MAXFAX

Journal of the D. C. Maxecuters

... home of the dreaded POTOMAC PURSUIT SQUADRON of the Flying Aces Club

Editor: Stew Meyers SEPT- OCT 2006

COMING ATTRACTIONS

NATIONAL BUILDING MUSEUM FLYING THIS COMING WINTER

This flying season at the National Building Museum (NBM) will a little different than in previous years.

First, there will be no fall flying events at NBM, and there will be only two flying dates after the new year.

Second the flying dates will be on Saturdays instead of Sundays. Third, the Delta Dart sessions will be on the same day as our flying dates. At this time, the first flying date is scheduled for

Saturday, *January 20, 2007.*

We expect to have a full day of flying with our usual events.

Dan Driscoll will contact us as soon as he has more details and the date of the second flying session. These changes are the result of shifting priorities at NBM. We hope to return to a three flying date schedule in future years.

Indoor flying sessions 12:45 to 2:30 Mondays and Wednesdays at the Bauer Community located south of Rockville, MD at 14625 Bauer Drive. Bauer Dr. crosses Norbeck Rd. (Route 28) about half way between Rockville Pike and Georgia Ave. At the stoplight turn toward the shopping center. At the next light turn away from the shopping center into the parking lot of the center.


1
One of Hurst's favorite models . . .
his design of the General Aristocrat,
kitted by
in the 1970s.
GENERAL
Photo by Dan Driscoll


2
1998
USIC
Johnson City, TN
894
Photo from Jerry Paisley


3
Photos by Wally Farrell


4
12
Photos from Lindsey Smith


Photo by Joe Barish
6


Photo by Joe McGuire
5
N90522
87
87


Photo by Van Hereford
7
21
RAFG
D-BAFG

Guillow's Big SE5 Issue

Stew Meyers

The big 24 inch series Guillow's WWI kits have been issued again; or at least four of them. The Rumpler C-5 and DH-4 have not been reissued yet, but rest assured that I have all the kits. Many of us have built these over the years; built up stock, they were great free flights with an .02. The SE5 having more wing area made a decent pulse rudder job. The construction however is typical Guillow's (read heavy and inefficient). It takes major modification for these to fly well on rubber or electric. The Nieuport is my favorite of the series, but with only 144 sqin it takes a backseat to the wing loading you get with the 208 sqin SE5. I covered the Nieuport in the May-June 2003 issue of MaxFax. This issue deals with the SE5 which I have adapted to Micro R/C. I had built the SE5 years ago beefed up beyond Guillow's standards for a diesel and 2 channels. Since I no longer tolerate supersonic WWI aircraft; this time I went for a more scale flight speed. Since the kit is readily available, I will not reproduce it here, but only show the modified design. If you want to build like the kit, buy the kit. Oh yeah, today they list for $33, but can be had for a little over $20. Today these are laser cut, but there is still too much heavy balsa in them.

I edit this news letter and include what interests me and what I think will interest the rest of the Maxecuters. Usually we have plans that you can build from.

PHOTO PAGE 2

1. Hurst's 'Aristocrat' resting before it's last flight over Geneseo. Read stories by Don Srull and Tom Hallman the July August MAXFAX/
2. Photo sent by Jerry Paisley of this year's 'Cloud Tramp' mass launch at Yorktown. Abram VanDover and Earl Stahl enjoying the festivities
3. An aircraft that did not make it to the FAC Nats last month. Dave Rees and his Focke-Wulf with the starved crew.
4. Lindsey's Mig3 from the Earl Stahl plan with added radiator, intakes and guns, on its undercart. Terrific flight photo of the Mig inset by Laurence Marks.
5. Photo of Ralph Hudson from Bob Schlosberg's 'Cactus Squadron' Newsletter holding his PAR Special Goodyear Racer . The photographer, Joe McGuire is the president and newsletter editor for the Cactus Squadron, and has been for the past six years.
6. Joe Barish could not travel to the FAC NATS either. Here is a photo of Joe with his Curtis Autoplane.
7. .Van Hereford enlarged Hurst's Poncelet plans to become a nifty 1/2A Texaco

Upon reviewing my lightened SE5 plans, I realize these are not complete. It's obvious I relied on the Guillows plans for a lot of details, but I think there's enough there to build one. If I took the time to draw up a full set of plans this issue would really be late. Beyond the lightening of the kit the other feature I want to highlight is my method of rigging wings. And of course I want to put in a plug for building scale wing structure. I also persuaded Don to up date an article on trimming. Pat Daily has an appreciation of his brother.

I also show the nifty $25 Rocky Top 18" SE5. Rocky Top has some of the bets laser cutting I have seen. Check out www.rockytopmodels.com they have pre shaped "S" hooks as well as other models and Esaki tissue.

Guillow's 24" SE5-A

Stew Meyers

This kit like most of the series was based on the Air Age Drawings by William Wylam originally published in Model Airplane News and still available from them. My objectives in working over these Guillow's designs is to build a lighter more crash-worthy (flexible but strong) model that follows the original Guillow's outlines as closely as my sense of scale will let me. For the SE5 I have stuck pretty close to the kit outlines down to the thick wing and slightly non-scale fuselage profile. Of course the fuselage is half shell construction and needs to be changed to longeron construction. I have made both sets of wings plug-in using functional rigging to retain them and lightened the structure moving the spars to more rational positions.

There are two problems associated with building any model biplane. One, how do you locate that upper wing in relation to the lower wing and the rest of the airframe. And two, how do you attach it.

Back when I was a kid, I remember jacking up the upper wings with stacks of books and magazines to try to establish the correct relationship to the fuselage in order to fit up the cabines; lots of eyeballing here. The lower wing was glued to the bottom of the fuselage by eyeball to try to match the upper wing. The fun came when I went to fit up the interplanes , they never were the same length from side to side. Over the years my technique has improved a bit, but the problem has remained. How do you locate that top wing? For a while I favored subjects with simple rectilinear cabines that allowed you to line them up over the plan like a DH-4 or DH- 6. For others, I have carefully jigged the upper wing or at least the center section, and made the cabines to fit. I also usually attached the lower wings with pins and then made the interplane struts to fit between them. Lately, I have improved my building techniques for bipes, using a modified version of Claude's method of wing attach, and believe I have developed an easier, lighter, stronger and more accurate method.

How to get alignment reasonably correct is the problem. On the full scale aircraft, the cabine struts and center sections are jigged and/or rigged into position. Trammeling is one of the more interesting aspects of aircraft assembly that I learned at mechanics school. The adjustment features designed into full scale aircraft are not available on models.

By making an interplane jig, which completely surrounds the ribs with a removable center section that can be reinserted to lock the rib in place, the upper and lower wings can be accurately positioned in relation to each other. Furthermore the interplane struts can be made to an exact length and will fit; after they are pinned in place, the jigs can be removed without being destroyed. All that is necessary is to get the lower wing on accurately (usually not too hard to do) and everything else will fall in place. The cabines can be pinned to the upper wing and the lower ends glued to the fuselage where they fall. Since the jigs can be used as many times as desired, the wings, cabines and fuselage can be set up uncovered and again after covering and painting.

Ribs, Struts, Spars & Such

Good design principles dictate that you try to have the shortest load path possible, if you want the lightest most efficient structure. In full scale practice, this results in struts being connected directly to the wing spars which carry the main lift loads and the longerons which usually carry the fuselage loads. Ribs are almost never used since they are of much lighter construction to only give the aerodynamic shape to the wing.

On small light weight models the spars and ribs are rarely where they were in full scale practice. In models, ribs may be as robust as the spars or the spars may be missing altogether, replaced by a beefed up leading and trailing edge especially in Peaunts. Thus lighter WWI models tend to have the struts attached to the ribs.

This works for peanuts and some larger models, but becomes inefficient with something as heavy as the 24" Guillow's kits. Guillow's has displaced the spars from their scale position to enable the struts to fit in sockets on the ribs. Since we desire to build a lighter more efficient structure, we want to move them back to the full scale position or nearly so. We then need to figure out how to attach the struts to the spars. (Butt gluing the end grain of the strut to the spar is definitely out!). For a light rubber job, monofilament pins work fine. But these models are not that light.

The wing outer panels have short lengths of 1/16th aluminum welding rod as attachment pins glued to the spars. Since we are plugging these into 3/32 od aluminum tubing in the center section, it made sense to try to connect to these pins with the struts, which would result in very little eccentricity in the load path. A tab of aluminum sheet with a 1/16 dia hole in it can be cyanoed into a slot sawn in the end of the cabine strut. This tab fits over the pin and is captured between the center section and the outer panel. Actually upon final assembly the tab will be glued to the center section with ambroid, so that if the outer panel pops off in an overly enthusiastic contact with the ground, the center section will still be in place. Hopefully stretching of the mono-filament rigging will have absorbed any excess energy associated with this. All normal flight loads however are carried from the spars though the pin and tab directly to the strut and thus into the fuselage.

Monofilament rigging is relied upon to hold the wings in place, although rare earth magnets can be used in addition. Rigging attachment points are made from paper staples, fish hooks, or twisted soft wire and cyanoed in place. The interplane struts are attached with monofilament pins. However strip of Sig hinge material is used on the upper end to prevent strut rotation.

The secret to getting parts to fit or align properly is to make everything exact (not likely) or to hold a few key references and match pieces to them (a much better bet) with the ability to adjust the other end of the piece to fit. The plug in wings and struts of this model are a case in point. On the lower wings, if the pins in the outer panels were just put in over the plans and the tubes in the fuselage were done the same way, you would never be able to plug them in. They need to be matched since our building tolerances rarely are better than 1/64th (.016") and the fit of nesting

tubing is on the order of .002 nearly an order of magnitude difference.

When laying out the fuselage sides, the lower wing rear spar attach point is transferred to the balsa along with the outlines and bulkhead locaters. (An Acetone filled felt tip is used to burnish the laser copier toner to the balsa making a nice piece of print wood.) This is drilled out with a sharpened 3/32 brass tube before assembly. The lower wing forward spar attach point was not drilled out at this time. The fuselage is assembled upside down (the top is flat) with a length of aluminum tubing inserted in the spar attach hole to aid in alignment. I might mention here that I used Peter Rake's method of building the sheet forward fuselage and built up aft section separately and joining them after each was sub- assembled. The rear fuselage section is built up next and joined to the forward section, again inverted over a reference drawing.

A master rib jig is built of 1/8th plywood to locate the wing pins and mating sleeves. It does not have notches for LE, TE, or spars, but does have holes drilled in it 1/32th larger than the socket tube used in the upper wing center section. In reality it can just be a rectangular shape but should be exactly the length and height of the rib to aid in registry. Since we are using 3/32 tubing here these holes are 1/8 in diameter. Use a drill press to get the hole normal to the rib. These holes are bushed with 1/8 od brass tube which has a 3/32 id. Two more bushes are made up of 3/32 brass tubing for drilling the 1/16th rod holes with this jig.

Once the master rib jig is fabricated, it can be used as a drill jig to locate the forward lower wing fuselage spar mount tube. The jig is pinned to one side of the fuselage with a length of 3/32 music wire in the rear spar mount location. The incidence of the lower wing is set with a simple spacer under the jig. A 3/32 drill or sharpened length of brass tubing is run through the jig forward spar bush to match drill the fuselage side. The other side is similarly done.

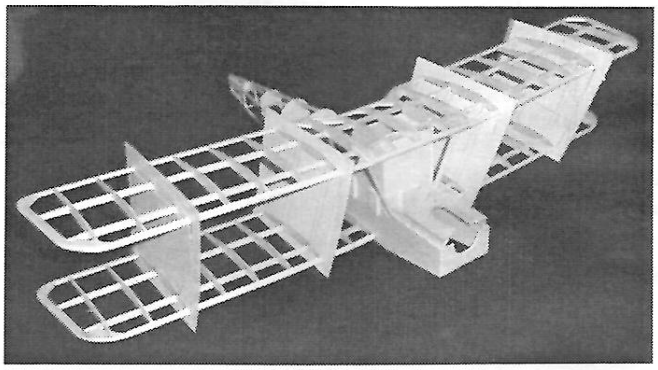
A 3/32 music wire is then inserted in both sets of the lower wing spar mount holes to see if they look parallel. Once satisfied, 3/32 al tubes are then cyanoed in place to provide the lower wing spar mounts. These mounts extends across the fuselage.

The upper wing center section is built next. The master rib jig is used to locate the 3/32 spar mount sockets on both sides. Drill out these with a 3/32 sharpened brass tube or drill. The 3/32 aluminum sleeves can now be glued in place in the center section.

When the lower wing and upper wing outboard panels are built, the master rib jig is used as a locating jig for the solid 1/16th aluminum mounting pins in the outer panels. In this case the 3/32 od bushes are used.

A tab of .015 aluminum sheet is cyanoed into a slot sawn in the end of the cabine strut. A 1/16 dia hole in this tab fits over the mounting pin.

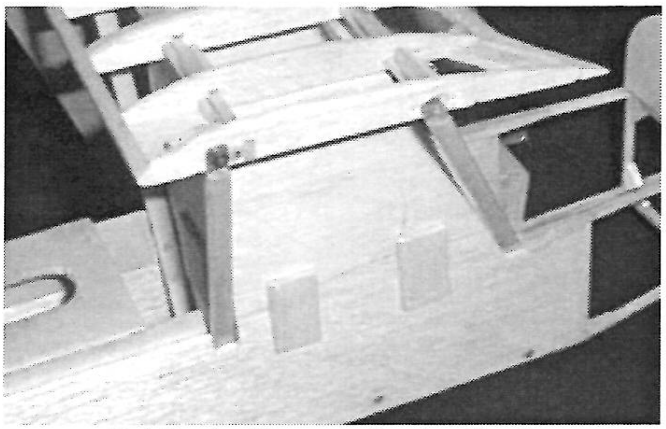
A simple CS jig locates the upper wing center section laterally, the outer panels are plugged in, capturing the cabin strut upper ends and the interplane wing jigs are used to accurately align the wings. Refer to the photo.



