



RCMW

February 2017

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Five Full Size Plans

Including the LUSCOMBE Model 10
and History of the Luscombe Factory
Download a Complete RC Modeler Issue

C/L Hanriot-
Biche H-110 Pursuit

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ON THE COVER

The March 1977 issue of Flying Models included the article and plans for the HANRIOT-BICHE H-110 Pursuit plan by Dick Sarpolus. Dick also provided the photo used on the cover of that issue

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USA

For the Model Bulder and Flyer - February 2017 Issue



Full
Size
Plans



Let's talk about RCMW and what we are trying to do by putting out an online magazine for model BUILDERS. I emphasize Builders because the remaining two US magazines and from what I have seen of some magazines originating in other countries do not seem to have much of interest to model Builders.

It's obvious, based on reading Model Aviation and Model Airplane News that the interest, money and profits in the model "game" are driven by those who are fliers rather than Builders, particularly radio control fliers.

I don't find anything wrong with this except that those of us who are builders don't find much except advertising in the surviving model magazines. There is something about paying \$4 or \$5 for a magazine that is basically a catalog of items for sale that doesn't sit well.

A lot of the content consists of articles about gigantic and expensive models that that the big majority of readers would never dream of building, or even buying. Sort if interesting but once you have seen one 1/3 or 1/2 scale warbird model they all begin to look the same.

Again, those are interesting but looking over model magazines from earlier days of model building when construction plans, 3-Views and building hints and kinks were in every issue can be lot more rewarding, even more so when you can build it yourself. Personally I'm a lot more pleased with something I built myself than having to brag about how much it cost.

Not everyone agrees with me on this but I'm convinced there are enough folks who would like to see plans and construction articles for reasonable sized models that can be flown in the local park, schoolyard or even backyard that we will publish them.

We reprint selected classics from old magazine and out of production kits and also welcome new designs. The majority of builders seem to be interested in Radio Control but we try to have a well rounded balance that includes other types of models too, gliders, U-Control, and free flight models.

There are thousands of model designs out there that can be built and flown as designed or easily modified to use current electric power and micro sized radio control systems. Even free flight and U-Control models are starting to appear with electric power, radio controlled dethermalizers and motor controls. It's a good time to be Building models.

I hear from a lot of model Builders who complain about the lack of plans and projects in the current magazines. Don't just complain about it, tell your modeling buddies about RCMW. We welcome and need new subscribers in order to keep providing the plans and projects you enjoy.

Free two month trial subscriptions, and a whole year, 12 issues is only \$24.

Keep 'em Flying,
Roland Friestad, Editor

LUSCOMBE 10

by Earl Stahl

This little rubber powered scale model by Earl Stahl appeared in the September 1946 issue of Model Airplane News. Also in the same issue was a 3-view by Leonard Wieczorek and historical information by Robert McLarren. I've added a few notes at the end also - Editor

Build a flying scale model of this little sport plane that looks like a pursuit job

RECENT months have shown a revival in investigating potentialities of single seat sport planes, but whether or not they are to take their place in popularity beside the two and more place civilian models is still a matter of speculation.

In the late twenties and early thirties a number of one place planes were buzzing around airports. These included the Buhl Bull Pup, several types of Heaths, Corben Baby Ace and Super Ace, Knight Twister and numerous others.

The mushrooming popularity of Cubs, Aeroncas and Taylorcrafts soon, however, shoved these craft into the background and not until now has new interest been shown in them.

Several manufacturers are again looking to one place planes and the result of their investigations of performance possibilities and market potentialities may result in assembly lines for their production.

Luscombe's experimental single seater is one of the most promising to be shown to the public. Using a regular 65 hp Continental engine, it is reported to have a cruising speed of more than 120 mph. ... and that is really something!



A plane of this type would be especially desirable for cross-country piloting because it would provide rapid transportation at very low cost.

This Model 10 was fabricated largely from standard Silvaire parts which means that it surely inherits the durability and utility of this popular sport plane.

How the little ship flies is not known for to our knowledge only the Luscombe test pilots have flown it, but if it bears the fine flight characteristics of the Silvaire it will be more than satisfactory for the author, who owned one of the latter and considers them "tops."

As a model the Luscombe 10 provided one of the sharpest looking yet easiest built planes we have ever designed for MODEL AIRPLANE NEWS. No deviation from scale was required to adapt the proportions to a satisfactory flying model design. Build this little ship and you will have one that you will be proud to display and fly.

The drawings and text are for a rubber powered model, but by doubling the plans and altering the structure slightly to provide for the motor a fine control line model can be had.

As usual we caution you to work carefully with the best materials because the finished product can be no better than the effort and raw materials put into it.

Medium weight balsa is used throughout for the rubber model while a gas job should be fabricated with harder grade, particularly for spars and such. Regular colorless, quick-drying cement is used to assemble the various parts.

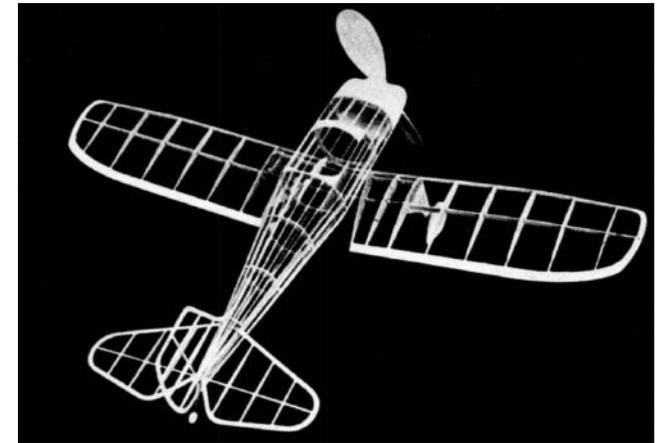
Since they are most simple, let's start with the tail surfaces. The rudder and stabilizer can be assembled over the plans. Notice that both units are of identical rib construction.

Cut the outlines from 1/16" thick balsa and make the spars and ribs from 1/16" sq. strips. When these structures are built, remove them from their jigs and cement strips of soft 1/16" sq. to either side of each rib only. Then cut these overlaying strips to the streamline rib shape. This type of construction is the lightest and strongest we know for small models.

To start wing construction, cut ribs, spars and leading edges from materials specified. Assemble the parts over the plans, building the wing into two halves and leaving rib No. 1 off until the halves are assembled. Join the halves with 1 5/16" dihedral at each tip and then install rib No. 1. Trim and sand the edges and tips to their proper shapes to complete the structure.

Since the landing gear is part of the wing unit, it should be made now. Bend the .040 music wire as shown to form a right and left strut. Bind and sew these right to the wing as illustrated, then cement the area for added strength. Wheels are made from laminations of sheet balsa and they should have bearings to permit them to revolve freely.

Wheel pants and fairing struts are likewise laminations of sheet balsa. Note that centers of the pants are cut out for the wheels while centers of the struts are open to allow the wire struts to spring and thus absorb shock. Incidentally, don't attach these landing gear details until the wing has been covered.



For years we have been modelling monocoque fuselages in the manner described here. This method calls for the use of four sheet balsa keels to give the proper outline shape, bulkheads to form the crosssection, and fairing stringers. It is both easy to accomplish and strong so we recommend it highly.

Go about the construction in this manner: Trace top and bottom outlines of the side view as well as sides of the top view to get the shapes of the keels which are cut from 1/16" sheet. Bulkheads are likewise 1/16" sheet and two of each are needed as they are made in halves.

To assemble, pin top and bottom keels over the side view. Note how the top keel at the rear forms the mount for the stabilizer and how the bottom keel below the cockpit is curved to fit the top camber of the wing rib. By making these very accurately, assembly of the parts is made easy and exact.

Over the side view, place half of the bulkheads in their respective positions, then slip a side keel into the notches. Now pick this frame up and add the remaining formers and keel. Stringers of 1/16" sq. stock are next attached. Add those closest to the side keels first, placing one on each side at the same time to avoid pulling the structure out of line.

Incidentally, it will be necessary to cut some of the notches in the bulkheads as assembly progresses. We do this to assure perfectly straight stringers and it makes the task no more difficult if a razor blade broken to a sharp point is used.

On the lower fuselage between bulkheads B and C curved pieces of 3/32" sheet are attached to fit to the wings' uppercamber. Just aft of bulkhead F small inserts of 3/32" sheet are installed at each side to retain the bamboo pin that holds the rubber motor.

The nose section may be made entirely from laminations of cross grained sheet or it may be made from a block, or several small blocks glued together to make a large one—with the 1/2" thick laminated front shown. Check the drawings for details and note how the whole nose is hollowed for lightness.

In the extreme front laminated portion of the nose, a square hole is cut to receive the removable nose plug which is shown. Carve the outside of the nose to shape, using pictures of the model and real craft as a guide.

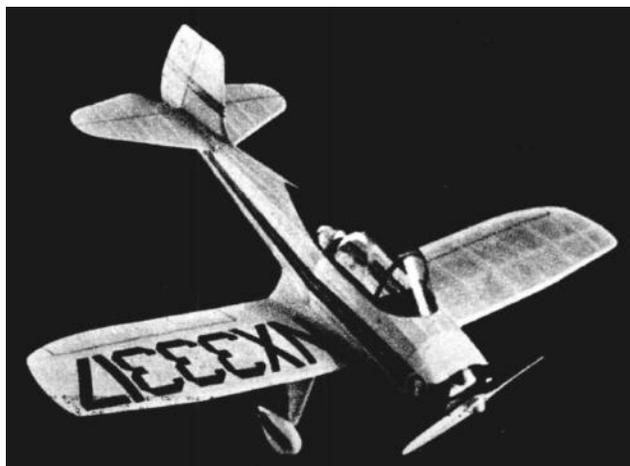
Two propellers are shown; the scale one which we made from thin laminations of white pine and mahogany and the enlarged flying one for real performance on the flying field.

Carving a good flying prop is of such importance that much care must be exercised. First cut the blank which is a hard balsa block to the size and shape given. Drill the tiny hole for the propeller shaft and then begin to carve. A right revolving prop is required and it is best to finish the back face of the blades first.

Cut and sand about 1/16" undercamber into the back, then cut away the front until the blades are of the required thickness. Round the blades and sand them into balance.

The nose plug is simply squares of 1/8;" thick balsa glued together with a 1/32" thick plywood face. Cement washers or bearings to the plug to fix the line of thrust.

To assemble the propeller unit first bend a shaft from .040" music wire. Slip the nose plug, several washers and the propeller on in that order. Bend the end of the shaft into-a U and pull it back into the prop, or better still fit the propeller with a free wheel gadget and bend the end of the shaft accordingly.



With all the parts constructed they may now be prepared for covering. Carefully sand them so that as near perfect a job as possible can be done. Colored tissue is recommended because of its light weight and attractiveness. It is stuck to the frames by banana oil or very thin dope.

For the tail surfaces and bottoms of the wings, use a separate piece for each flat surface, and for the tops of the wings use an additional section for the tips since they are tapered slightly. The fuselage will require numerous small pieces neatly lapped to avoid wrinkles.

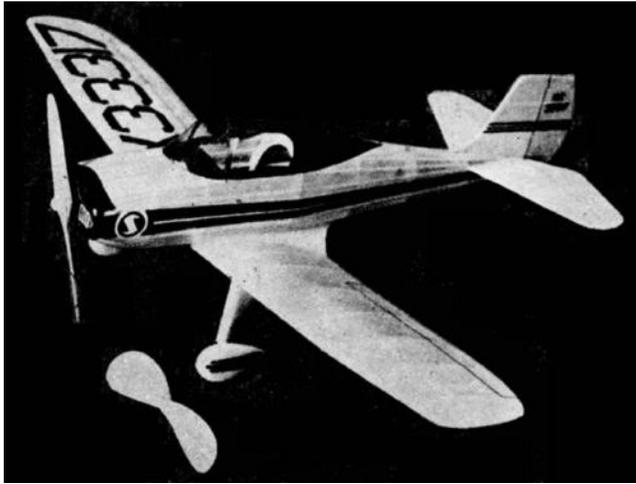
To tighten the tissue lightly spray it with water and allow to dry. Do not dope the tissue until the whole model is assembled.

The little model will begin to resemble the real ship now that parts are ready for assembly. Slip the wing into place and cement it fast. Make the two small fillets from 1/32" sheet balsa and attach them with glue.

Now fit in any small pieces of 1/16" sq. needed to shape the bottom of the fuselage and cover the area. Slip the stabilizer into place and cement. The rudder is placed perpendicular to the stabilizer with the front offset a bit for a right turn. Check the alignment of all surfaces carefully.

Finish any small fillets between tail and fuselage and the covering can then be sprayed again to be sure all wrinkles are eliminated. Now brush one or two coats of light dope on the covering.

It is the minor details that "make" any model so they should not be overlooked. Probably the first part that will catch the eye of anyone viewing the model Luscombe will be the bubble canopy.



The one on the original was easily made by simply heating a piece of 1/32" soft plastic in an oven and then stretching it down over a carved wood mold. Two persons (or any reader with four hands can do it himself) are needed for this job, and if at first it is not perfect simply reheat and try again.

Incidentally, if strain marks appear on the canopy they can easily be eliminated by rubbing with auto rubbing compound or Simoniz cleaner.

Landing gear fairings, wheels and the like may be installed at this time. Details such as license numbers, control outlines, stripes, cowl grill, cockpit details, etc, are all represented very effectively by tissue of contrasting color doped to the covering. Tail wheel, exhaust stacks and the like are made from scraps of wood. Sticklers for details can find more on photos of the real ship and they may dress up their ships to the limit of their initiative and ability.

Power required for each model will vary with the weight and general efficiency. Six or eight strands of 1/8" flat brown rubber will be about right. Lubricate the strands with a mixture of tincture of green soap and glycerine before dropping them within the fuselage.

To do this hook one end of the loop of strands to the prop shaft and then tie the others together with a bit of thread and drop them through the nose. A removable bamboo pin is slipped through the back to retain them.

Little remains now but enjoyment of the fruits of the hours of labor. However, remember that to get the most of this or any model it must be handled carefully and skillfully. With this in mind select a nice grassy field and a calm day for the test flights. First tests should be glides from shoulder height. If a stall occurs, add a small amount of weight to the nose. If it should dive, add weight to the tail.

Once glides are okay, try a small amount of power. Observe the flights carefully, adjusting the amount of turn by putting slivers of balsa between the nose plug and nose to offset the thrust line right or left and at the top to tilt it down should the model stall while under power. As flights become more satisfactory, increase the amount of power making any further minor readjustments required.

The author found that his scale models are most satisfactory when they are adjusted to fly in a large left circle when under power, and then when they start to glide the turn is large and to the right.

The Luscombe 10 is a smart little ship, trim in line and fleet when on the wing; you are sure to find that yours will take to the air as readily as a duck takes to water.

About Don Luscombe and the Model 10 by Robert McLaren

**Some of the information is a bit dated having been written 70 years ago. Some more recent information is added at the end of this article.
Editor**



THE engineering design of a lightplane no longer presents a serious problem and there are hundreds of competent engineers available for the job. Its manufacture in quantity is far simpler with war-proved techniques and thou sands of widely experienced workers available.

These two phases of the lightplane industry present no problem to the manufacturer. But one seemingly minor item does: what type shall we build?

Many companies have approached this problem on the basis of economy, most of them continuing to build the same type they had in quantity production before the war.

Many others have made elaborate field studies of consumer desires, analyses of sales records of competitors over the past ten or fifteen years, serious economic studies of the probable future market, etc. Still others have gone direct to the public with polls in the hopes that returned questionnaires would provide the answer.

That the results of these various surveys have proved inconclusive is well shown in the variety of types now on the market. One question however remains unsettled, even after the expenditure of hundreds of thousands of dollars: does the flying public want a single-place lightplane ?

Lockheed thought it did, built the Little Dipper, then decided it didn't and abandoned the project. Piper also thought it did and built his Skycycle (MODEL AIRPLANE NEWS November 1945), then decided to wait and see.

One manufacturer however, seems to think there's room for a single place lightplane in the bluebook and gives every indication of seeing the thing through: Luscombe Aircraft Corp. The plane:the Luscombe Model 10, our Plane on the Cover this month.

That Luscombe is approaching the problem cautiously and tentatively is borne out by the fact that the Model 10 is actually a slightly revised Model 8 Silvaire with the wing moved from top to bottom and a single cockpit replacing the two seat cabin.

Naturally, the design of an airplane is not as simple as that and the wing had to be redesigned into a full cantilever type. However, a fundamental requirement throughout the design was that as many standard Silvaire parts and assemblies be used as possible.

With fully developed and proved tooling available on the two place model, large economies could result from their use on the new single place design. The fuselage is the same with the exception Of fillets and large fairings over the landing gear struts.

The Model 10 has a wingspan of 25 ft. and is 17 ft. long. The structure is all metal throughout with the exception of the fabric covering of the wing panels.

