

RCMW-FSP

MARCH 2015

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Digital Magazine Collections



For the Model Builder and Flyer - March 2015 Issue



Full
Size
Plans



March is here! Can spring be far behind. Unfortunately it often includes windy weather which makes it hard to fly outdoors. So, either fly indoors or continue building. It's not warm enough to go out and lie in the sun anyhow, unless you live in the American southwest.

We have a good mix of plans and articles this month. First up is the KLOUD QUEEN, a circa 1938 old timer by Mickey DeAngelis. It was offered as a kit by "Hobby Shop" in Trenton, NJ and our plan is a copy of the original kit plan from the David Baker Heritage Library in England. Page 4

Igor Sikorsky built what was the forerunner of the first airliner in 1913 when his GRAND took to the air with seven passengers for a night flight lasting six and a half hours at 56 miles per hour. A hot meal was served and although speeds and time in the air have increased, the quality of the meals served is probably worse along with the seating. Page 5

Moving 10 years forward in model building, next up is BOJO, an appealing U-Control biplane from the August 1948 issue of Air Trails. Not likely to compete with the all-out stunt ships but should make a pleasant sport flyer for an afternoon of circle flying. Page 6

Right after the end of WWII, all of the aircraft manufacturers were building prototypes of light aircraft thought to be the future of the industry. The Luscombe MODEL 10 was one of them and here is a brief history of the airplane and the company along with a nice 3-View drawing. Pages 7-10

The MIGNET POU DU CIEL. What's that ?? Better known by its more common name as the FLYING FLEA, it is here presented as a quarter-scale RC ship from the pages of RC Modeler's November 1961 issue. While we don't publish giant scale plans the FLYING FLEA was so small that a quarter scale model has a wingspan of only about 60 inches. Pages 11-12

A working wind/smoke tunnel you can build yourself would make a great science project for students interested in aviation. Full details and drawings are included in this design by Paul Palanek originally published in the April 1957 issue of Air Trails (American Modeler). Pages 13-17

Joe Ott was an early model builder and went on to be a major supplier of kits during the 30's and through the 50's. One of his earlier designs is this twin pusher dating back to 1931. It was redrawn by Don Farnsworth for the NFFS (National Free Flight Society). Our plan came from the David Baker Heritage Library in England. Page 18

And last, but not least, our listing of digital model magazine collections available on USB drives. Take a look. They make great replacements for those smelly old paper copies moldering in the basement. I'll bet your wife or significant other agrees so much that she would buy them for you. Pages 19-20

Roland Friestad, Editor

We Get Letters and Misc Other Stuff

HELP !

We have run into a bit of a problem. As mentioned on pages 19 and 20 of this issue, we are working on digitizing RC Modeler magazine to go along with our other digital collections. We have the first 10 years of issues well underway, but....

About 18 months ago we had 12 inches of water in our basement office and lost, among other things, some of our copies of RC Modeler.

We are looking for the January 1964 issue and all of the issues from 1973 and 1974. If you can help us, please contact me by e-mail at --

cardinal.eng@grics.net

Thanks - Roland Friestad, Editor

The Numbers in the Corner

The two numbers in the upper right corner of our plans represent the dimensions to the OUTSIDE of the border when the plan is printed at full scale.

How to scale plans by wingspan or wing area was discussed in the December 2014 issue.

How to Subscribe

To Subscribe to RCMW-FSP, the model BUILDERS magazine, you can use either PayPal or send a check or money order for \$24 payable in US dollars.

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USA

Downloading Back Issues

We have had a few questions from subscribers who did not download issues of our magazine and find that they are no longer available for downloading from the website. So to clarify our policy regarding back issues here is the straight dope, so to speak.

Subscribers can download the current issue and the previous 11 issues as part of their subscriptions. This means that a limited number of back issues you may have missed are available.

As each new issue is available on line, the monthly issue from the previous year is no longer available for download.

A collection of older back issues is available for purchase at a modest cost. See pages 19 and 20 of this issue.

Good Links - Bad Links

One of the big advantages of an online magazine is that active links can be included so that readers do not have to enter complicated lists of characters manually, but just hover over the link until it appears in the little box, then click on the box to go to that location, or start an email to the adress given. Quick and easy !

One of the minor inconveniences of using active links is due to the very fluid nature of the internet. All links are checked out for each issue but links may change or even disappear into a bypass on Al Gore's information superhighway (little humour there).

We check all links in each issue but cannot be responsible for changes over which we have no control. If you find a link that doesn't work properly it really isn't our fault, honest. If you find the correct link that replaces a bad one we'd like to know.

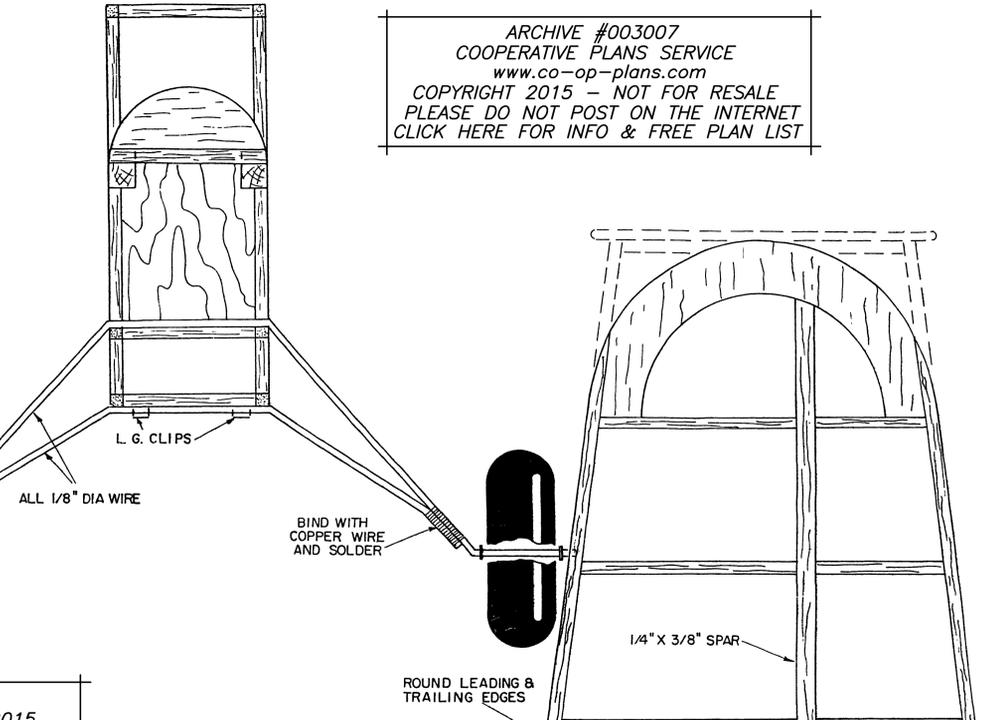
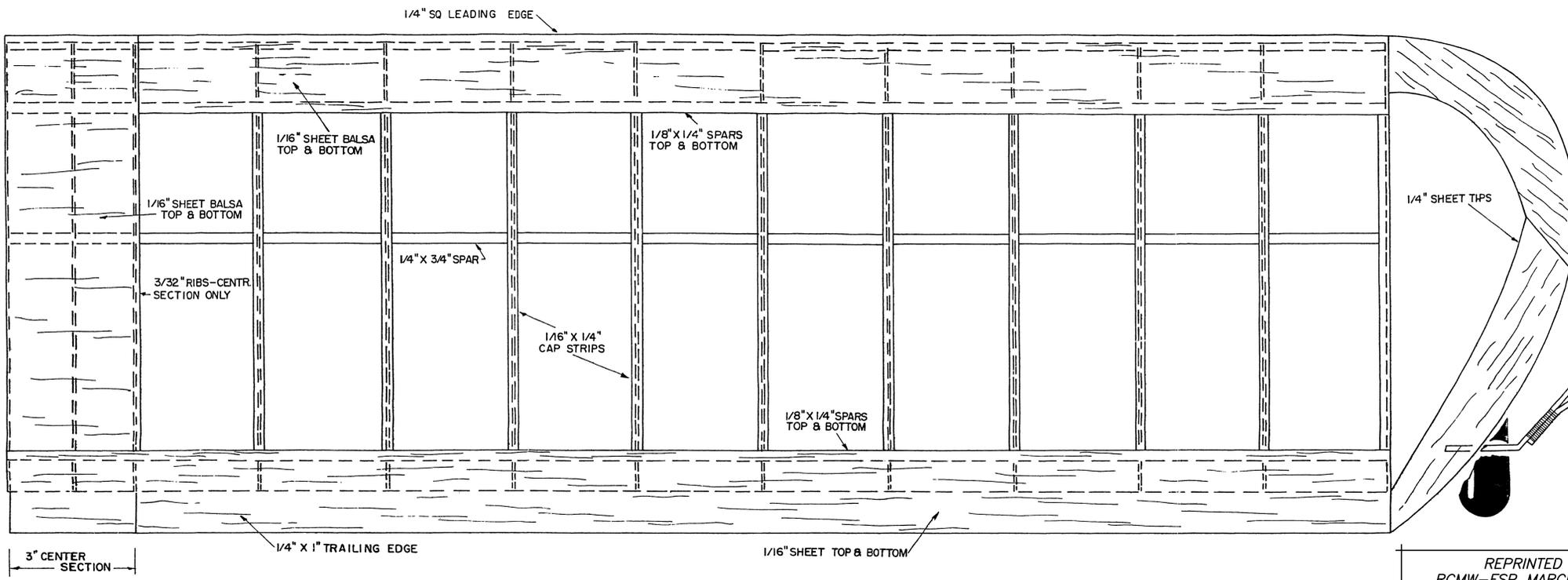
Attaboys and Brickbats

We want to hear from our readers, especially if you have photos, stories and hints on building and flying that can help other modelers just getting started. Don't keep it a secret. Remember all the builders who helped you when you were learning and pass it on. That's what we're trying to do with RCMW-FSP. How about giving us a hand.