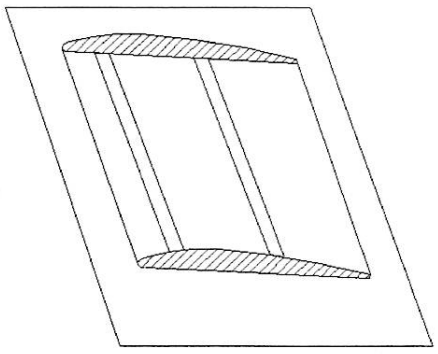
Interplane wing jigs in use.

When everything is copesetic, the lower ends of the cabines are glued to the locating bulkheads. Since we are not really attaching the cabines directly to the longerons, the sides must be notched to allow the strut to pass though them and get cantilevered from the bulkhead. The fuselage is sheet in this area, so that works out fine.

This model is not really finished-- no dummy motors exhausts or pilot. I probably will make some lighter wheels than the William's Brothers on it now. I would do a few things differently, if I were to build it today. I would mount the motor differently, by the way it's a Fiago in a GWS gearbox. I would move the front spar forward to a more scale position. Note the forward cabine is bolted to the center section since the spar is too far aft to use the pin as in the aft cabine.



Details of cabine mount on locating jig.

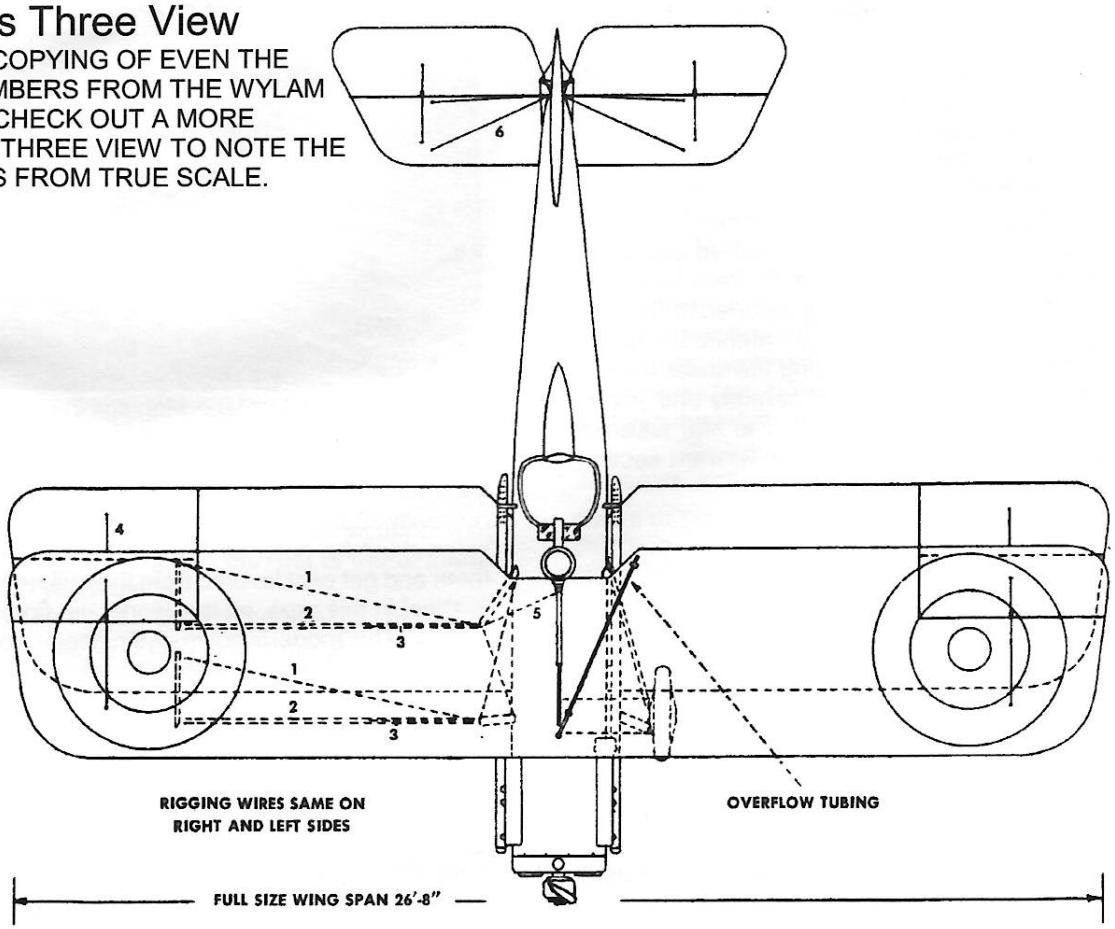


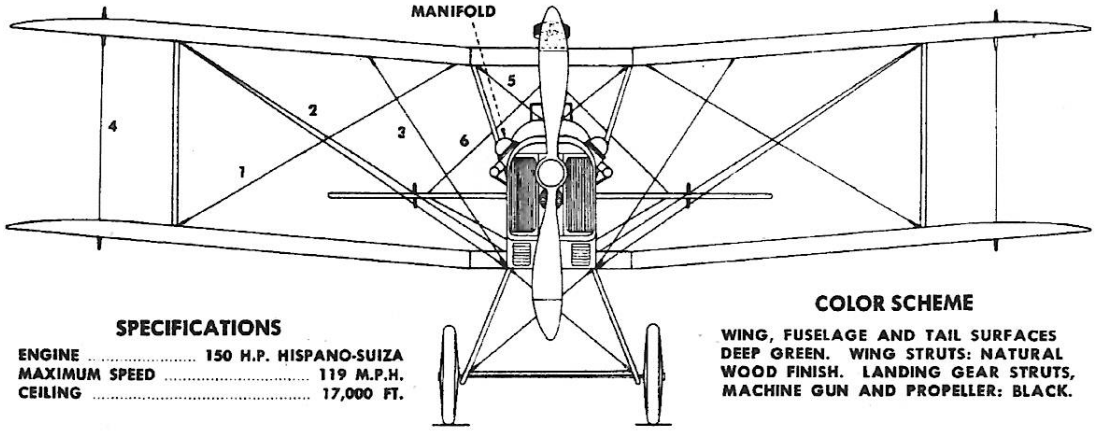
Cardboard wing jig

The hatched rib shapes are cut out and removed. A slit is made along the leading and trailing tangent lines. The removable center piece is then taped back in place. This two piece jig can then be used even with struts in place.

Guillow's Three View

NOTE THE COPYING OF EVEN THE SERIAL NUMBERS FROM THE WYLAM DRAWING. CHECK OUT A MORE ACCURATE THREE VIEW TO NOTE THE DEVIATIONS FROM TRUE SCALE.



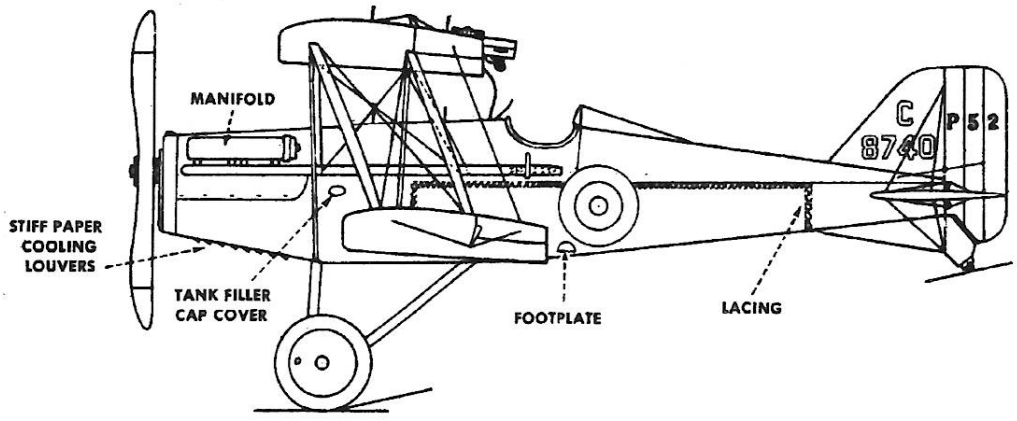


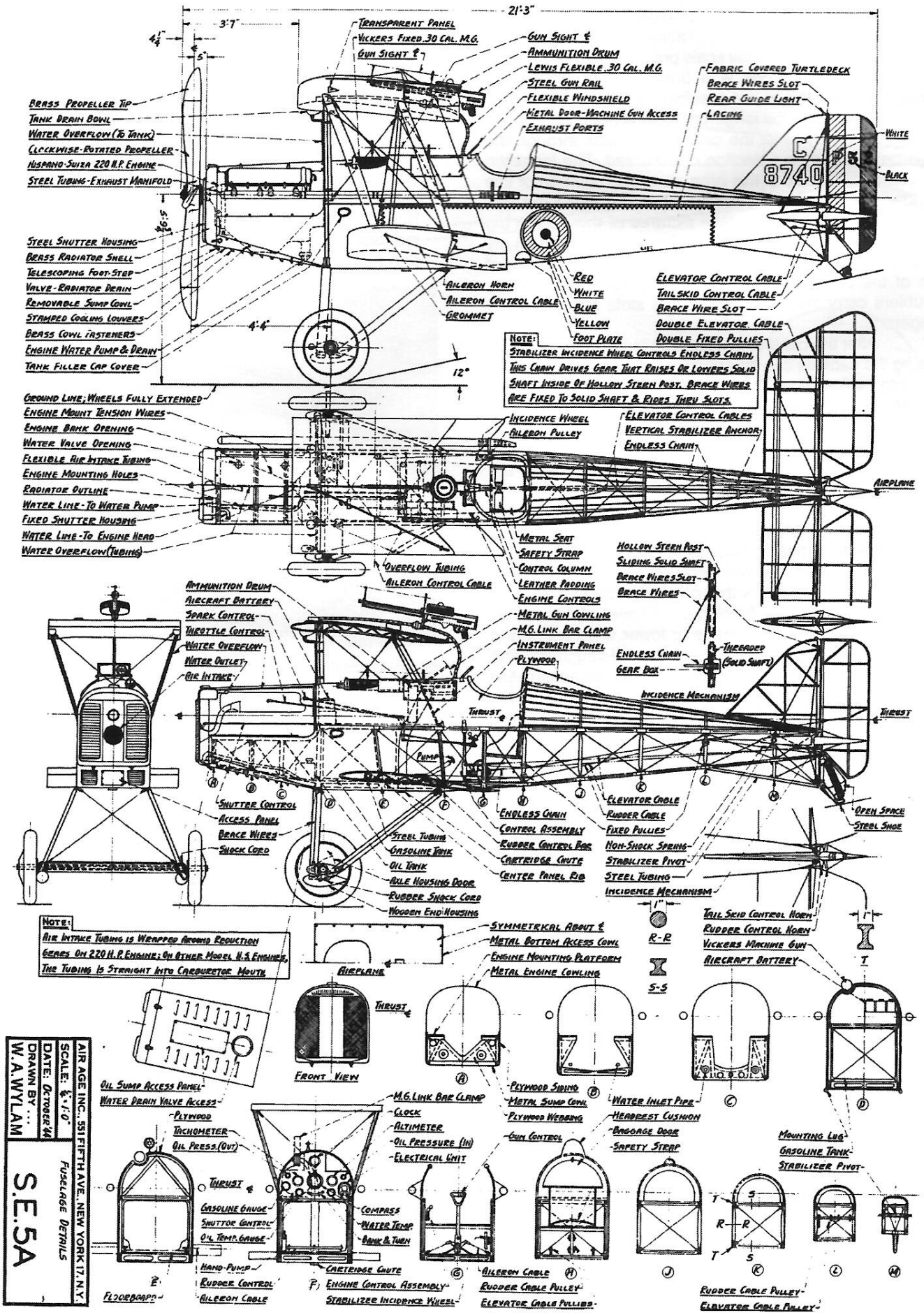
SPECIFICATIONS

ENGINE	150 H.P. HISPANO-SUIZA
MAXIMUM SPEED	119 M.P.H.
CEILING	17,000 FT.

COLOR SCHEME

WING, FUSELAGE AND TAIL SURFACES DEEP GREEN. WING STRUTS: NATURAL WOOD FINISH. LANDING GEAR STRUTS, MACHINE GUN AND PROPELLER: BLACK.