Its construction follows the metal die cutting practice pioneered a decade ago by Don A. Luscombe, founder of the company bearing his name, and one of the patriarchs of American lightplane design.

Luscombe's prominence in lightplane activities began in May 1929 when he formed the Mono-aircraft Corp., in Moline, Ill. His Chief Engineer was Mr. Clayton Folkerts, who was destined to achieve fame many years later in his own name as designer of a series of racing airplanes for the National Air Races.

Luscombe produced the well remembered Monocoupe, 65 hp two place cabin monoplane; the Monoprep, 65 hp two place model with a parasol wing and open cockpits; the Monosport, 110 hp two place monoplane; and the Monocoach, 225 hp four place cabin transport model.

Although highly successful airplanes, production quantities were not enough to carry the company through the early thirties financial slump and Mono-aircraft was sold to Knight K. Culver.

The story of what Culver made of the firm, which was later changed to his name, was told in MODEL AIRPLANE NEWS, March 1946. This month we take another turn from this path and follow the story of Don Luscombe.

With the era of welded steel tubing and fabric covering fast drawing to a close, Luscombe began experiments with metal die cutting and stamping, a far cheaper and less complex method of metal fabrication than the use of metal skin strips riveted onto frames and stringers.

In addition, he designed a high wing monoplane of extremely advanced lines and test flew it successfully. He called the new plane the Phantom and sold several of his friends on the idea of its manufacture.

The Luscombe Aircraft Corp. Was formed and facilities prepared in Trenton, N. J. for the manufacture of the new Phantom, which quickly proved, one of the fastest, safest and most popular lightplanes ever offered to the public.

The 45 hp model was augmented by the Luscombe Fifty, powered by a 50 hp Continental, and the Luscombe Ninety, powered by a 90 hp Warner engine.

During 1938-1941 more than 300 of these trim, two place lightplanes were sold. Then came the new model 8 Silvaire, one of the most popular lightplanes available prior to the war. But Pearl Harbor brought its production to a swift halt.

Luscombe, seeing the writing on the wall, evinced an interest in the sale of his holdings in the company.

Then occurred one of the strangest chain of events in modern aircraft manufacturing history. Luscombe sold his interest, 64.3% of the Luscombe stock, to young Leopold H. P. Klotz, whose American Aviation Investing Co. assumed title to this controlling interest.

Klotz proved youthful, ambitious and hard-working and soon had plans underway for conversion of the Luscombe plant to war sub-contracting work. Jigs and fixtures for the fabrication of ammunition boxes, hydraulic actuating units and large fuel tanks for the Curtiss C-46 Commando were soon in full production.

These projects were followed shortly by contracts for the manufacture of rudders and elevators for the Grumman Wildcat and bomb bay doors for the Avenger.

These latter contracts with the Navy brought forth the usual investigation which was suddenly brought up sharp by the fact that Klotz was a citizen of an alien country unfriendly to the U. S. Proceedings were instituted promptly on April 7, 1942, his holdings were vested in the Alien Property Custodian division of the U. S. Treasury Department.

Since these holdings constituted a majority control of the company, Luscombe became literally a government operated plant. However, the change in management left the work of the company unaffected and the contracts for Navy sub-assemblies continued with an extremely satisfactory production record.

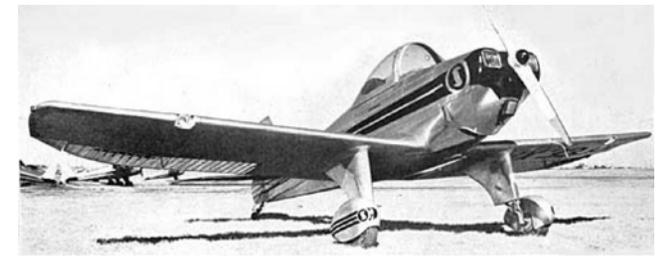
The Navy actually had plans for an extensive enlargement of the Trenton plant well under way when aircraft production cutbacks brought a swift alteration in the plans for expansion.

Klotz, meanwhile, applied for citizenship papers and filed an appeal in which he hoped to show that his native country, Austria, was not an enemy country and that he had been forced to leave Vienna where his family had been wealthy industrialists.

Finally, the Vested Claims Committee determined that Klontz was a resident neutral rather than an enemy alien, and his holdings in Luscombe were returned to him on June 6, 1944.

Following V-J Day, Klotz toured the country seeking a suitable site for a brand new plant in which to manufacture the Silvaire and which might sever all old ties. He purchased land near Dallas, Texas, and built a new plant in record breaking time.

He secured the services of Eugene W. Norris, Technical Services Manager of Aircraft Industries Association, as Chief Engineer. Klotz' sincerity, energy and production "know how" have paid big dividends and his Dallas plant was producing six Silvaires a day, which is claimed to be the largest lightplane production west of the Mississippi.



But he has highest hopes for the new Luscombe Model 10 and places his bets on its high performance, which he feels is the first requirement of the postwar lightplane. The little single seater has a top speed of 135 mph and cruises at 122 mph on its 65 hp engine, which may justify his unique title for it.

It weighs only 845 lbs. and burns but four gallons of fuel per hour; this means about 30 1/2 miles per gallon, which is stiff competition for even the highly touted "economy" automobiles now available.

Klotz felt that untold thousands of dollars were wasted each year by two place airplanes being flown every day only by the pilot with the passenger seat empty.

Not only is this true on business trips but it is also true in the plane "time" selling business in which hundreds of pilots fly simply to "log time" and prefer doing it alone. On this premise, the Model 10 could mean extra miles per hour and extra miles per gallon to the private pilot who takes his flying "neat".

Klotz didn't announce dates concerning the Model 10 simply because they weren't set yet. The plane, only one of which was built at the time of this writing, was undergoing extensive flight tests and its design was being engineered to incorporate many essential changes that had been created since it first left the ground.

REPRODUCTION MODEL 10 AT OSHKOSH

A reproduction of the Luscombe Model 10 appeared at one of the EAA flyins at Oshkosh. Here's a photo of the aircraft.



VIDEO OF BUILDING THE REPRODUCTION

And here is a 45 minute youtube video about the construction of the reproduction aircraft.

<https://www.youtube.com/watch?v=EDsvceJI3qE>

On the next page is the three view by Leonard Wiczorek from the September 1946 issue of Model Airplane News, followed by the plan for Earl Stahl's rubber powered free flight version of the aircraft.

We have combined the separate pages of the plan as presented in Model Airplane News into a single sheet. The PDF file is full sized and can be printed at your local copy shop

But the flood of inquiries from former fighter pilots and private pilots who are looking for the answer to their single place problems seemed to indicate that they have found it in the Luscombe Model 10, a name that has come a long way on a plane that will go a long way.

NOTES FROM THE AEROFILES WEBSITE

The Luscombe 10 was essentially built up from parts there was no engineering or structural analysis done. The fuselage center section was hand-built, while the tail unit, engine, and cantilever wing were modified from 8A components.

The first test flight by Bob Burns almost ended in disaster when the main landing gear threatened to fail. After some redesign, Burns successfully flew the airplane once in Jan 1946, commenting that it was a very good airplane and needed no changes.

Subsequent analysis indicated that there would be no market for the type, and development was dropped. John Swick, in The Luscombe Story, claims the prototype was later destroyed in a windstorm, and other reports say that the aircraft and all data were destroyed for tax purposes. Jim Zazas says both, that the plane was scrapped as a tax advantage after being critically damaged in a storm.

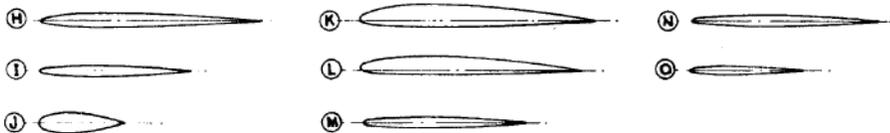
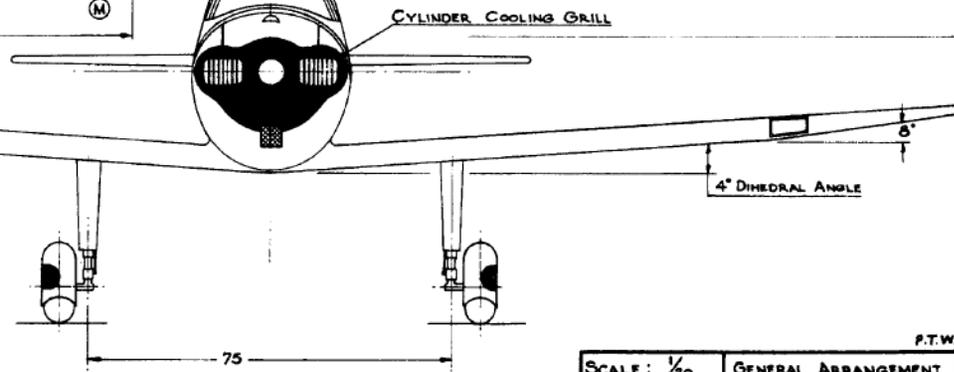
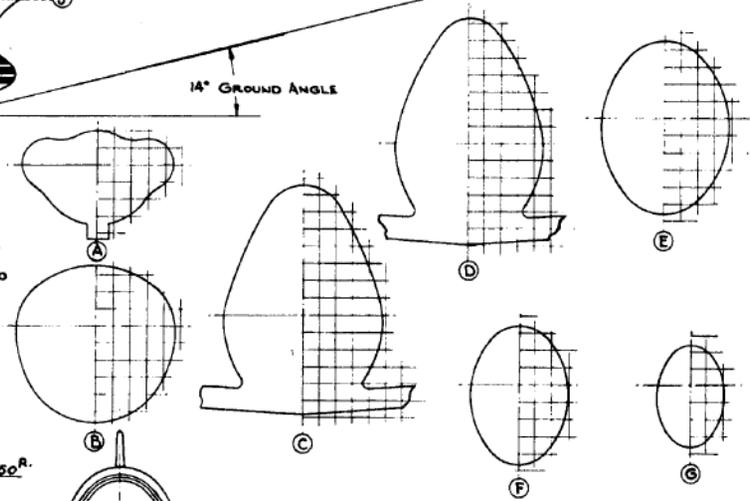
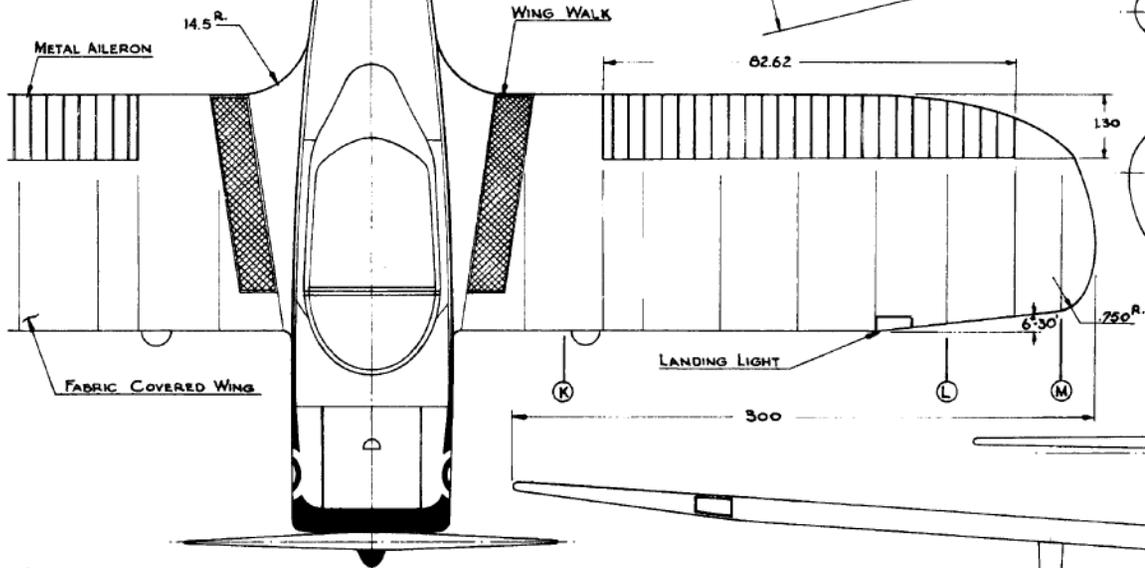
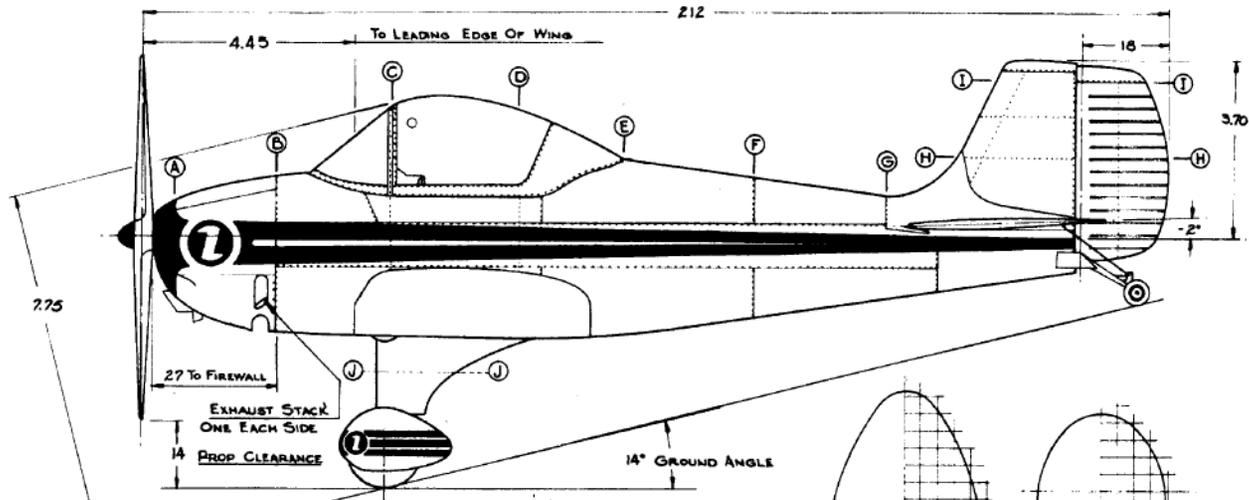
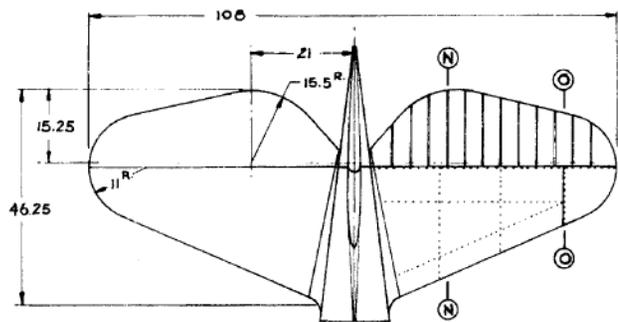
NOTES FROM WIKIPEDIA

The Luscombe 10 was a single-seat sport aircraft built in the United States in 1945. It was a conventional, low-wing cantilever monoplane with fixed, tailwheel landing gear, designed for aerobatics.

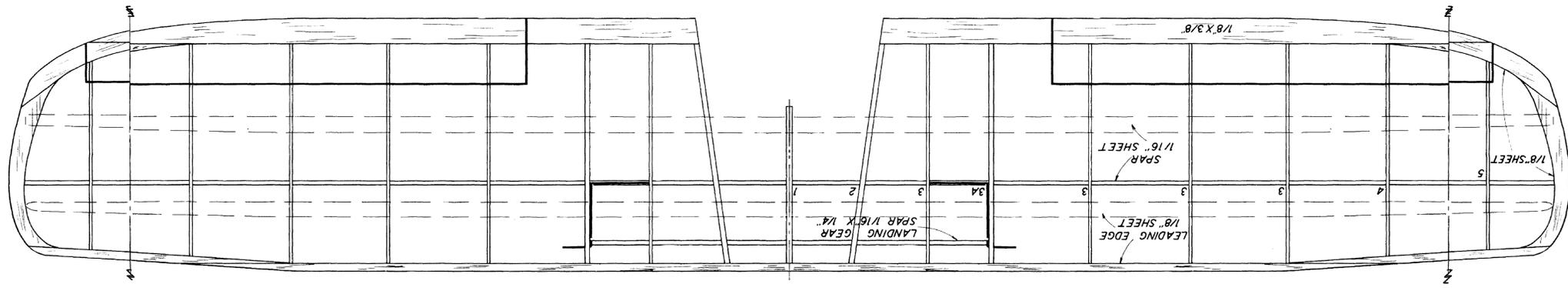
The wings, tail unit, and engine section were all adapted from the Luscombe 8, while the fuselage center section was an all-new design, relocating the Model 8's wings from a high to low position.

Despite promising results from flight testing, Luscombe ultimately felt that there was not a sufficient market for the type, and development was halted almost immediately.