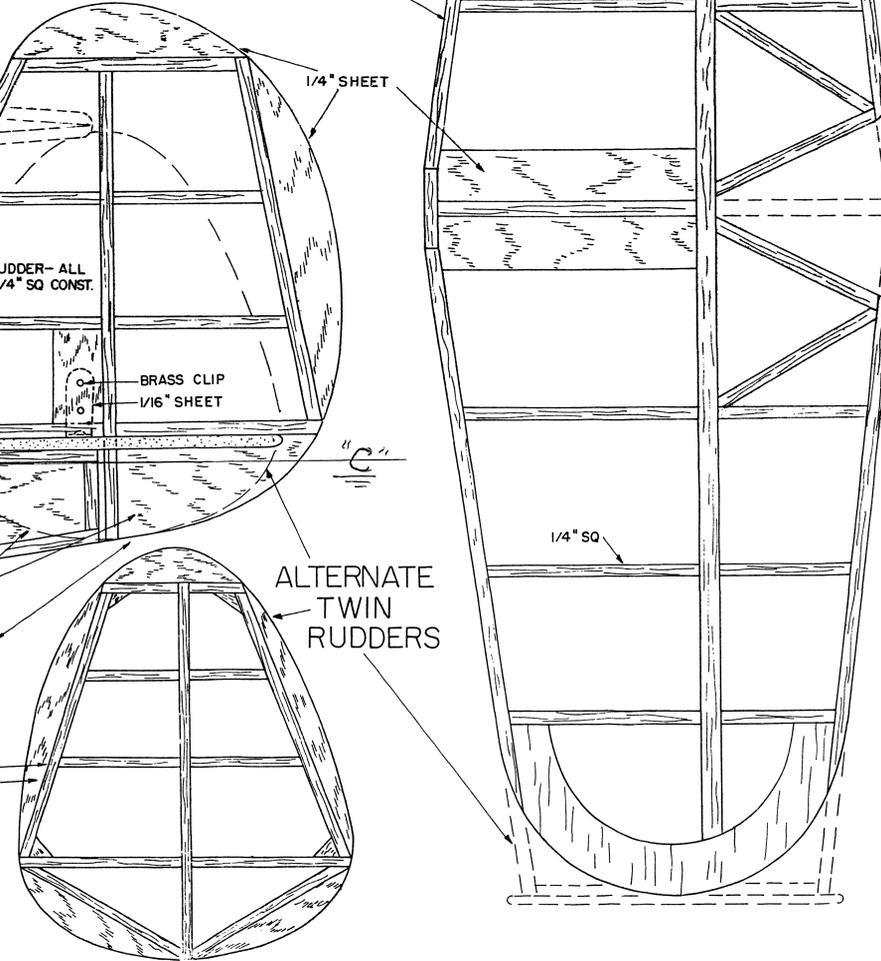
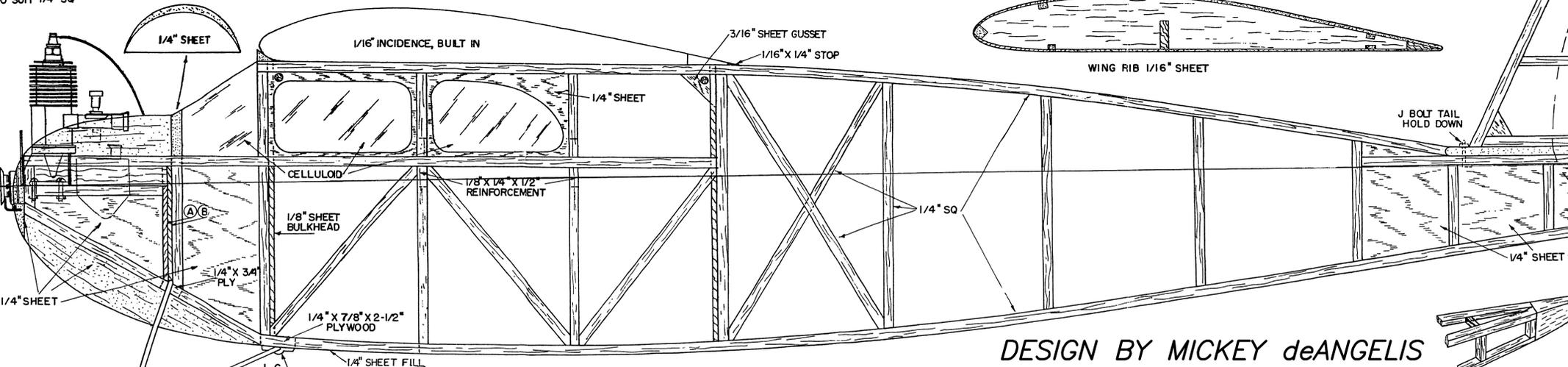
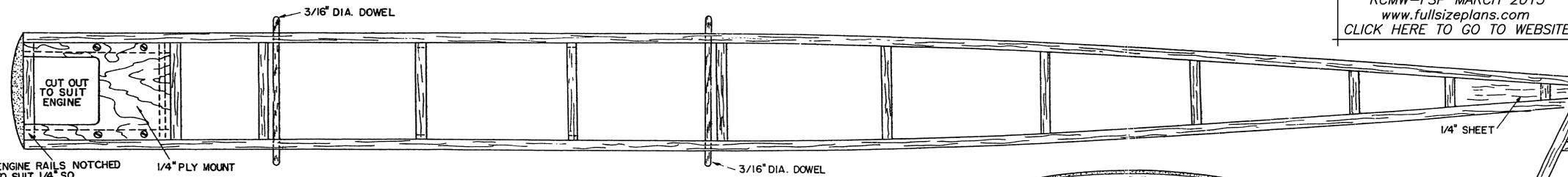
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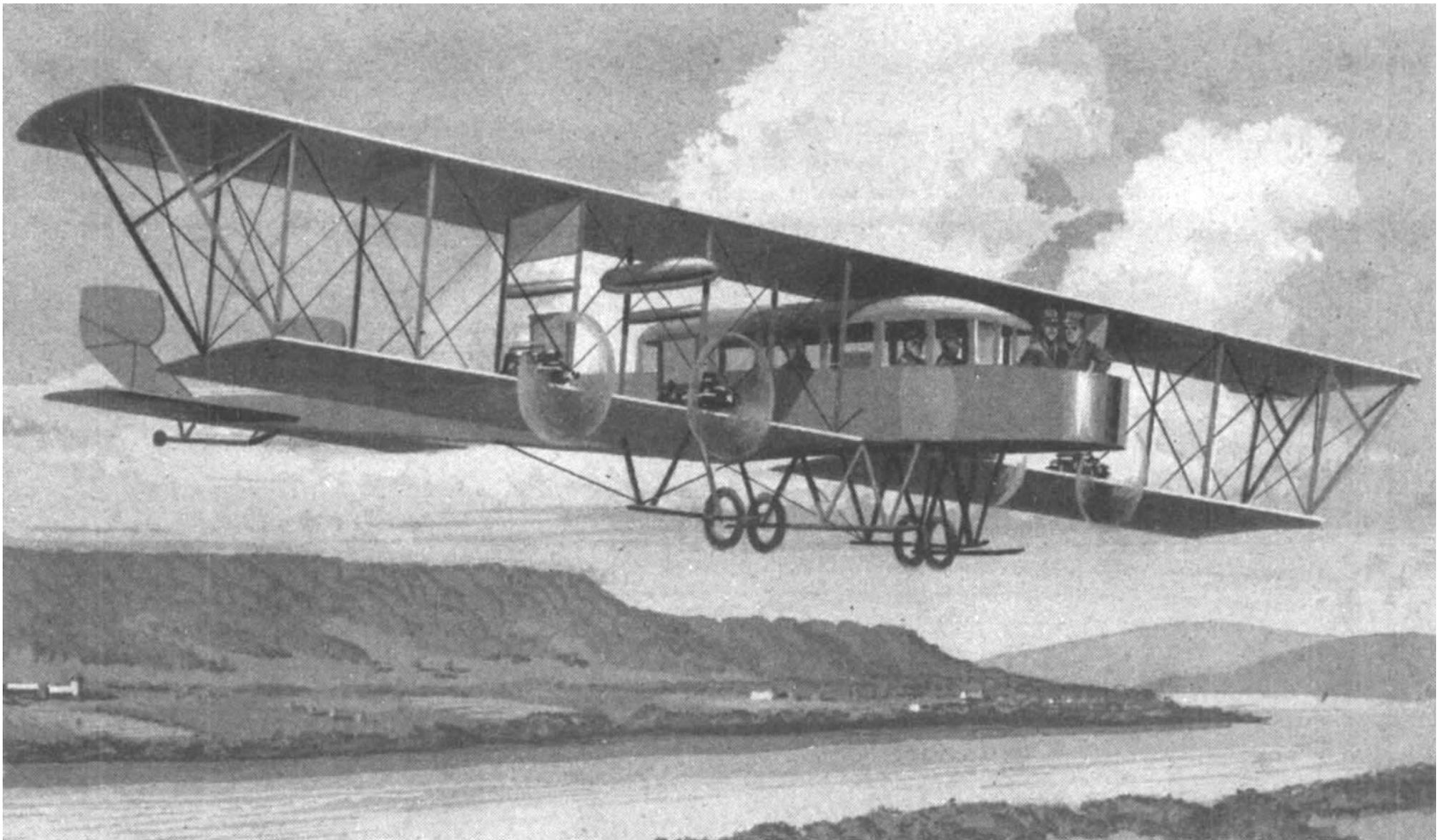
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DESIGN BY MICKEY deANGELIS
CIRCA 1938

"KLOUD QUEEN" BY MICKEY deANGELIS
DRAWN BY Mickey deAngelis
& JOHN LEWIS-CORDED BY DAN GIBLIN
HOBBY SHOP
473 CHESTNUT AVE.
TRENTON, N.J.
PLANS FULL SIZE \$12.00
KIT \$25.00 OR \$9.50 IN CANADA

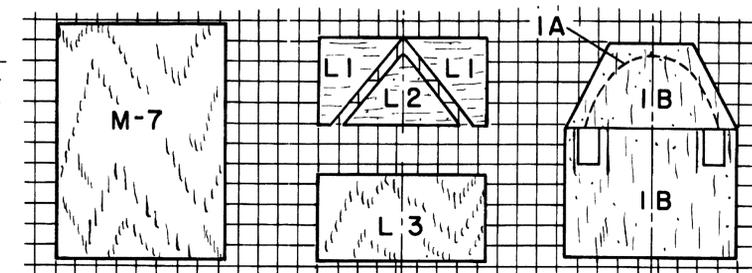
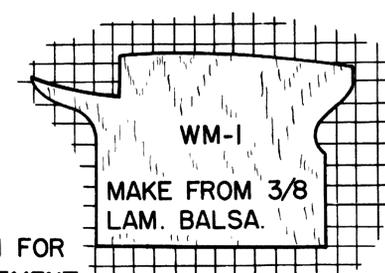
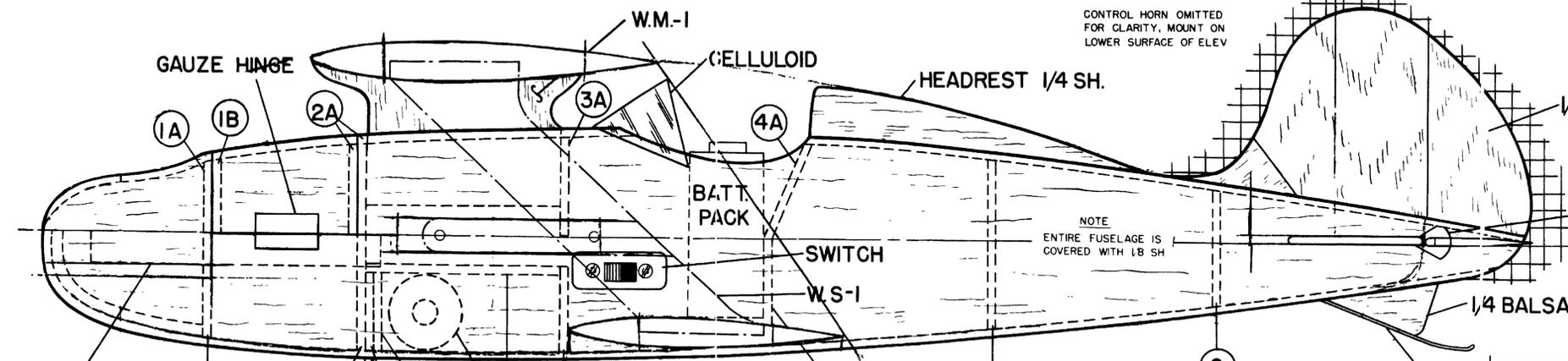
PLAN FROM VAN WILSON - CLEANED BY MARK VENTER



