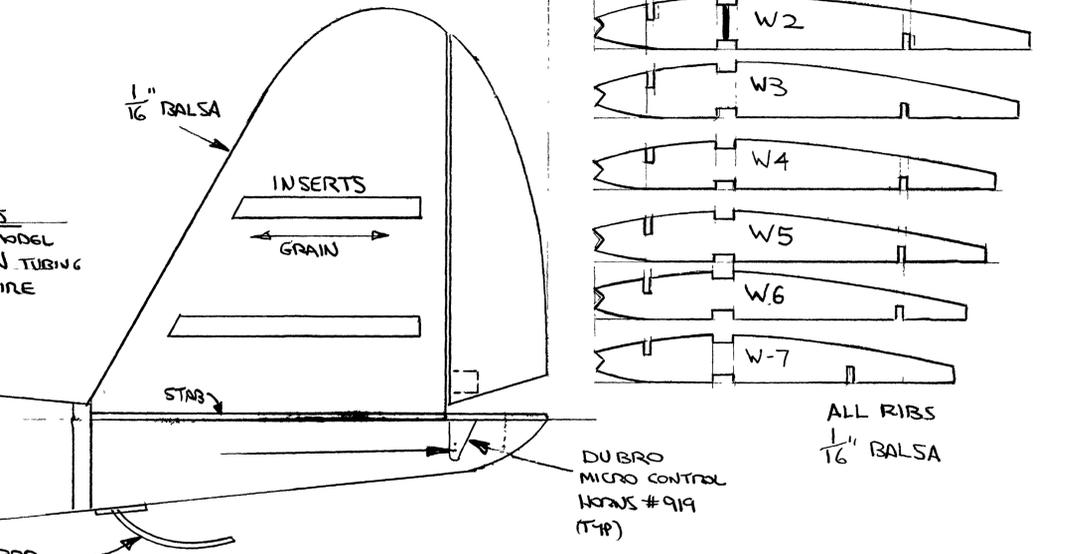
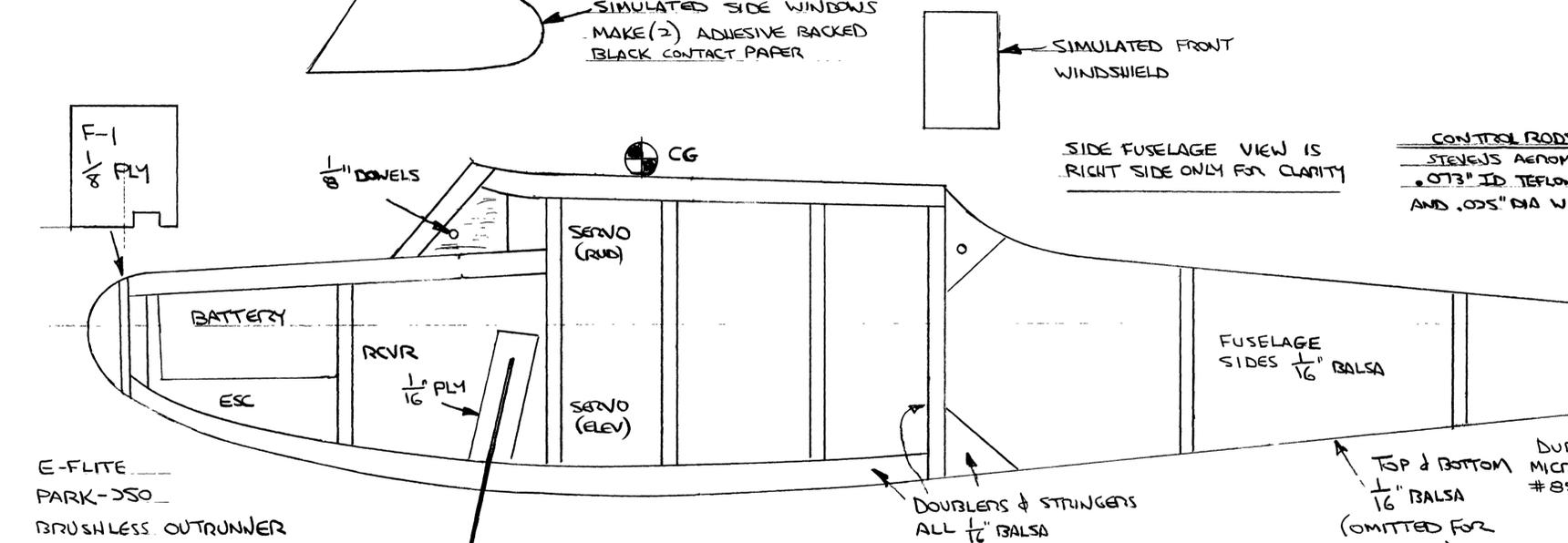
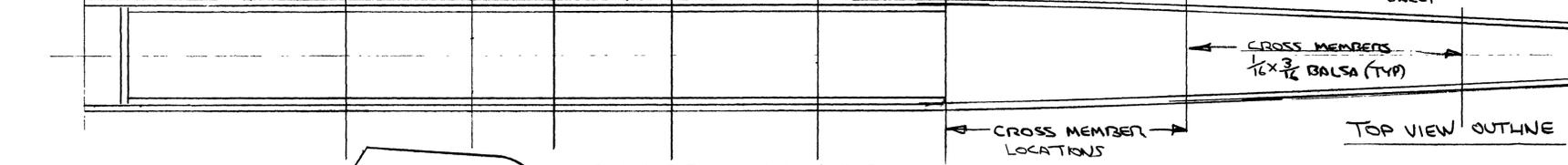
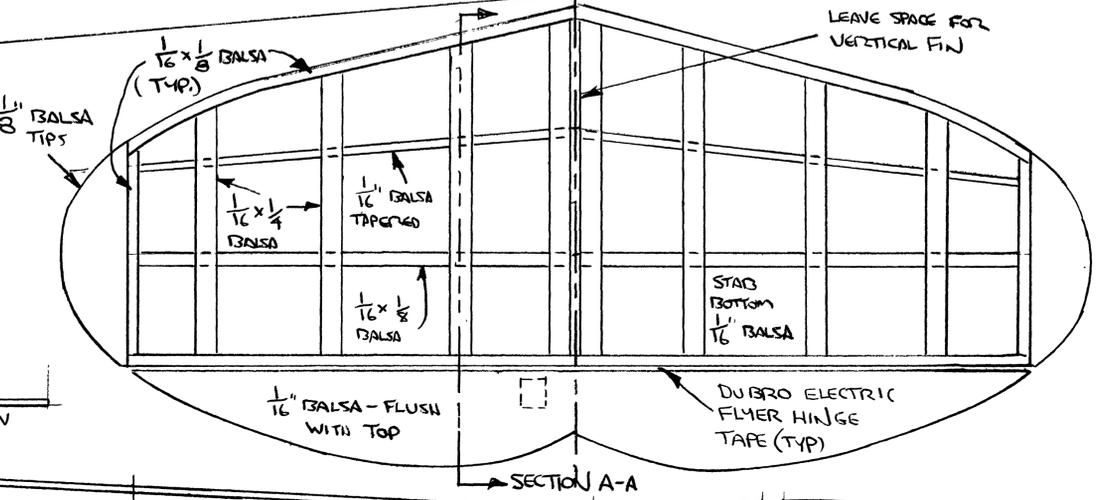
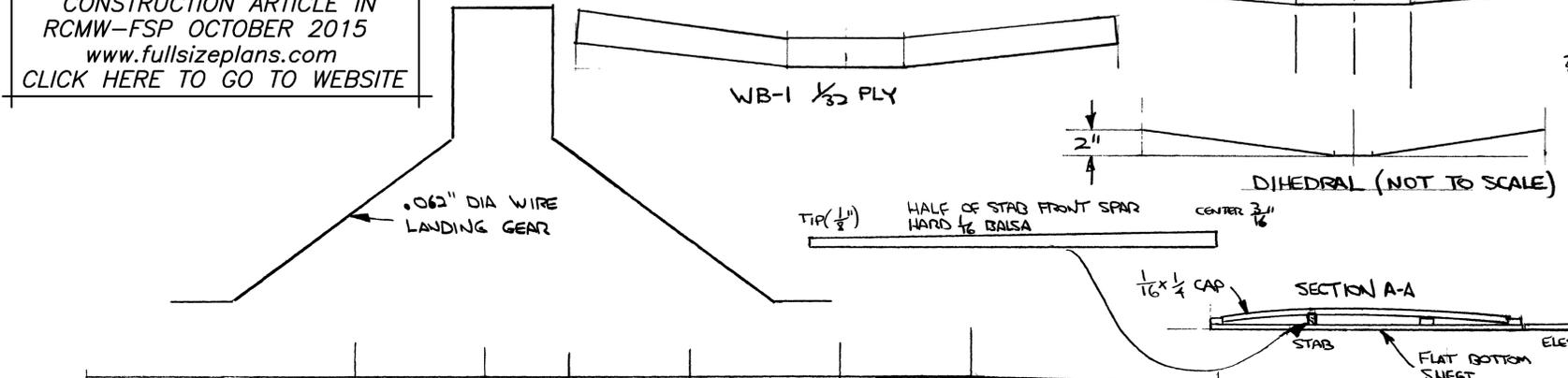
Horizon Hobby - Spectrum DX-7 transmitter, Spectrum AR500 receiver and a PARK-250 brushless outrunner motor
www.horizonhobby.com