The sole prototype (registration NX-33337) was destroyed in 1948 for tax reasons.

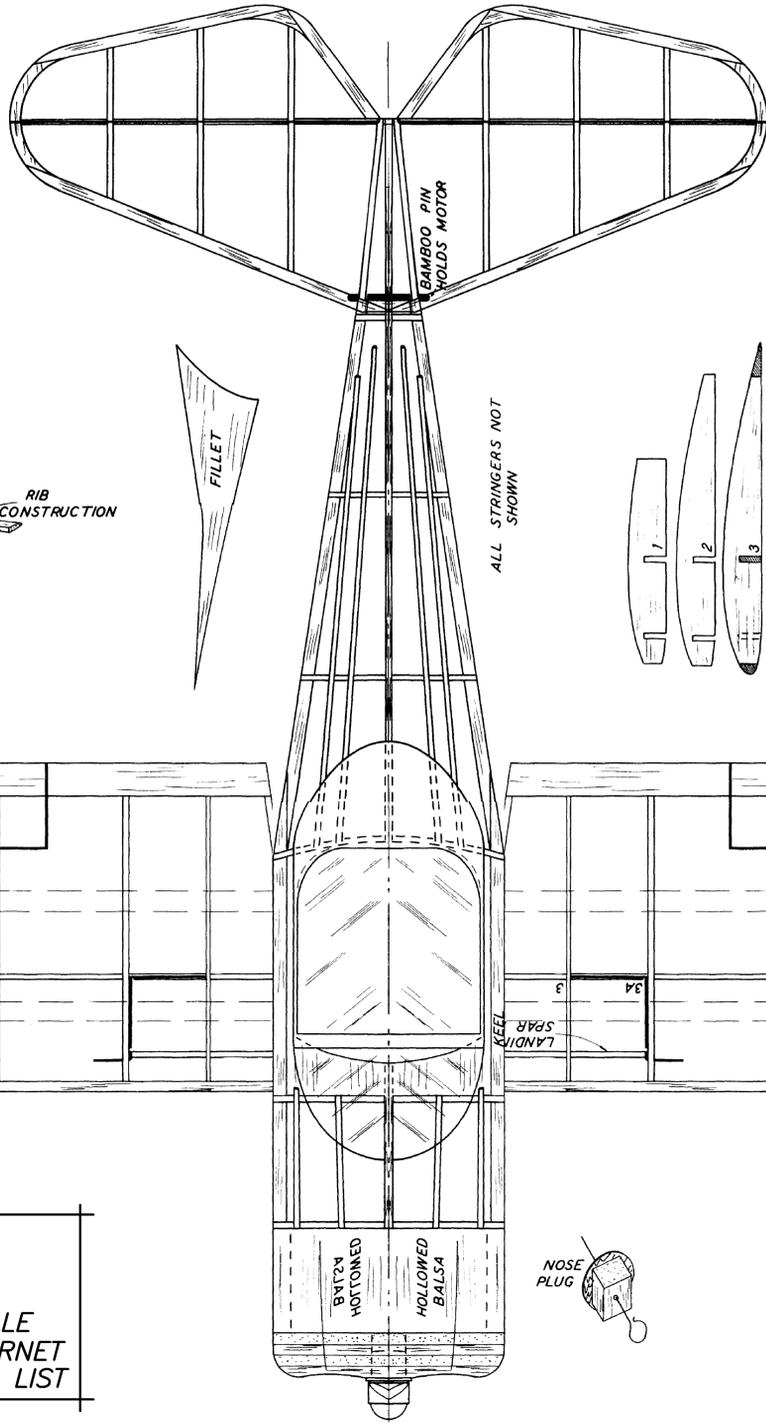
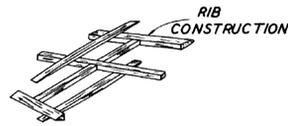
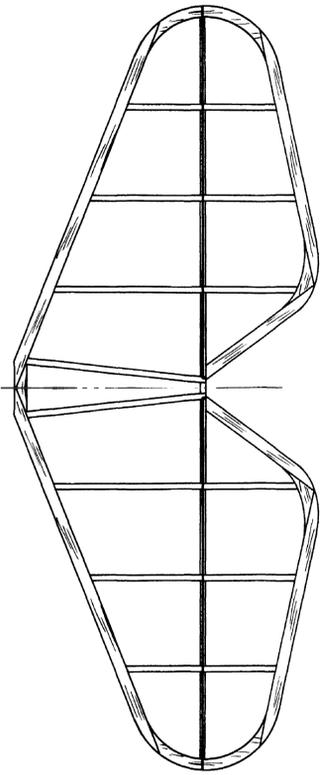


SCALE: 1/20
 DRAWN BY: L.H. WIECZOREK
 GENERAL ARRANGEMENT
 LUSCOMBE 10
 P.T.W.

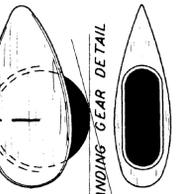
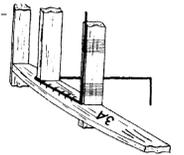
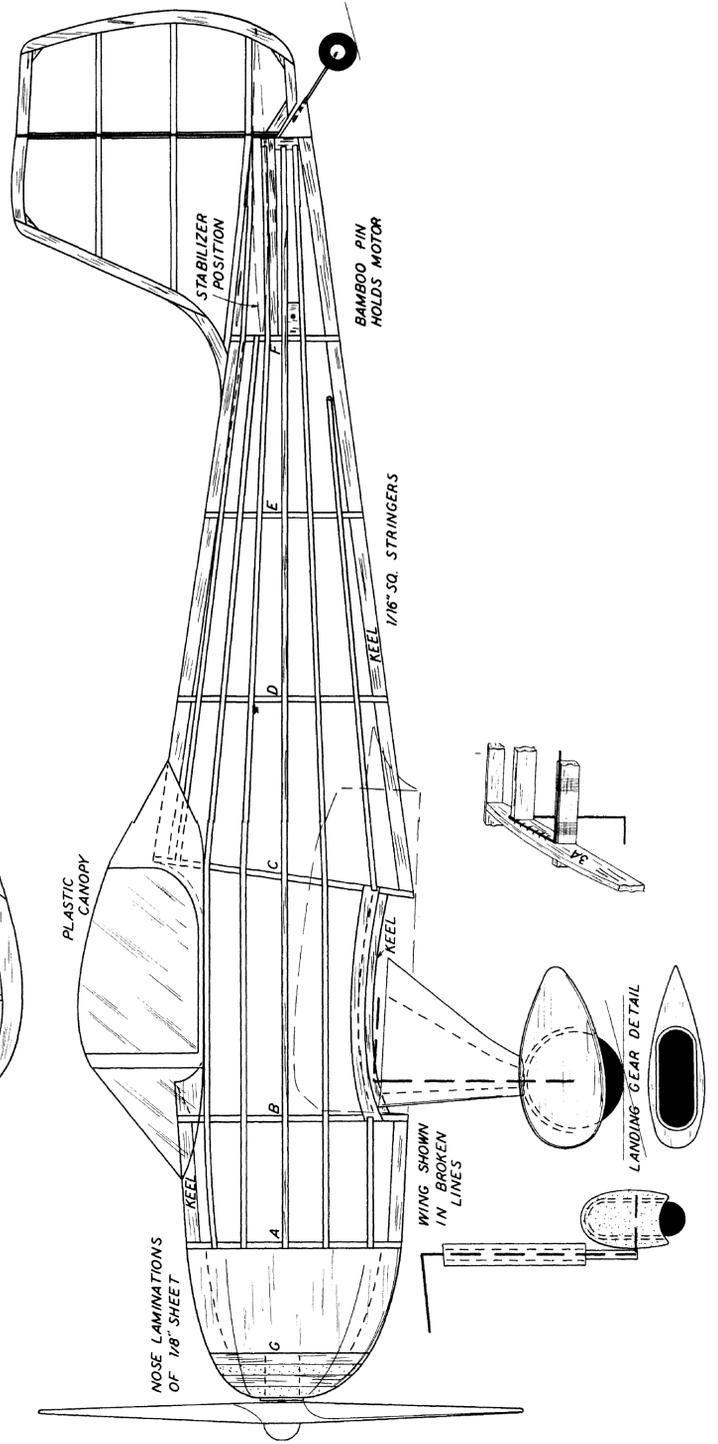
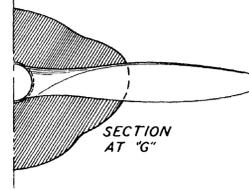
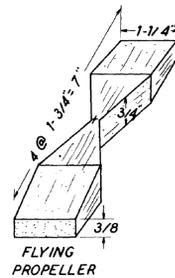
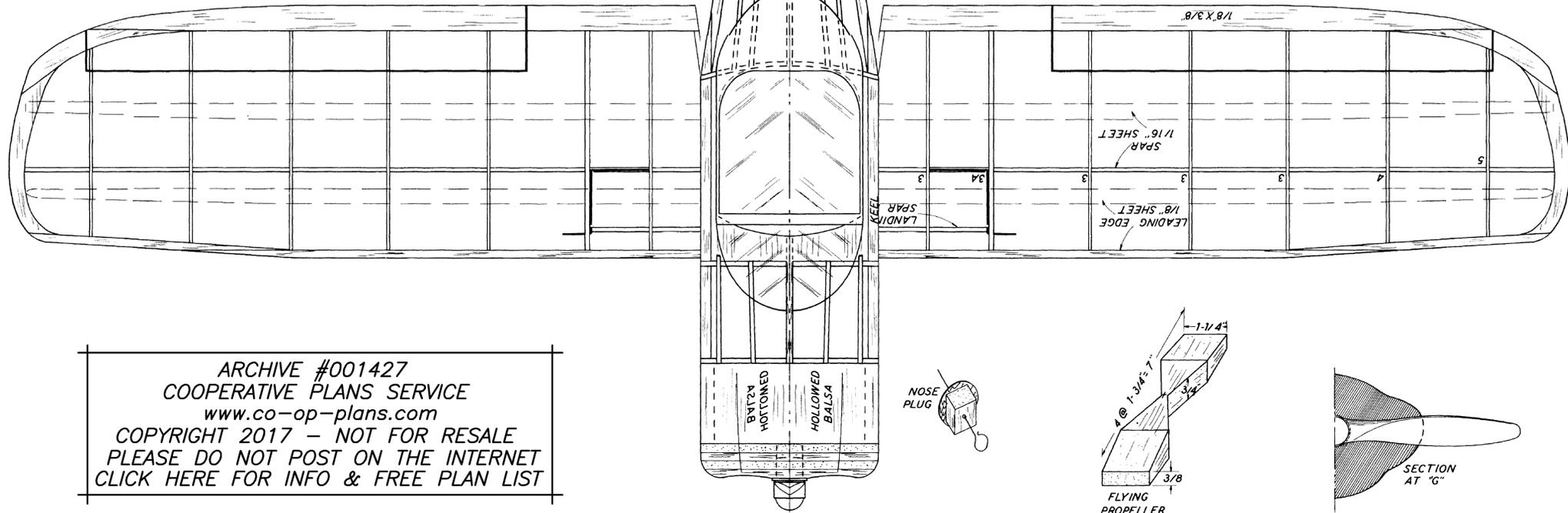
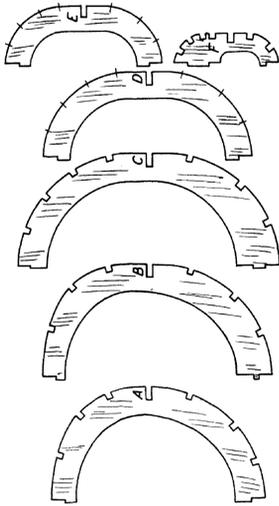
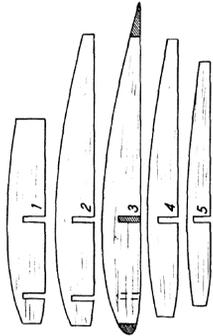


1.5/16" DIHEDRAL AT TIP

DESIGN BY EARL STAHL
ORIGINALLY PUBLISHED IN
MODEL AIRPLANE NEWS
SEPTEMBER 1946
REPRINTED IN RCMW
FEBRUARY 2017



ALL STRINGERS NOT SHOWN



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Now - THE BIPLANE GLIDER

A New Type Glider—Easy to
Build and a Remarkable Flier

By **AUSTIN RINALDI**

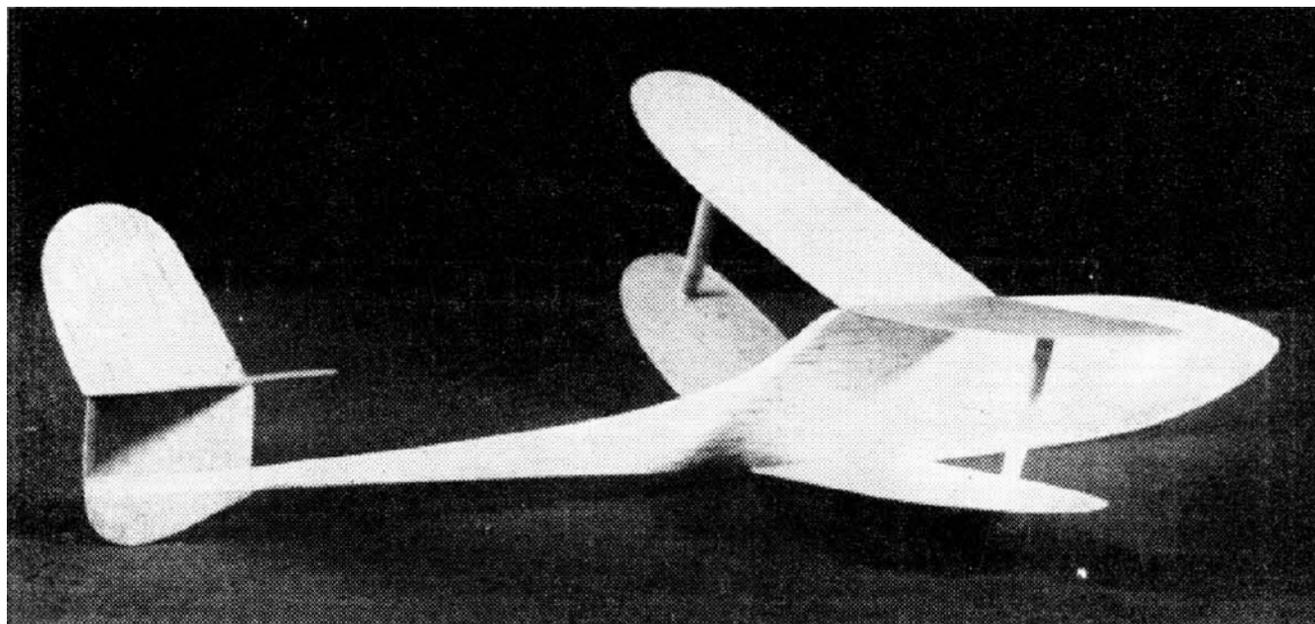
Here's something you don't see very often, a biplane hand launched glider. It's from the December 1941 issue of *Model Airplane News*. This would get lots of comments at the flying field

MODEL airplane builders ! Here's the ship for you; an improved biplane glider that catches the eye, both in looks and in flight. We know some of you don't believe in biplanes and are always building that same old monoplane glider; well, here is just the ship to prove to you that a good biplane will match any ordinary monoplane. It costs very little to build and can be made in one night.

This ship is also a honey for catapulting; just insert a hook on bottom of the body. The tail was especially designed for this purpose. When catapulted it climbs high and soars around, making good flights. Why not look at the plan and picture and start reading construction data?

Construction

To start building just trace wing patterns from the plan, which is full size, on a 3/32" sheet of



medium hard balsa, cutting out for back sweep in top wing. Sand all four half wings to airfoil section given on plan.

Glue in dihedral of both wings, which is 1-1/4". Allow to dry and polish wings with clear dope or glider polish, whichever you prefer. Then cut out body, which is in two pieces on plan; join DD to DD for full size pattern of body, cutting it from a sheet of 3/16" by 2" medium hard balsa, sanding to cross-section indicated on plan.

Cut out grooves for upper and for lower wing, making sure you glue both wings at 0° incidence. Body is also polished with clear dope or glider polish. When wings dry, cut out wing struts and sand to a streamline ; then glue them between the wings. Refer to plan for their position.

Next you cut the stabilizer from 1/16" by 2" medium hard balsa, sand to section as on plan and glue in dihedral in same manner as wings. The stabilizer dihedral is one inch. While this is drying cut the sub rudder and tail mount from 1/8"

sheet. Sand to streamline and glue on body, then glue on stabilizer at 0° incidence; polish whole tail assembly. Wax the whole ship for a good shine and finish.