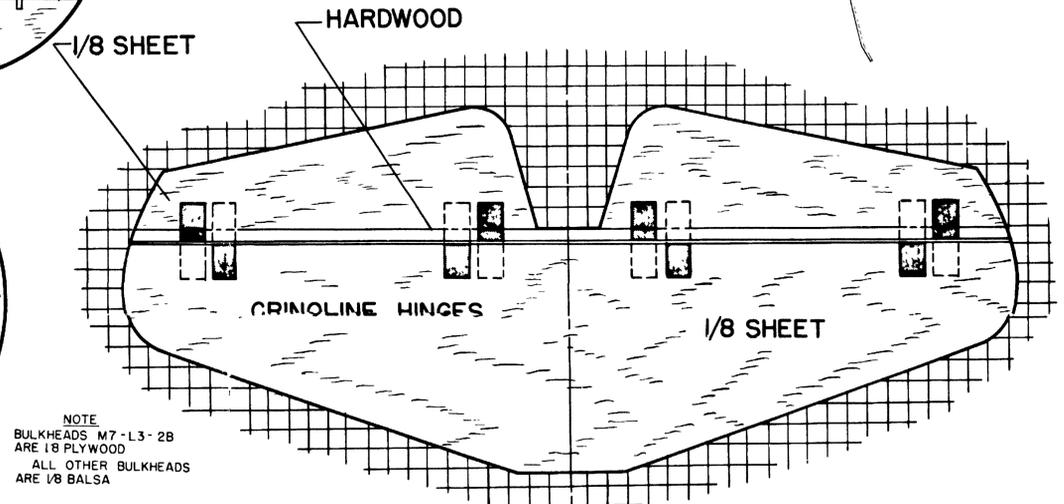
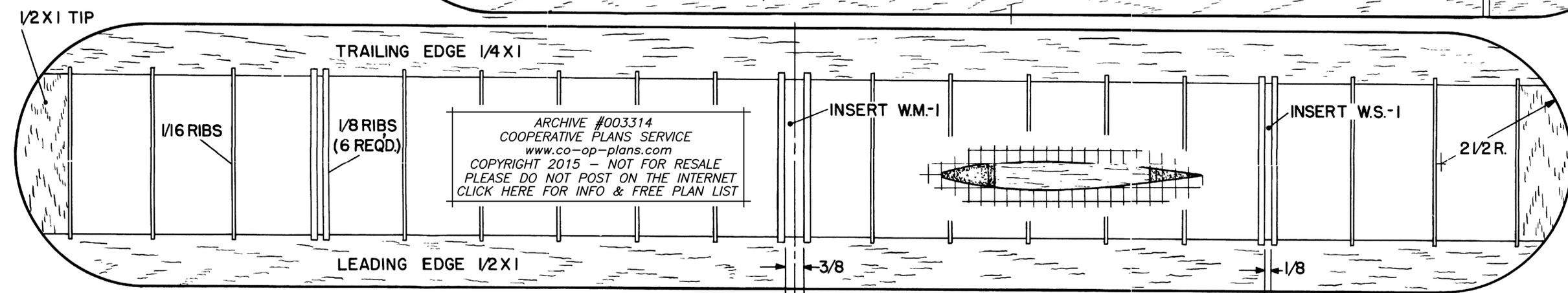
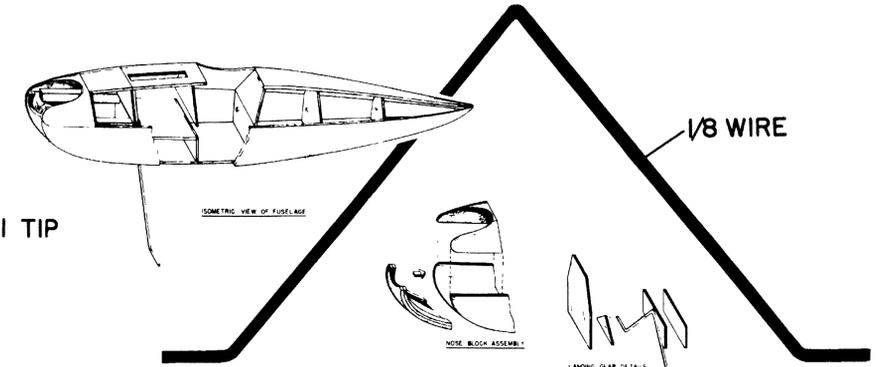
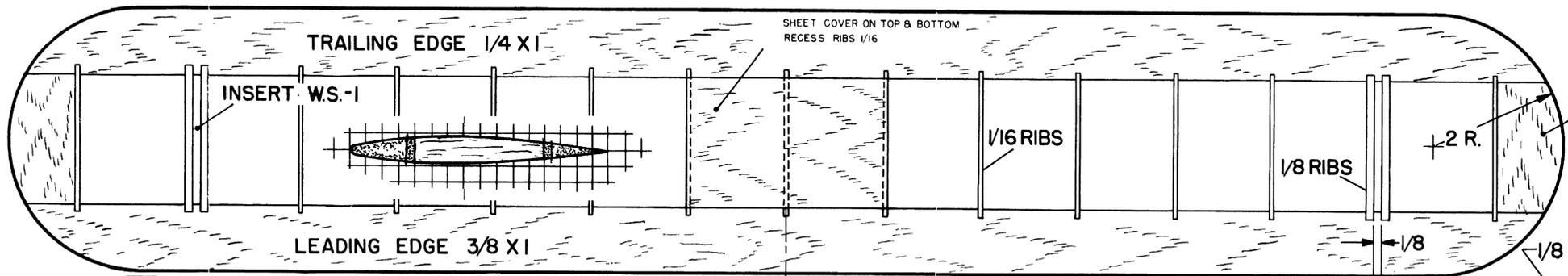
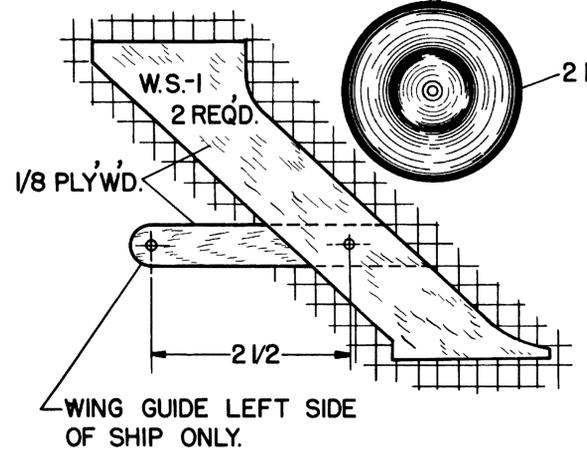
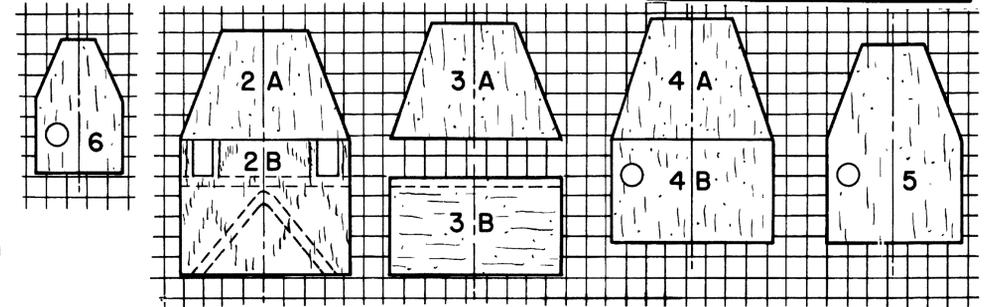
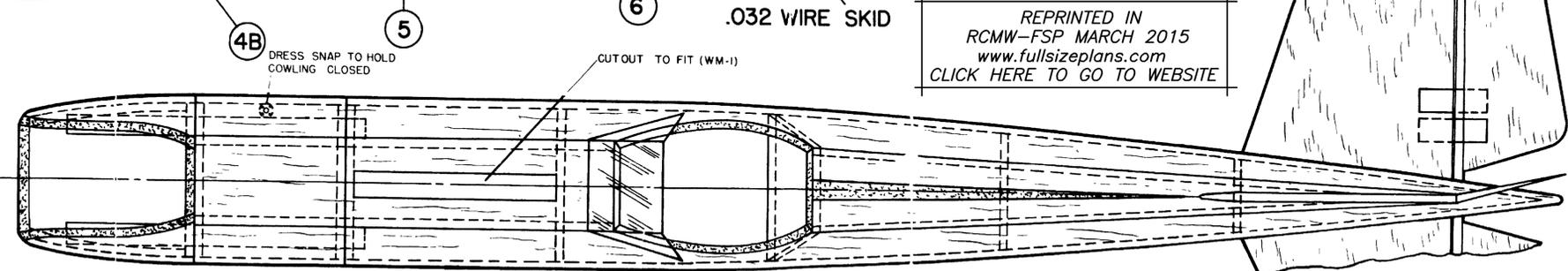
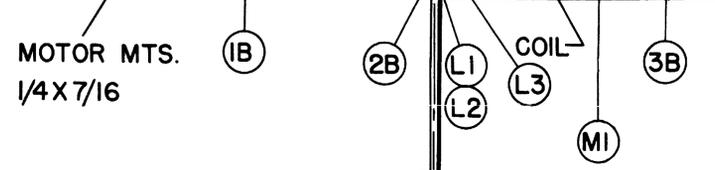
The fabulous Sikorsky "Grand"

In 1913 an airplane with a wingspan of almost one hundred feet capable of carrying several passengers was a sensation. The monster's four 100 h.p. engines enabled it to attain a speed of 56 m.p.h.

Russian born Igor I. Sikorsky the designer and builder of this huge craft startled the world by taking seven passengers on a night flight lasting 6 hrs. and 33 min. During the course of the flight his guests were served a hot meal. It can be truly said that here was the forerunner of the modern airliner. Sikorsky's contributions to aviation have become legendary. From Air Trails, April 1957



BOJO
FROM
AUGUST 1948
AIR TRAILS



NOTE
BULKHEADS M7 - L3 - 2B
ARE 1/8 PLYWOOD
ALL OTHER BULKHEADS
ARE 1/8 BALS

Luscombe MODEL 10

*by
Robert McClarren
And
Leonard Wieczorek*

This article and 3-view originally appeared in the September 1946 issue of Model Airplane News.

The Luscombe MODEL 10 was one of many lightplanes that aircraft manufacturers hoped would be the salvation of their companies after the end of WWII when production for the military was abruptly terminated. Dozens of designs were built as prototypes and never saw production. Several are mentioned in this article.

A slightly different version of the historical aspects of the Luscombe company is available on the Wikipedia web-site below ---

https://en.wikipedia.org/wiki/Luscombe_8



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 thousands 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 expen-

diture of hundreds of thousands of dollars: does the flying public want a single-place light-plane?