21'-3"
3'-7"
4¼"
5"
Transparent Panel
Vickers Fixed .30 Cal. M.G.
Gun Sight ℄
Gun Sight ℄
Ammunition Drum
Lewis Flexible .30 Cal. M.G.
Steel Gun Rail
Flexible Windshield
Metal Door-Machine Gun Access
Exhaust Ports
Fabric Covered Turtledeck
Brace Wires Slot
Rear Guide Light
Lacing
White
Black
C
8740
Brass Propeller Tip
Tank Drain Bowl
Water Overflow (To Tank)
Clockwise-Rotated Propeller
Hispano-Suiza 220 H.P. Engine
Steel Tubing-Exhaust Manifold
Steel Shutter Housing
Brass Radiator Shell
Telescoping Foot-Step
Valve-Radiator Drain
Removable Sump Cowl
Stamped Cooling Louvers
Brass Cowl Fasteners
Engine Water Pump & Drain
Tank Filler Cap Cover
4'-4"
12°
Aileron Horn
Aileron Control Cable
Grommet
Red
White
Blue
Yellow
Foot Plate
Elevator Control Cable
Tailskid Control Cable
Brace Wire Slot
Double Elevator Cable
Double Fixed Pullies
Note:
Stabilizer Incidence Wheel Controls Endless Chain. This Chain Drives Gear That Raises Or Lowers Solid Shaft Inside Of Hollow Stern Post. Brace Wires Are Fixed To Solid Shaft & Rides Thru Slots.
Ground Line; Wheels Fully Extended
Engine Mount Tension Wires
Engine Bank Opening
Water Valve Opening
Flexible Air Intake Tubing
Engine Mounting Holes
Radiator Outline
Water Line-To Water Pump
Fixed Shutter Housing
Water Line-To Engine Head
Water Overflow (Tubing)
Incidence Wheel
Aileron Pulley
Elevator Control Cables
Vertical Stabilizer Anchor
Endless Chain
Airplane
Overflow Tubing
Aileron Control Cable
Metal Seat
Safety Strap
Control Column
Leather Padding
Engine Controls
Hollow Stern Post
Sliding Solid Shaft
Brace Wires Slot
Brace Wires
Endless Chain
Gear Box
Threaded (Solid Shaft)
Incidence Mechanism
Ammunition Drum
Aircraft Battery
Spark Control
Throttle Control
Water Overflow
Water Outlet
Air Intake
Metal Gun Cowling
M.G. Link Bar Clamp
Instrument Panel
Plywood
Thrust
Pump
Thrust
Shutter Control
Access Panel
Brace Wires
Shock Cord
Steel Tubing
Gasoline Tank
Oil Tank
Axle Housing Door
Rubber Shock Cord
Wooden End Housing
Endless Chain
Control Assembly
Rubber Control Bar
Cartridge Chute
Center Panel Rib
Elevator Cable
Rudder Cable
Fixed Pullies
Non-Shock Spring
Stabilizer Pivot
Steel Tubing
Incidence Mechanism
Open Space
Steel Shoe
Note:
Air Intake Tubing Is Wrapped Around Reduction Gears On 220 H.P. Engine; On Other Model U.S. Engines, The Tubing Is Straight Into Carburetor Mouth
Airplane
Symmetrical About ℄
Metal Bottom Access Cowl
Engine Mounting Plateform
Metal Engine Cowling
R-R
S-S
Tail Skid Control Horn
Rudder Control Horn
Vickers Machine Gun
Aircraft Battery
T
Thrust
Front View
A
B
C
D
Oil Sump Access Panel
Water Drain Valve Access
Plywood
Tachometer
Oil Press. (Out)
Thrust
Gasoline Gauge
Shutter Control
Oil Temp. Gauge
M.G. Link Bar Clamp
Clock
Altimeter
Oil Pressure (In)
Electrical Unit
Compass
Water Temp
Bank & Turn
Plywood Siding
Metal Sump Cowl
Plywood Webbing
Gun Control
Water Inlet Pipe
Headrest Cushion
Baggage Door
Safety Strap
Mounting Lug
Gasoline Tank
Stabilizer Pivot
T
S
R
R
S
T
E
Floorboard
Hand-Pump
Rudder Control
Aileron Cable
F
Cartridge Chute
Engine Control Assembly
Stabilizer Incidence Wheel
G
H
Aileron Cable
Rudder Cable Pulley
Elevator Cable Pullies
J
K
L
M
Rudder Cable Pulley
Elevator Cable Pulley
AIR AGE INC. 551 FIFTH AVE. NEW YORK 17, N.Y.
SCALE: ¾" = 1'-0"
DATE: October '41
DRAWN BY ...
W.A.WYLAM
S.E.5A
Fuselage Details

More Strut Attach

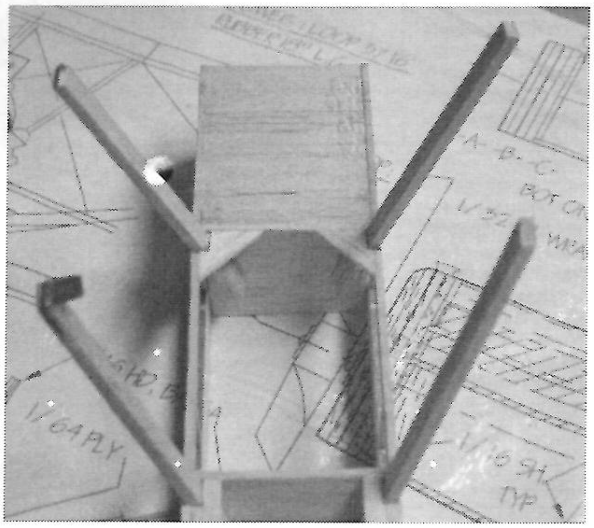
Another problem with cabine struts is anchoring them to the fuselage. In full scale practice, they are usually bolted to the longerons with brackets and fittings; on smaller models this is not feasible. Modlers usualy butt glue the cabines to the longeron. This is not a very strong joint. I usually try to let the cabine strut pass through the logeron and glue to a section of bulkhead. The longeron must be doubled up in this area, as a good portion of it is sanded away to allow the cabine to pass through it but look like it ends at it. I did not take pictures of this on the big Guillow's SE 5, so I will show you how I am doing it on my Rocky Top SE 5. Note formers are installed in the plane of the of the cabines viewed from the side and gusset or doublers carry the loads around the slots sanded in the longerons.

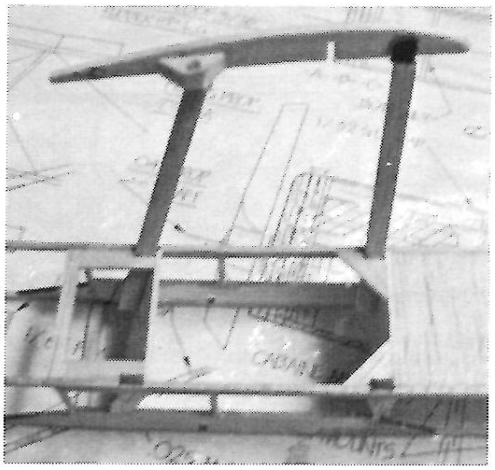
After the cabines are fitted up to the center section in a jig the cabines can be shortened to extend only 1/4 to 3/8" into the fuselage. The formers can then be cut away to lighten the structure and provide rubber clearance. The cabines are not glued in at this point. That will come on final assembly. The portion of the cabine external to the fuselage is sanded to shape and painted. The rest of the fuselage can now be built up and covered.

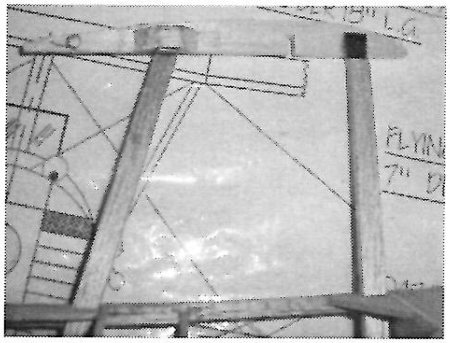
It is best to build up the under carriage at this point, while the top of the fuselage flat and it is easy to work on upside down. I nearly always make up a WWI under carriage assembly that has wires bound with thread to plywood upper spreaders that can be glued in to slots in the underside of the fuselage. These slots usually correspond to major bulkheads or lower wing spars and provide very short load paths to substantial structure. The under carriage assembly can be finished and attached after the rest of the model is assembled. As an aside, I have never been unhappy with an WWI axle that is sprung and capable of being replaced afer a too hard landing.

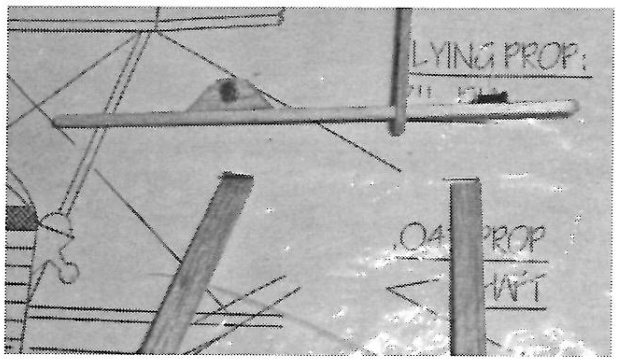
I'll make note here that the 18" Rocky Top model does not use the same cabine to center section attach as the Big Guillows. Mike Midkif designed the model with a single spar at max camber on the near Clark Y airfoil. This is certainly strong enough, light, and well executed in this laser cut kit. I have found, if I use pop off wings held on by the tension of monofilament rigging, the flexible structure will allow a WWI model to survive much better than if the wings are mounted solidly. This is true from peanuts to 1/4 scale R/C.

On this smaller scale model, the lower wings use 1/32 aluminum wire plugging in to 1/16th aluminum tubes at approximately the true spar locations. To mount the one piece upper wing, the forward cabine has a 0.018 staple hook that engages a thin wall 1/32 od brass tube thread wrapped to piece of 1/32 bass wood glued to a center section rib. The rear cabine has a small piece of 0.008 sheet steel in a slot that is secured by a magnet on the center section rib. The test set up in the photos does not have the cabines shaped, nor the center section built up. But I think you can see how it will work. The small 1/8 dia magnet is strong enough for this electric free flight model or a rubber version.









Charles (Chuck) Dennis Daily, Jr., MD
1931-2006

My older brother, friend and teacher passed away from a long struggle with pancreatic cancer on June 5, 2006. He was 11 years older than me, but was my first "teacher" when it came to model airplanes-showing me how to build Comet Twentyfive Centers in the late 40s and early 50s. His last year of life saw him flying with the Korda club in Marin County, CA-he built a Korda Wakefield and a Skokie and flew them during this time. He was a member of theDC Maxecuters since 1977 or so and enjoyed MAX FAX since the middle 1970s (see the letter below that he wrote to Alan Schanzle in 1981 from Frankfurt, Germany, while serving as the Chief of Opthalmology at the US Army hospital there).

Chuck grew up loving airplanes-our Dad was an early aviator and was flying for TWA when Chuck was a little boy. He told me about spending a year with his Grandma while our Dad was flying (Chuck's mother died when he was 31/2) in 1935 or so. Dad would fly down to the little town in Missouri on a Sunday morn and buzz the Churches (emptying them)-some of Chuck's first memories of airplanes. He soloed (secretly-our Dad had a hissy when he found out) at age 16. He was an avid modeler in those days-as a 5 year old I remember a Comet P47 he built and I quickly destroyed! While we lived in Munich, Germany (1949-51), Chuck began working for the CIA - something he would do (covertly) for the rest of his life. He served in the Army and was a soldier in the 101st Airborne during the end of the Korean conflict. He finished college and began medical school while working as a Capital Hill policeman. In 1960 got earned his MD degree from George Washington University, served in the Navy medical department as a Flight Surgeon (went through Pensacola flight training and had his Wings of Gold), did a residency in Opthalmology and then a Fulbright Fellowship in Germany in the late 60s. After many years in private practice as a retinal surgeon in San Rafael, CA, and a professor of surgery at the University of San Francisco, he joined the Army Medical Department in 1976 and was stationed in Frankfurt for 5 years. In 1983, he went back to private practice in San Rafael until he retired about 10 years ago. Chuck was very active professionally and was President of the Marin Medical Society. He also continued to serve in the reserves and retired as a Colonel. While doing all of this, he continued to work for the CIA as a consultant and was frequently called to DC for CIA business - remember the Ames case? He was very proud of his service and was a real Cold Warrior in the best sense. During his CIA time and private medical practice, Chuck continued to fly and also sailed on San Francisco Bay. He never lost his interest in aviation-we talked frequently about airplanes right up until he passed away.

He and his wife Suzanne raised three wonderful children, Gretchen, Kirsten and Scott. All a superb skiers, having been taught early by their Dad. Chuck continued to ski until a few years ago and loved to travel. He and Suzanne saw a lot of eastern Europe before and after the fall of the communist Russia and traveled extensively in Europe. He also loved to write and had a great sense of humor. I will miss him. He was a great guy!

Pat Daily

15 August 1981

Alan Schanzle
Treasurer
D.C. Maxecuters

Dear Alan:

It is always a pleasure to unfold the latest MAX-FAX and let one's imagination leave the surly bonds of earth on the wings of a new design or idea from the pages of your Newsletter.

My son and I enjoy the news and photos of your hearty band of aeronauts, and envy the camaraderie of your flying competitions.

As perhaps your only subscribers east of the Bermuda Triangle we thought you would be interested to learn that MAX-FAX has occasionally been hastily translated into a multitude of foreign tongues, including high-German, Bavarian, French, and Yugoslavian.

Often our pitifully small squadron of Yankee flyers here on the Rhine have been challenged by numerically superior forces from beyond the steppes. Sadly, some of our plucky aircraft have not returned to the home field after these engagements. Those that have made it through the fogs of these Rhineland valleys to the home airstrip often stagger in with unbelievable battle damage.

Yet, time and again, rival airmen have marvelled as our rag-tag squadron has lifted off the grass strip and snarled skyward to resume combat. Cries of "Ach, du lieber!" and shouts of "Mein Gott!" ring through the clouds as enemy pilots watch, horror-stricken, as a Yankee prop driven by multiple strands of Pirelli rubber chews into their tail section.

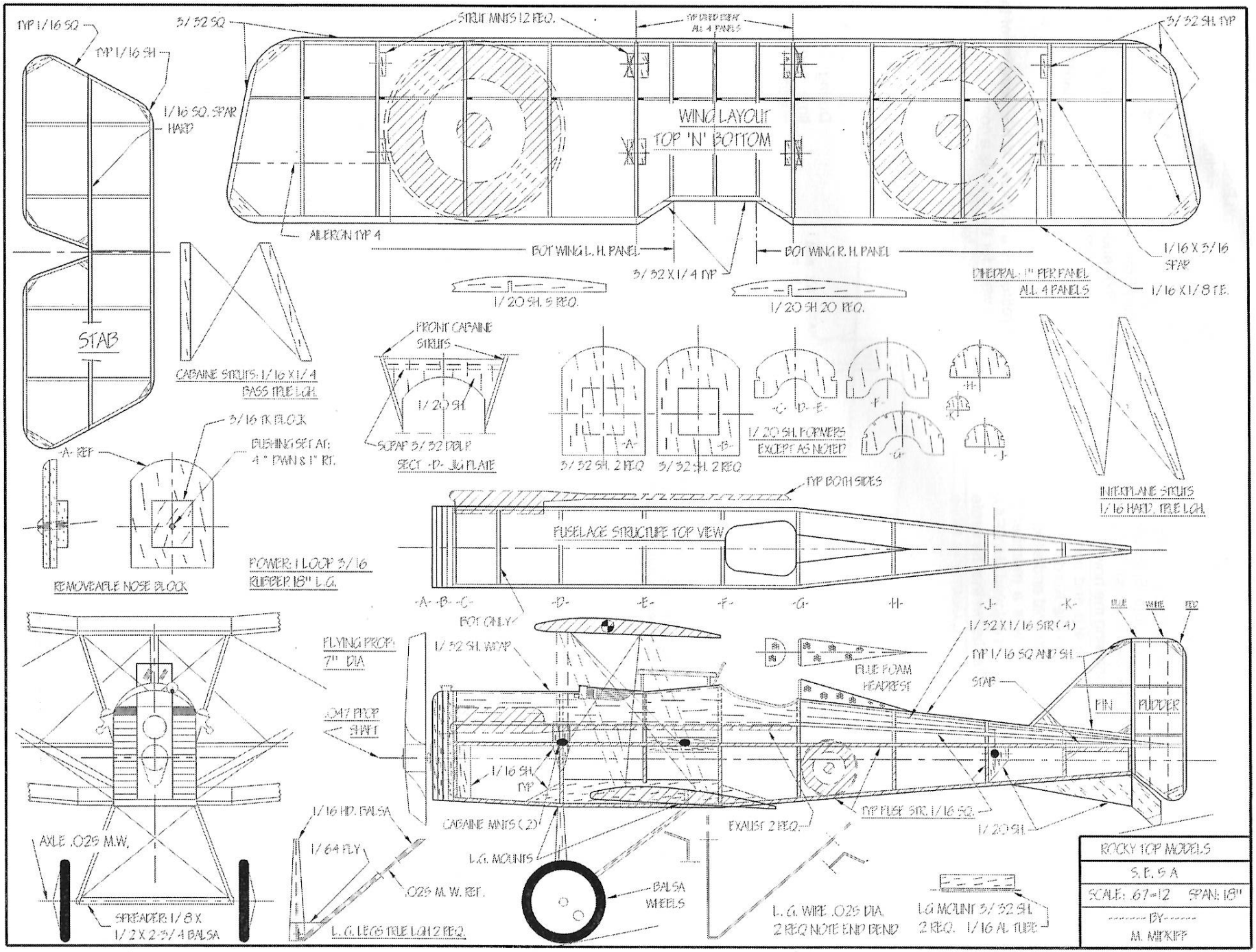
Later, in a time-honored custom peculiar to aerial combat here on the European front, rival airmen meet in neutral territory, invariably a cozy tavern where busomy barmaids keep the glasses full, and it is here that MAX-FAX has been passed about, translated, photo-copied, and fought over. The name alone has such a Teutonic ring that one of the barmaids attempted to make off with my July/August copy coyly stuffed into her ample busom, thinking it was a new sex manual. I persuaded her to relinquish the newsletter with great difficulty. But it was a pleasurable encounter and we have remained good friends. She calls me Herr Max.