Stevens Aero Models - .073 inch OD Yellow Teflon tubing for the elevator and rudder control rods.
<http://stevensaero.com/shop/product.php?productid=16639>





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E-FLITE
PARK-350
BRUSHLESS OUTRUNNER
MOTOR



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FIZZ-WIZZ			
DESIGNED BY AUBREY KOCHNAN - 1962		UPDATED BY BOB ABERLE 2015	
AN ELECTRIC POWERED RC PARK FLYER		AREA - 176 SQ IN	SPAN 32 INCHES
WEIGHT - 8.4 OZ.	WING LOADING 6.9 OZ/SQ FT	POWER INPUT 37 WATTS	
0	1	2	3
4	5	6	7
8	9	10	

Ed Atala 9/15/15

Classy Class "C" Glider

By Elbert J. Weathers

Elbert Weathers, better known for designing some larger free flight gas jobs like the MYSTERY MAN, WESTERNER, PACIFICOASTER and others, wrote up this nice flying 30" span tow-line-glider in the August 1939 issue of Flying Aces. Try it,

Elbert J. Weathers, that Ace designer and model flyer out in California, once more has prepared a top-notch ship that all you lads will want to build. She's right on these pages, the BEST tow-line glider that Weathers has ever turned out!

Flights of up to 33 minutes have been made with this baby. And such swell hops will be on tap for you, too, if you follow instructions carefully in making your version.

THIS GLIDER, designed and built in '33, has since been duplicated by me four times. You see, "fly away" losses have kept me busy making new copies of this sweet little job.

Unofficial flights made to date have been clocked at 21, 28, and 33 minutes, respectively, all after launching with the regulation 100-ft. towline.

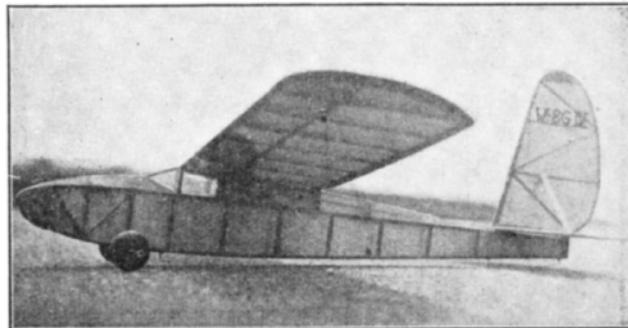
On the 33 minute hop, the ship "thermaled" to a breath-taking high altitude over San Diego, then landed later on the floor of a service station. In making that sit-down, believe

it or not, the ship flew through the 36" width open doorway with its 30" span!

On another occasion, the model flew out of sight over Mission Bay. I thought it was lost, but an obliging citizen eventually notified yours truly as to its whereabouts. Strangely enough, it was found almost at the spot I had been standing on when it sailed away over the bay! Obviously, it had made a round trip over-water flight and returned to dry land!

A really grand send-off was given the last of these jobs I built. It was attached to a Government Weather Bureau altitude balloon that was set to burst at 55,000 ft. You guessed it! Nothing has been heard of it since. Maybe the dad-blamed thing is still combing the high reaches of the ol' stratosphere!

And then there was that other time when--- But heck, I forgot you fellows wanna get to building the ship. Well, go ahead. Who's stoppin' ya?



FUSELAGE

START construction by making the two side frames, using 1/8" sq. balsa. Sand the outside face of each of these frames to a smooth, uniform surface.

The cross-braces are now cut out and cemented in place. When dry, make the tail post from 1/4" sq. balsa and put it in place. Next, cut the formers from 1/16" sheet balsa and cement each in a vertical position.

When the cement has set thoroughly, lay in two lengths of balsa 1/8" sq., upon which the wing rests. For the remaining section on top, between the wing position and tail, use two lengths of 3/32" sq. balsa, cementing each in position.

The balsa used for the nose block should be as firm as possible. Carve it to shape and finish by rounding off the corners. Now, cement the block directly against the end of the fuselage frame.

To make the landing gear, bend a 7-1/4" length of No. 18 piano wire to the shape shown on plans. Make the tow hook and solder it to the landing gear wire in the location shown.

In order to obtain sufficient attachment area, carve a filler from 1/8" sheet balsa and install it in the fuselage bottom. Now cement the landing gear directly to the filler and strengthen the unit.

Bend small staples from pins and sink them in the balsa over the piano wire at the fuselage corners and around the tow hook. Be sure it is a thorough job of attachment as there will be a lot of strain on it because of the tow hook.

Solder washers on the landing gear wire for the inner sides of the wheels.

WING AND TAIL

CUT 15 RIBS, the leading and trailing edges, and wingtips from 1/16" sheet balsa. Carve the 5/16" deep main spar from a hard sheet of 1/8" hard balsa.

When the wing has been built, as shown, cut the main spar, the leading edge, and the trailing edge part way through at the points shown and put 1-1/2" dihedral at each tip.

The upper short compression spar may now be cut and cemented in position. Because of the dihedral now in the wing, spring it to its correct position, flush with the ribs, rather than cut it. For added strength, make blocks from 1/8" sheet and cement them to the main spar where the dihedral was put in.

Cut balsa 3/16" wide from 1/8" sheet stock to form the leading edge on the rudder and stabilizer. The trailing edge of the rudder will also have to be cut from 1/8" stock, as will the stabilizer and rudder tips.

Use 1/8" sq. and 1/16" by 1/8" strips for the remaining construction of the empennage, as shown on plans. To complete, sand to a smooth surface and round all edges nicely.

COVERING AND ASSEMBLY

It is suggested that the wing and stabilizer be covered with yellow paper, using red for the fuselage and rudder. Cover the fuselage first, leaving the top section between formers 1 and 3 uncovered.

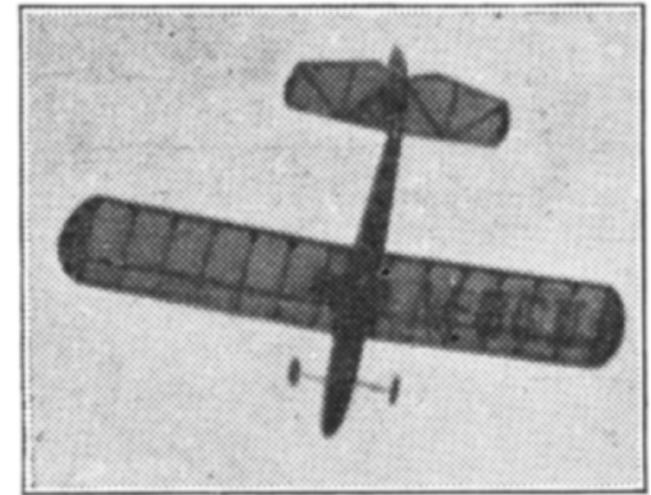
While the cabin braces can't be installed until wing is attached in place, proceed to cover the top section of the fuselage between the nose and windshield. Continue by covering the wing, followed by the tail surfaces.