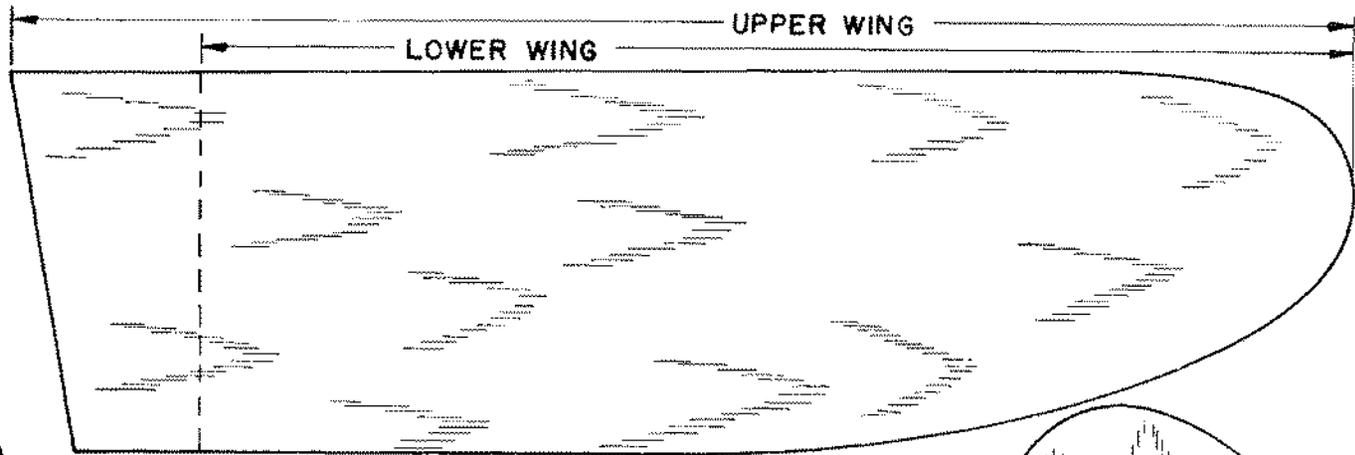
Flying and Adjusting

Test glide the ship, adding clay to nose to balance it. When a long, flat glide is obtained launch the model. If you wish to catapult ship, bend a small hook out of .049 wire.

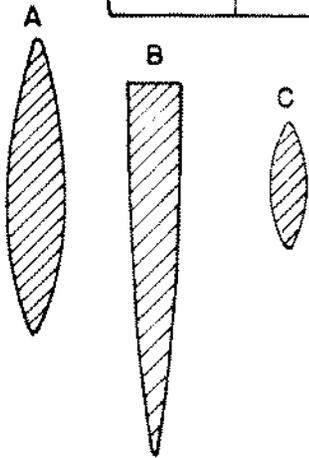
Well, that's all for now. We hope you will be satisfied with the performance of this model as we are.

Bill of Materials

1 sheet 3/32" by 2" by 36" for wings.
1 sheet 3/16" by 2" by 15" for body.
1 sheet 1/16" by 2" by 7" for stabilizer.
1 sheet 1/8" by 2" by 2" for tail mount and sub rudder.
1 ounce clear dope. 1 ounce cement. 1 piece .049 wire.



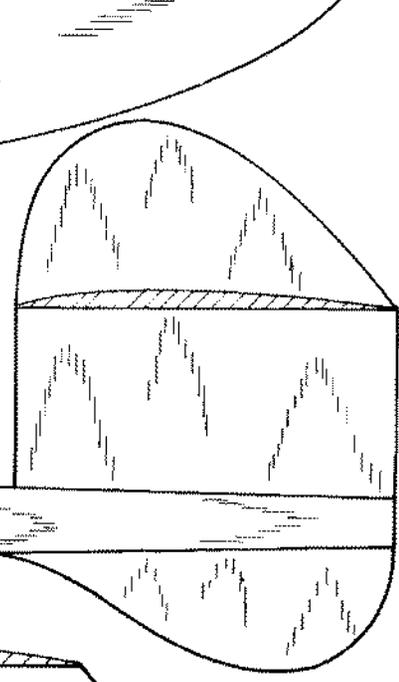
DREAMER
CLASS A H.L. GLIDER
 BY AUSTIN RINALDI
 BEST TIME 3 MIN.
 SCALE - FULL SIZE



FUSELAGE SECTIONS

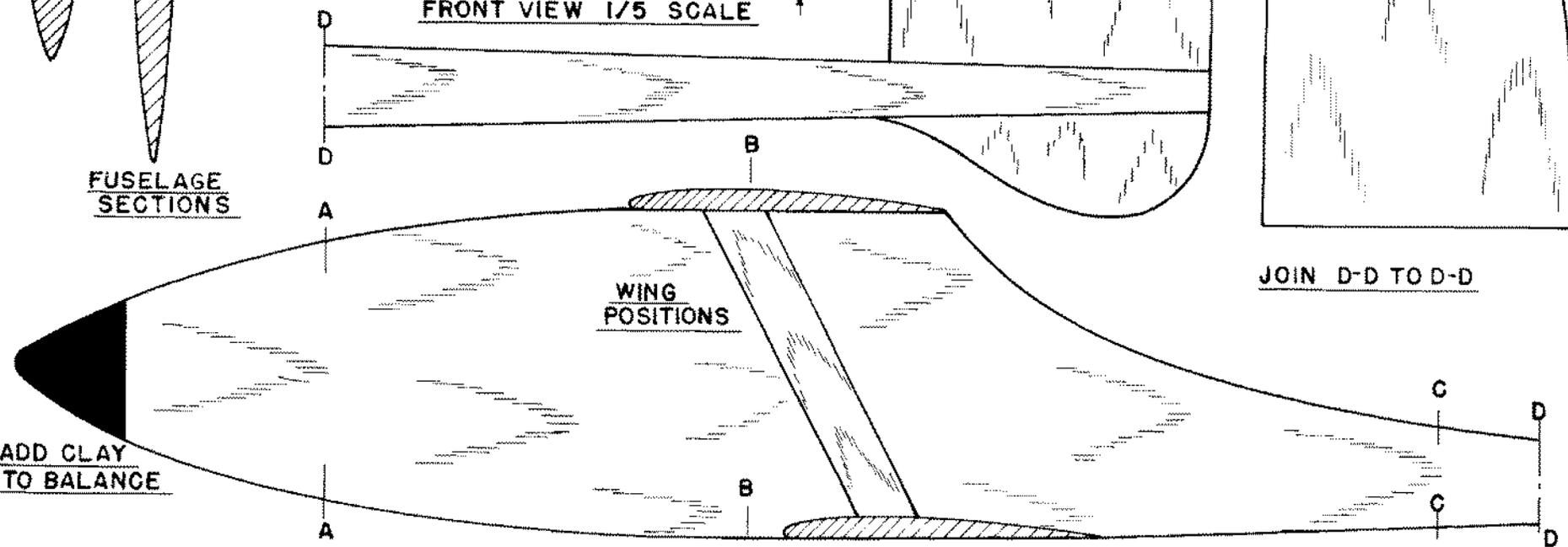


FRONT VIEW 1/5 SCALE



STABILIZER HALF

JOIN D-D TO D-D



ADD CLAY TO BALANCE

WING POSITIONS

HANRIOT- BICHE H-110

Pursuit by Dick Sarpolus

This U/C model that originally appeared in the March 1977 issue of Flying Models was inspired by a 3-View and rubber scale model that was presented in the July 1934 issue of Universal Model Airplane News,

"It's a Henry 0. what? How come the needle valve is up there and the prop is back here?" These are some of the comments heard at the field concerning this model, one of the more unusual projects I have had the pleasure of developing.

Most scale fans are always looking for that "different" ship to model, and when I saw pictures and a 3-View of this one in an old July 1934 issue of Universal Model Airplane News it looked like an interesting challenge. One thing to be sure, it is not something you will see at every flying field.

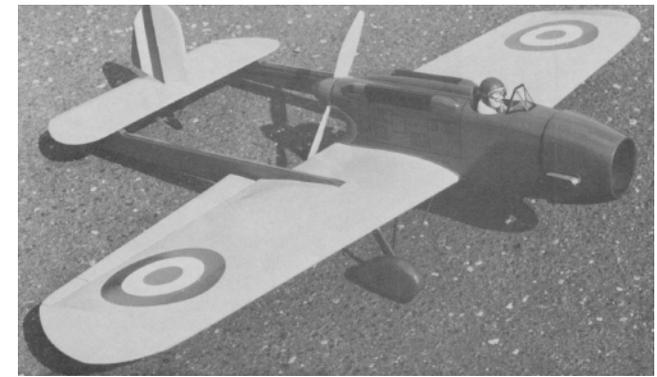
In 1934 this was the latest state-of-the-art; a monoplane that could fly over 240 m.p.h.! At that time, data on its performance and top speed had been kept secret by the French government. It was powered by a geared and supercharged 600 m.p. Hispano-Suiza engine, water cooled with the radiator mounted in the nose and enclosed in an N.A.C.A. Cowling.

The gas tanks were located in the center-section of the wing, and in case of an emergency could be dropped free of the plane. I would think dropping the gas tanks would just place the pilot in another sort of emergency.

It had a three bladed, adjustable pitch prop. Twin machine guns fired through the bottom of the cowl. Flight controls were push-pull rods, passing to the tail through the tail booms on ball bearings. It was planned to have the landing gear retractable on subsequent versions.

Apparently the H-110 Pursuit was not too successful; at least I have never heard of the aircraft, except in this magazine. The issue did contain a three-view drawing, a photo of the aircraft, and the full color cover painting depicted it in action.

Three years passed before I began work on the plans for the model, then another year before construction was started. Once begun, the model was completed in three months.



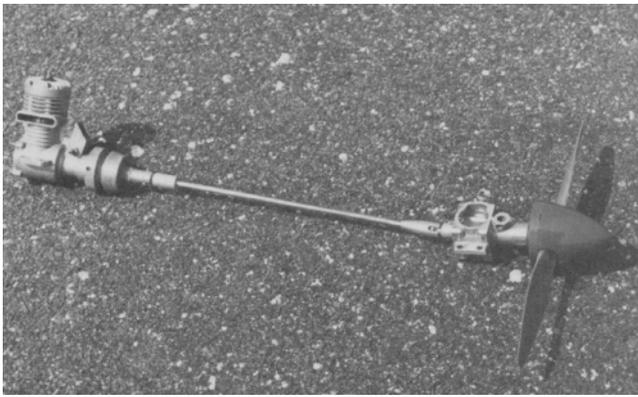
It must be classed Stand-Off Scale, as I wanted it sized and proportioned for hopefully aerobatic capabilities. Coupled flaps and elevator called for the double bellcrank arrangement due to the center-section notch in the wing.

The extra linkage required is another bellcrank, it's mounting provisions, pushrods, and another flap control horn. An adjustable lead-out guide was built in to aid in trimming the ship.

The plans were first laid out calling for the engine to be located over the wing trailing edge—it was obvious that this approach would require much ballast weight in the nose for correct balance, so the extension shaft idea was explored.

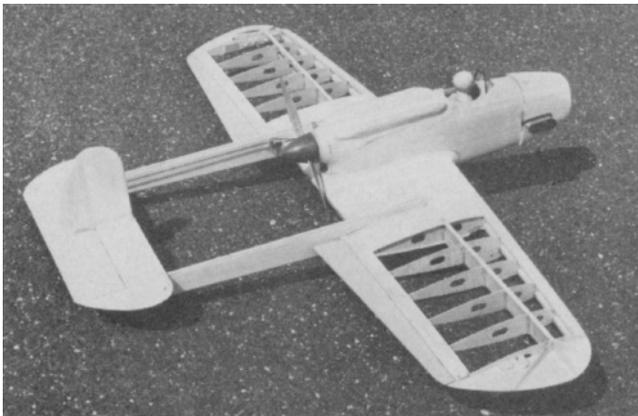
Standard boat hardware; flywheel, universal joints and shafting, could be used, but the big problem was the rear bearing support and prop drive arrangement.

To keep it simple, an old engine was sacrificed — the cylinder, piston, etc., were discarded and the crankcase casting cut off above the case itself. The crankshaft was modified to accept a universal joint by welding a stub shaft into the back end and turning off the counterbalance and connecting rod pin.



This provides a standard prop drive arrangement and mounting lugs for easy installation. The best solution would be to use sealed, grease lubricated bearings on the shaft. Depending on your machining capability many methods could be used for fabrication of this extension shaft assembly.

Construction is basic; built-up wing with full depth notched spar, sheet balsa tail booms, sheet tail surfaces. The fuselage is built up with 1/32" plywood doublers and has long 3/8"x 1/2" maple motor mounts which take both the engine and the rear bearing support which simplifies alignment.



The fuselage does require quite a bit of carving. The rear end fairs into the spinner, engine cowlings and headrest on the top, and the front cowling all must be built on and shaped. Details as the wheelpants, landing gear fairings, fuselage air scoops, all add to the finished appearance.

The Extension Shaft

Engine starting is accomplished with an electric starter and small V-belt over the engine flywheel, as is done on many R/C helicopters.

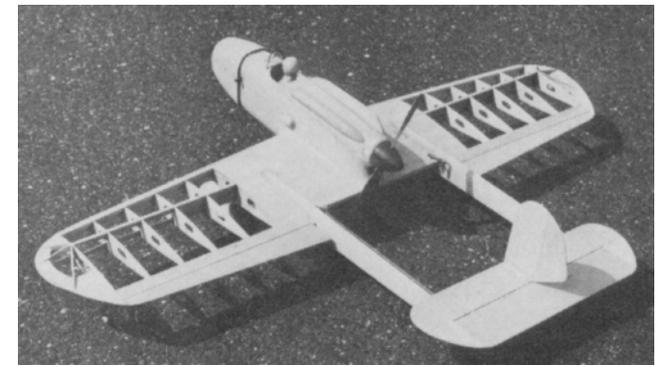
The original model turned out quite heavy. I haven't weighed it as I really don't want to know just how heavy it is. The extension shaft hardware naturally adds weight, and at the time construction was underway, I just couldn't find any lightweight balsa for that fuselage.

The weight of course hurts the aerobatic capability, but it does fly quite well. If you keep the weight down it would be even better. An old model Fox .35X was used with a Tornado 10-6 pusher prop which does a good job.

Don't keep the plane on the ground very long after the engine has been started, as it must be moving to get air flowing over it for cooling.

The first flight was more interesting than most trial flights, due to the extension shaft setup. Starting with the electric starter below the aircraft through the belt loop was easily done. We had intended to tuck the excess belt loop up into the fuselage after the engine was running but decided to leave it alone. In the air it is not noticeable.

Due to the distance from the engine to the pusher prop, the exhaust is not blown away and stays near the plane, adding to the confusion. Very noticeable is the different noise, from the engine and from the propeller.



As the engine is leaned out, the noises blend together; it still sounds different from a conventional model. It is also unique adjusting the needle valve a foot away from the prop.

The vibration level seemed no higher than that with a normal prop-on-engine configuration. The model seemed to take off slower than expected; possibly due to less air blast over the wing; but once in the air it flew, and responded just as any conventional model. With the fuel almost gone, the engine began to scream and the prop stopped. We landed, obviously, and before anyone could get to the overrevving Fox, it stopped. Disassembly revealed a loose universal joint on the extension shaft.

The whole extension shaft assembly must be handled properly. File flats on the shafts where the setscrews contact, and assemble all setscrews with loctite. To be doubly sure after that first flight, I silver soldered all universal joints onto the 3/16" dia. wire extension shaft.

I can't be sure about the life of the joints, but they are readily available and easily replaced. Silver soldering definitely keeps them in place. Rubber tubing over the universal joints retains grease to keep them lubricated.



As mentioned before, the best propeller shaft mount would be one with sealed ball bearings, but using an old engine crankshaft and crankcase, of any type, makes the project easily handled. Long life of the bearings isn't too important as a model of this configuration probably won't be flown constantly anyway.

Subsequent flights have shown that some better method of lubrication must be provided for the rear prop shaft. Suggestions have been to put a grease fitting in the ex-air intake position, or to run a piece of tubing from the muffler to carry exhaust oil to that rear shaft. We intend to try the oil line idea.

Construction

Starting with the wing, the ribs can be cut individually from the templates on the plans, or sanded to shape sandwich style between root and tip rib patterns, whichever method you prefer.

The spar is 1/8" sheet balsa, notched for the ribs. Block up the ribs on your building board to keep the leading and trailing edges level for a warp-free wing. Plywood rib doublers strengthen the landing gear block installation and plywood bellcrank mounts are epoxied in.