Long live MAX-FAX and the D.C. Maxecuters!

Chuck

Chuck Daily

(From an aerodrome somewhere east of the Rhine.)


TYP 1/16 SQ
TYP 1/16 SH
1/16 SQ. SPAR HARD
3/32 SQ
STRUT MNTS (2 REQ.
TYP DIHEDRAL ALL 4 PANELS
3/32 SH. TYP
WING LAYOUT TOP 'N' BOTTOM
AILERON TYP 4
BOT WING L. H. PANEL
BOT WING R. H. PANEL
3/32 X 1/4 TYP
1/16 X 3/16 SPAR
1/16 X 1/8 T.E.
DIHEDRAL - 1" PER PANEL ALL 4 PANELS
1/20 SH. 5 REQ.
1/20 SH. 20 REQ.
STAB
CABANE STRUTS: 1/16 X 1/4 BASS TRUE L.GH.
FRONT CABANE STRUTS
1/20 SH.
SCRAP 3/32 PLY
SECT -D- JIG PLATE
3/32 SH. 2 REQ
3/32 SH. 2 REQ
1/20 SH. FORMERS EXCEPT AS NOTED
3/16 BLOCK
BUSHING SET AT: 4" DWN & 1" RT.
-A- REF
REMOVEABLE NOSE BLOCK
POWER: 1 LOOP 3/16 RUBBER 18" L.G.
TYP BOTH SIDES
FUSELAGE STRUCTURE TOP VIEW
-A- -B- -C- -D- -E- -F- -G- -H- -J- -K-
BOT ONLY
INTERPLANE STRUTS 1/16 HARD, TRUE L.GH.
FLYING PROP: 7" DIA
.047 PROP SHAFT
1/32 SH. WRAP
1/16 SH. TYP
CABANE MNTS (2)
L.G. MOUNTS
BALSA WHEELS
1/16 HD. BALSA
1/64 PLY
.025 M.W. REF.
L.G. LEGS TRUE L.GH 2 REQ.
AXLE .025 M.W.
SPREADER: 1/8 X 1/2 X 2-3/4 BALSA
BLUE FOAM HEADREST
1/32 X 1/16 STR (4)
TYP 1/16 SQ AND SH
STAB
FIN
RUDDER
TYP FUSE STR. 1/16 SQ.
EXHAUST 2 REQ.
1/20 SH.
BLUE
WHITE
RED
L.G. WIRE .025 DIA. 2 REQ NOTE END BEND
L.G MOUNT 3/32 SH. 2 REQ. 1/16 AL. TUBE
ROCKY TOP MODELS
S.E. 5 A
SCALE: 6"=12" SPAN: 18"
BY
M. MERKEL

Summer Kudzu Meet - Goldsboro and Raeford, NC - August 25-26, 2006

Friday ROW Winners:

Stick (4 flew) – John Diebolt **Cabin** (4 flew) – Wally Farrell

Saturday Events:

WWI Biplanes (6 flew)		
1	Dave Rees	Martynside
2	John Houck	SE-5
3	Stew Meyers	Bristol Scout

Combined Racers (6 flew)		
1	Dave Rees	Smoothie
2	Wally Farrell	Altair
3	Ray Rakow	Smoothie

Hurst Bowers Mem. (6 flew)		
1	Dan Driscoll	Poncelet
2	Claude Powell	RWD-10
3	John Houck	RWD-5 bis

WWII Fighters (11 flew)		
1	Wally Farrell	Macchi 202
2	Dave Mitchell	Seawolf
3	Dave Rees	Defiant

Modern Production (6 flew)		
1	Josh Finn	Fleet Canuck
2	Dave Mitchell	Cessna 140
3	Dave Rees	Piper Cruiser

GHQ P-Nut (8 entered)		
1	Josh Finn	Goon
2	Claude Powell	PT-19
3	Frank Rowsome	Lippisch P.13

Embryo (5 entered)		
1	Dan Driscoll	Embry-OK
2	Josh Finn	Featherlight
3	John Houck	Swallow

Golden Age (5 entered)		
1	Wally Farrell	Nich. Beazly
2	Claude Powell	DGA-9
3	John Houck	Gen. Aristocrat

Dime Scale (11 entered)		
1	John Houck	Fairchild 45
2	Stefan Proskt	Waterman
3	Claude Powell	Fokker D-7

FAC Scale (8 entered)		
1	Wally Farrell	Macchi 202
2	Dan Driscoll	Poncelet
3	Dave Mitchell	Aero A-10

FAC Power Scale (2 entered)		
1	Dave Rees	Dauphin
2	Wally Farrell	Beechcraft
3		

Jet Catapult (4 entered)		
1	Carl Dowdy	?
2	Wally Farrell	F-84
3	Ray Rakow	Vulcan

AMA Catapult Glider (7 entered)		
1	Carl Dowdy	
2	Brad Glass	
3	John Diebolt	

AMA Catapult Glider (1 entered)		
1	Andy Ringlier	
2		
3		

Grand Champ – Wally Farrell

Get That CG Right

A first step in trimming free-flight models

Don Srull 9/06

Here is a simple procedure I have found to be helpful when trimming a new free-flight model, either rubber scale or sport. It is a summary of part of an article that appeared in the August, 1982 Model Aviation magazine. It describes the important first step of finding a good combination of center of gravity (C.G. or balance point), and the wing and stab incidence angles. Only after getting a satisfactory C.G. and incidence setting is it safe to move on to power tests to find the best thrustline offsets for powered flight. Initial C.G. and incidence adjustments determine to a large extent how stable and well behaved the model will be under power and in the glide as you finalize your trim settings. To work, the steps must be followed in sequence. It will only take a few minutes, but in the long run can save a lot of time and minimize those annoying trim flight accidents.

Basically, we'll get the glide and C.G. adjusted first, and only then proceed to the power phase. The first trimming objective is to achieve a reasonable, but minimum amount of longitudinal (or pitch) stability. But wait a minute - isn't stability good? Can you have too much stability? Yup, you can. The reason we don't want too much stability is because it adds drag; but worse, it makes the model prone to zooming and stalling at high speed - like at launch! That means we would have added drag plus need huge amounts of downthrust to overcome the excess stability - not good. On the other hand, we do want some stability, of course, so our model will recover from gusts and other minor upsets. In general, the further forward the model's C.G. is, and the larger the angular difference between wing and stab, the greater the stability-and vice versa.(see Figure A). Luckily, we can easily trim our model to have enough, but not too much, longitudinal stability and simplify the whole trimming process to boot by just following the steps outlined below.

1. Since each model tends to be unique, there is no simple formula to predetermine exactly the correct CG and wing/stab angular differences. Test gliding is the best way to find out; and besides, it's more fun than doing math anyhow. The idea here is to test glide our model to determine the combination of C.G. and wing and tail angular difference that provides satisfactory pitch stability. Make sure you have some means of accurately adjusting the angular difference between wing and stab. If you have an adjustable elevator, you can use that, but usually, the simplest and most common way to allow some stab angular adjustment is to tack glue either the leading or trailing edge of the stab to the fuselage, and allow for some shimming of the other, loose edge. When adjustment is complete, you can then cement the stab permanently in place if you wish. The very best method to provide for very accurate and repeatable adjustments is to make use of a small nylon machine screw (2-56 or 0-80 size) to change the stab angle. Moving the CG is most easily done by simply adding bits of clay to nose or tail.

2. First of all, make sure that all flying surfaces are straight and free of warps before testing. Use modeling clay if necessary to place the C.G. at a reasonable spot - about one-third the distance between the wing's leading and trailing edge is a good starting point. Also as a first guess, approximately 1° to 3° angular difference between wing and stab should be OK.. Keep the rubber motor in the model under tension so it doesn't flop around and change the C.G. during glide tests. If your model has a free-wheeling prop, it is best to remove the propeller and replace it with a piece of modeling clay of equal weight. The model's behavior, and the changes we want to observe will be easier to see without the drag of the propeller. For models with a folding prop, keep the prop attached.

3. Begin by gently gliding the model several times at normal gliding speed. Adjust the *stab (or elevator) angle only* until you get a nice, smooth descending glide. Several glides with each stab adjustment will be necessary to make sure you eventually have the best glide possible.

4. Continue gliding the model while slowly increasing the speed of launch, until you are tossing it considerably harder than a normal launch; about twice as fast at least. The shape of the model's trajectory at these higher speeds indicates how stable the model is. (a)If the model tends to zoom upward very sharply as launch speed increases, and then repeats the climb/dive path, it has excess stability. (b)If, on the other hand, it tends to tuck the nose under or dive toward the ground, it is unstable. The trim setting we are after is like path (c),when the model, after a fast launch, rises in a shallow climb and then glides smoothly to the ground as shown in Figure B.

5. Here are the adjustments to make if your model followed path (a) or (b). If the model was too stable and zoomed upward sharply as in (a), move the C.G. about 1/8" to 1/4" *rearward* by adding some clay to the tail, and bend the stab trailing edge *down* a tweek. If the model was marginally stable as in (b) and did not climb at all or dove down during the fast launches, move the C.G. *forward* about 1/8" to 1/4" and bend the stab trailing edge *up* a tweek. These adjustments are illustrated in Figure C.

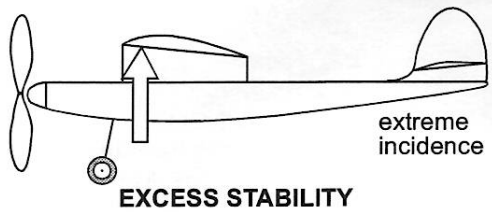
6. Now return to the slow, gentle glide test described in Step 3. and again fine tune the stab angle as necessary to get a smooth, good glide. Next, return to Step 4, and repeat the fast launch tests. Cycle through the process till you find the C.G. and incidence angles that results in a smooth , slow glide, and a slight climb and recovery during the faster launches as in path (c).

At this point you can safely assume your C.G. and incidence settings have been finalized. You can move on to power tests during which you only make appropriate thrust line adjustments to achieve a satisfactory climb pattern. No more cycling through repeated C.G. and incidence adjustments during power, then glide, then back to power, etc. Table 1 summarizes the process much more clearly than these words.

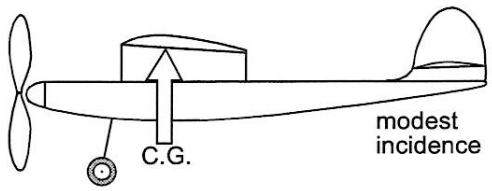
Guillow's Big WWI Series

201 THOMAS MORSE	24"	200 sqin
202 BRITISH SE5-A	24"	208 sqin
203 NIEUPORT 11	24"	144 sqin
204 FOKKER DR1	20"	180 sqin
205 DE HAVILAND 4	27"	185 sqin
206 RUMPLER C-5	24"	138 sqin

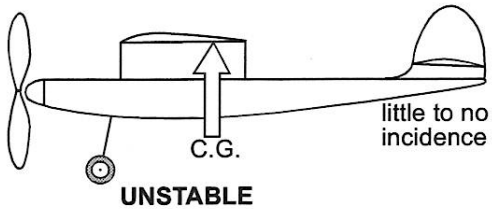
Figure A
C.G. , Incidence Difference, and Longitudinal Stability



EXCESS STABILITY

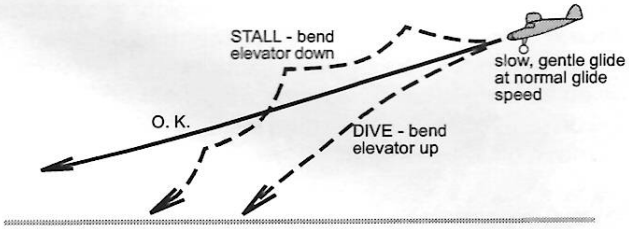


MINIMUM STABILITY

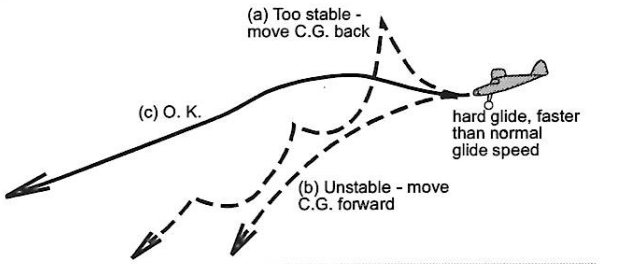


UNSTABLE

Figure B
Glide Tests to Find Proper C.G. and Incidence



Initially, set glide trim at normal glide speed (step #3)



Use high speed glides to establish stability margin (step #4)

Table 1 Summary of process for finding suitable C.G. and incidence angular differences

	Glide Result	Adjustment
INITIAL STEP	**Stalls**	**Bend elevator trailing edge down**
Test glides at slow, normal flight speeds	**Dives**	**Bend elevator trailing edge up**
	Smooth, good glide	**Go to next step**
NEXT STEP	**Zooms or tends to loop**	**Move C.G. rearward and repeat slow glides**
Harder, faster test glides	**Model dives or nose tucks under**	**Move C.G. forward and repeat slow glides**
	Model climbs slightly & glides smoothly	**Finished; go to power tests**

More on Trimming

The classical process of trimming a free flight is first to establish the glide. The center of gravity is set, according to the plan usually about the quarter chord point. The horizontal decalage is adjusted to achieve the desired glide with a gentle launch aimed at a point about twenty feet away. This is best done with the propeller removed and replaced with a dummy weight equal to it. Glides without the rubber motor will be slower and result in less damage in the case of poor trim. Warps especially asymmetrical wing washin or washout will show up here and should be corrected for a smooth straight ahead glide. Once a smooth glide is achieved, the model should be thrown hard at the same point about twenty feet away. The object here is to see how the model will recover from flight disturbances. You can then install a motor and prop, and move on to power trim.