Lockheed thought it did, built the LITTLE DIPPER, then decided it didn't and abandoned the project. Piper also thought it did and built the SKYCYCLE, 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 is the Luscombe Model 10.

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 the central portion which is rounded in at the top to provide for the single cockpit. The tail surfaces are actually fabricated on Silvaire jigs but are cut off to provide a reduction in area. The wing ribs are standard Silvaire parts as are the ailerons and control cable fittings.

However, the spars are new to take the loads formally carried by the wing struts. The landing gear is fundamentally a Silvaire assembly

but entirely different in installation, being independently sprung and supported.

The job of designing and building the Model 10 was accomplished in less than six months. It is the work of Mischa Kantor, Luscombe engineer, who supervised the entire project from start to finish.

He worked with the avowed intention of creating the fastest single seat lightplane in the 65 hp class and carefully supervised the design of a bubble canopy for the cockpit, generous wing 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 light-plane 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 and the name of the firm was later changed to Culver Aircraft, another well known identity.

Now we follow the story of Don Luscombe. With the era of welded-steel tubing and fabric covered 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 light-planes ever offered to the public.

The 45 hp Phantom 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.

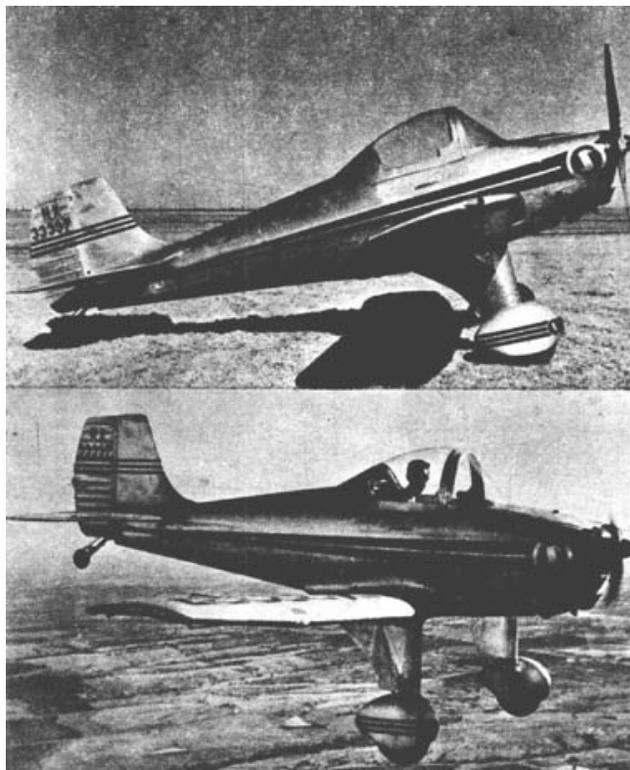
Then occurred one of the stranger chain of events in modern aircraft manufacturing history. Luscombe sold his interest, 64.3% of the Luscombe stock, to young Leopold H. P. Klotz, whose American Aviation Investing Co. assumed title to this controlling interest.

Klotz proved youthful, ambitious and hardworking 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 Com-mando 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 goevrnment 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 Klotz 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. In January of 1946 he secured the services of Eugene W. Norris, Technical Services Manager of Aircraft Industries Association, as Chief Engineer.

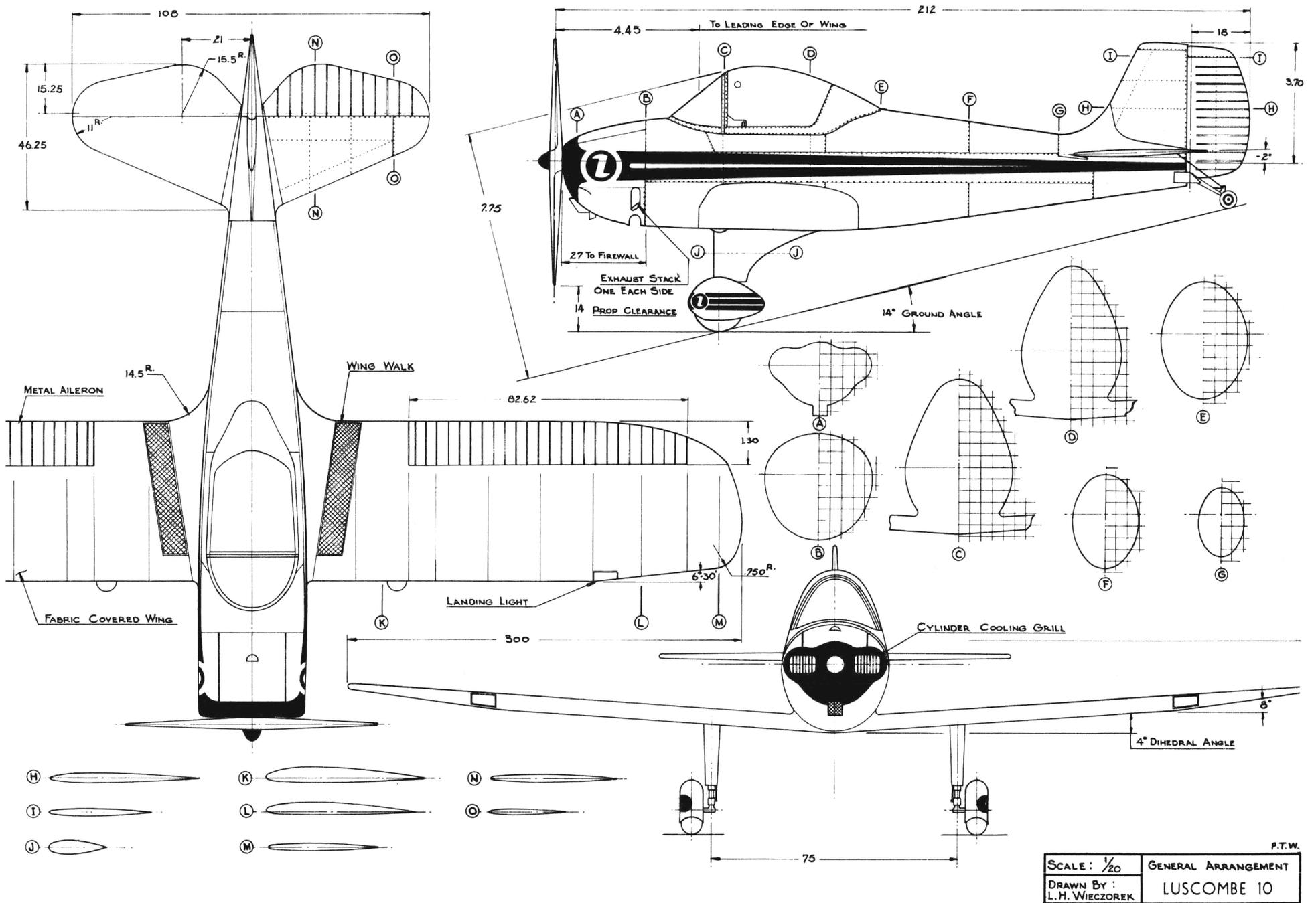
Klotz' sincerity, energy and production "know how" had paid big dividends and his Dallas plant was producing six Silvaires a day, which was claimed to be the largest lightplane production west of the Mississippi. But he had highest hopes for the new Luscombe Model 10 and placed his bets on its high performance, which he feels is the first requirement of the postwar lightplane. The little single seater had a top speed of 135 mph and cruised at 122 mph on its 65 hp engine, which might have justified his unique title for it.

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

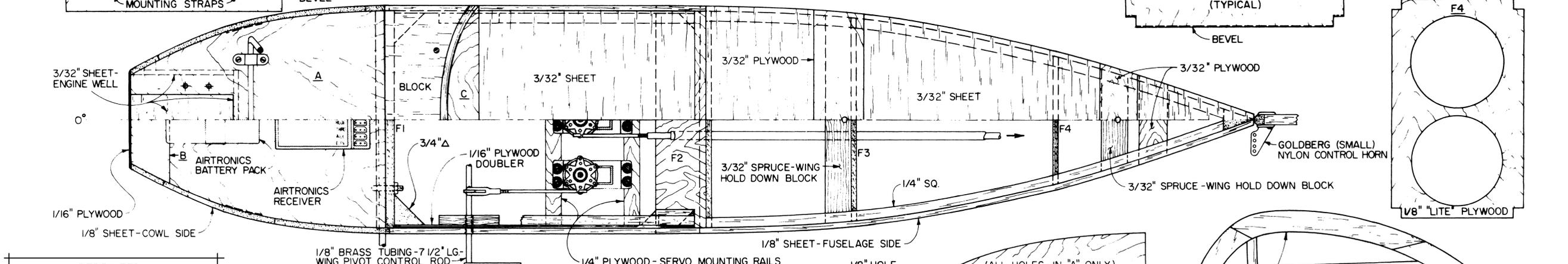
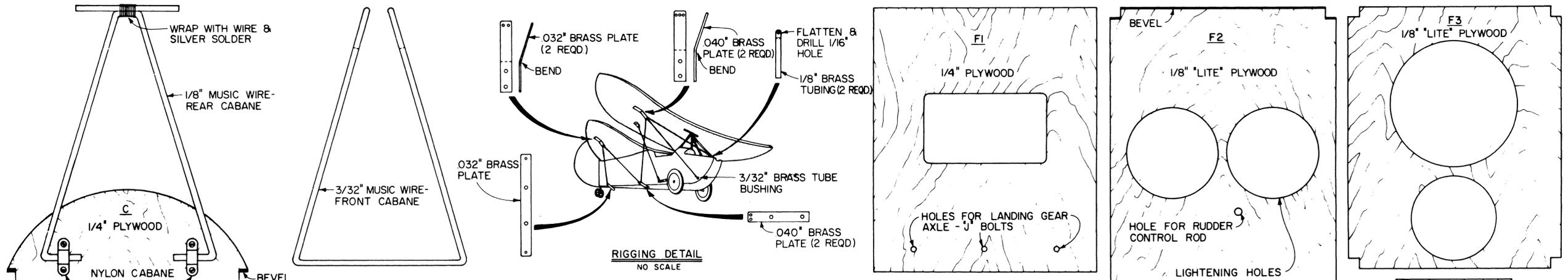
Klotz points out that untold thousands of dollars are wasted each year by two place airplanes being flown every day only by the pilot with the passenger seat empty. Not only is this true on business trips but it is also true in the plane "time" selling business in which hundreds of pilots fly simply to "log time" and prefer doing it alone. On this premise, the Model 10 can mean extra miles per hour and extra miles per gallon to the private pilot who takes his flying "neat".

Klotz did not announce production dates concerning the Model 10. The plane, only one of which had been built to, was undergoing extensive flight tests and its design was being engineered to incorporate many essential changes that have been created since it first left the ground.