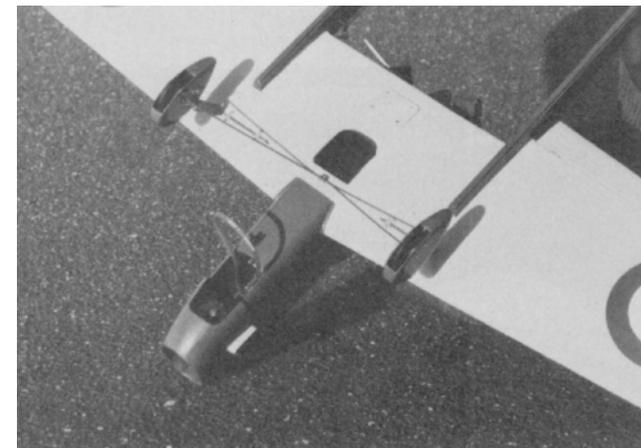
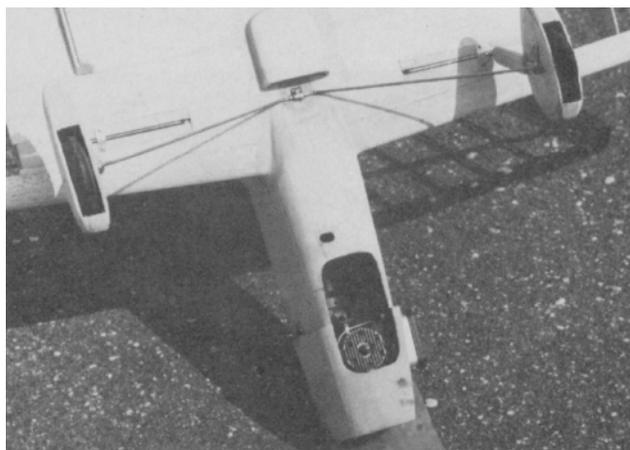
The dual bellcrank flap controls must be completely installed before sheeting the wing center-section. The adjustable lead-out guide is not a necessity for a sport ship, but I feel it is worth the effort to aid in trimming.

The tail surfaces are simply sheet balsa. The tail wheel and its mount are built up of 1/16" dia. wire sandwiched in the middle layer of the 1/16" plywood pieces. A real wheel and wheelpan could be used if you wish to go to that trouble.

For a more rugged setup, a wire skid could be added to each tail boom, long enough to keep the center mounted tail wheel just off the ground. This way the horizontal stab would not have to take the tail wheel shocks.

The tail booms are cut from 1/2" balsa; the 1/8" x 1/4" n pieces top and bottom are added to simulate the shape of the original aircraft. The tail booms are epoxied to the wing, and the tail assembly epoxied to the booms.

Alignment is important; tail booms mounted perpendicular to the wing trailing edge, and parallel to the wing center line so the horizontal stab and the wing are both level. If you get to this point and lose interest in the fuselage you can always put an engine on the wing and have a combat model.



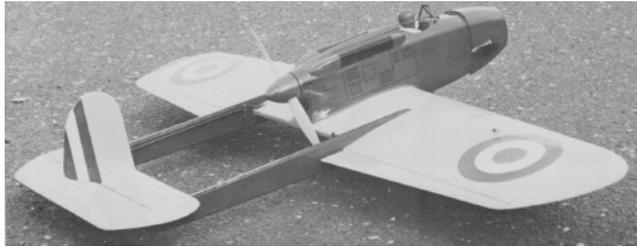
The fuselage is built up of 1/8" sheet balsa sides with 1/32" plywood doublers. We epoxied the 3/8"x 1/2" maple motor mounts, with their 3/8"x 1/2" balsa side spacers, to the three plywood fuselage bulkheads.

At this point we drilled the bolt holes for the engine and the prop shaft mount, installed blind nuts for their mounting, and then added the fuselage sides. The top blocks and front and rear cowling pieces are added and cut and sanded to shape.

No engine hatch is required as the engine and shaft can be installed through the access hole in the bottom of the fuselage. We used a small access hatch on the bottom of the wing to permit tightening the mounting bolts for the rear shaft mount, which can be installed through the spinner opening.

The fuselage can be completely assembled, shaped, and sanded before being epoxied onto the wing. The scale engine cowling blocks, air scoops, headrest, all are shaped and filleted in place.

A drafting pen was used to add fuselage detailing and trim tab lines. The roundels were painted on, no masking tape used, by utilizing a drafting compass with dope in the inking tip to draw outline circles for each color. It was then painted in by hand, within the circle lines. The entire plane received two coats of clear dope sprayed on to protect the detailing.

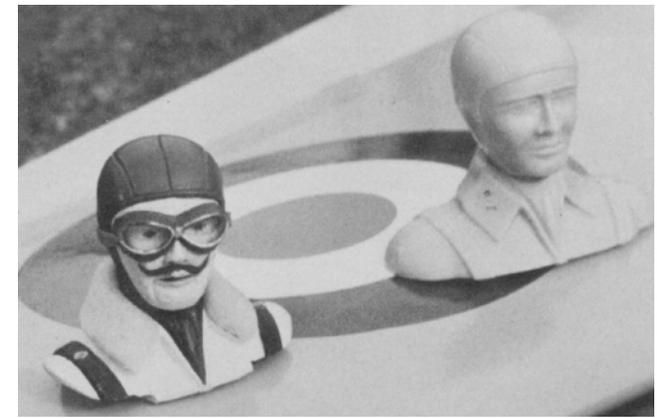


Finishing Up

The wheelpants are built up and sanded to shape. Narrow Williams Bros. wheels were used. The landing gear strut fairings and wire spreader bar add greatly to the appearance of the model. The landing gear assembly is removable, mounted with small straps into the hardwood blocks in the wing.

Silkspun Coverite was used on the wing panels to keep the weight down. The wood surfaces received only clear dope and a few coats of fillercoat, all sanded well, before the color dope was sprayed on.

The color scheme depicted on the 1934 magazine cover was used; yellow wings and tail surfaces, red fuselage and booms, and of course the French red, white, and blue roundel insignias.



This craftsmanship was performed by good friend Chuck Roedel, little known Captain of the often-overlooked Flying Fools of the Air group; all unsung heroes of the Monmouth MAC.

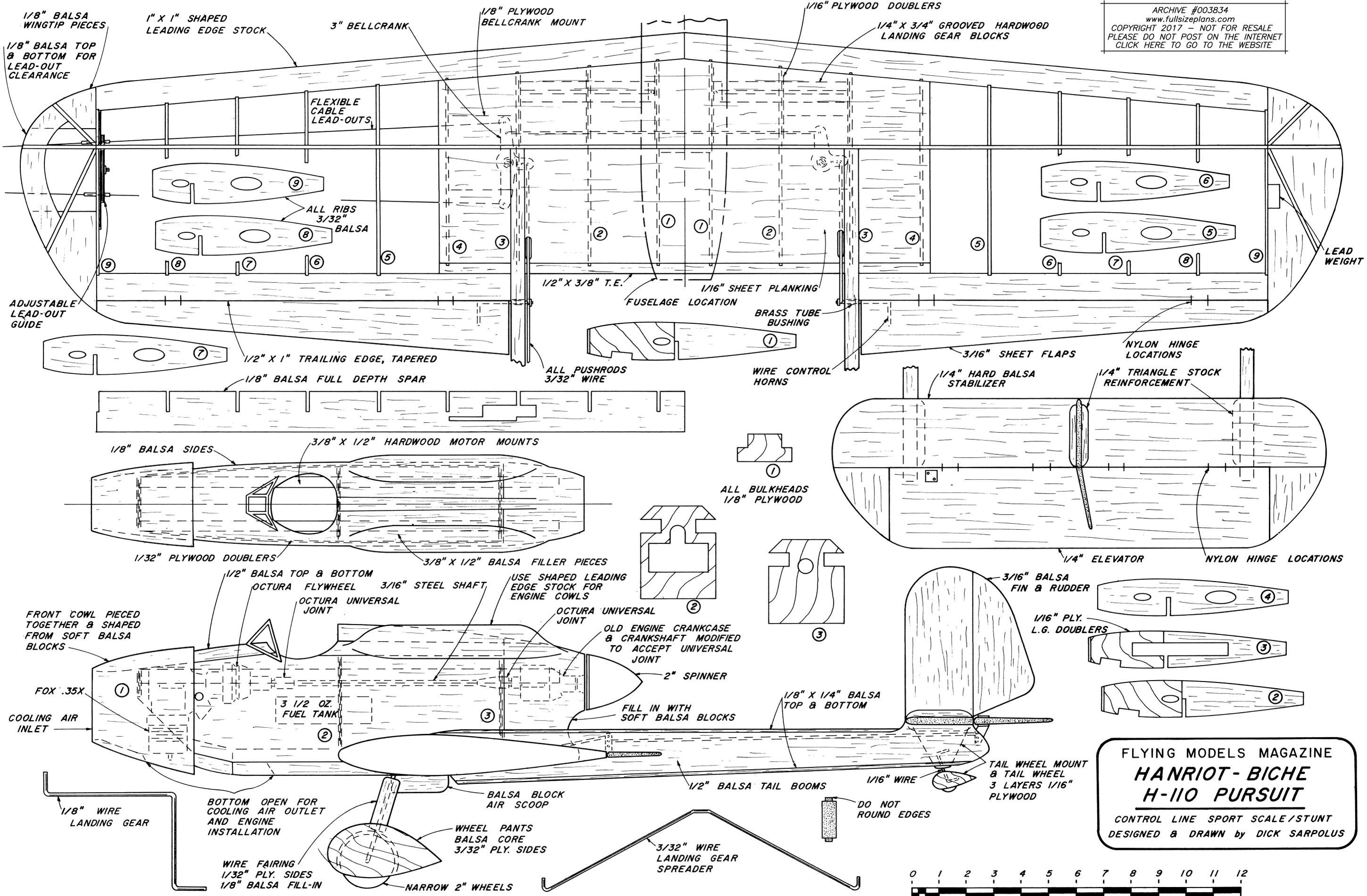


Here's the cover from the July 1934 Universal Model Airplane News used by Dick Sarpolus as the inspiration for his Semi Scale Control Line model.

In addition to the 3-View on the previous page, that issue also included a rubber powered scale model of the same aircraft by Elmer Pilzer.



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FLYING MODELS MAGAZINE
HANRIOT - BICHE
H-110 PURSUIT
 CONTROL LINE SPORT SCALE / STUNT
 DESIGNED & DRAWN by DICK SARPOLUS

Build the MD-3

by Al Clark



A Delta Wing Indoor Flyer

I have a fondness for delta winged aircraft, both full scale and models. I have built and flown quite a few RC deltas with speeds ranging from extremely fast to fairly slow. I got into indoor RC flying in 2008, and have recently had a good time flying micro sized deltas which I designed.

My first design was a small all-balsa model which used the radio and motor from an E-Flite Vapor. It flew OK but was a bit underpowered. My second design was made from Depron foam and used a brushless outrunner motor. It had plenty of power but proved to be faster than I desired for indoor flying.

The MD-3 is my 3rd Micro Delta design for indoor flying, and with it I finally achieved the flight characteristics I wanted.

Lessons learned from my first two designs led me to use in a much larger wing (288 square inches area) on the MD-3 which resulted in the ability to fly quite slowly at low throttle, and yet to fly quite fast at full throttle.

On my second delta design I had incorporated rudder control in hopes of doing flat spins, but that didn't pan out – application of full rudder merely produced a tight spiral. So I did not use rudder control on the MD-3, resulting in a weight savings.

The all-up weight of the MD-3 is 3.3 ounces, giving a 1.65 ounce per square foot wing loading, and a 1.17 ounce per cubic foot wing cube loading.

Using a Turnigy 1811-2000 10 gram outrunner motor with a GWS EP-5030 prop on a 2S LiPo battery provides 4.5 ounces static thrust, allowing much of the indoor flying to be done at around half throttle.

As with all delta wing configurations, the drag rises rapidly at higher angles of attack, so the extra power is needed for tight turns, small loops, and high angle of attack slow flight.

The MD-3 is quite easy to fly. It is very maneuverable, and the throttle is varied pretty much continuously according to what you are doing and how slow or fast you want to fly. Very small radius turns can be accomplished, allowing the MD-3 to be flown in compact spaces.

At slow speeds you will notice a bit of adverse yaw with turn commands, but it is not enough to be an issue. Differential can be added to the ailerons to correct the adverse yaw, but then roll performance suffers, so I fly my MD-3 with no differential.

The skids on the underside of the wing allow for ROG takeoffs and landings on a smooth surface, and hand launching at half throttle is also easy.

Our indoor flying site has numerous hanging lights and obstructions resulting in a low ceiling height, but the MD-3 nonetheless has no trouble performing loops and rolls. It also flies inverted well with only slight down elevator required.

Here is a link to a short video of the MD-3 at our indoor flying site:

<https://youtu.be/3G273eK7pF4>

In addition to indoor flying you will find the MD-3 is also a lot of fun outdoors in calm conditions. Outdoors you can go full throttle and really let 'er rip, performing loops, rolls, and inverted flight at higher speeds than indoors.

Construction



The MD-3 is built entirely from 6mm Depron foam, with a bit of 1/64 and 1/32 plywood, and a small piece of balsa. It is very easy to build using odorless CA and CA+ glue. I started construction of mine after lunch, and by supper time it was ready to fly. So grab the materials and let's get started!

I like to cut all the parts to size and make up a "kit" before I begin construction. That way I don't have to stop at every stage to make a part. The 6mm Depron cuts well with a fresh #11 X-Acto blade.

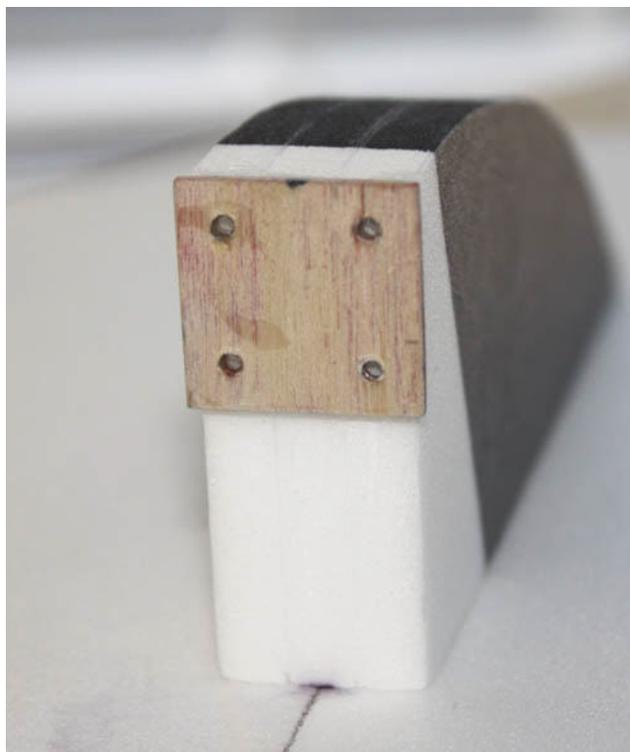
The previous photo shows all the parts (except for the balsa nose piece and short pieces of 1/32 plywood, which I decided to add after I had already started building). Don't forget to cut the 45 degree bevel on the front of the two elevons, and shorten the ends slightly for clearance with the wing and tip fins.



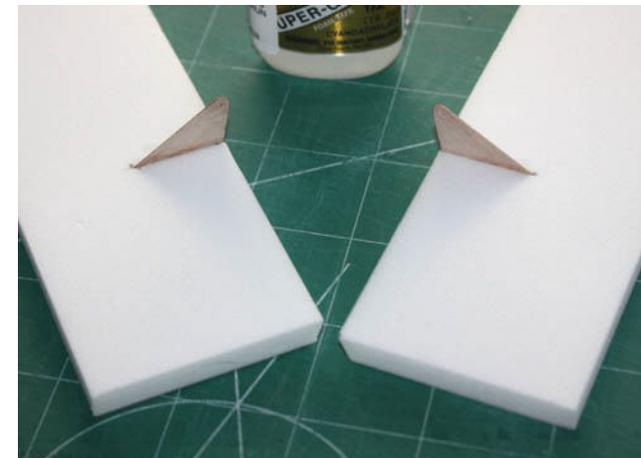
Start construction by gluing the 1/64 plywood strips to the bottom of each skid using odorless CA+ glue. This glue cures more slowly than regular CA+ glue, so you will have to hold the strip in place for a minute or so while the glue kicks off. Here are the two skids with the plywood strips installed.



Glue the three canopy/motor mount 6mm Depron pieces together using odorless CA+. Make sure the bottom and aft edges are square. After the glue cures, smooth up all edges with 100 grit sandpaper and check the squareness of the aft edge – you don't want any up/down or left/right thrust in the motor mount.



Glue on the 1/16 plywood motor mount with odorless CA+, making sure you have drilled the holes in the motor mount first. Now take a black Sharpie marker and color in a fake canopy.