Dave Aeronsten defines "trim" vs. "stability" rather well in the following article from an old issue of MaxFax when he was a local member.

Stability is the tendency of a system to return to an equilibrium condition. In the case of an airplane, that condition is the model's equilibrium angle of attack and flight speed. "Trim" refers to the specific value of that equilibrium angle of attack or flight speed. "Stability" refers to what happens when the model is perturbed from that equilibrium condition.

Now this is the hard part for most modelers: Stability is controlled entirely by the position of the center of gravity, relative to the model's flying surfaces. Incidence, or decalage, has NO EFFECT ON STABILITY. If your center of gravity is ahead of a certain point - called the "aerodynamic center" or "neutral point" - then your model will be stable. The farther forward the c.g. is, the more stable the model will be. However, it might not be properly trimmed.

Unlike stability, trim does depend on decalage as well as c.g. position. For any reasonable center of gravity, there is exactly one value of decalage angle that will give you proper trim. The farther forward the c.g. is, the more decalage will be needed to trim.

A couple of extreme examples to illustrate. If the c.g. is, say, well ahead of the wing leading edge, then the model will be very stable - it will want to dive, and it will quickly return to its diving condition even after a large disturbance. Is that stable? Yes. Is it desirable? No. Stable, but not properly trimmed for duration flying.

On the other hand, if the c.g. is behind the neutral point, you can still trim the airplane, using negative decalage (tail at higher angle of attack than wing), to trim at any desired flight speed. But, if it is perturbed, it will diverge. That means, if it is put into a shallow dive then the dive will become steeper; and if it is put at a higher angle, it will slow down practically to a stop and then execute a severe stall. This is the case of trimmed, but not stable.

If a model exhibits that kind of behavior - flies well until it is perturbed, then diverges - or shows tendencies to either stall or dive with the same set of adjustments - then you need to make it more stable by moving the c.g. forward. Then you will have to restore the proper trim by increasing the decalage.

Kevork K. Fags (201) 664-2606
236 Thayer St. River-Vale, NJ 07675-6235 has a nifty HAND-HELD SPRING WINDER for $30 + $1 shipping - A completely self contained hand held unit for making impossible to get small springs. Make springs in wire sizes from .004 to .014, on mandrels ranging from .020 up to .080 (2mm) in diameter. Seven mandrels are provided offering a good range of sizes. Includes starter wire and detailed instructions.
I have one of these and it's the answer for viscus timers.
He also has a HAND-HELD BALSA STRIPPER -Strip balsa form 1/16" to 1" wide in 1/32 increments, in thicknesses up to 1/4" medium balsa. $10 + $1 shipping.

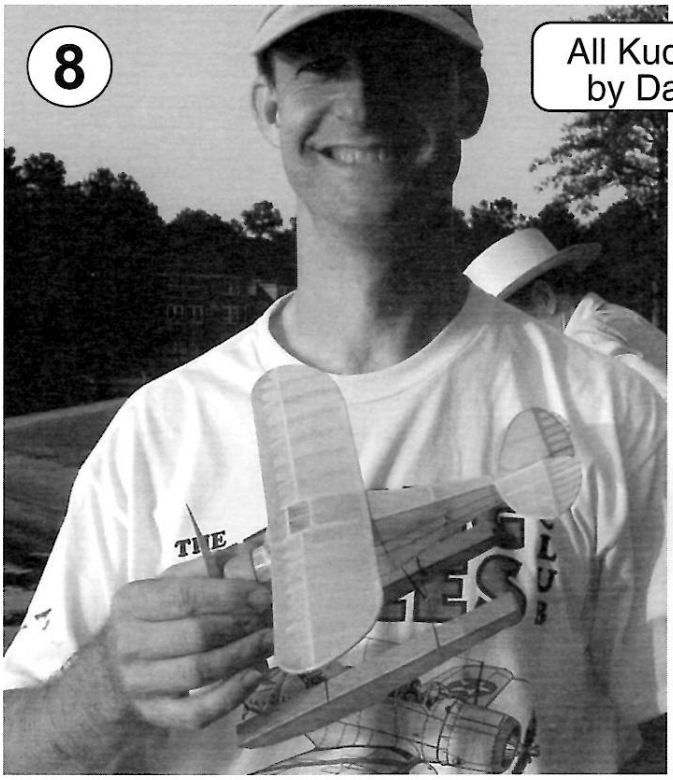
In the last issue I mentioned you could get the Bell P51A from www.pennvalleyhobbycenter.com,

Jim Fiorello of GoldenAgeReproductions called and let me know he was the one producing the Bell kits. He has:
43 complete kits ranging from $12 to$32
Over 245 plans of vintage model airplanes
Esaki tissue, plastic wheels and decals available
Catalog available for $3

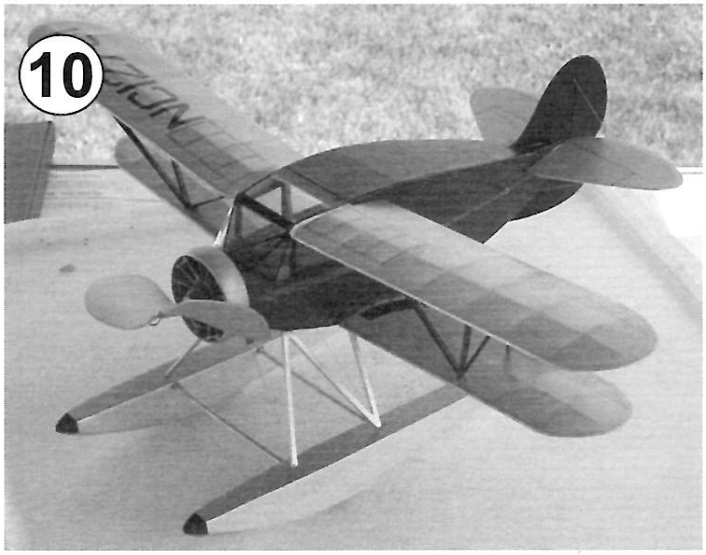
GoldenAgeReproductions
P.O.BOX1685
Andover, MA 01810
Phone: (978) 687-0024
Email: garepro@aol.com
www.goldenagereproductions.com

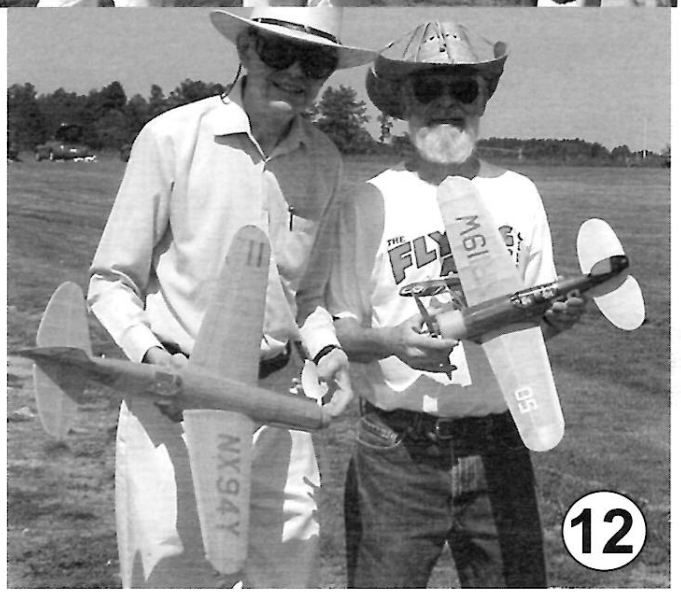
Photo Page 23

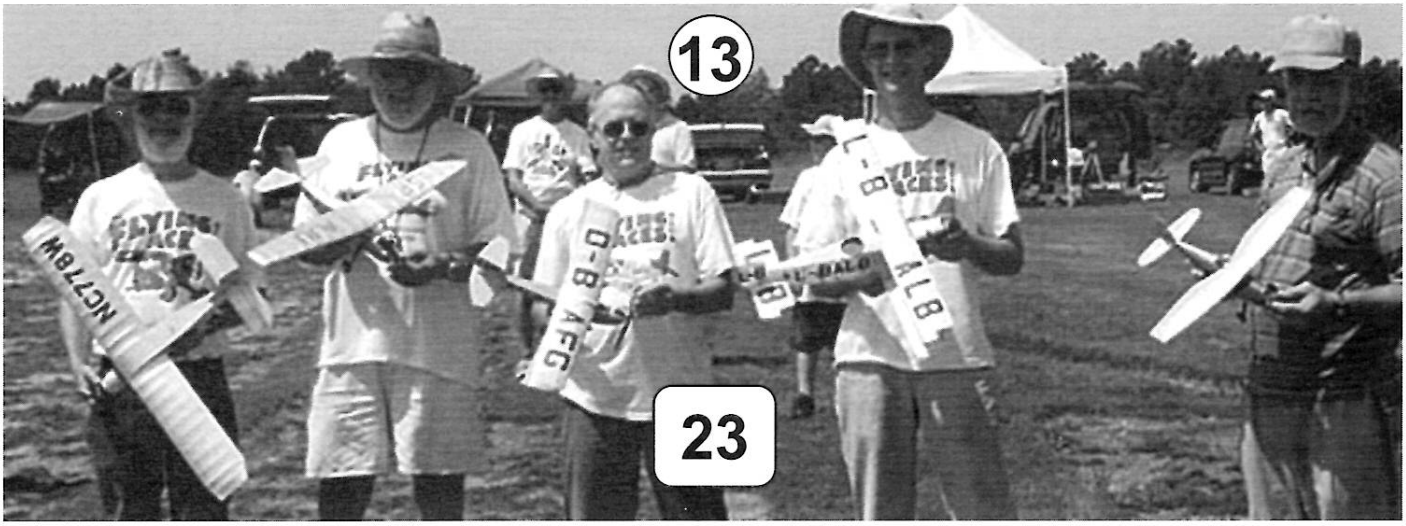
8. Despite his cat ate the canary grin, Dave Mitchell's Monocupe was unsuccessful in getting of the water.
9. Wally Farrell, on plane guard here, won cabin with his Dietrich Convertible.
10. This really beautiful Waco on floats by Joe Hurdle did not try to fly off water.
11. The final three in WWI: Dave Rees, John Houck, and Stew Meyers finished in that order. Note the allies beat the Hun Fokker Scourge.
12. One & two in the Races Dave Rees and Wally Farrell.
13. The flying entrants in the Hurst Bower event: Wally farrell, John Houck, Dan Driscoll, Dave Mitchell, and Claude Powell. Stew's Poncelet nose block broke just before the event.