The assembly may now be started, after first water-shrinking the covering. Cement the wing in its proper location, making sure that it is firmly secured. Now make the 1/8" sq. balsa cabin braces and install them in place.

The front window area of the cabin, or windshield, is made up of three sections of celluloid. Follow with the two side cabin windows.

Next, cement the rudder to the stabilizer, making sure it is at right angles. The tail group is held in place on the fuselage by a strong rubber band.

Before attempting to glide the model, cement in place the correct amount of nose weight behind the nose block. Now hand glide the ship in



the usual manner, and take from, or add to, the nose weight to get as flat a glide as possible.

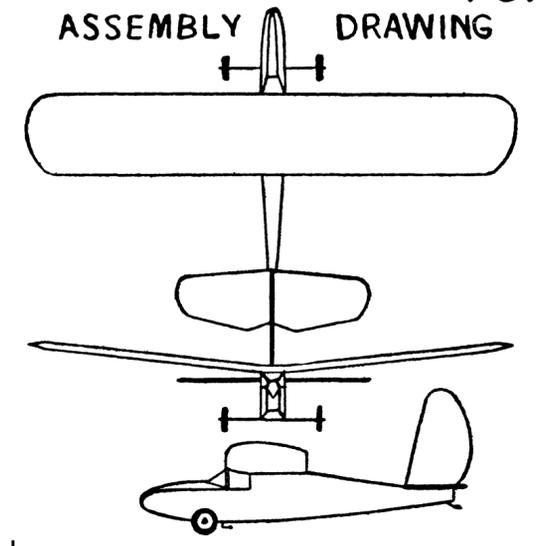
Now that everything's ship-shape, you'd better put your name and address in black letters on the wing of your glider so when she does eventually decide to land in some distant county after a high-thermal hop, the chap who finds her can "take you up" on your "please return in five days."



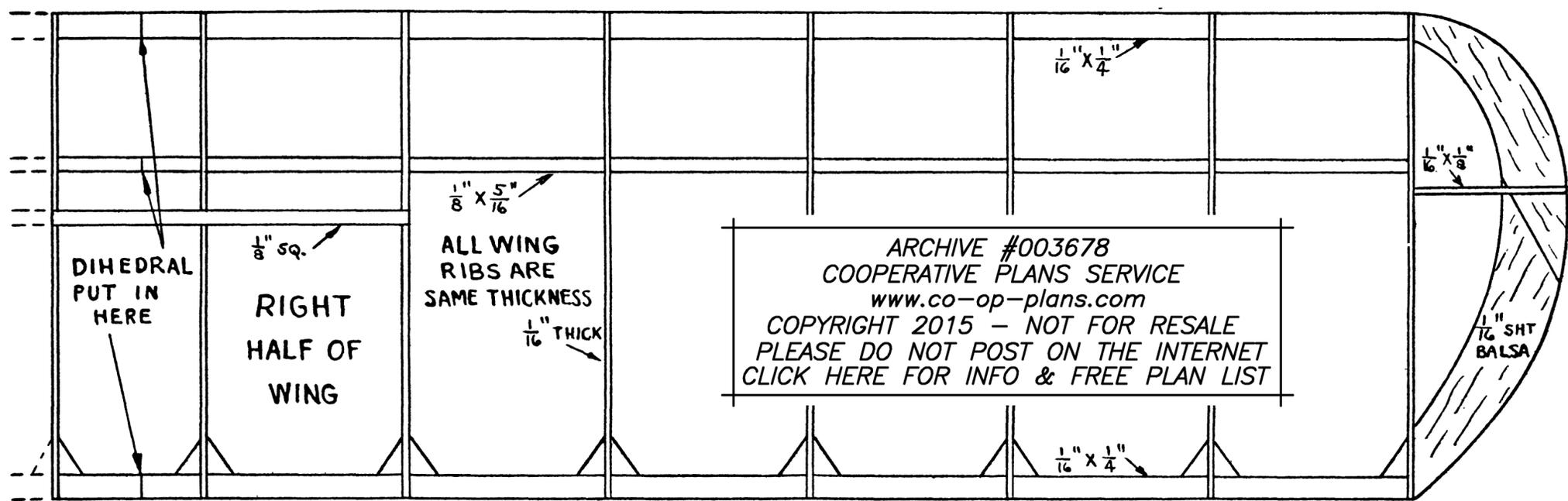
1
HOUR
LATER



ASSEMBLY DRAWING

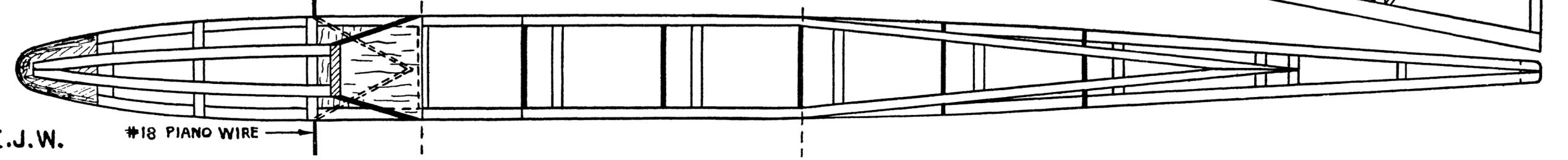
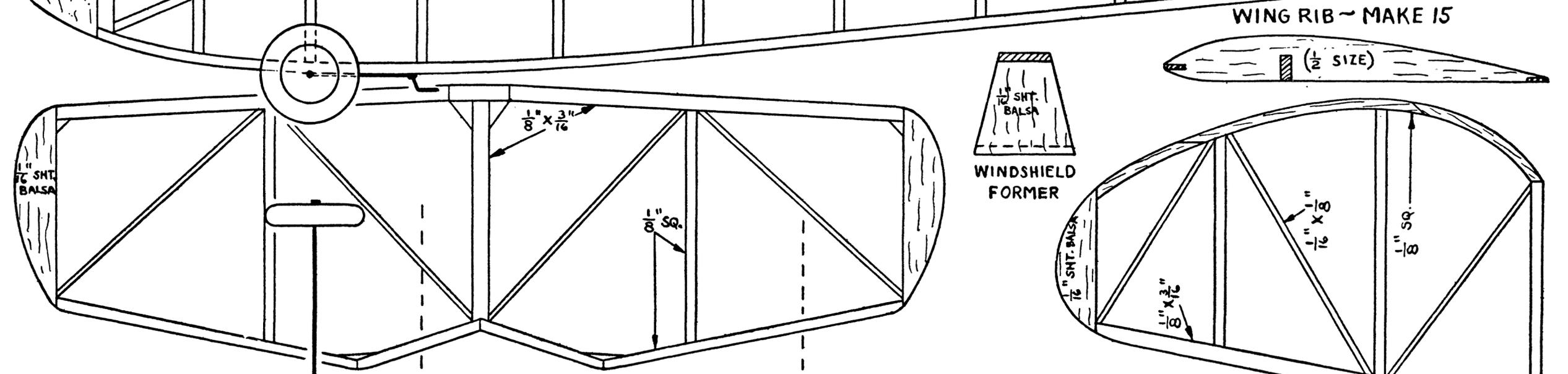
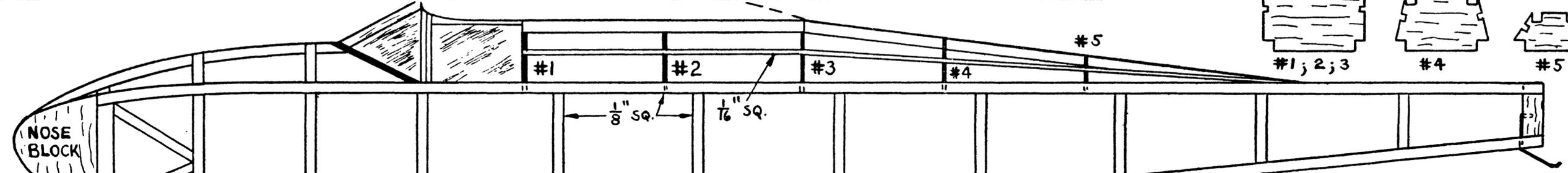
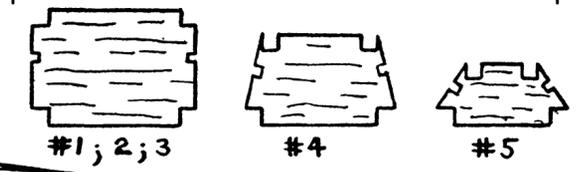


CLASS "C" ~ WING AREA ~ 137.62"



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E.J.W.