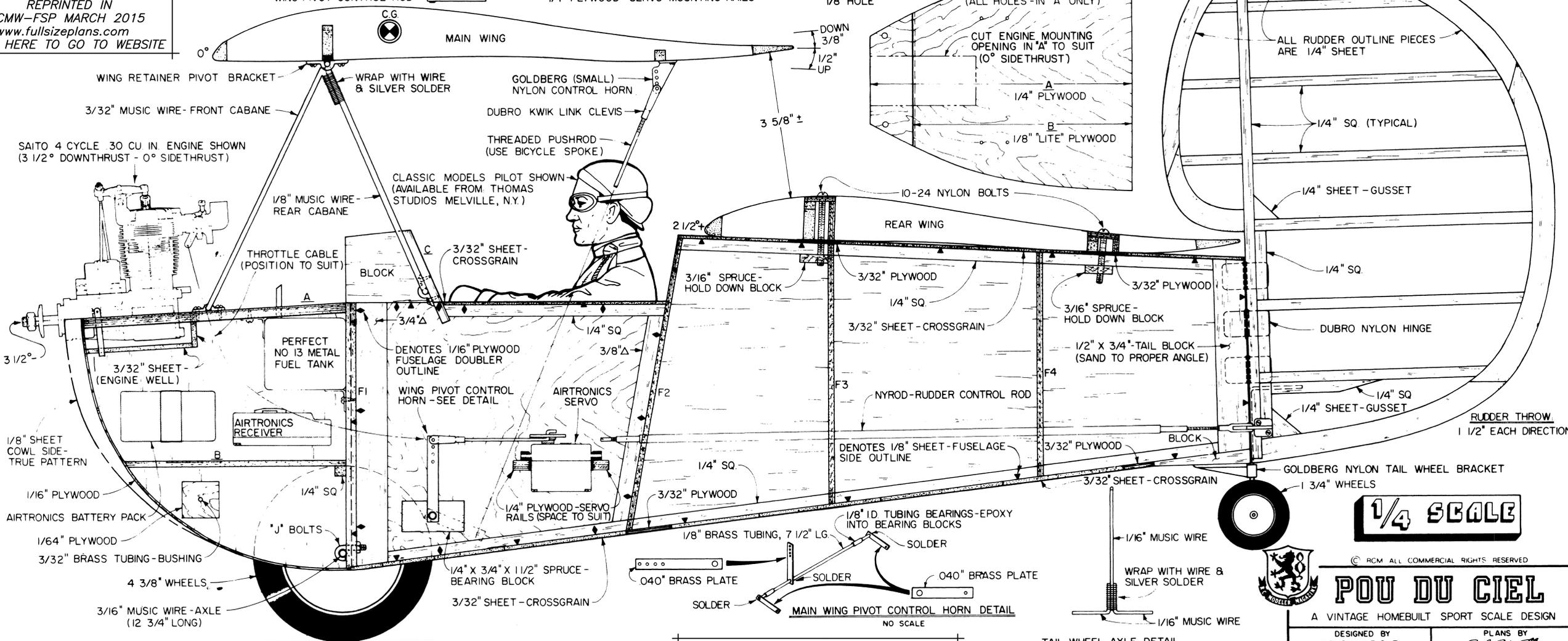
But the flood of inquiries from former fighter pilots and private pilots who were looking for the answer to their single place problems seemed to indicate that they had found it in the Luscombe Model 10.



Leonard Wieczorek, an Aeronautical Engineer with one of the major manufacturers, I believe it was Grumman, drew a series of 3-Views for Model Airplane News in the 1940's and 1950's.



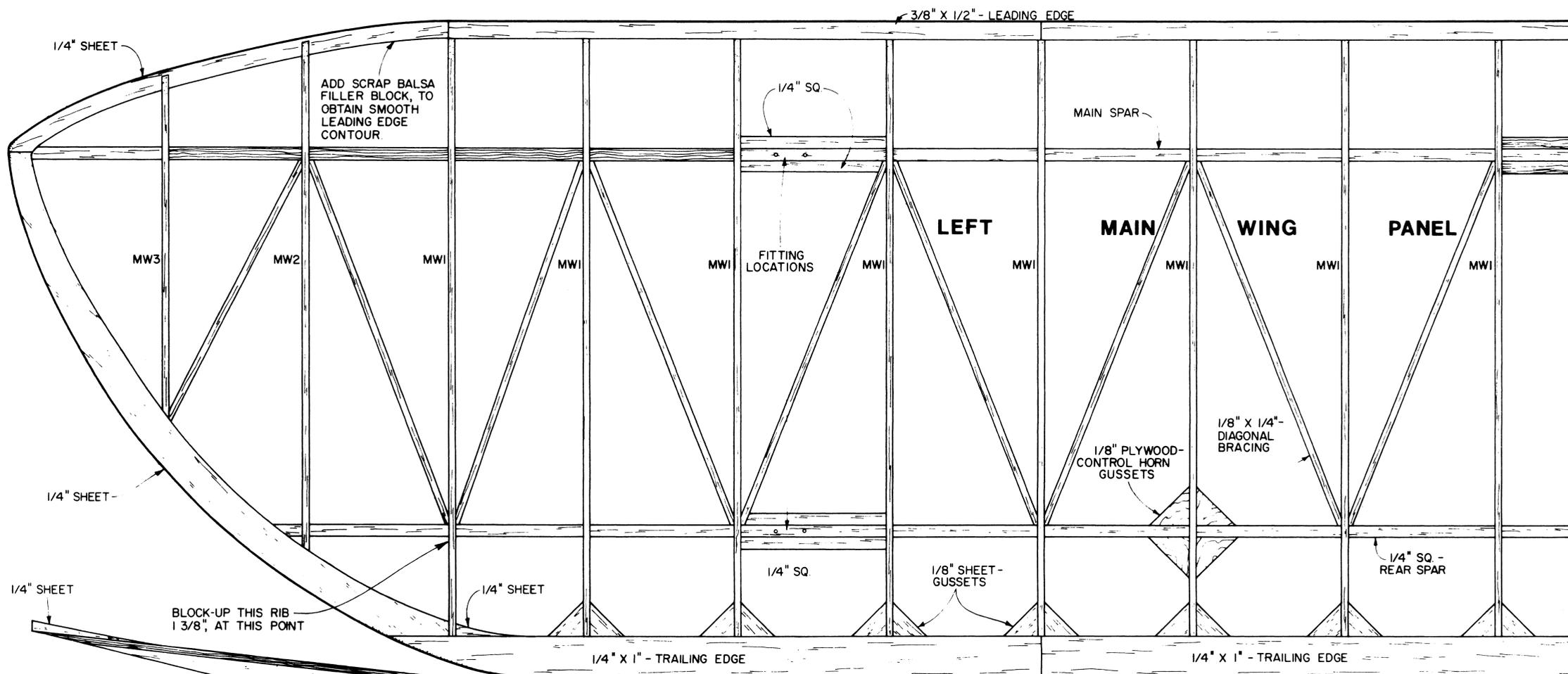
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NOTE ALL WOOD IS BALSA UNLESS NOTED OTHERWISE

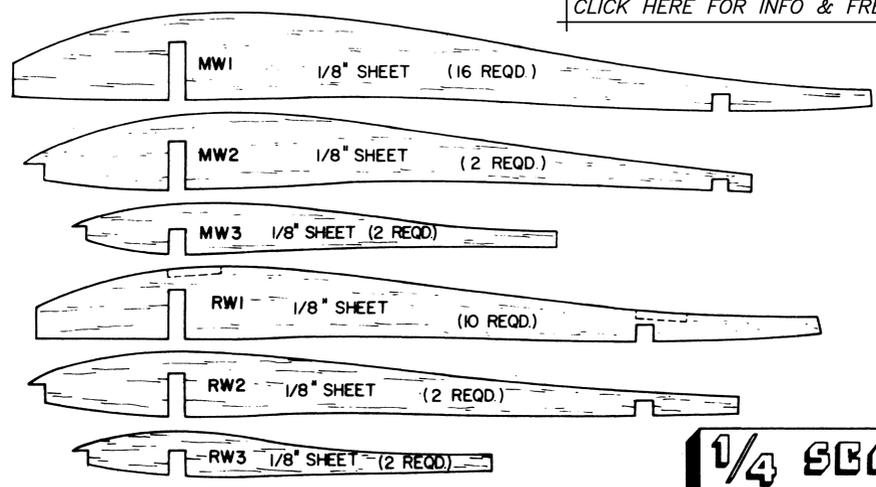
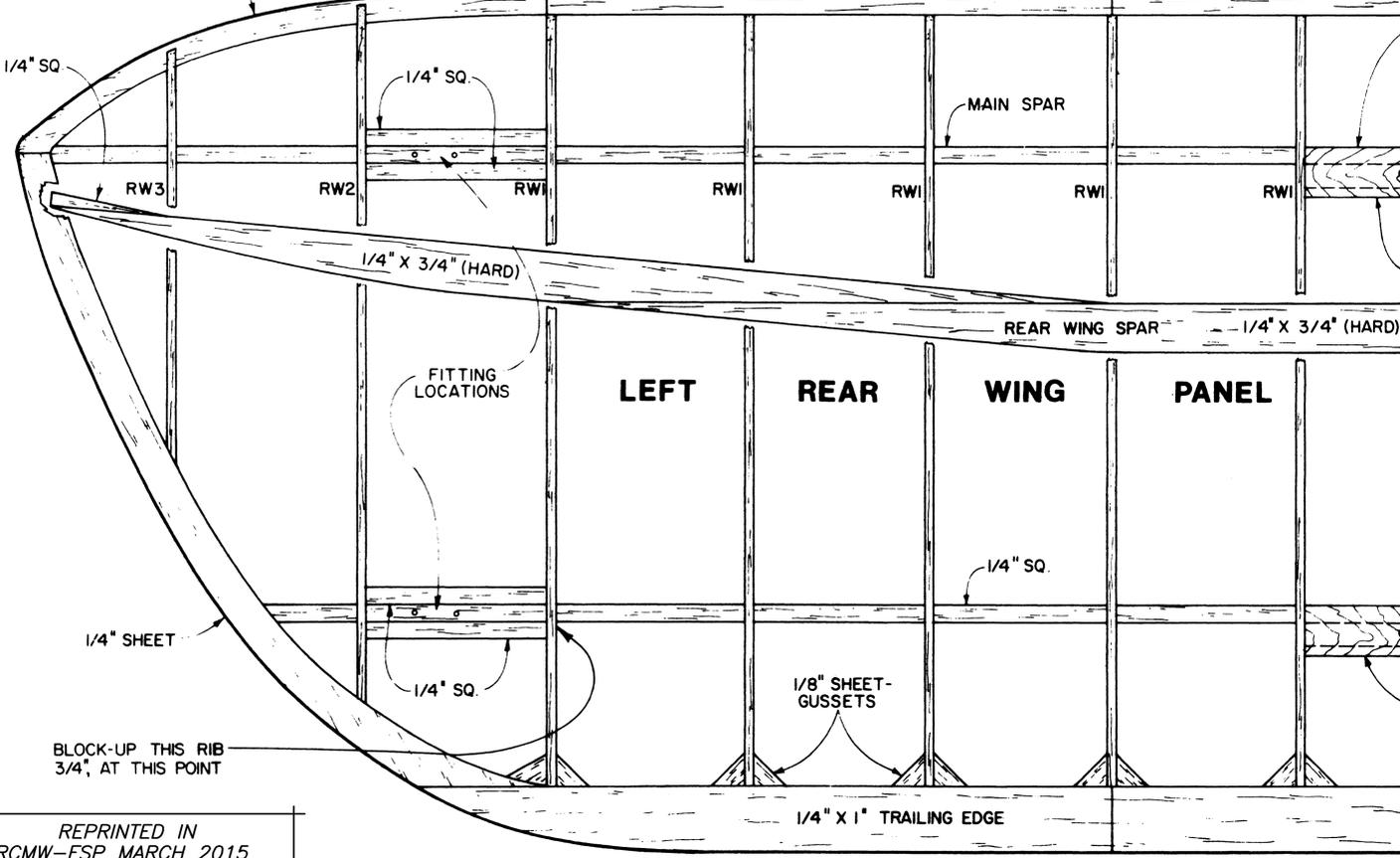
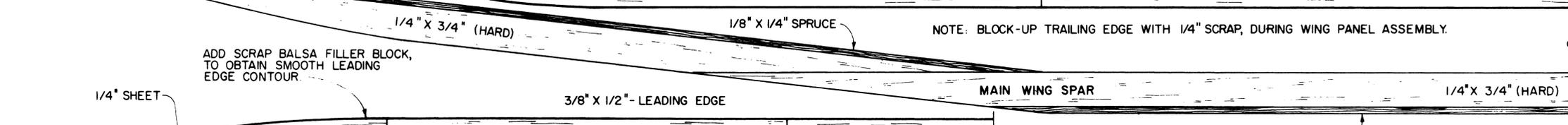
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ORIGINALLY PUBLISHED IN RC MODELER NOV 1981