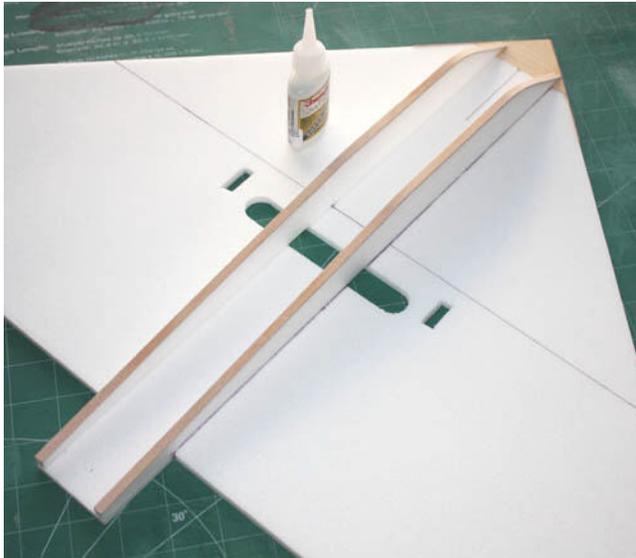


Locate and cut the 7/8" long slots into the elevons using a #11 blade. Install the control horns, check their position, and then glue them using odorless CA. Note the horns project above the elevons.

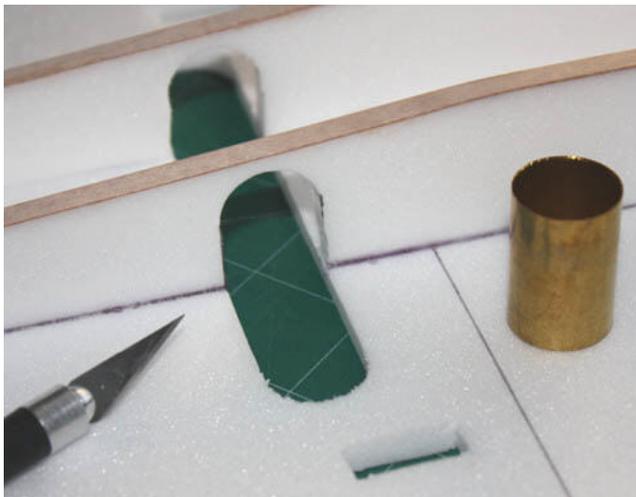


Cut off the front of the Depron wing and glue on the 1/4 thick balsa piece using odorless CA+. Then glue on the 1/32 plywood reinforcing strips using the same glue.

The reason I added this wood on the front is I figured at some point I would run into an obstacle, or the floor, while flying indoors and the wood pieces should spread the impact load enough to hopefully prevent damage.



Draw lines (I use a fine Sharpie) on the bottom of the wing to locate the two skids and glue them into place using odorless CA+. After the glue cures, make the cut-out in each skid for the prop clearance. This is easy to do with a piece of sharpened 3/4 O.D. brass tube and a #11 blade.



The skids are shaped to give the MD-3 the correct angle for ROG takeoffs from smooth surfaces, so don't be tempted to change their shape.

Draw a centerline on top of the wing to locate the canopy/motor mount. Also mark where the aft end of the canopy/motor mount goes. Note the aft end of the canopy/motor mount is NOT flush with the front of the prop cutout.

Glue it into place using odorless CA+, making sure it is accurately centered and positioned fore and aft. If you are not comfortable with the quick cure of CA+, use 5 minute epoxy here instead (not too much please – epoxy is heavy).



Apply 1/2" wide Blendederm tape to each elevon, then attach the elevons to the wing. Make sure you have the elevon in the downward deflected position when you stick the tape to the wing. This will ensure you have adequate down deflection later when the pushrods are connected.

Install the servos using hot glue (or whatever foam-safe glue you prefer) on the servo mounting tabs. The slots on the plan are sized for

a snug fit of Hobbyking S0251 servos. If you are using other servos you might need to adjust the slot size. I used a 3" extension on each servo lead.

Install the Turnigy motor base to the plywood motor mount. Two screws will be sufficient here – no need to use all four screws. I used #2 screws and had to slightly drill out the holes in the Turnigy base to 3/32 diameter. Install the motor to the base and tighten the two set screws (use some blue Locktite on these).

Make a 3/32 wide slot in the wing behind the canopy/motor mount to allow the motor wires to lay against the aft face of the canopy/motor mount. Install the GWS EP-5030 prop with printing facing forward.

Plug in the servo and ESC leads to the Spektrum AR6300 receiver (has been replaced by the AR6335 receiver now) and install the receiver and the Castle Creations Thunderbird 6 ESC using sticky-backed Velcro. Don't forget to bind the receiver to your transmitter before installing it!

Add a strip of Velcro for the battery to attach to. I used Blendederm tape and a bit of masking tape to hold down the servo and ESC leads.

Turn on the radio and make sure all transmitter trims are at neutral. Center the servo arms using subtrim if required. Pushrods are 1mm (.039" diameter) carbon rod. Ends are 1/32 diameter music wire with Z bends, applied using heat shrink tubing and CA.

Here's the sequence I use: Slide a piece of heat shrink onto one end of the carbon rod, and slide the 1/32 music wire Z bend piece into the heat shrink. Shrink with a heat gun, then hit it with CA and wipe of any excess. It only takes a small amount of CA.

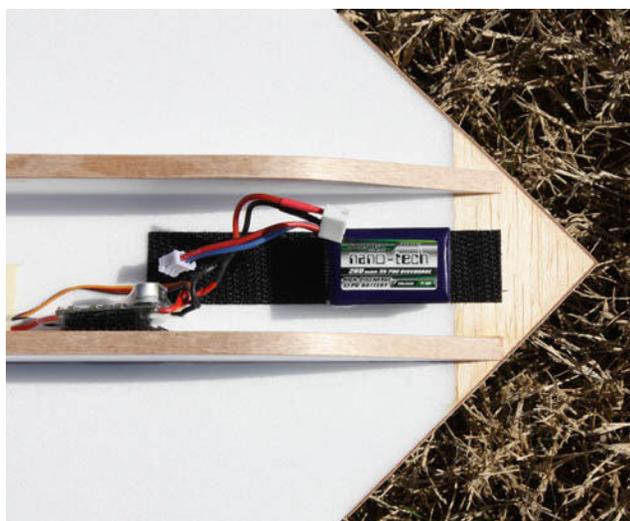
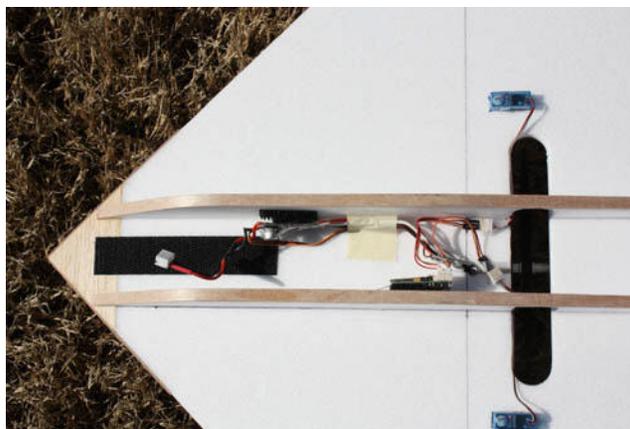
Install the Z bend wire into the elevon control horn and lay the carbon rod down along the servo. Install a Z bend wire into the middle hole on the servo arm. Set the elevon to neutral (right elevon is set to 1/32" up) and cut the carbon rod off about 3/16" from the servo arm hole.

Slide a piece of heat shrink onto the carbon rod, align the carbon rod with the Z bend wire, and slide the heat shrink over the wire. Check the neutral position of the elevon and use a soldering iron tip to shrink the heat shrink over the rod and wire. Double check the elevon neutral position and then apply CA to the end of the heat shrink tubing. You now have a hooked-up, completed pushrod. Repeat for the second pushrod.

To reiterate, the left elevon should be at neutral, and the right elevon set up 1/32". Check to see that you have the control throws specified on the plan for aileron and elevator, and don't forget to set the exponential!

After you get some experience flying the MD-3 you might find you want to use different settings and that's fine; what I have specified is a good starting point. If you want to get picky, you might want to mix in a small amount of up elevator with throttle – I use a 5% mix for this, which takes care of the slight nose-down pitching moment from the high mounted motor. But most folks probably won't notice the small pitch-down and won't need the throttle to elevator mix.

The photos below show the location of the components.



Glue the fins to the wing tips using odorless CA+. Install the LiPo battery and check the CG. My Turnigy Nanotech 2S 260mah 35C LiPo ended up right at the balsa nose piece, as can be seen in the photo above.

I get 6 – 8 minutes air time, but a somewhat larger LiPo, such as a 350mah pack, could be used with no problem – the MD-3 can handle a bit more weight due to its large wing area. That's it for the construction, she's ready to fly!

Flying

Double check the CG and the controls for correct direction. Test fly outdoors if you have a calm day, otherwise do your test flight indoors. I tested mine indoors and it flew right out of my hand with no problem. Just set the throttle to half or slightly above, and give her a level launch.

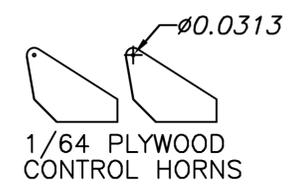
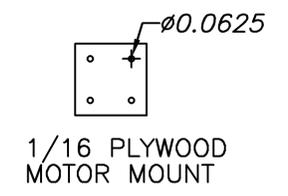
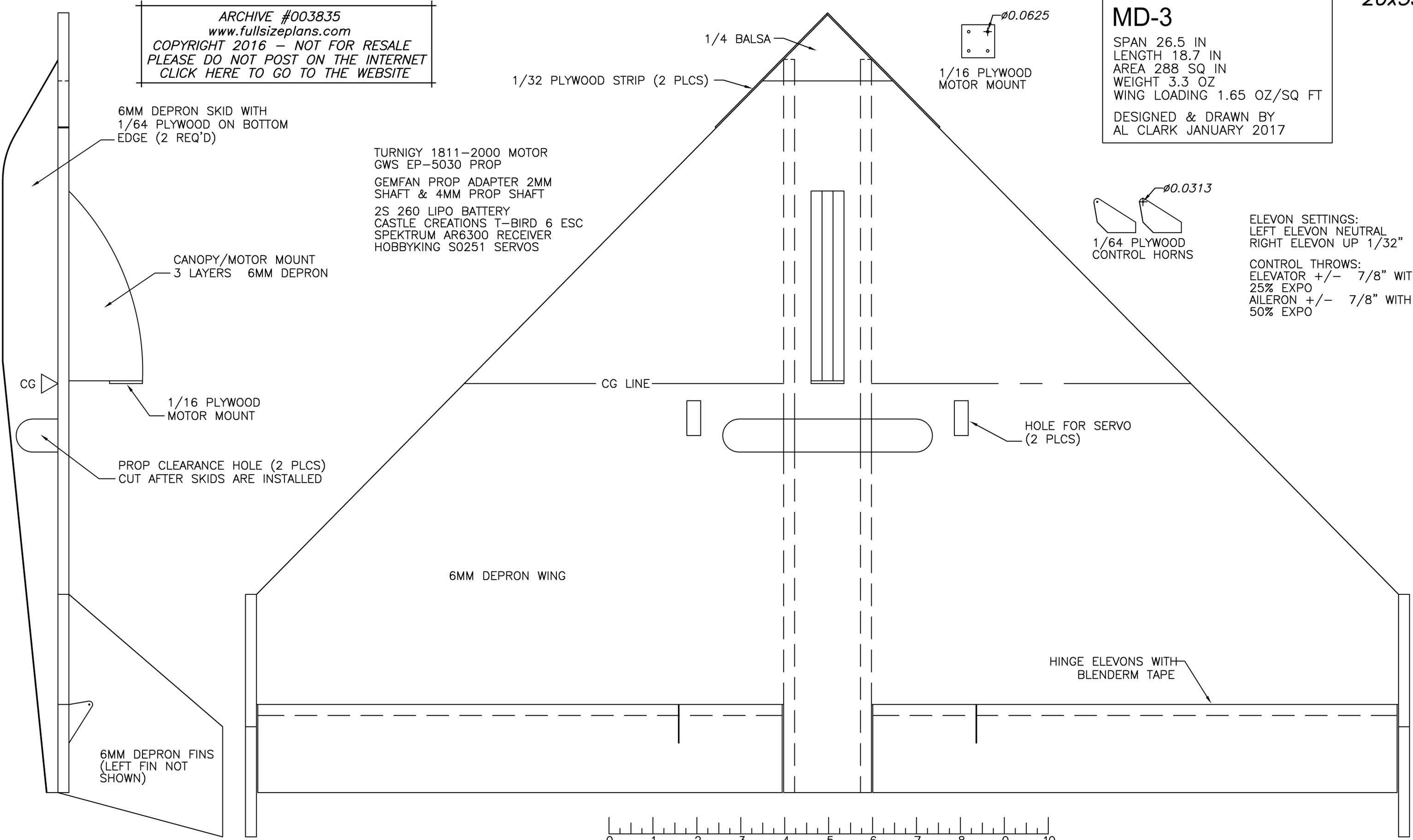
Fly her around a while to get used to the handling, and to using the throttle. You will find you use throttle much more on the MD-3 than you are probably used to with other models.

Once you get comfortable you will find you can turn very tightly if desired, and easily do loops and rolls by adding some throttle to counteract the extra drag from full elevon deflections. Even inverted flight is fairly easy to do. Landings can be on the skids, or you can catch the MD-3 in your hand.

If you have calm conditions, you can also take her outdoors and really wring her out. You'll be hard pressed to find an easier and quicker indoor model to build. The MD-3 will provide a lot of fun for a small investment of time and money. I hope you have a lot of fun with yours!

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MD-3
SPAN 26.5 IN
LENGTH 18.7 IN
AREA 288 SQ IN
WEIGHT 3.3 OZ
WING LOADING 1.65 OZ/SQ FT
DESIGNED & DRAWN BY
AL CLARK JANUARY 2017



ELEVON SETTINGS:
LEFT ELEVON NEUTRAL
RIGHT ELEVON UP 1/32"

CONTROL THROWS:
ELEVATOR +/- 7/8" WITH
25% EXPO
AILERON +/- 7/8" WITH
50% EXPO

TURNIGY 1811-2000 MOTOR
GWS EP-5030 PROP
GEMFAN PROP ADAPTER 2MM
SHAFT & 4MM PROP SHAFT
2S 260 LIPO BATTERY
CASTLE CREATIONS T-BIRD 6 ESC
SPEKTRUM AR6300 RECEIVER
HOBBYKING S0251 SERVOS

6MM DEPRON SKID WITH
1/64 PLYWOOD ON BOTTOM
EDGE (2 REQ'D)

CANOPY/MOTOR MOUNT
3 LAYERS 6MM DEPRON

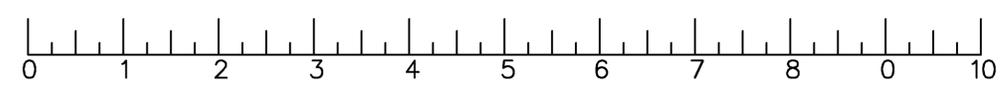
1/16 PLYWOOD
MOTOR MOUNT

PROP CLEARANCE HOLE (2 PLCS)
CUT AFTER SKIDS ARE INSTALLED

HOLE FOR SERVO
(2 PLCS)

HINGE ELEVONS WITH
BLENDERM TAPE

6MM DEPRON FINS
(LEFT FIN NOT
SHOWN)



Back Issue
MAGAZINE ARCHIVES
from the Digitek Books Collection

Here's the next in our series of monthly back issues of model airplane magazines available for download to subscribers. This month's selection is the RC Modeler May 1970 issue.

I think RC Modeler was the first magazine featuring attractive (pronounced "sexy") women on the cover, probably because it helped news stand sales. My two sons were 2 and 5 years old at the time and my wife semi-jokingly referred to the magazine as "RC Playboy" as each issue arrived.