#18 PIANO WIRE

ORIGINALLY PUBLISHED IN FLYING ACES AUGUST 1939

Hi-Climber

Earl Stahl, probably best known for his small free flight scale ships, had this rubber powered endurance free flight ship published in the August 1939 issue of Flying Aces. The plan was reprinted in the April 1984 issue of Model Builder. The construction article is from Flying Aces and the plan is from Model Builder.

HOW MANY times have you wanted to build a swell flying sport model—one that would turn in an excellent performance every flight yet isn't too hard to build? Well, here it is, boys—the FLYING ACES Hi-Climber!

Originally designed to provide good flights with a minimum of construction labor, the Hi-Climber in the past eighteen months has repeatedly demonstrated its ability to make consistently good flights.

During the past summer, blue prints of the original plane were given to members of the Model Flying Club, of Johnstown, Pa., and more than a score of successful planes were constructed. In fact, quite a number of these models placed high in several contests.

Any model builder will find the performance of this contest corker interesting. When well adjusted, consistent 90 second flights can be made in most atmospheric conditions, and when the weather is ideal the length of flights is considerably longer.

The longest flight to date lasted 14 min. before the Hi-Climber became invisible in the distance—it was recovered, however, and was finally wrecked by an enthusiastic retriever who fell on it.

The method of construction is quite orthodox. And since the plane is so simple, most any boy will be able to build it. Naturally, it is important to understand the general procedure before actual work is begun, so the plans should be studied carefully.

Most details are shown full size, but such parts as the wing and stabilizer, because of their size, are not shown full scale. (Editor's note - The plan included in this issue of RCMW has the wing and stab shown full size.) Therefore, the first job is to make the proper size plans on a large sheet of paper.

A complete list of necessary materials is provided on the opposite page, and for a few cents your neighborhood model dealer will supply everything needed to build your Hi-Climber.

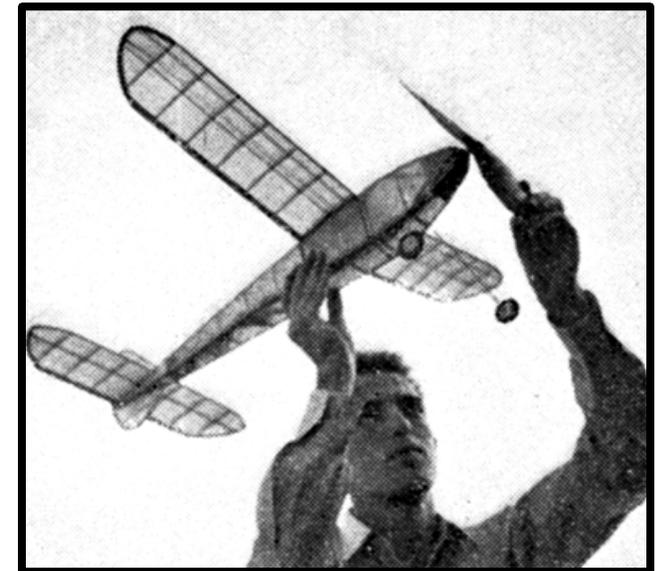
Note the various grades of wood indicated, and try to obtain the exact kind specified. Now, if your workbench has been cleared, and the required tools are on hand—razor blade, small pliers, and pins—you can get to work.

FUSELAGE CONSTRUCTION

BY WORKING directly over the plan, the two sides are built, one over the other (the use of pins, incidentally, will aid in keeping the longerons and uprights in their exact positions until the glue is dry).

It is advisable to build the tail piece as a part of the fuselage, and then, when the unit is entirely completed, it can be cut off.

The diagonal members are cemented directly to the fuselage sides as the plans show, but note that they are on the inside when the top and bottom cross pieces are added to complete the framework.



All joints should be well cemented, since the fuselage is subjected to much strain and punishment. Shaded areas in the front and back are filled with 1/16" balsa on all sides to provide a suitable place to hold the model while winding the rubber motor.

Two thin metal plates should be glued to the back of the fuselage, and a hardwood dowel is fitted through to retain the rubber motor.

The frame is not complete until the landing gear is added. Bend .034 piano wire to the size indicated, bind the struts to the fuselage with strong thread, and glue the small wood gussets in place.

WING AND TAIL

CUT SIXTEEN ribs from a sheet of 1/16" medium balsa, but be very careful and make them exactly as the plans show. The spars should be hard balsa and must fit accurately into the notches in the ribs. This multiple spar type of construction is very strong and helps to retain the airfoil's shape.

The wing tip-pieces are cut from 1/8" sheet balsa and are glued firmly in position. Remember that a good fit makes for neatness.

The plans show the correct angle to incline the end-ribs of each wing-panel so the dihedral will be correct when assembled.

When thoroughly dry, the leading and trailing edges, as well as the tips, should be cut and sanded smooth but do not assemble the three separate pieces (outer panels and center panel) until they are covered.

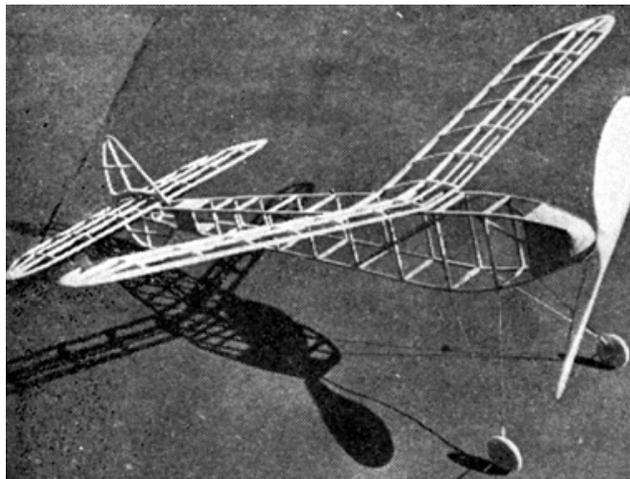
Construction of the Hi-Climber's tail surfaces is so similar to the wing that details are not necessary. However, a full sized stabilizer drawing must be made. The ribs are cut from 1/16" sheet balsa, spars are hard balsa. Work directly over the plans, trim and sand the parts to their proper shapes when dry.

PROPELLER

FOR top-notch flights a good prop is a necessity. Take plenty of time on the job, and make this the best airscrew you ever carved. A hard block of balsa should be blanked out as the drawings specify.

First, drill a tiny hole exactly through the center for the prop shaft—and then carefully carve a right hand prop. Cut the back face of the blades first, about 3/32" of undercamber should be sanded into each one.

Make the blades as thin and efficient as possible while still retaining the necessary strength. Once they are cut to a pleasing, effective shape, the blades should be sanded well and several coats of clear dope applied. Sand lightly between each coat. Three or four applications of heavy dope should give a fine luster.



It is advisable to complete the prop unit now. Make a nose plug from very hard balsa. Looking from the top, the hole through the plug should be slightly to the right---about 2 degrees.

Washers are glued to both sides of the prop and nose plug to reduce friction and prevent wear, and an additional washer glued to the prop provides the catch for the free-wheeling device.

The prop shaft is bent from .040 wire, and should have a loop for winding as well as a free wheeler which is operated by a coil spring. A notch in the nose plug provides the means of holding the unit to the fuselage by a rubber band.