NOTE REVERSE PLAN SHEET AND RUB WITH OIL (TO MAKE IT TRANSLUCENT), IN ORDER TO ASSEMBLE RIGHT WING PANELS

NOTE POSITION 1/8" X 1/4" DIAGONAL BRACES TO CLEAR WING UNDERCAMBER



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1/4 SCALE

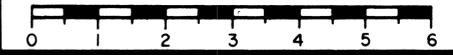


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POU DU CIEL

A VINTAGE HOMEBUILT SPORT SCALE DESIGN

DESIGNED BY RANDY WRISLEY PLANS BY Bob Wallace



NOTE. BLOCK-UP TRAILING EDGE WITH 1/4" SCRAP, DURING WING PANEL ASSEMBLY.

SHEET 2 OF 2

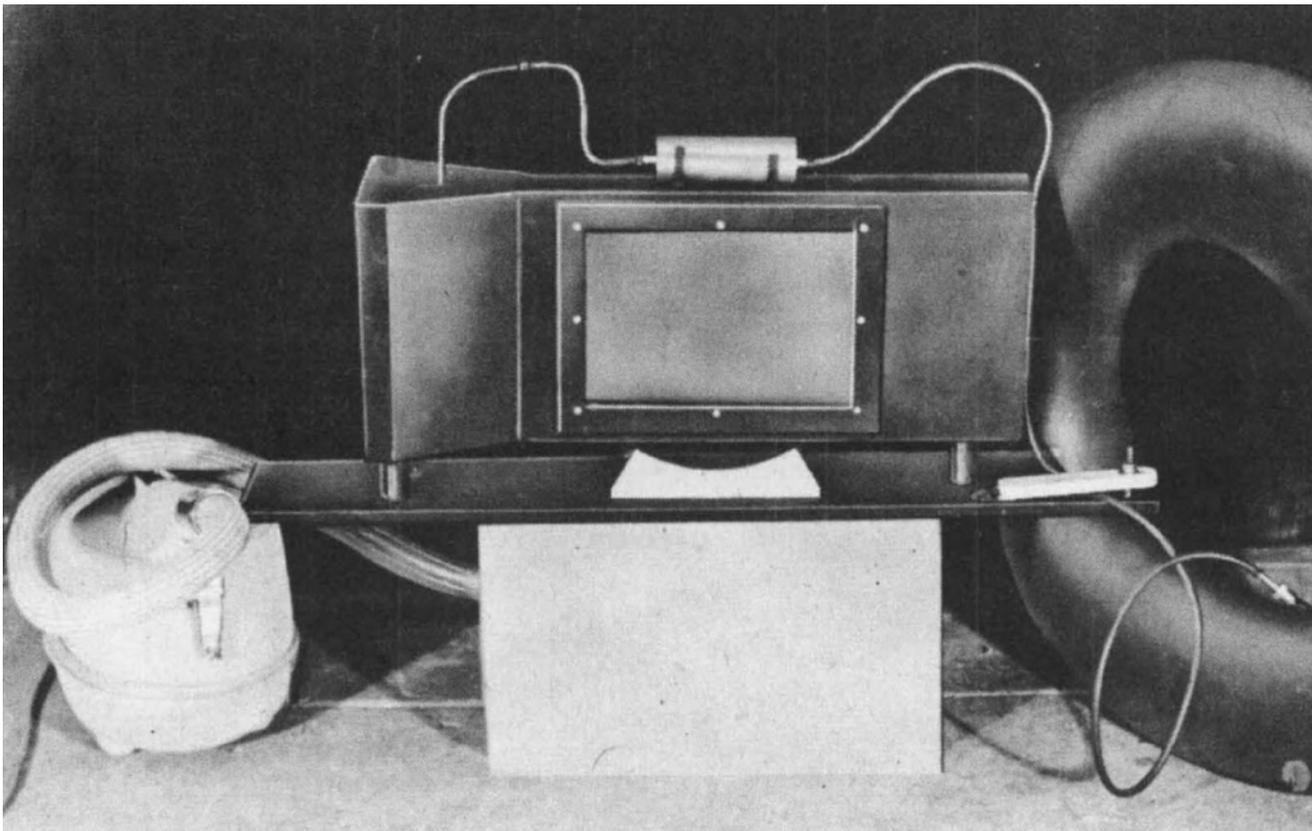
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ORIGINALLY PUBLISHED IN RC MODELER NOVEMBER 1981

A Wind Tunnel You Can Make and Operate

Okay, so be technical and label it a “smoke” tunnel. But that won’t lessen the value of your findings one bit!

By Paul J. Palanek



Over the years, there have been several do-it-yourself wind tunnel projects published. This one appeared originally in the April 1957 issue of Air Trails (American Modeler). Could make a good science project for a student interested in aviation.

This is an instrument of scientific proportions, not just a novelty. The serious minded experimenter can probe many secrets relative to the movement of air and bodies placed in its stream. Knowledge reaped from smoke tunnel studies can lead the model builder, particularly the free flight enthusiast, to design better models.

Prior to settling down to the serious task of building the instrument, let's delve into a brief history of the wind tunnel, a close cousin to the smoke tunnel.

The world's first wind tunnel was built at Greenwich, England in 1871. Its designer, F. H. Wenham, proposed it to the then recently organized Aeronautical Society of Great Britain, as an instrument to obtain data on which a true science of Aeronautics could be founded.

In 1901 Wilbur and Orville Wright built a small wind tunnel at Dayton and with it tested some 100 different wing models at various angles of attack.

In the year of the Wrights' flight, Crocco built a wind tunnel near Rome; Prandtl built a large one at Gottingen in 1908. Eiffel built one of unique design with an air tight testing chamber at Paris in 1909. The British government constructed its first large tunnel at the National Physical Laboratories in London, in 1910.

There are today about 200 tunnels in these United States. Half are for subsonic work, both commercial and in schools; the remainder for testing at high speed. They vary from low speed, low density types to tubes developing 18,000 mph speeds by hot expanding gases—in reality an explosion.

There are two basic types. The first, called the open circuit (or "Eiffel" or NPL) tunnel, has no guided return of the air. After the air leaves the diffuser, it circulates by devious paths back to the intake. If the tunnel draws its air directly from the atmosphere, entirely fresh air is used.

The second type, called a closed circuit, "Prandtl," "Gottingen," or "return flow" tunnel, has, as the name implies, a continuous path for the air.

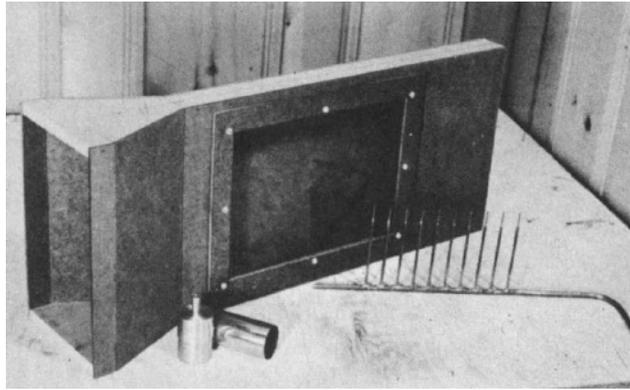
Our unit is a two dimensional smoke tunnel devoted exclusively to section testing. For this type of airfoil research the test specimen is a flat cross section that spans the shorter axis from one wall to the other.

The tunnel is constructed of common materials; what must be purchased, can be had for a few cents. A good deal of the material came from the scrap heap and waste bin. The most expensive component was the lucite observation window. Glass could have been substituted, but would have been more difficult to handle and fit.

Since the copper tubing smoke manifold appears to be the most difficult part, let's get along with this. A piece of 1/4" or 3/8" diameter copper tubing is used. Drill eleven holes enabling a press fit for the 1/8" manifold reducers. Solder these tubes in parallel. Be certain that the solder remains clear of the I.D. of the tubes. Exit nozzles are soldered to the 1/8" reducers

The tunnel uses 1/2" bass or pine top and bottom, with 3/16" tempered Masonite for the walls. Lay out the contour lines and shape accordingly. Make the window cut-out cleanly since it carries the sealing lucite window.

Assemble tunnel by first inserting the smoke manifold, then with brads secure the sides to the upper and lower walls. Seal off the exit end of the tunnel with a piece of 1/2" hardwood.



A wood baffle spans the minor axis of the tunnel; fasten with brads in the shape of a "V" as indicated. This baffle prevents the smoke streams from terminating sharply.

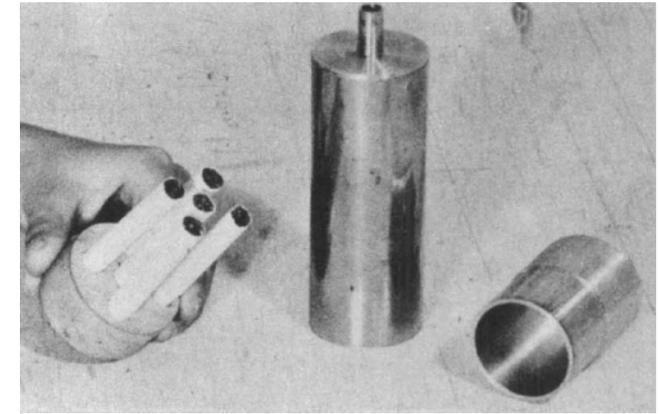
At this point, seal all seams with model cement. This will strengthen the assembly noticeably. When the cement has dried, spray the tunnel both inside and out a dull black.

Mount the tunnel on its three 1" diameter dowel legs fastened to the baseboard. This will hold the instrument in good position for working. Note the location of the securing bolts.

With the tunnel positioned, secure the flanged pivot bushing in the center of the vertical axis and in the center of the front face cut-out. Secure to the aft end of the tunnel a vacuum cleaner flange, to fit the vacuum cleaner used. Keep this as air tight as possible for obvious reasons.