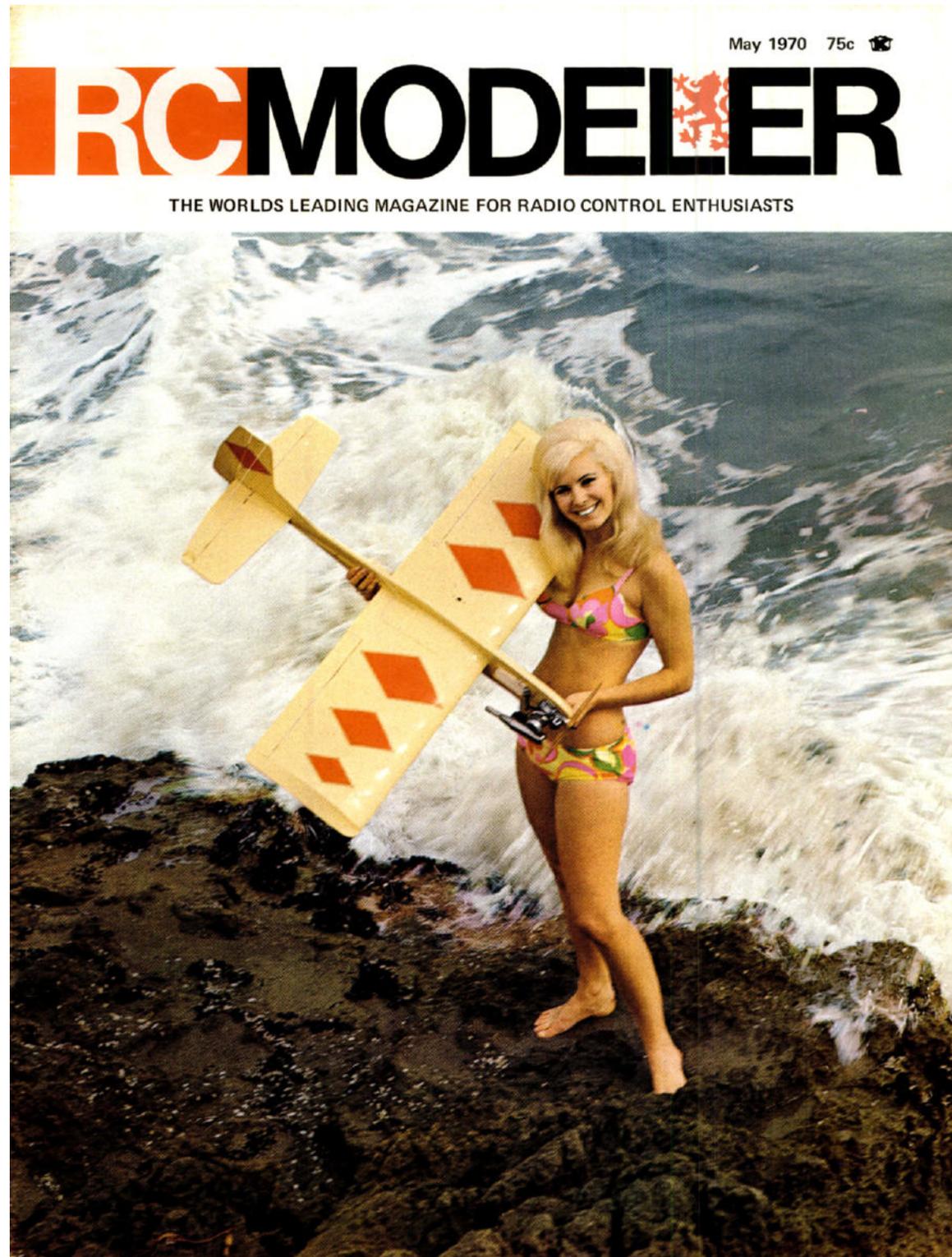
The sales ploy must have worked because it wasn't long before some of the other model airplane magazines followed suit. Never fear, there are some good articles and model plans in the issue also.

To get your copy, just go to the following link and click on the download button that after a short time will appear in the upper right corner of your browser screen. The issue will be downloaded as a PDF file and you can read or print out any or all of the pages as you choose.

[-- CLICK ON THIS LINK PLEASE --](#)

This download link will be expire on May 1, 2017, so if you'd like this issue for your own collection, better do it now.

If you would like more complete digital collections of RC Modeler and other model magazines, take a look at the back pages of this issue.



DIESEL SPORTSTER

by Frank Ehling

This model by Frank Ehling appeared in the September 1946 issue of Model Airplane News.

Ehling's discussion of the advantages of Diesel over spark ignition predates the beginning of the glow ignition era.



THIS little ship has been the test job for several engines of which the Arden proved best; however the latter still has the inconvenience of the gas engine, namely ignition.

The Movo D2 diesel was used next and with the disappearance of the ignition troubles went some of the power; yet it was a relief to go out to the field, bring only fuel and know that there would be no trouble with batteries, coils, and plugs.

A word of caution should be added here because we noticed that the engine ran better when the fuel was first mixed; as it stood the ether would evaporate and the pep was lost. Now we mix the fuel as we need it.

Props are the deciding factor with this engine as the R.P.M. is not as high as with a gas engine. We found that an eight inch diameter and a five inch pitch worked well, yet we did not have time to test as many as we would have liked. This is where a great deal of experimentation can be undertaken to see just what is best.

Since there is no ignition to cut in order to stop the engine, we used a small tank to keep her from flying out of sight, as we did not need to have the engine stop at twenty seconds. However, a spring loaded vane can be installed to work with an Austin air timer which chokes the engine to a stop.

Start construction by sanding all the wood that goes into the ship; in this way the framework will not only look better but will be much stronger as well as a little lighter. In laying out the sides note that the upper longeron is deeper; this is done to keep the lower longeron from pulling the upper one out of shape.

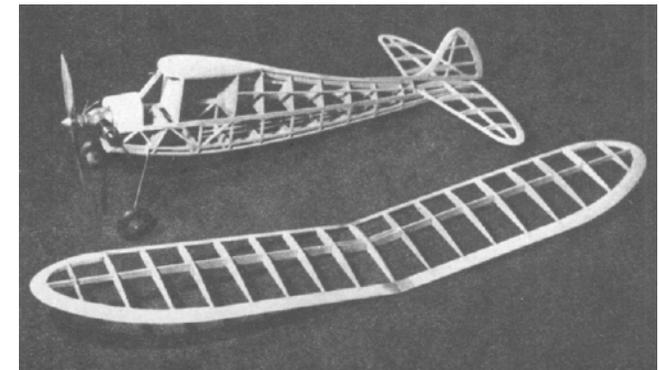
While the sides are drying the formers can be cut to size and cemented in place along with the stringers. Cut the fire-wall and cement in place using plenty of cement.

Cut the landing gear bulkhead, bend the gear to shape, bolt in place, then cement the whole assembly in the ship. The lower part of the fuselage is shaped out with stringers.

The rudder is of simple flat construction; however, care should be taken to cement all joints well to prevent the covering from warping the frame. The stabilizer is built in the same manner as the wing and should offer no trouble.

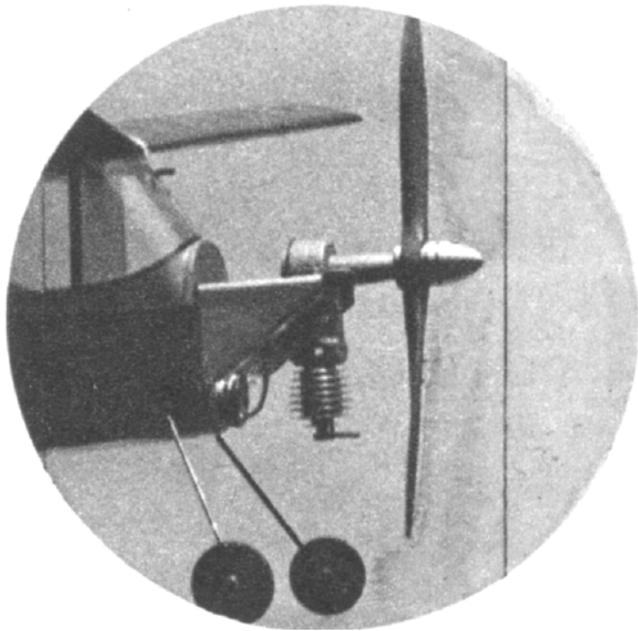
The wing should be made with great care. There should be no warps in either half as this spells trouble. Cut out the required ribs and parts that go into the wing. When cementing the parts be sure to cement on both sides of all ribs as this prevents the ribs from going out of line.

After the wing is assembled sand the tips so they fair into the trailing edge. Add the gusset to the center span as this is used to assure proper dihedral.



At this point we usually say "put in the ignition." However, in this ship all that need be done is to install the engine mounts and bolt the engine in place.

The whole ship can now be covered. When the covering is dry you can dope the ship; be sure to thin out the dope 50% as that eases the job so that it will be a pleasure, and the finish one you will be proud to show.

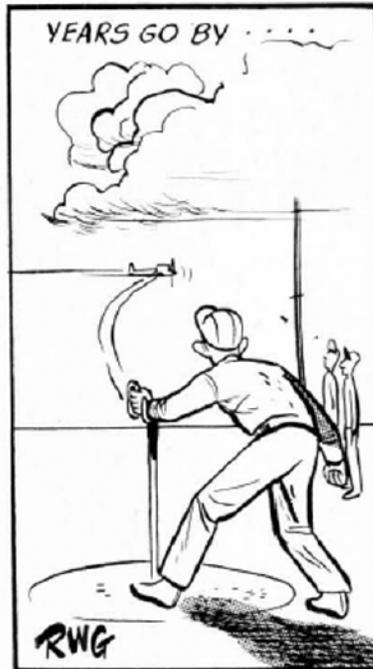
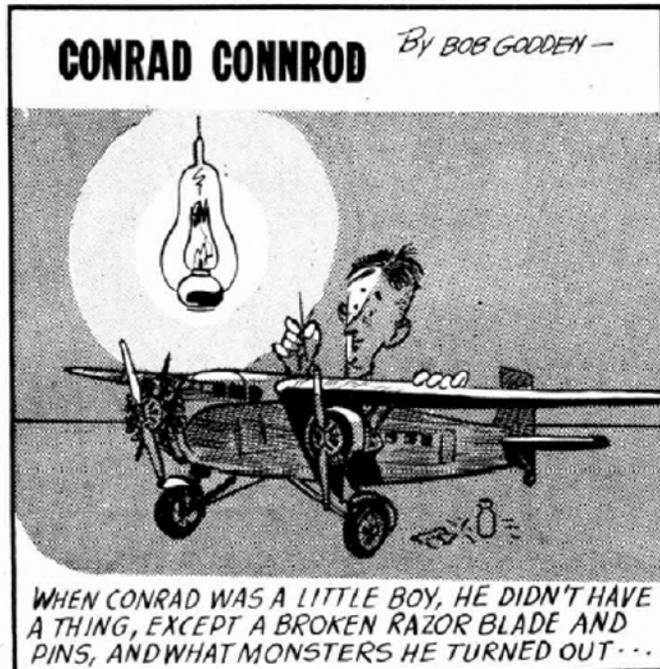
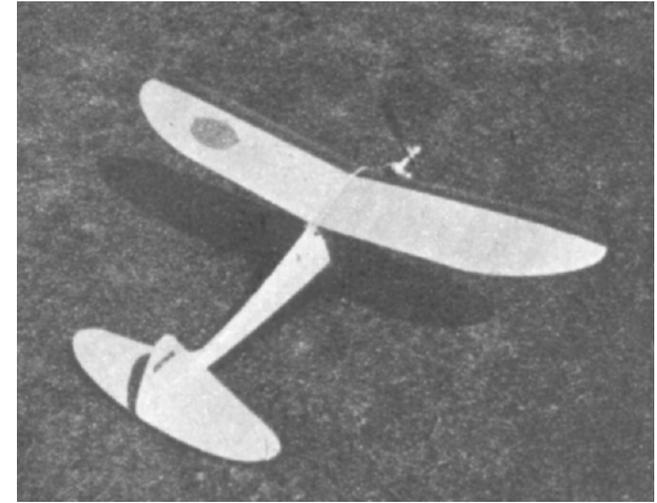


Flying is done in the same manner as with any other ship. All that is needed is a little care in test gliding till a nice flat glide is secured.

Since there are no units (such as coil and batteries) to be moved in the ship to correct the balance, weight will have to be added to the tail in order to offset the weight of the engine. If hard balsa is used it would further this aim.

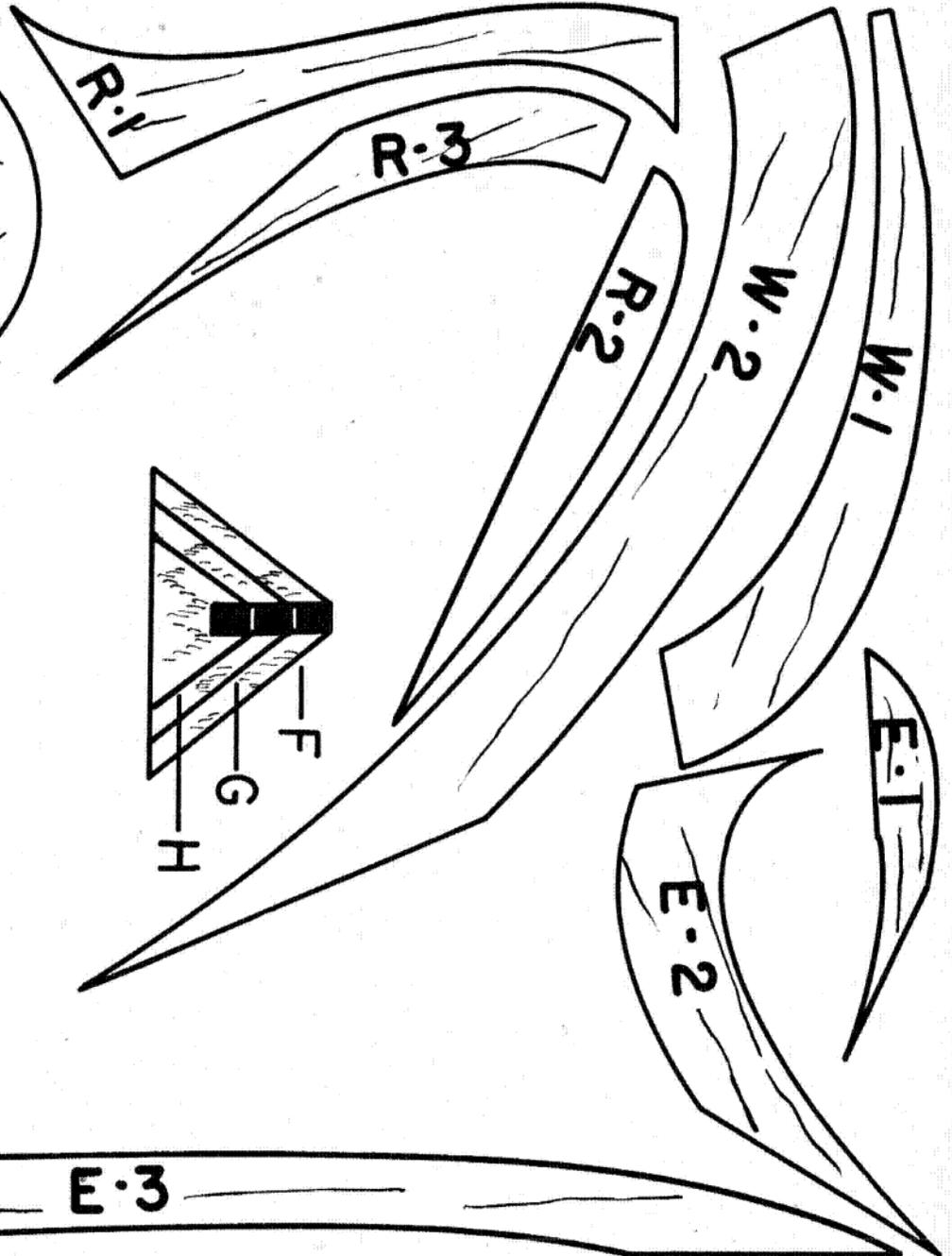
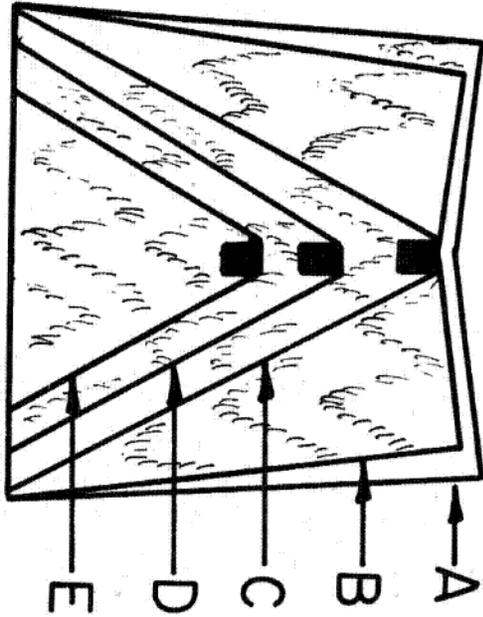
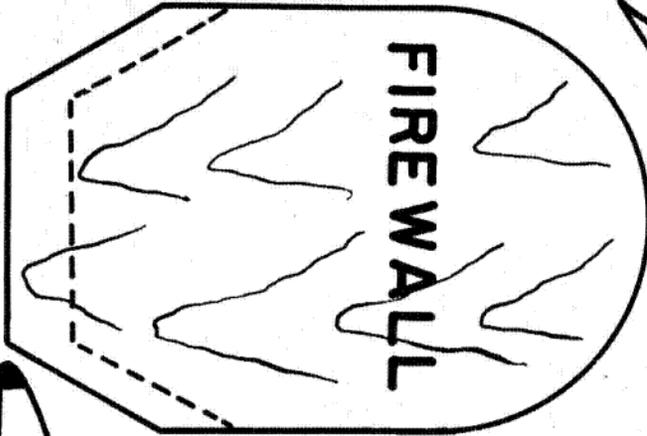
If you have a Class A engine build this Sportster and have a model that will take you out of the rut of pylon ships.