COVERING AND ASSEMBLY

SINCE all the individual parts have been completed, they should be covered at this time. It is advisable to lightly but thoroughly sand the entire framework in order that any imperfections, or bits of roughness, are removed before the covering process is begun.

Colored tissue is used. But select colors that are attractive yet readily seen. Orange and black, red and black, or blue and yellow are especially good combinations.

Notice the direction of the paper's grain, and cover each part with the grain running the longest way. The grain will run span-wise on the wings, and from nose to tail on the fuselage.

Banana oil or light dope is used to adhere the paper. Wrinkles may be eliminated if small, separate pieces of tissue are used on wing tips or other curved parts.



Tighten the tissue by spraying lightly with water. If the surfaces are pinned to a flat board they will not warp. When completely dry, one or two coats of dope are applied — but always dope in a dry room of average temperature to avoid "blushing."

Assembly of the various parts completes the construction. The wing has three inches of dihedral. Elevate both panels the proper amount and firmly glue the center section joints.

The stabilizer and rudder are glued to the tail piece—the stabilizer setting directly atop it and the rudder exactly neutral or slightly to the right.

The plans show the small, curved bamboo pieces which are glued to the top and bottom of the tail piece. Rubber bands are wrapped about these and the dowel pin to hold the tail assembly in position.

A single loop of 1/8" flat rubber holds the wing to the body. Any exposed wood parts such as wheels or nose plug should of course be color doped, and the construction will be finished.

Obtain fresh, brown rubber for the motor. Twelve or fourteen strands should be used, depending on the model's weight. The original ship flew well on twelve strands, but fourteen improved the climb.

The prop shaft should be covered with rubber tubing to prevent cutting the rubber strands, and it should have a catch as shown to keep the wire from straightening when the motor is tightly wound.

Once the motor is lubricated and placed in the fuselage the plane is ready to be flown.

FLYING THE MODEL

THE approximate wing position is indicated and if the plans were followed exactly, the wing and stabilizer angles will be correct. Glide by hand until a long, flat glide is achieved. Sliding the wing fore or aft will correct any diving or stalling tendencies.

Best performance is obtained when the Hi-Climber flies and glides in right hand circles of about 70 foot diameter. Once the glide is good, correct any improper flight attitudes by offsetting the thrust line.

But if a tendency to "mush" is apparent, a sliver of balsa at the top of the nose plug, causing it to pull down slightly, will probably correct it.

Right or left thrust as needed will help make the plane circle exactly as desired while under power.

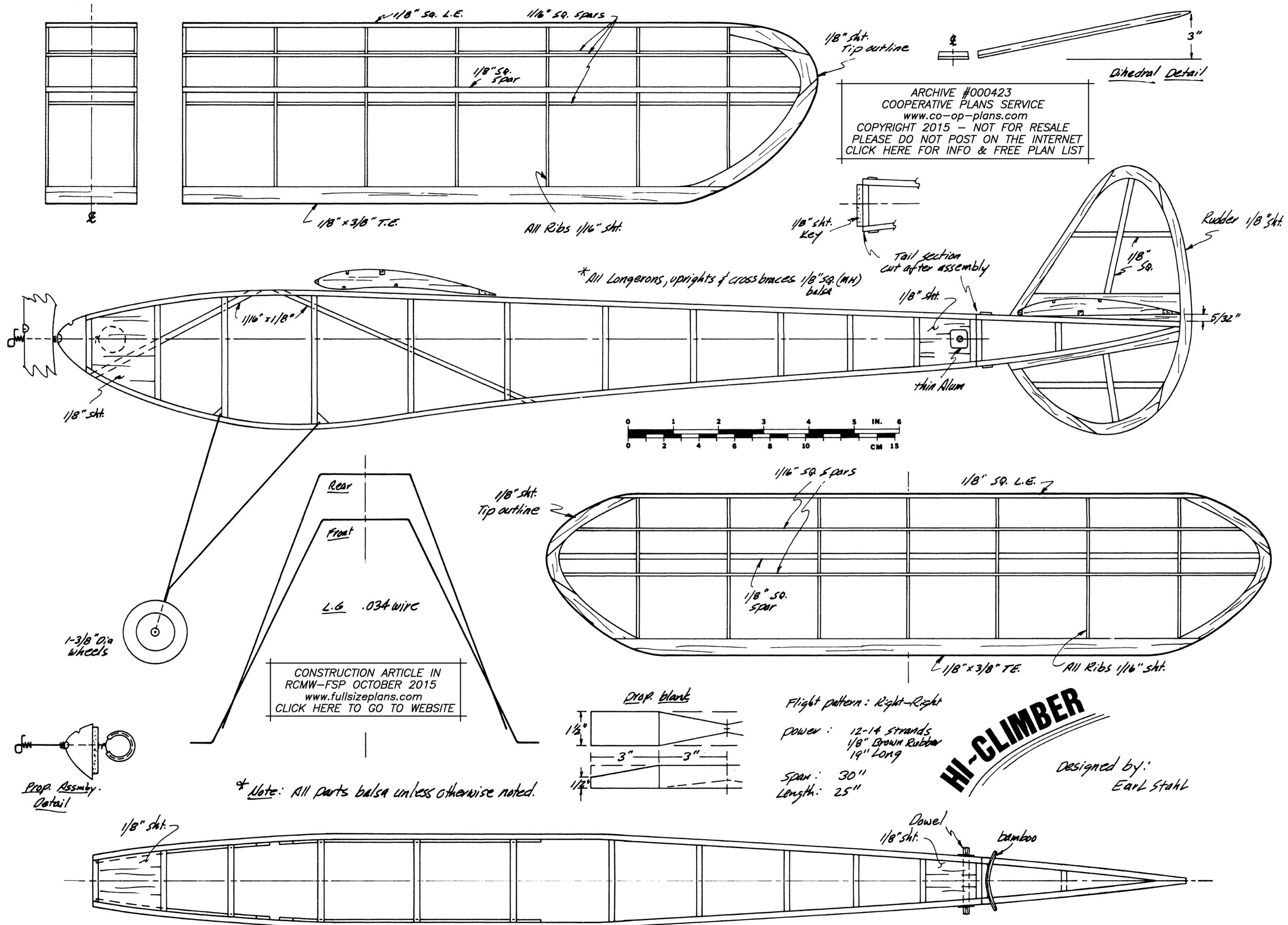
When the adjustments seem satisfactory, a mechanical winder should be used. And the 14 strand motor, if stretched out about two and one-half times, can be safely wound 750 turns.

Don't forget to put your name and address on your Hi-Climber and if you want to photograph it, do it before you fly it—many models have been lost on their first test hops.

Once the Hi-Climber is flying well, don't be content to leave it unchanged. Instead, experiment with different adjustments, try a one blade prop, different power ratios, or your pet airfoil. This is a fine basic design, but possibly you can better it. Why not try?

Bill of Materials

Nine strips 1/8" by 1/8" by 36" medium balsa for fuselage, wing, and tail surfaces;
 Four strips 1/16" by 1/16" by 36" hard balsa for wing;
 Two strips 1/8" by 3/8" by 36" medium balsa for wing and tail surfaces;
 One sheet 1/16" by 2" by 36" soft balsa for ribs and fillers;
 One sheet 1/8" by 2" by 18" medium balsa for wing tips, etc.;
 One block 1" by 1 1/2" by 12" very hard balsa for propeller;
 Hard-wood wheels, washers, 25 feet of 1/8" flat brown rubber, .034 and .040 piano wire, glue, dope, tissue, rubber tubing, pins, and sandpaper.