Use a protractor to layout the calibrated scale and cement to the face of a 1/16" plywood panel, then fasten to baseboard, locating so zero line is directly below center line of the pivot bushing. Use Y4" sq. hardwood strip to mount the dial plate properly.

You will note that the entry end of the tunnel has a grating 1" sq. something like an egg crate separator. Build this of 1/16" smooth balsa sheet. When complete, the unit should fit snugly in place. This grid work straightens the air as it is drawn into the tunnel.

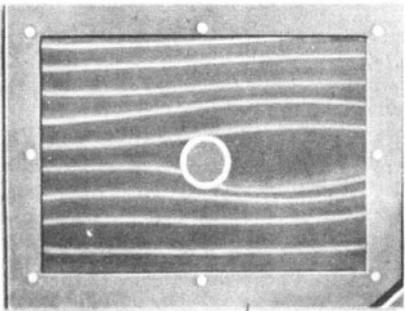


The smoke generator is a simple affair. It can be constructed from equal diameter fruit cans or from machined brass rod. The wood cartridge carries five cavities for five burning cigarettes. This assembly is fastened to snap-on clips for loading and unloading.

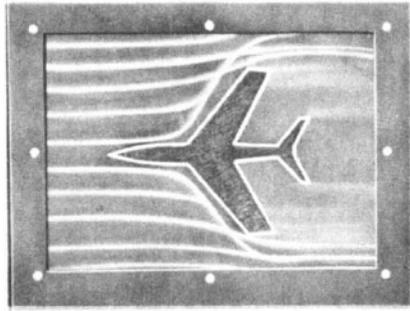
Since a control of some sort is necessary to meter the air to the smoke generator, a simple wood clamp is mounted to the rear of the unit on the baseboard. Rubber tubing, 1/4" I.D. is used for all piping.

To pivot the test specimens, a brass or bronze flanged bushing is fastened to the back face of the tunnel, fitting flush to the inside. The hole through the bushing is of little importance—1/8" to 3/16" diameter should do.

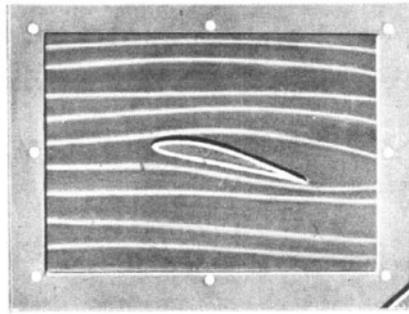
Here's the reason you don't see any super-sonic balloons flying around these days!



This should interest every model builder who notes air flow at the wing tips.



Now we're getting down to cases. Quickly, Henry, hand me the Clark "Y" section.



Test specimens are outlined; these should be made accordingly of hardwood or balsa. The pieces should be painted black with a narrow white border. This simplifies photography if used. Tunnel is sprayed a dull black to provide good photographic background.

Complete the face window. The lucite fits snug into the tunnel opening with the framing fastened to the window by #10 sheet metal screws. This assembly should fit flush to the inside walls. It may be necessary (depending upon fit) to clamp the window assembly in place to avoid any seepage of air.

To create the decreased air pressure in the chamber, a vacuum cleaner of standard make was used, along with an inner tube as shown in the pic to activate the smoke flow.

We strongly suggest photography to permanently record each experiment. This pertinent data can be referred to at a later date and further tests run with varied sequences. The versatility of the instrument is up to the experimenter.

A large and fertile field of research almost totally neglected by the wind-tunnel engineer is that covering non-aeronautical experiments.

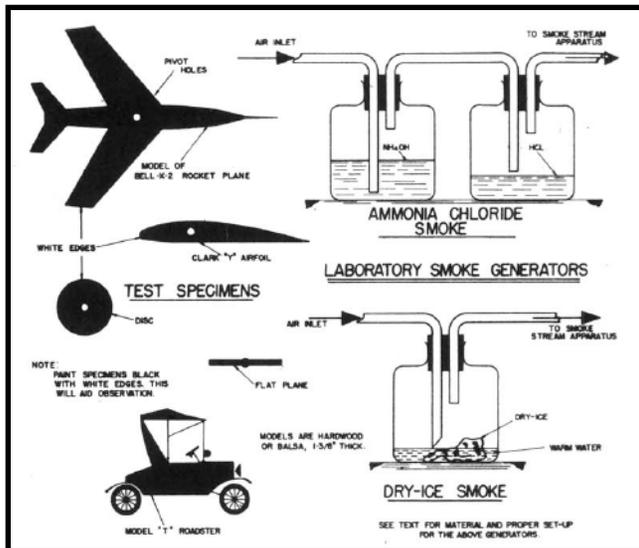
Boats are seriously affected by drag and turn over angle. In a number of vessels, the modern "decorations" on the stacks are the direct result of tunnel tests.

As road speeds have increased, more and more attention has been given to streamlining of automobiles. Race cars, particularly those designed for attempts at the world speed records, must of necessity pay much attention to wind tunnel tests.

A vast field also exists for commercial tunnel work such as air conditioning outlets, rail-shielded inlets, automobile manifolds, drying set-ups, anemometer calibrations, wind-driven power plants, and a host of air flow devices.

BILL OF MATERIALS

- 1 pc: 3/16" x 12" x 12" Masonite for window frame;
- (2) 3/16" x 12" x 24" Masonite for walls;
- (1) 1/2" x 4" x 8'0" white pine for top and bottom, pedestal base, deflector, tunnel end;
- (1) 1" dia. x 12" dowel for pedestal risers;
- (4) 1/16" x 1" x 36" balsa sheet for inlet mesh;
- 1 box 1" long brads to assemble tunnel;
- (1) pc. 1/4" O.D. x 14" brass tubing for smoke manifold;
- (1) 1/8" O.D. x 36" brass tubing for manifold reducer;
- (1) 1/16" O.D. x 36" brass tubing for exit nozzles;
- (1) 1/4" dia. rubber tubing for smoke and air couplings;
- (1) flange, standard vacuum cleaner coupling for Aft end of tunnel Air coupling;
- (2) metal fruit cans for smoke generator;
- (1) 1/16" x 2" x 2" sheet brass for manifold reinforcement;
- (3) 1/4"-20 x 4" nuts and bolts for pedestal mounting;
- 1 can rubber cement for tunnel sealer;
- 1 can Krylon black spray for tunnel blackener;
- 1 pc. 3/16" Lucite x 10" x 13" for specimen window;
- 1 doz. 10-32 bolts 3/8" long for window fasteners;
- 1 pc. 1/16" x 3" x 10" plywood for angular setting;
- 1 pc. 1/8" dia. x 12" steel rod for segment pointer;
- Misc.: Cement; solder and paste; white cardboard; small brads; inner tube for smoke generator air blast.



ALTERNATE SMOKE GENERATING DEVICES FOR CLASSROOM DEMONSTRATIONS

Type A: Ammonia Chloride Smoke

Material needed: 2 wide mouth bottles; 2 large two-hole stoppers to fit; glass tubing; ammonia hydroxide; hydrochloric acid;

Notes on setting up:

The apparatus may be set-up as indicated in the drawings. Air from a compressor, a hand pump, or an old inner tube previously filled at a service station is most satisfactory. If the smoke is not dense enough, try the use of a more concentrated solution. Too concentrated solutions, however, are likely to produce particles that will clog the tubes.

By the use of "T" or "Y" tubes three or four jets may be used at the outlet to give smoke over a wider area. All experiments should be supervised by a trained leader.

Type B: Dry-Ice Smoke

Material needed: 1 wide mouth bottle; 1 large Two-hole stopper to fit; glass tubing; Dry Ice.

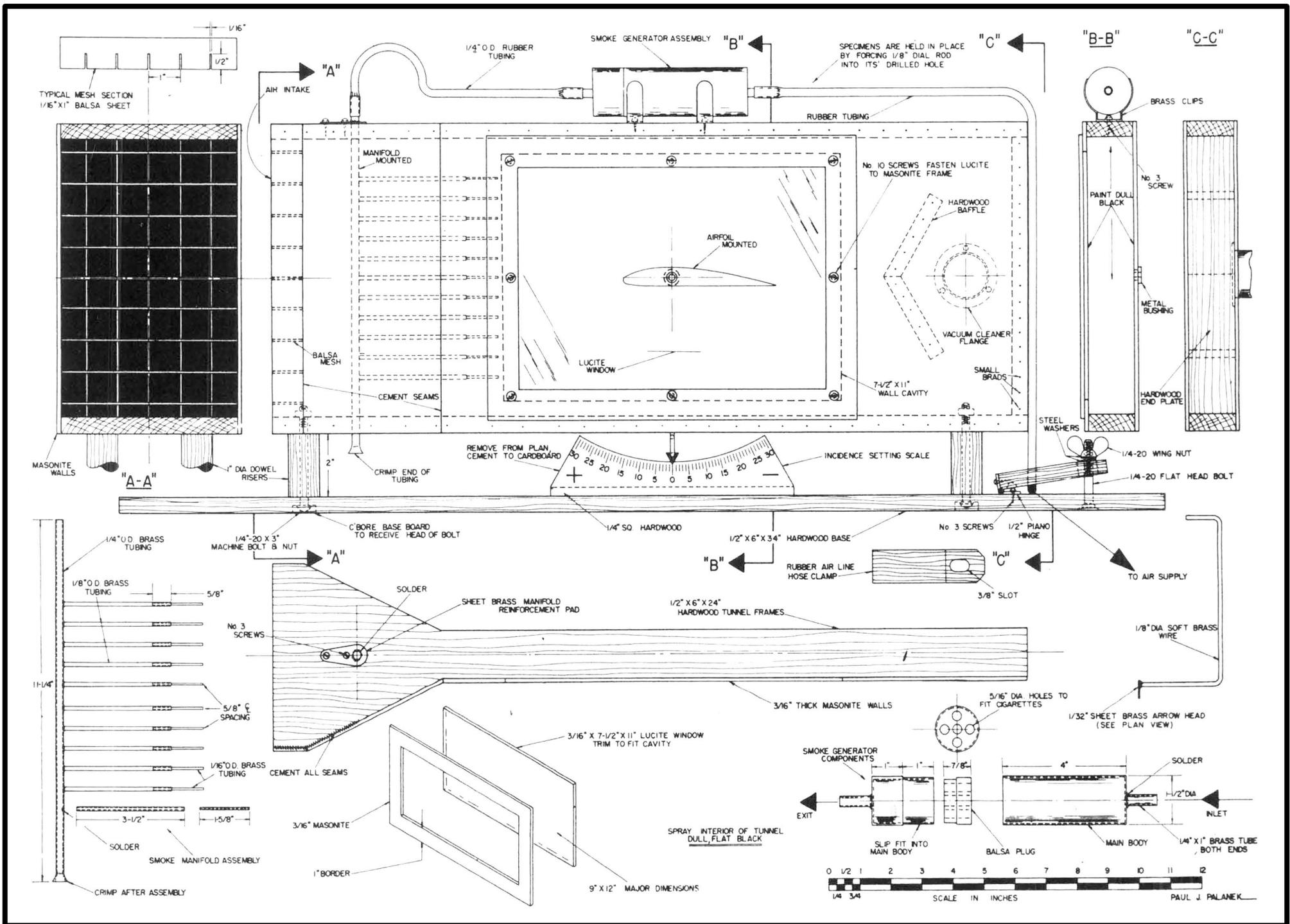
Dry ice may be obtained from such sources as dairies, ice cream factories, air products companies, and drug stores. It costs a few cents per pound. One pound will produce a good deal of "smoke." It must be used within a few hours.