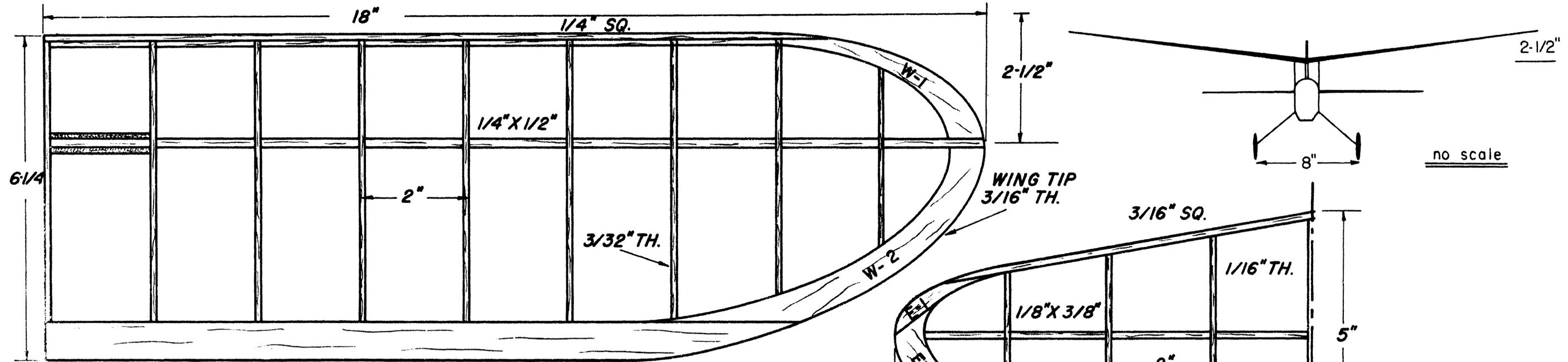
From our experience with this design we can safely say that with the Arden, real contest performance may be had. With the Movo Diesel you will have a sweet flying and reliable little sport job that eliminates all ignition worries.



Cartoon from August 1951 Model Airplane News

ALL PARTS FULL SIZE

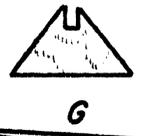
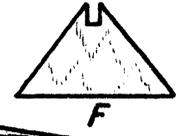
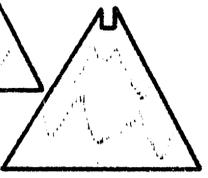
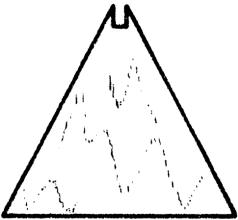
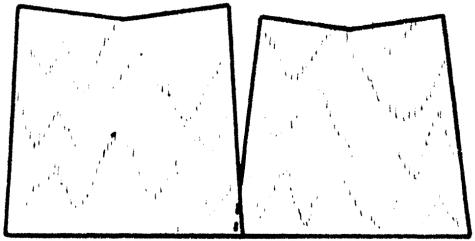




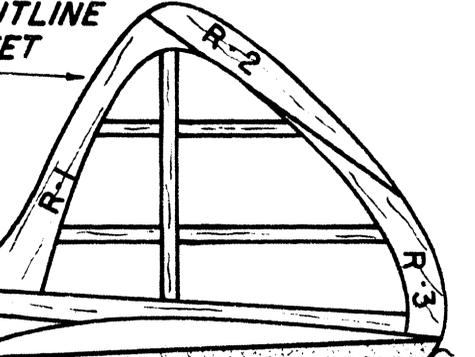
BULKHEADS-A,B,C, 1/8" SHEET

FOR ARDEN ENGINE USE
 DOTTED LINE COWL
 & NOSE

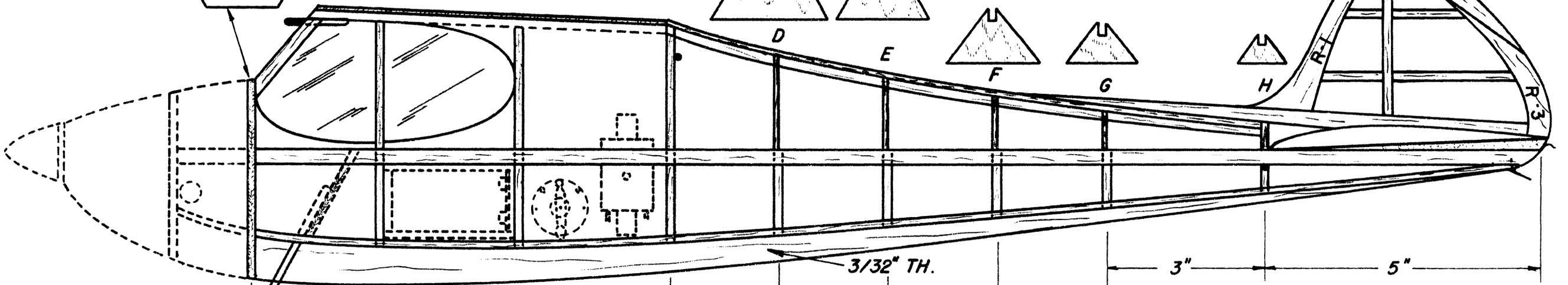
MOV0-D2
 FIREWALL
 1/8" PLYWOOD



RUDDER OUTLINE
1/8" SHEET



BULKHEADS D-H 1/16" SHEET



3/32" DIA.

2-3/8"

2-1/2"

2-3/4"

2"

2"

2"

2"

3"

5"

WING REST 1/8" HARD SHEET Balsa

1/8" X 1/4"

1-3/4" DIA.



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SCALE - 1" = 3"
FRANK V.B. EHLING

DESIGN BY FRANK EHLING
MODEL AIRPLANE NEWS SEPTEMBER 1946

PLAN RESTORATION BY R.FRIESTAD

Back Issues of 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.

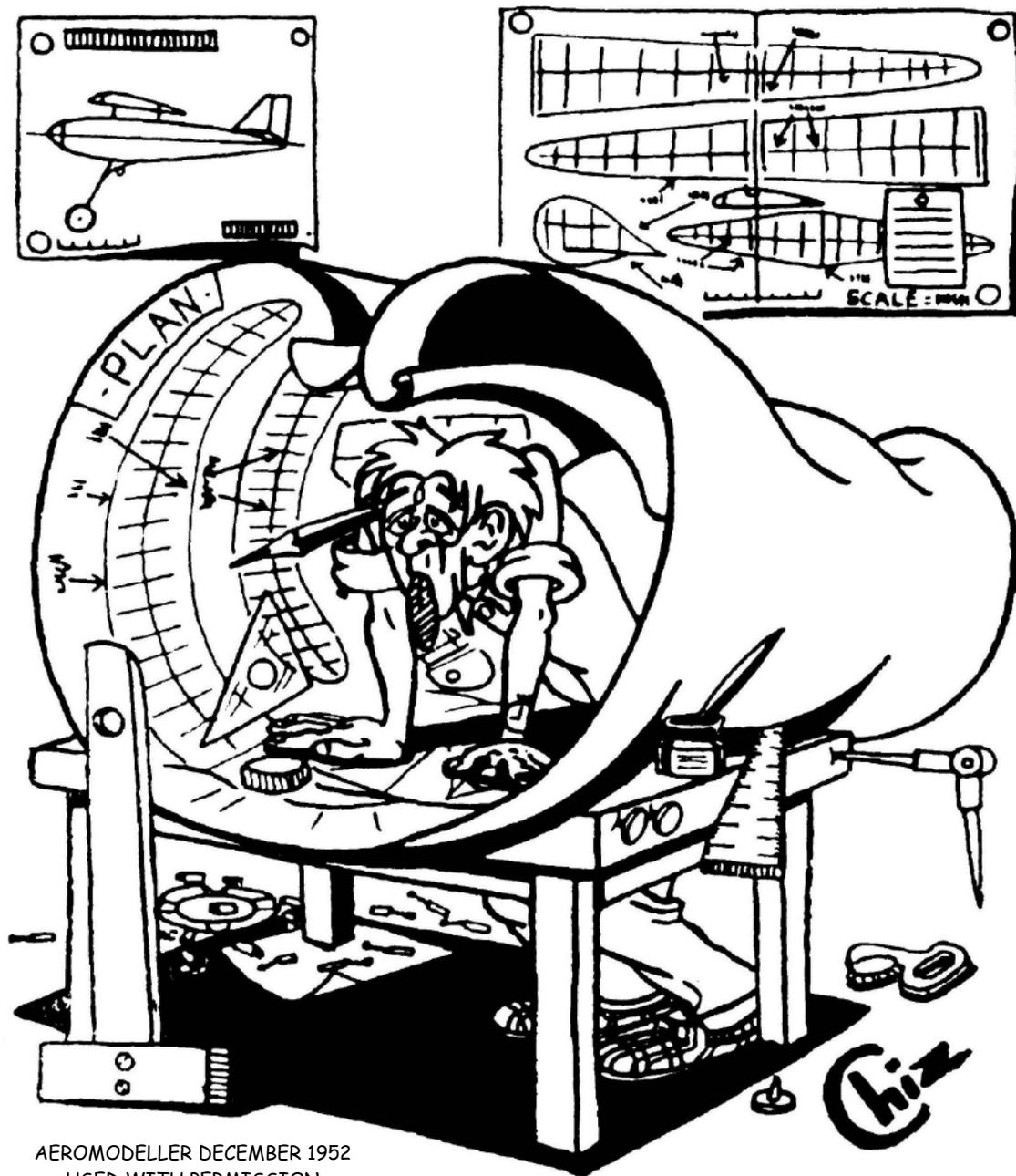
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of Air Trails, Flying Models, Model Airplane News, Aeromodeller and many of the several other magazines available "way back when".

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



AEROMODELLER DECEMBER 1952
USED WITH PERMISSION

Great Gifts for Modelers

Digital Magazines on USB Flash Drive Cards



AEROMODELLER, the premier British model airplane magazine is being digitized. **Ready now are all 240 issues from 1950 and 1960** including the full size plans that were sometimes included in each issue. On the left is a reproduction of the November 1935 cover of Vol 1, No 1. All of the earlier issues will also be available later in 2016

Catalog # D001033 - \$75 - Postage Paid

AIR TRAILS - This magazine went under several names. The final issue was published in March of 1975. There are 435 monthly issues included in the complete set and priced as follows ---

D001010 - January 1937 through December 1943 - 84 issues - \$50

D001011 - January 1944 through December 1950 - 84 issues - \$50

D001012 - January 1951 through December 1961 - 132 issues - \$50

D001013 - January 1962 through December 1971 - 96 issues - \$50

D001014 - January 1972 through March 1975 - 39 issues - \$25

AIR TRAILS ANNUALS -

D001009 - 1938 through 1969 - All 25 issues - \$30

D001015 - SPECIAL - Complete set including the annuals - \$200

MODEL AIRPLANE NEWS - The first issue of this magazine was published in July of 1929 and it is still being published. 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

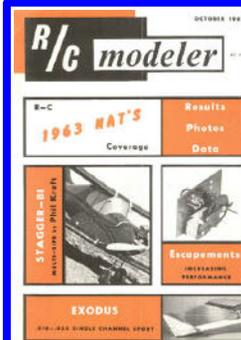
MODEL BUILDER - This magazine ran from the first issue of September~October 1971 through the final issue dated October, 1996 -

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 no longer published. We have the following collection 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



RC MODELER - Now available is the digital collection of the early issues of this magazine. The collection includes all issues from Vol 1, No 1 (October 1963) through December 1972. 109 issues all on a single USB Flash Drive.

D001017 - \$50 - Postage paid

All prices include postage paid worldwide

Send payment using Paypal to
cardinal.eng@grics.net

Or check or money order to
Roland Friestad
1640 N Kellogg Street
Galesburg, Illinois 61401
USA

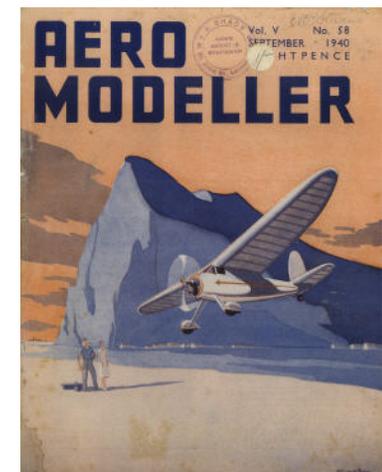
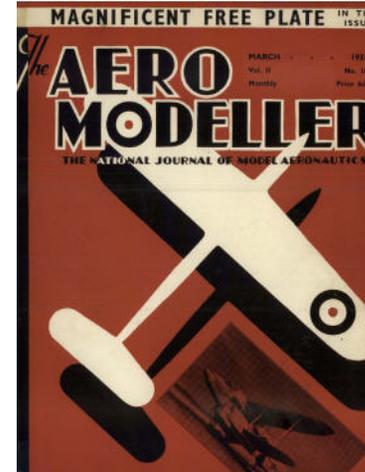
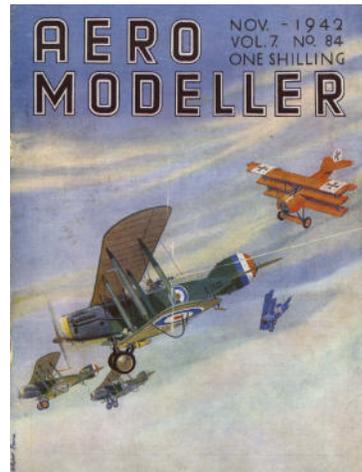
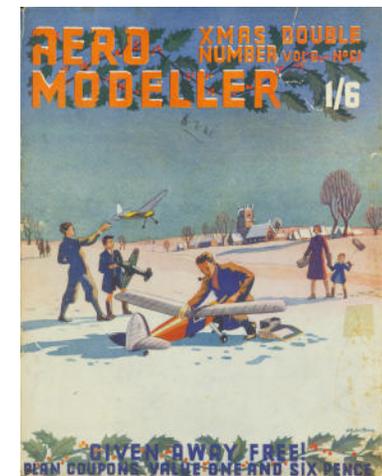
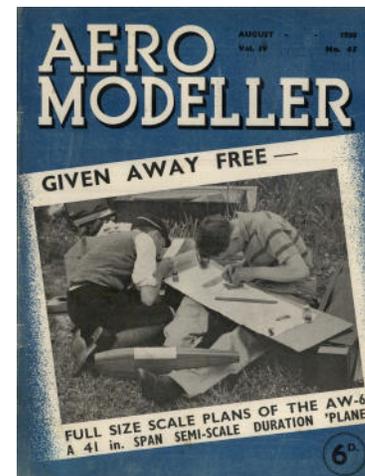
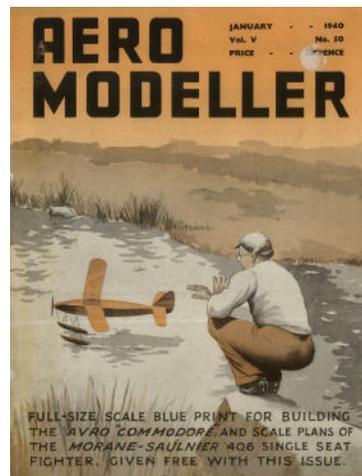
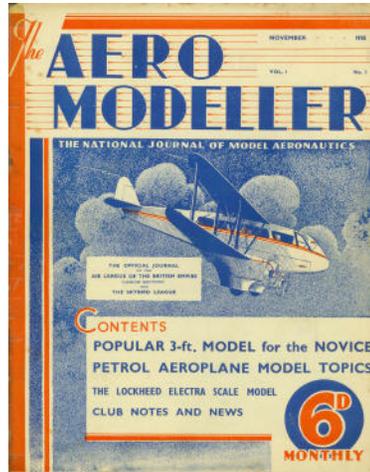
Makes a Great Gift for Modelers
Circle your interests and give this sheet to
someone who has a hard time finding you a gift

Prices Effective April 1, 2016 - Subject to change without notice

RCMW February 2017 - Page 33

Now Available!!
The early issues of
AEROMODELLER

Computerized in High Resolution
On Custom USB Flash Drives



Now, after several months and hundreds of hours of work, we have available high-resolution digital copies of the British Aeromodeller magazine starting with the very first issue dated November 1935, shown above, and through the December 1942 issue. These issues are extremely rare and hard to find. These early issues are from the late Ivor F collection in Australia, with thanks to his son Tahn Stowe.

Furnished on our custom made USB Flash Drives this collection is priced at only \$60 US, postpaid world-wide. PayPal, Money Order or check drawn on a USA bank. Catalog number - D001047 - 85 issues -

Roland Friestad
1640 N Kellogg Street
Galesburg, Illinois, 61401
USA
cardinal.eng@grics.net

P.S. - Don't forget to include your name and address - Sometimes people forget !!