All Kudzu photos by Dan Drisoll







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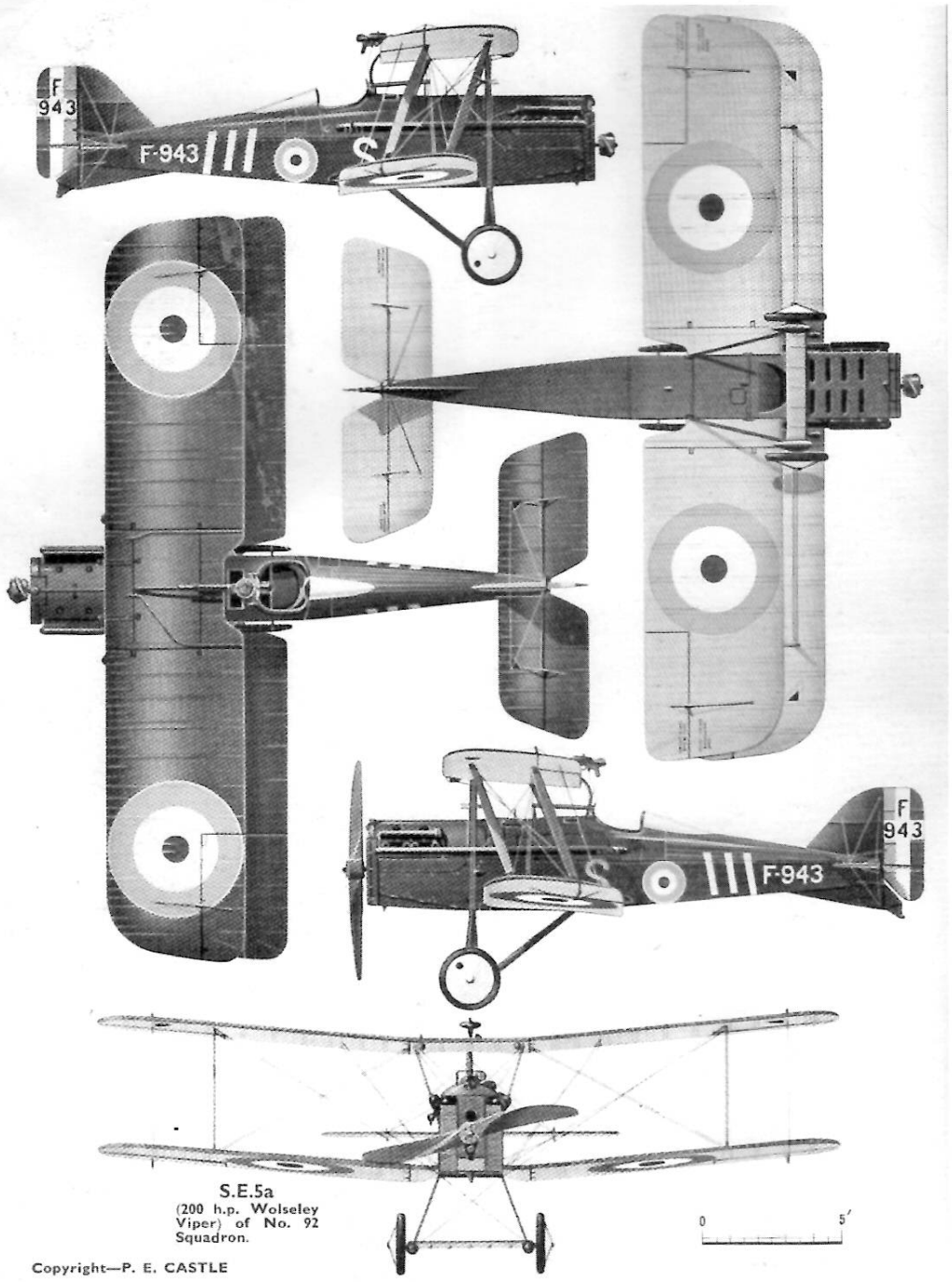


CLUB OFFICERS -President: Stefan Prosky 414 11th Street SE., Washington, DC 20003
Secretary: David Mitchell 230 Walnut St. NW., Washington, DC 20012
Treasurer:Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817 ---- *Note change - Stew has replaced Norm!*
Editor: Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817

MEETINGS - The D.C. MAXECUTERS hold meetings at 8:00 pm on the first Tuesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

MEMBERSHIP - Dues for membership in the D.C. MAXECUTERS are $15 per year for residents of the USA, Canada, and Mexico, and $25 for all other countries.

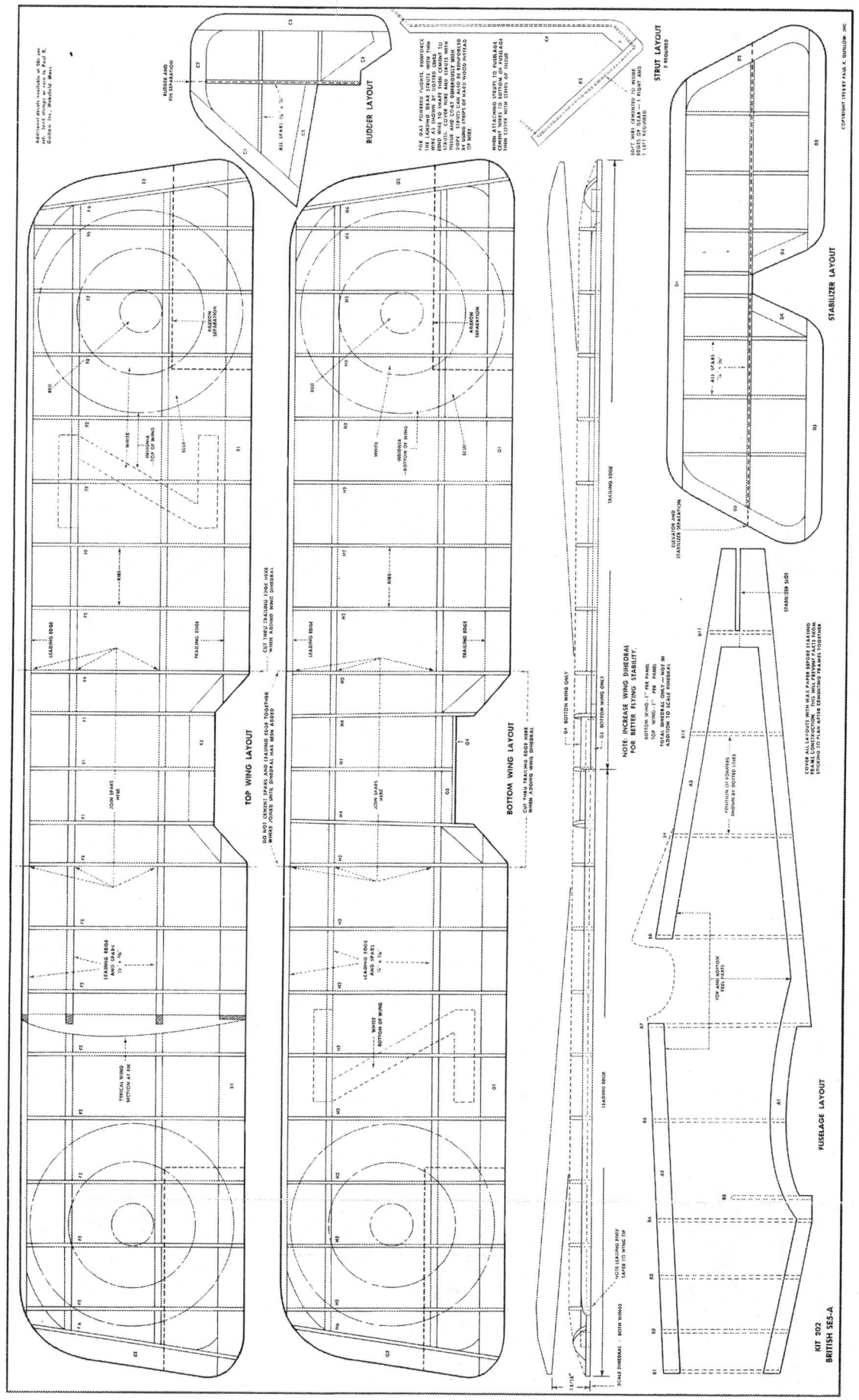
Your mailing label indicates the year and month of the last issue of your current membership. A red "X" in the box below is a reminder that your dues are due. Send a check, payable to the"D.C. MAXECUTERS", to the treasurer, Stew Meyers.

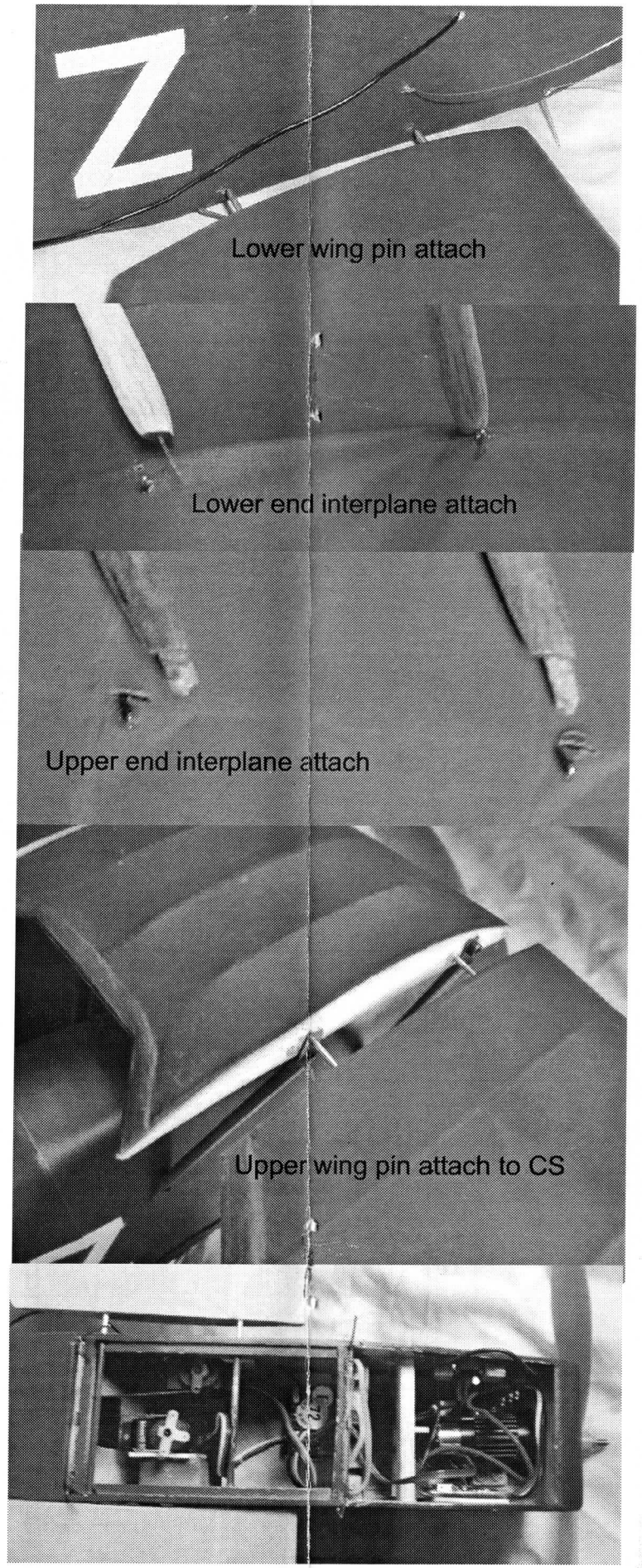
PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

CONTACTS - Material for the newsletter and membership questions should be addressed to Stew Meyers phone 301-365-1749. Email gets immediate attention. *stew.meyers@erols.com*

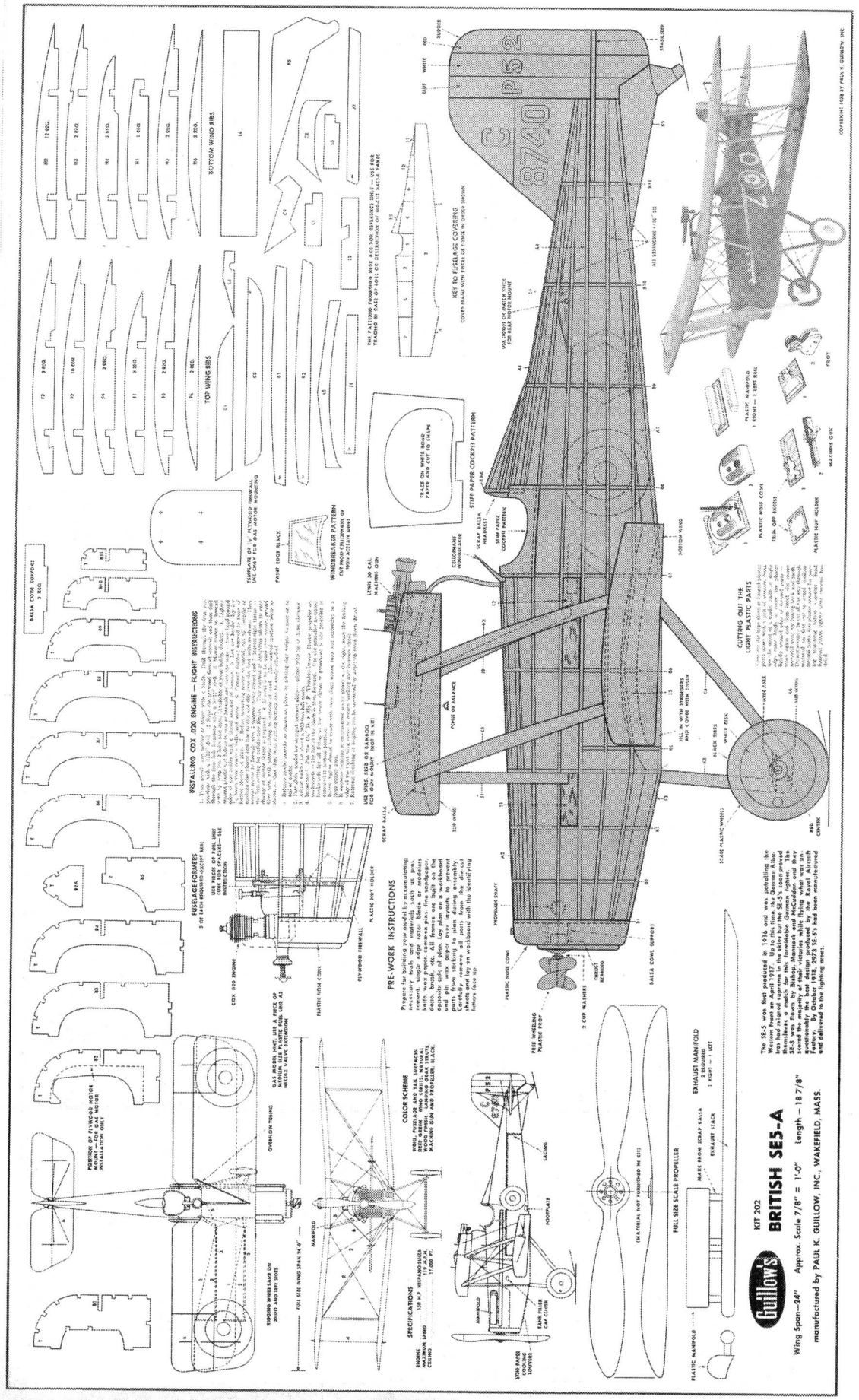
Maxecuter web site: http://www.his.com/~tschmitt/