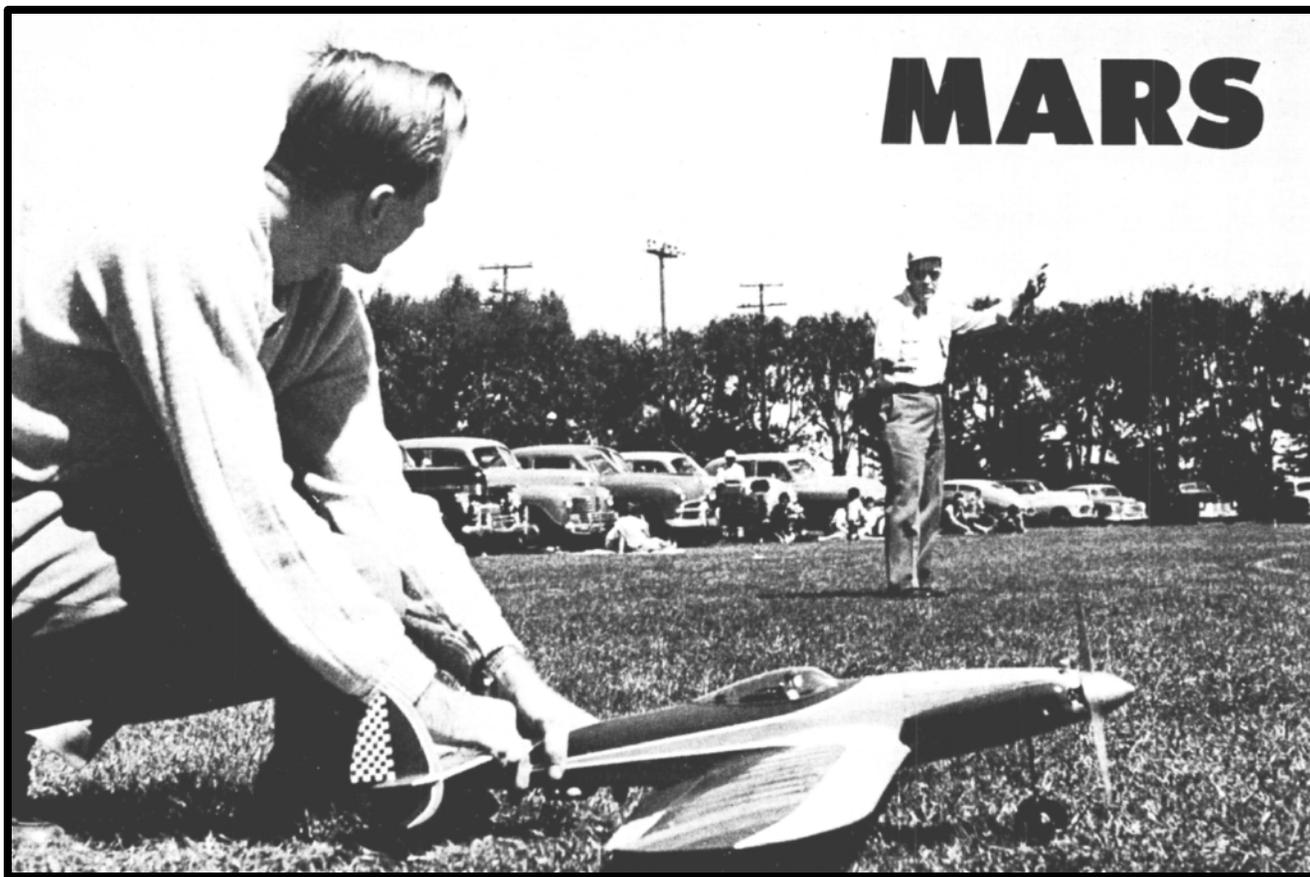


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* Note: All parts balsa unless otherwise noted.

HI-CLIMBER
Designed by:
Earl Stahl

Flight pattern: Right-Right
Power: 12-14 strands
1/8" Brown Rubber
19" Long
Span: 30"
Length: 25"



This attractive stunt ship by Bob Palmer was originally published in the August 1952 issue of Model Airplane News. The full size plan was donated by Hank Chesko.

Stunt flying has greatly changed in the last three years; more time and more realistic design is needed to get those extra points. The Mars is qualified to do the A.M.A. stunt pattern and is designed also, to obtain full appearance points. Span is 49", wing area 404 sq. In.

A.M.A. rules call for a possible 80 points for appearance and give points for certain parts of

the model. Taking into consideration all of these things, I designed the Mars.

I decided upon a tricycle gear because, with this gear, takeoffs can be held a little longer, looking more realistic, and giving you the fullest possible points; also, for good landings. It's difficult to get wheels in perfect place on a conventional landing gear to make good landings without that hopping effect, and with one hop, you'll get only 10 points.

In designing the wing, I have selected a 15 per cent section. Having built wings with different percentage sections, I decided the 15 per cent is ideal.

You will notice in the plans the size of wood in this wing. It's light, but very strong; a little more trouble, but it's worth it. Weight will have a lot to do with performance. Keep this in mind in your purchases and building.

The wing has a little sweep in the tips for appearance and less drag. Using a tricycle gear I could use a double-fin tail. This gives good stability and good action of the elevators.

The cowl is one of the features. By simply removing the one screw, the entire engine and tank is exposed, giving access to removal of either. This, my second experience with side mounting and first completely cowled engine, turned out better than expected. After I hit upon the idea of removing part of the cowl with the hatch block, construction became simple.

Having had quite a bit of experience in tricycle gears before, design was no problem and, in the initial tests, taxiing with full power on all the way around the circle, was not difficult and without swinging in on take-off. Landing required a different approach than with two-wheelers but, after a few practice landings, B-25 landings were a cinch.

This model is equipped with flaps. A lot of trouble has been experienced by persons using flaps for the first time so I'd like to clear up a few misguided ideas.

I've tried all sorts of flaps: big ones, small ones, some in the wing and even double ones. For what you get out of them and the improvement of one over the other, the trailing edge attachment flap is the most simple and ideal for stunt.

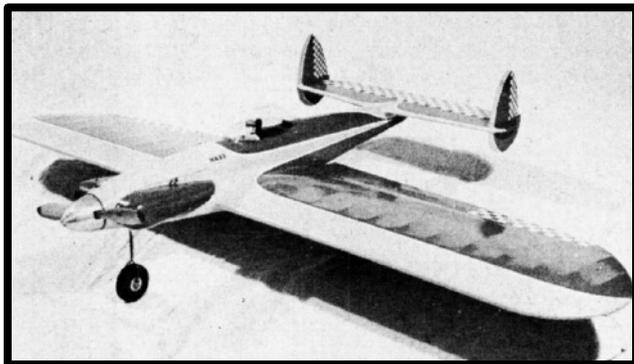
I've gone over a lot of stunters at contests and find the problems were mostly hook up and movement of control surfaces.

The flaps on this model are ideal in size and should move 30° to 35° with the elevator moving 40° to 45°. This allows model to square off, which is needed in the square loop and vertical climb, dive and wing over. The method of hook up to the bellcrank is important. The Mars uses two wires, one for the flaps and the other for the elevator.

Being a consistent winner means careful preparation. I believe almost anyone can do it. Constructing a good airplane is first. So build your model as accurately as you can, especially when installing the engine and accessories.

Fasten the engine and tank securely, using lock washers. Don't be sloppy with your cement joints. Use only enough to insure a good job.

Awaiting a contest to try the Mars in competition, Douglas Spreng and I went to Tucson, Arizona. Doug, with his Mars, came out a top appearance points winner. The interest of attending modelers and spectators thrilled us both, and I knew we had a good all-around stunter for sure.



Cut fuselage doublers using side view. Lay out tank mounts and cement. Install F2 and F1 in place, square assembly and let dry. Cut sides out, including wing slot. Cut bulkheads out and cement in place.

The engine used is a Fox 35, but any 29 or 31 with firewall mounting is perfect. A .19 Torpedo would do well, too. In the case of the Fox, where the three bolts are tapped in the case, I used 4/40 x 3/4 screws and cut them off, then ran a nut upon the case and through the firewall and fastened with another nut and lock washer.

Cut the hatch block out and leave uncountoured until cowl blocks have been cut. By studying plan and seeing where hatch separates, you'll see that part of the cowl block on the right side is cemented to the cowl block. Cement the belly block in place, carve the two cowls and cement on the left one.

Landing gear will require some careful bending. For this reason I used 3/32" wire and soldered it double. You will notice Veco landing gear clips holding the nuts for the three bolts of the engine, thus serving a dual purpose.

Cut the belly block into gear location. Install the engine, lower cowl and hatch block, and carve out until engine has just enough clearance.

Cut the hub of a broken propeller and install the spinner. With the spinner on the hatch blocks and cowl block on, refer to drawing and photographs. Carve to contour of spinner.

The top deck is a solid soft balsa. Tack cement and carve to shape. Carve out the canopy, remove top deck, and finish inside of cockpit. I used railroad paint, but first, prepare wood for finishing as prescribed in the painting of model. I used gray paint for flooring and black for headrest and radio equipment.

Cut ribs as shown and assemble trailing edge. Remember inboard wing is shown on the plan and left wing will be 2" shorter. Splice 36" pieces in overlap of center line; in other words, not at the center line, but the bottom being in overlap, from the top splice on a rib.

Cement up trailing edge on a straight board. By pinning trailing edge in upright position, mark rib locations and insert ribs. Mark location on 3/16" sq. in. spars, and cement and hold with rubber bands.

You will notice holes in ribs for 1/8" sq. in. To make it easy, bandsaw a stack of ribs and drill a 3/16" hole. A 1/8" sq. can be slid through these holes. Cement to each rib assembly, rib 3 and rib 4, and wingtip.

Wingtips are of 1/4" balsa and spliced like free flight. Flaps are of 3/16" balsa and sanded to a tapered edge of 3/32". Assemble flaps with horn and cement horn well. Leave the flaps off until wing is assembled.

Cut the stabilizer and elevator out of 3/8" balsa. Lightly cement stabilizer to elevator, then carve to airfoil shape. Cut out as shown on plan, and insert ribs that are oversize. After they are dry, fair into contour of stabilizer.

Now cut rudders to shape, cut a notch in rudder. The rudder is set in the stabilizer by the tongue method. Set rudder in place and replace the pieces on each side of the tongue. This will help hold your rudders good and secure. Building a thick tail may be new to you, but it really pays off in smoothness and less stalling out.

Install the Veco horn in the elevators, cement hinges on, and cut 3/32" control rod to length, within 5" of bellcrank, by taking brass tubing of 3/32" inside diameter. Saw off lengths of 3/32" and use these instead of washers to hold control rods on the horns, and solder well.

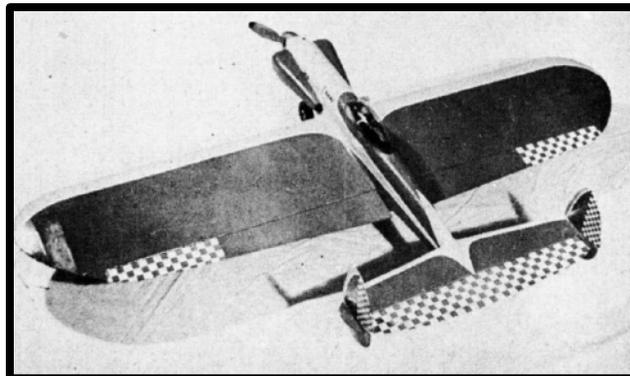
Install the tail on the fuselage, being very careful to line up on center line and horizontally.

This gear not only has spring effect but torsion also. Look at the plan and bend accordingly. Wrap with string and cement well. Bolt landing gear clip on bellcrank floor. Banner wheels are very realistic.

Install Wing in place. Measure landing and trailing edge, to be sure of no incidence. Everything is zero in Mars and the more accurately wing and tail are set, the more you are insured of a steady model.

With the wing in place, connect the control rods. Using tubing to set controls at zero will be easier; that is, rods are cut short and taken up by tubing. Rod to tail should have two guides to keep it from bending under flight pressure.

Make these guides from plywood and cement to bulkheads. Controls should be checked for freedom of movement and oiled before top deck is cemented permanently.



Cement on top deck and install bolt to hold hatch block in place. You will notice a piece of tin is soldered to tank and nut soldered in place.

Painting and finishing is a very important step and should be done with care. Wing and tail are covered with silk and given five coats of dope. Wood parts are doped two times and sanded with 320 wet or dry paper.

A mixture of talcum powder, dope, and castor oil is used to fill the grain. This is very easy and insures lightness and a white undercoat to paint on.

To make the mixture, simply mix talcum powder and thinner until you have a paste, then add a little dope so you can handle it with a brush. Add a few drops of castor oil.

Paint on with a brush about three separate times. Let each coat dry thoroughly. Then sand with 4-0 sandpaper until nice and smooth. Be very careful with fingernails and sharp edges of sandpaper.

Dope over the filling about three to four times and sand with 320. Now you're ready for the painting. If possible, use a spray gun.

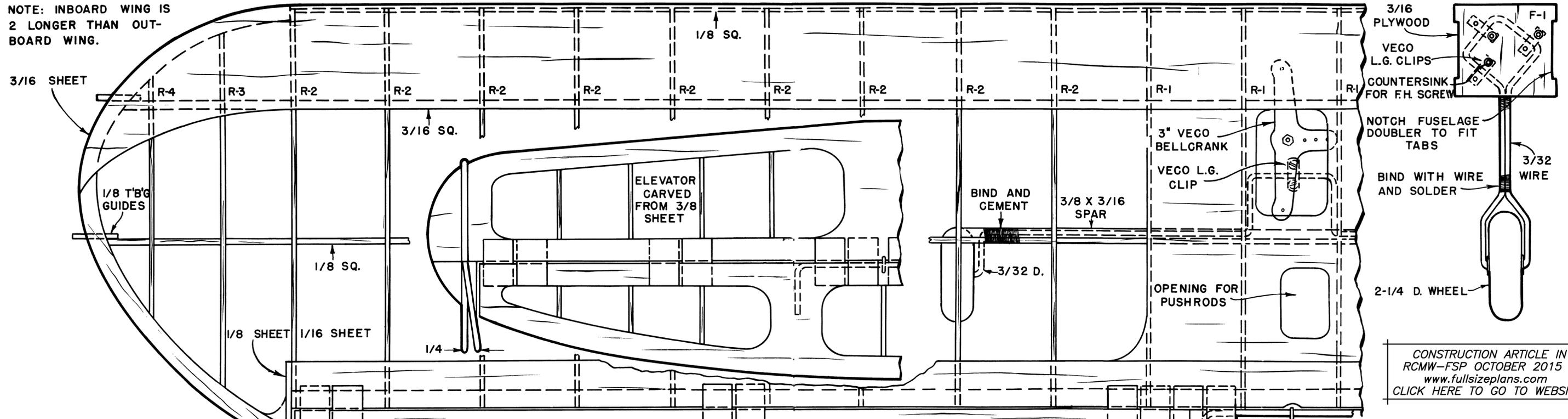
On the Mars, I used yellow and red, with a white stripe, between. I painted the yellow first, taping off the yellow, then I painted the white parts, then taping off the white parts, I sanded the blowby off with 400 sandpaper, giving a smooth surface for the final coat of red.

As you tape off, paint edge of tape with thin dope. This will keep paint from leaking under taped edge and give a smooth sharp edge. The type of paint used was lacquer, doctored by a little castor oil to keep it from cracking.

The engine cavity should be doped about six times and fuel proofed.