Your DUES are due X

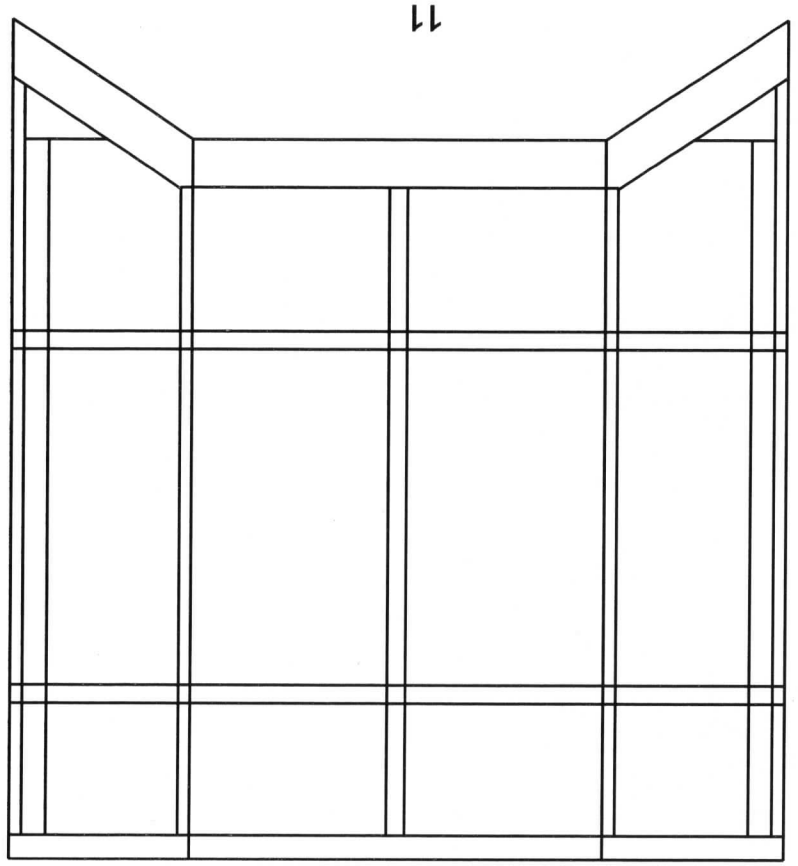


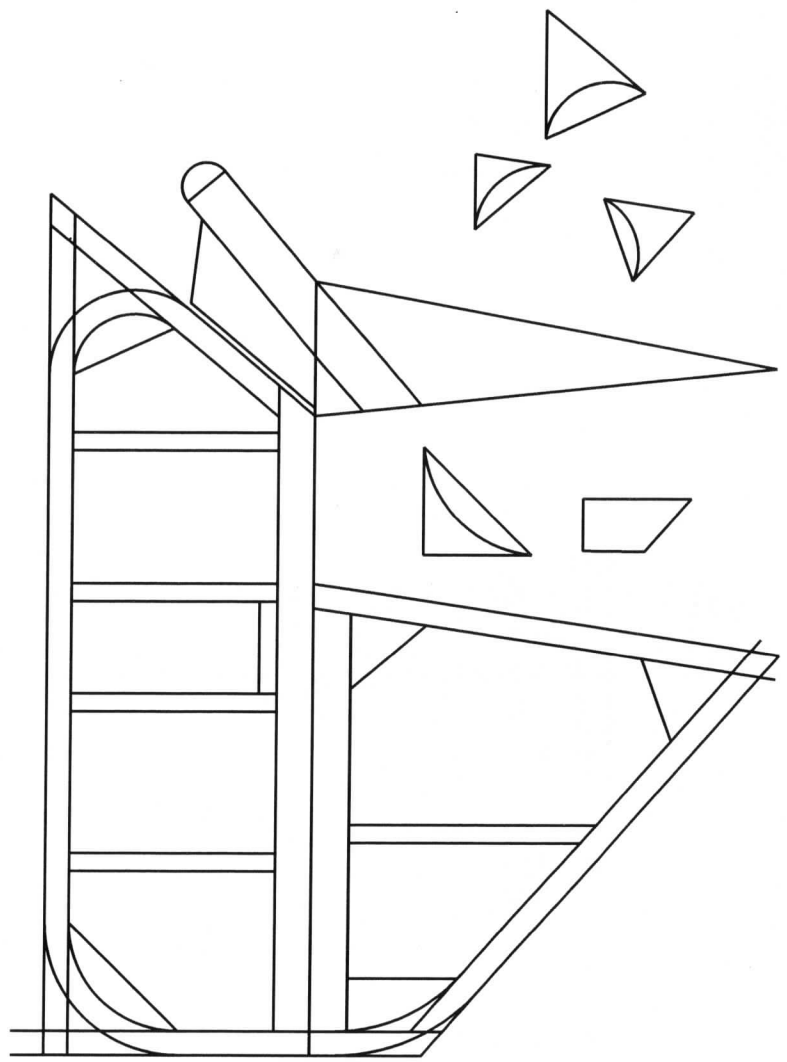


R/C installation under cart and battery removed



11





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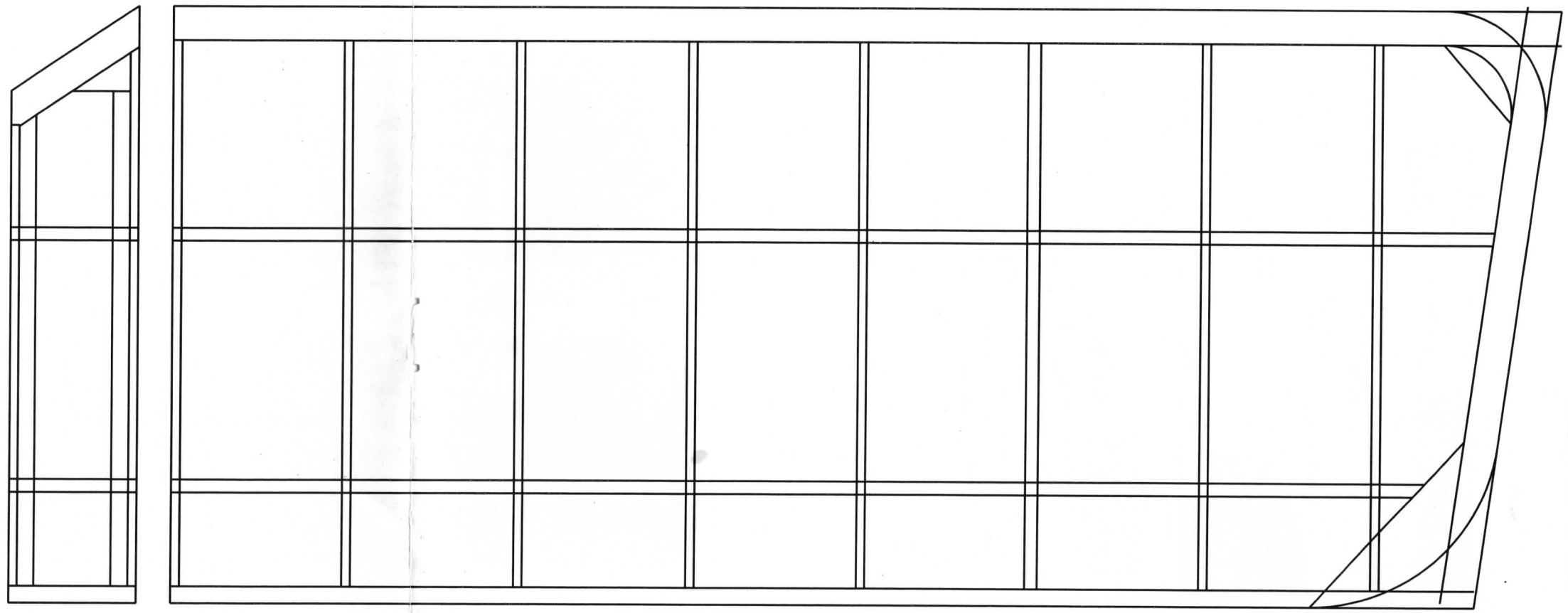
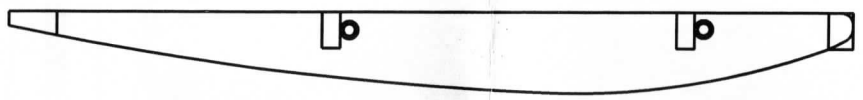
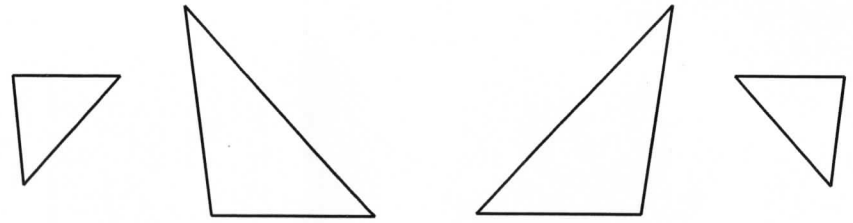
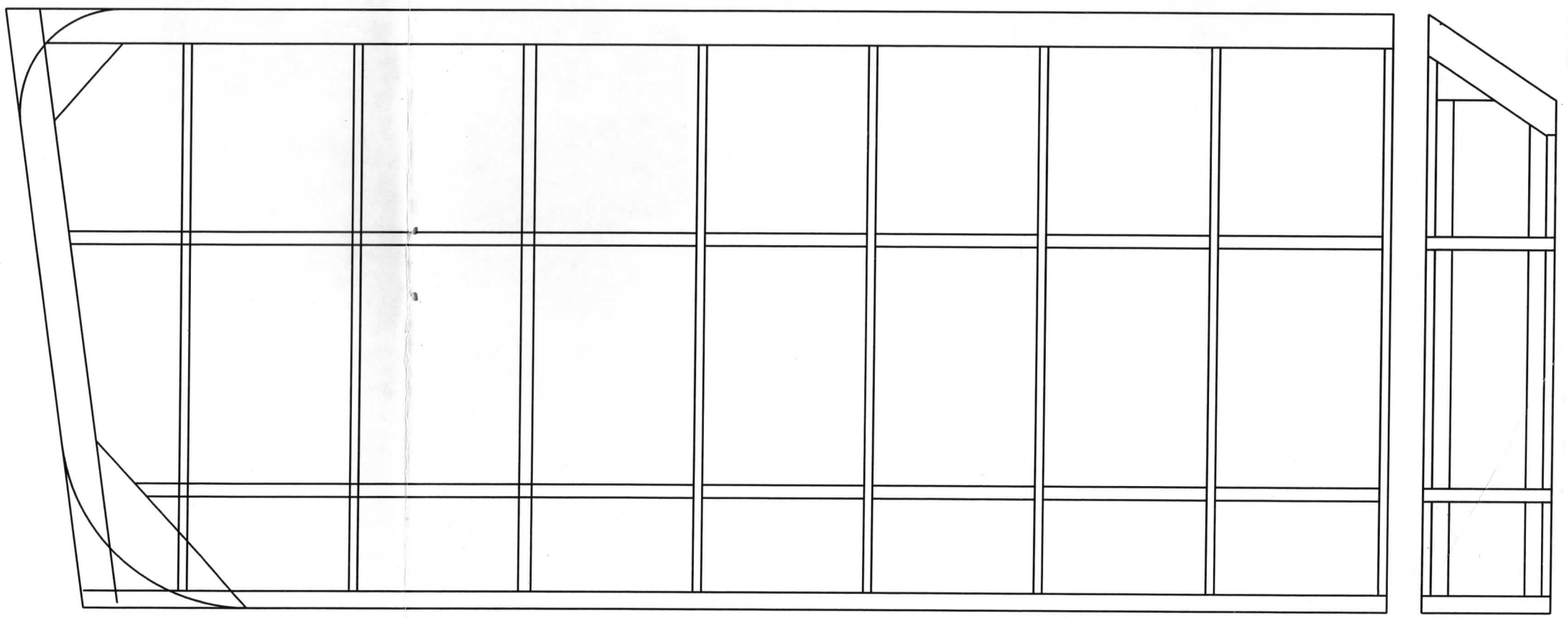
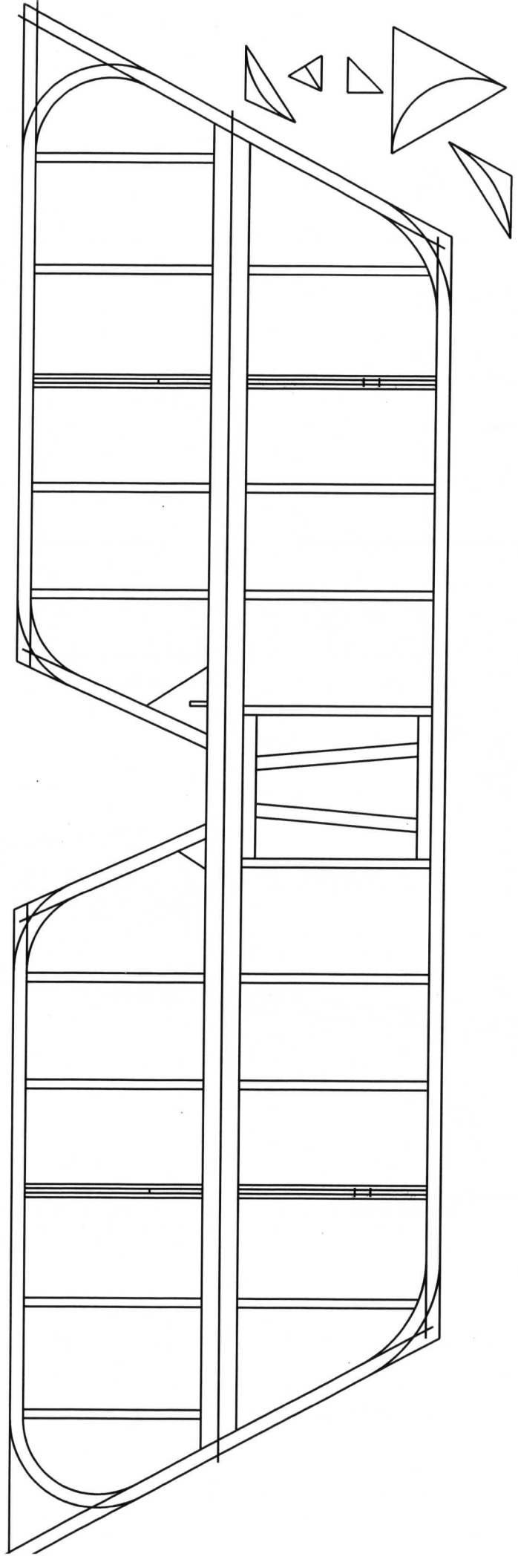
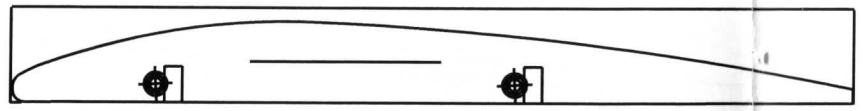




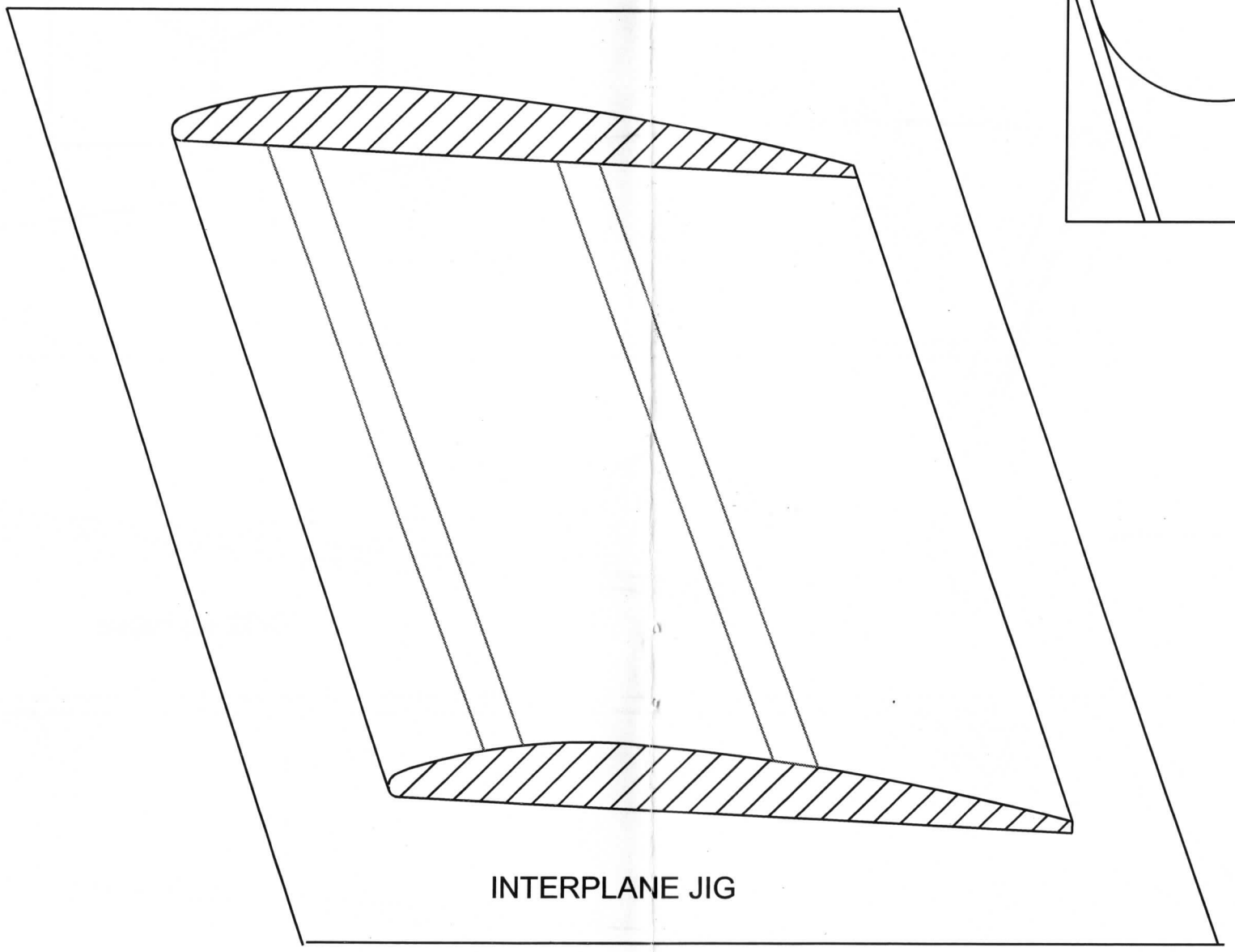




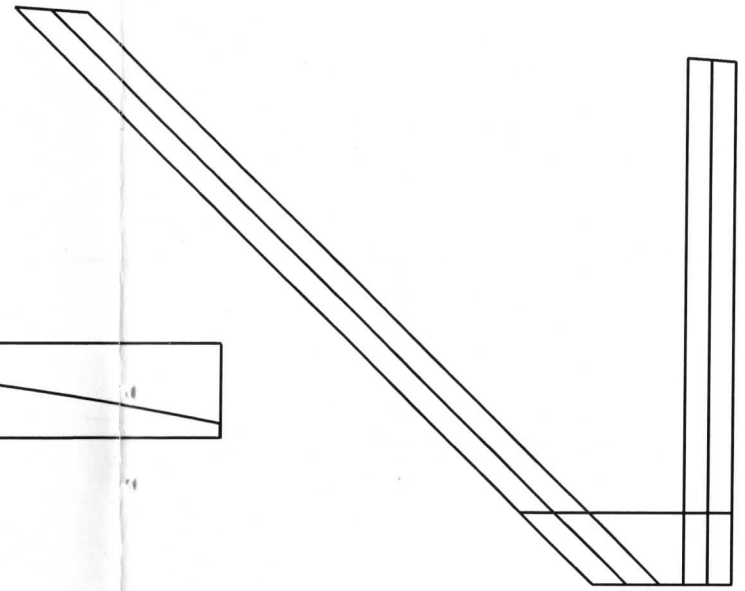


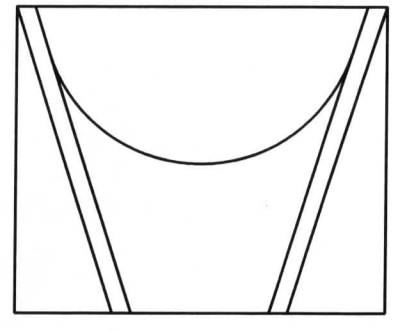


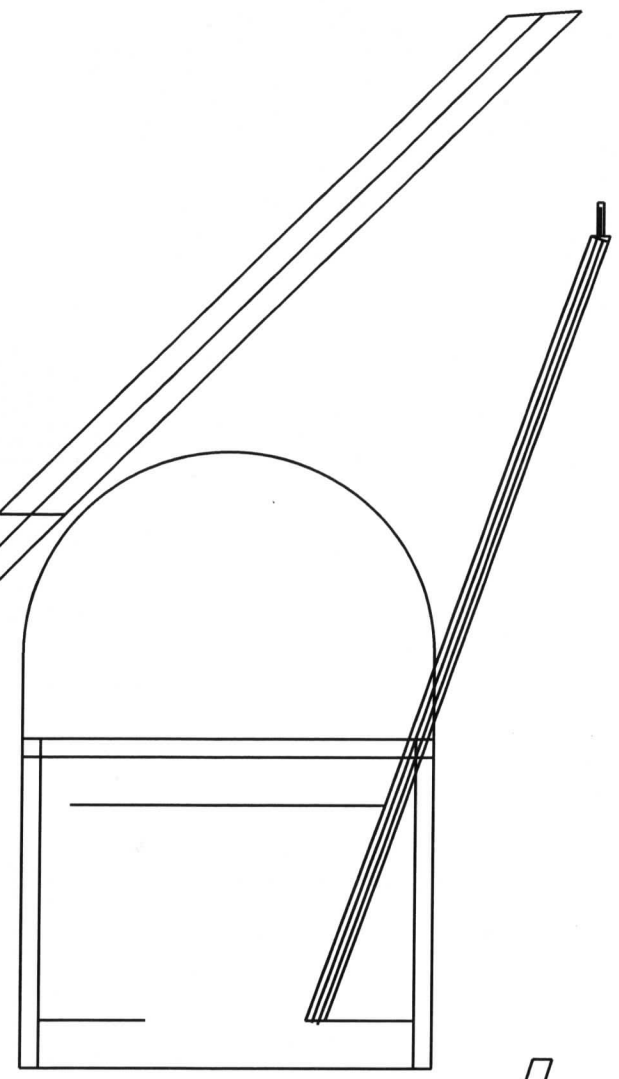
Master Rib



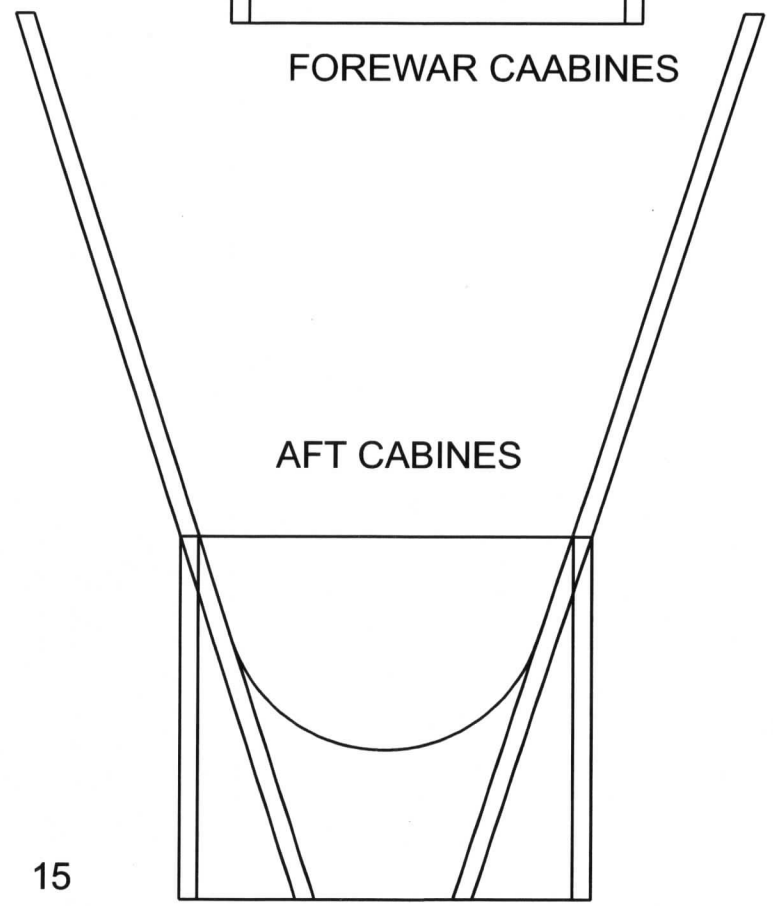
INTERPLANE JIG



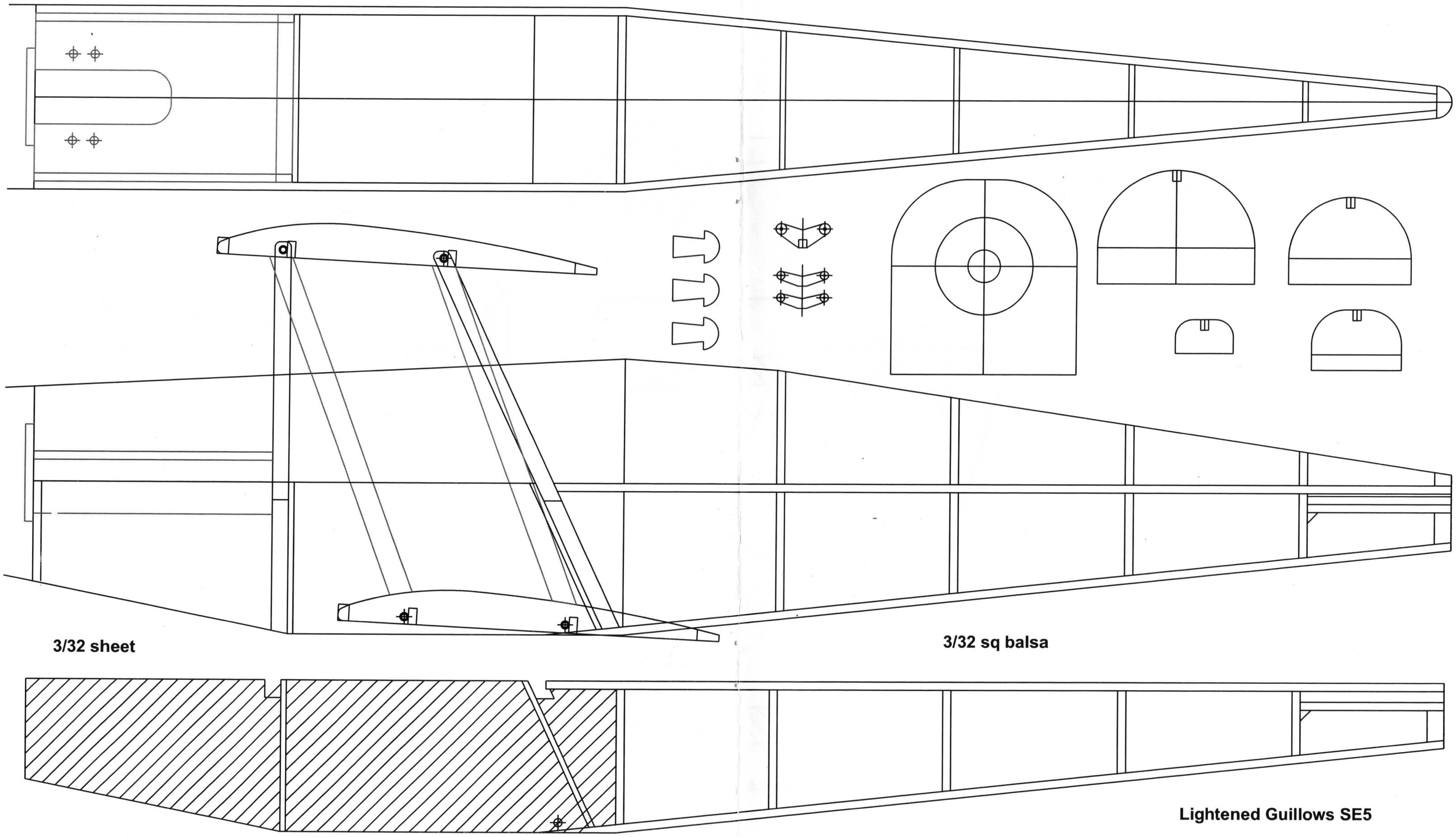




FOREWAR CAABINES



AFT CABINES



3/32 sheet

3/32 sq balsa

Lightened Guillows SE5