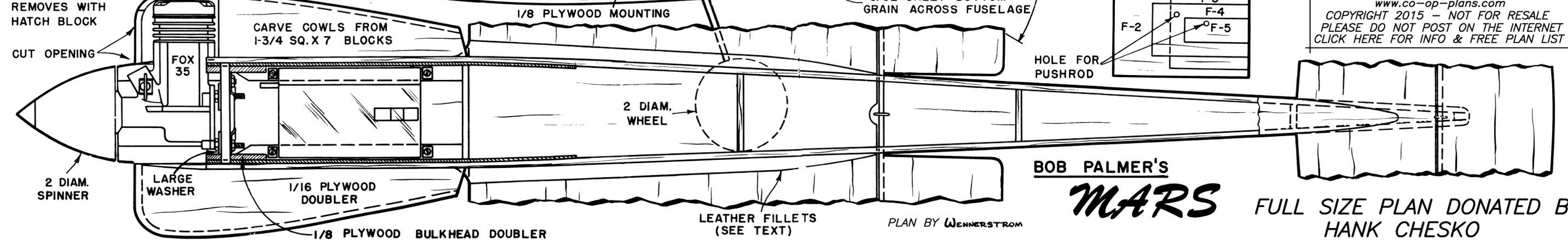
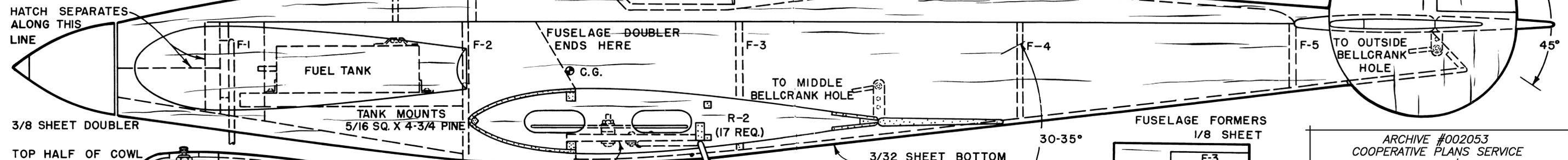
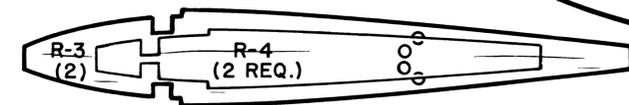


NOTE: INBOARD WING IS 2 LONGER THAN OUT-BOARD WING.



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Old Model Airplane Magazines

If you're like me, you enjoy paging through model airplane magazines and plans, sometimes to find a project to build, to research a particular aircraft, or to just spend some pleasant time away from the daily grind.

If you like to build models, the magazines of today don't offer much since they are primarily expensive catalogs of ready-to-fly models. There's nothing wrong with RTF or ARF models but they don't offer much to interest model BUILDERS.

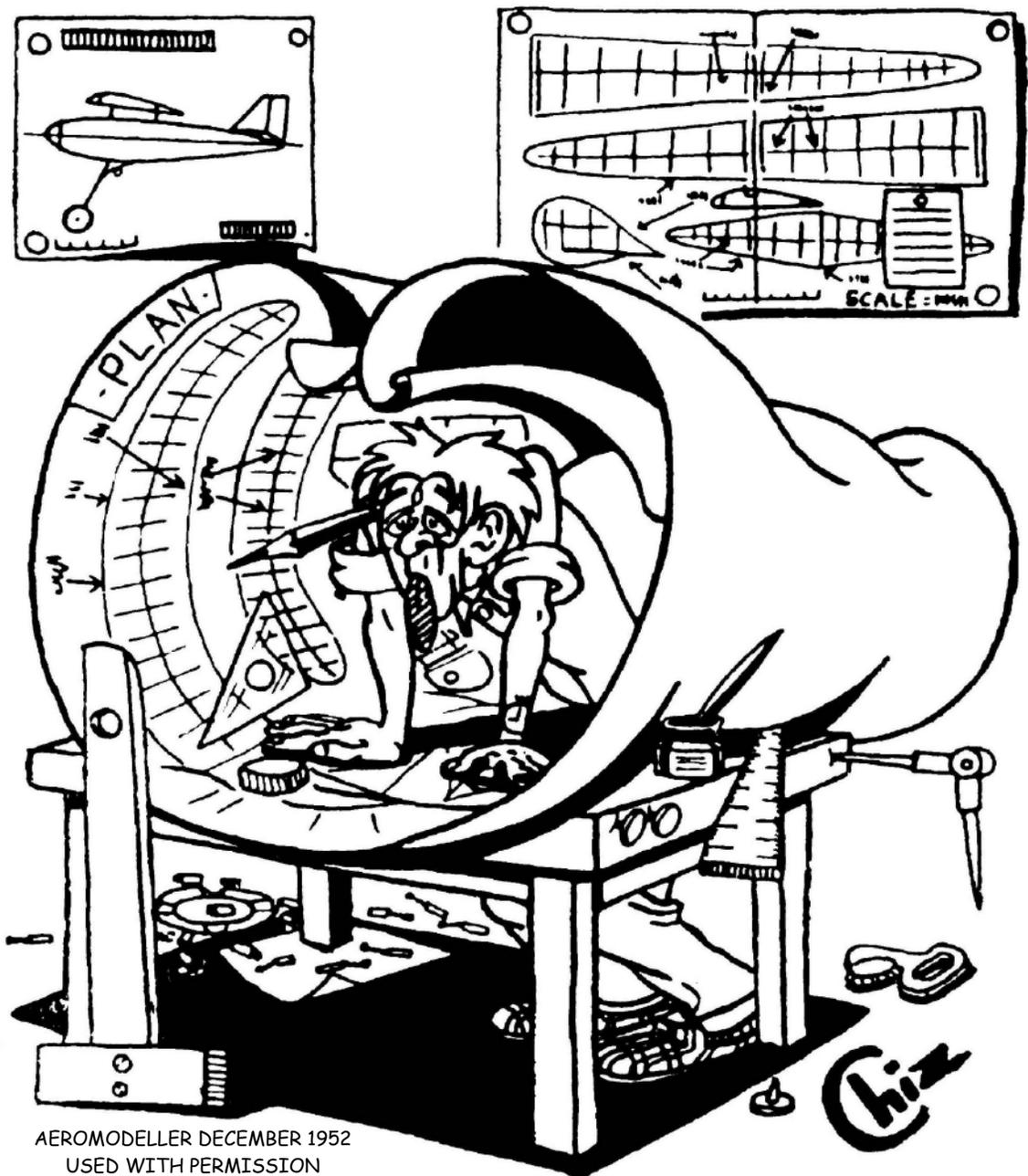
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of *Air Trails*, *Flying Models*, *Model Airplane News*, *Aeromodeller* and many of the several other magazines available "way back when".

If you're a relative newcomer to modeling and want to learn how to build them, those old magazines can provide a wealth of useful information, plans and how-to-do-it articles.

There are several problems with those old magazines. They are sometimes hard to find, often in bad condition, and in many cases they are so fragile that they can fall apart just by turning the pages. This is because they were often printed on pulp paper, also known as newsprint. Newsprint is inexpensive, but has residual chemicals that cause it to deteriorate when exposed to the air and particularly to sunlight. Your wife or "significant other" might also ask "When are you going to get rid of all those smelly old magazines?"

I admit to being a bit of a "nut case" but have been collecting these magazine for over 50 years and now I am trying to digitize them to preserve them for other modelers. They are now available as digital PDF files. See the details on the next page.

Keep 'em Flying - Roland Friestad



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AIR TRAILS ANNUALS -

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MODEL AIRPLANE NEWS - The first issue of this magazine was published in July of 1929 and it is still in publication. We have the following collections currently available ---

D001002 - July 1929 through December 1942 - 161 issues - **\$50**

D001004 - January 1943 through December 1952 - 120 issues - **\$50**

MODEL BUILDER - This magazine ran from the first issue of September~October 1971 through the final issue dated October, 1996 -

D001001 - The complete run - 295 issues - **\$75**

FLYING MODELS - The first issue of this magazine to use the name was published in June of 1947 and it is still in publication. We have the following collections currently available ---

D000013 - June 1947 through December 1963 - 123 issues - **\$50**

RC MICRO FLIGHT & RC MICRO WORLD - The complete run of RC Micro Flight, 1999 through 2004 and all issues of RC Micro World, 2005 through 2012 are available - D001016 - **\$30**

Currently being digitized are complete runs of RC MODELER and AEROMODELLER. RC Modeler is coming along and is scheduled to be done by March 2015 - Aeromodeller should be completed by the end of 2015 - Prices have not been set yet -

The digitizing of several other magazines will follow including MODEL CRAFTSMAN, FLYING ACES, POPULAR AVIATION, MODEL AIRCRAFT (British) and others. This is a long term project. Many thousands of hours and dollars are represented in these collections.

All prices include postage worldwide

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