Warm water will change the "ice" into vapor more quickly and produce a denser "smoke" than using cold water.

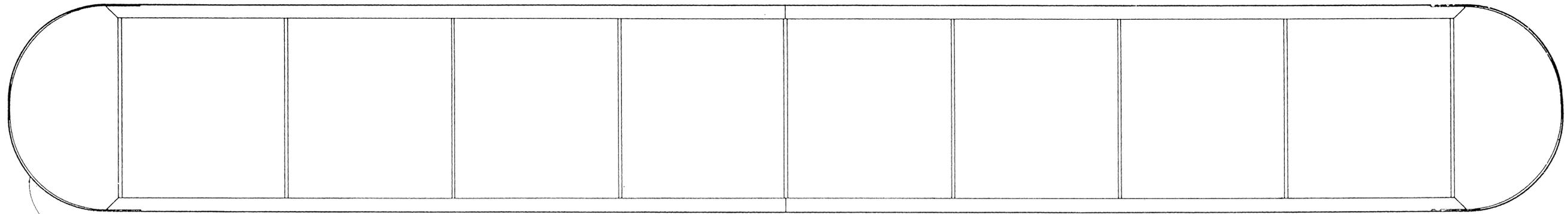
Notes: Suggestions for "Smoke Producers"

When used with a wind tunnel or in another air stream, the smoke producers will have to be placed so that the smoke will be carried along by the air stream. The rate of production will have to be adjusted to the velocity of the particular air stream (see text for details about metering clamp). If the velocity is high, the smoke may be too "thin" and thus not visible to the eye or a photographic plate.

The air velocity is from 2 to 10 mph depending upon the vacuum used. This can be varied at the exhaust end of the vacuum cleaner.



1/8 x 1/4 L.E.



1/32 x 1/16 BAMBO TIPS

1/8 x 1/4 T.E.



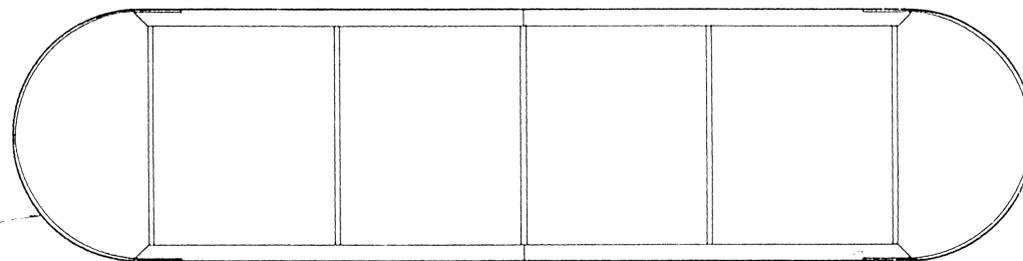
DOUBLE SURFACED RIB
9 REQ'D OF 1/16 BAL.



SINGLE SURFACED RIB
9 REQ'D OF 1/16 BAL.

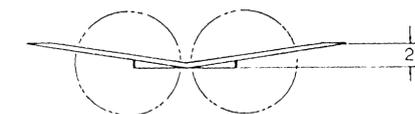
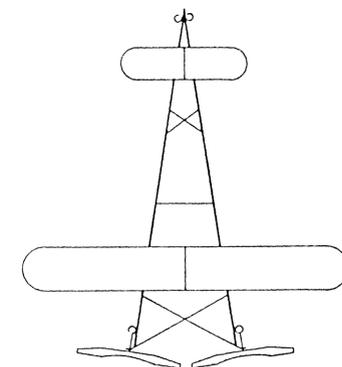
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1/8 x 3/16 L.E.



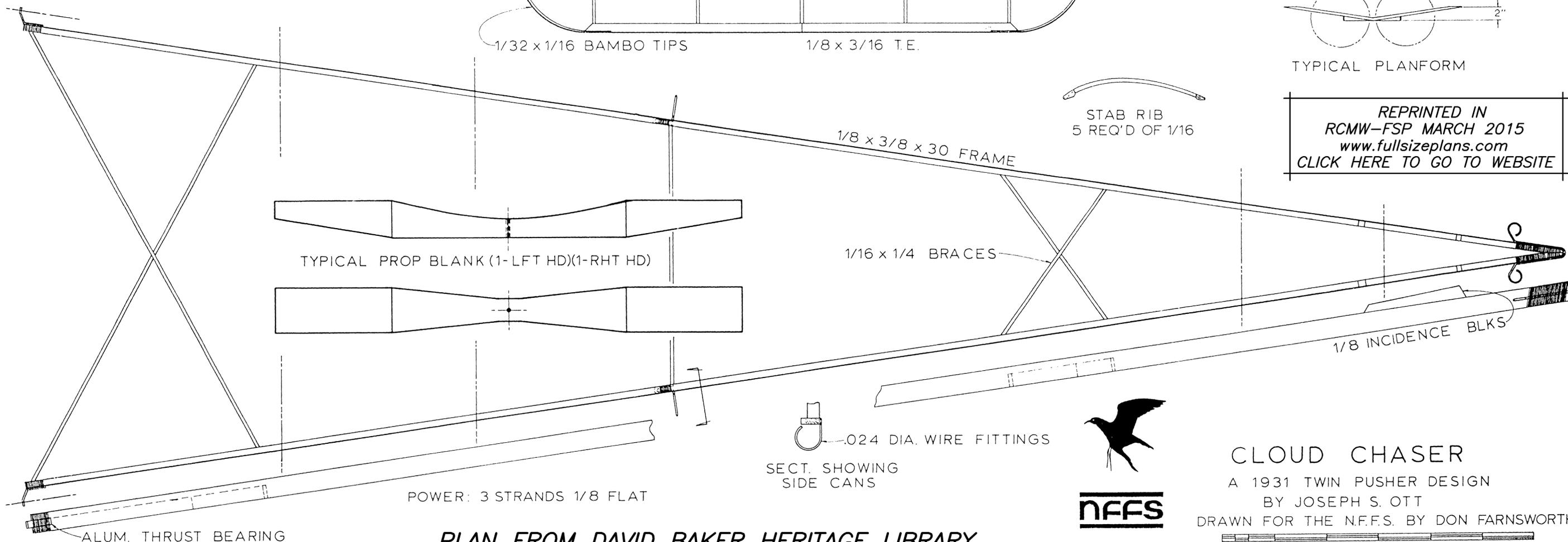
1/32 x 1/16 BAMBO TIPS

1/8 x 3/16 T.E.



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NFFS

CLOUD CHASER

A 1931 TWIN PUSHER DESIGN
BY JOSEPH S. OTT
DRAWN FOR THE N.F.F.S. BY DON FARNSWORTH

PLAN FROM DAVID BAKER HERITAGE LIBRARY

Old Model Airplane Magazines

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

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

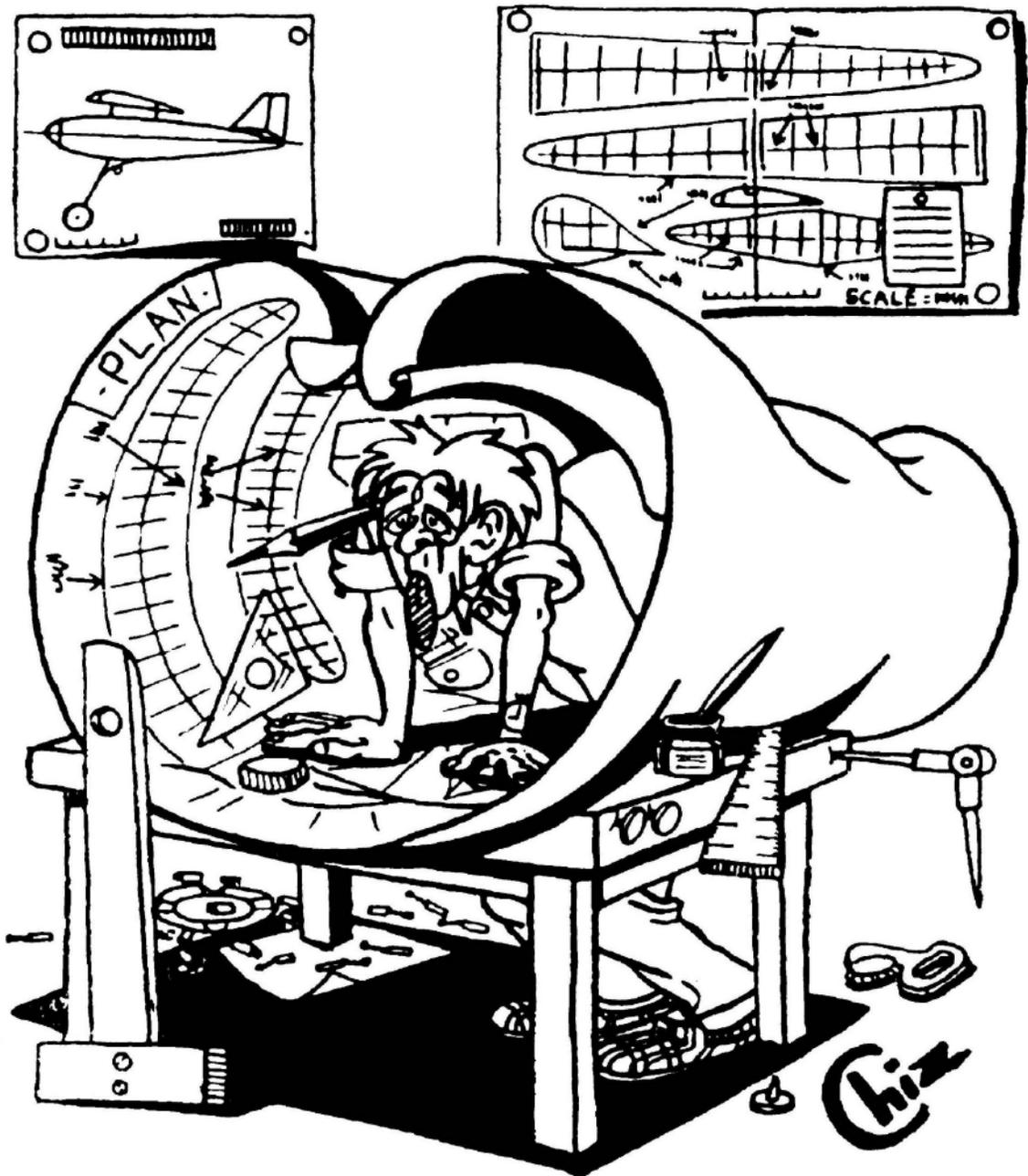
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of *Air Trails*, *Flying Models*, *Model Airplane News*, *Aeromodeller* and many of the several other magazines available "way back when".

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

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

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

Keep 'em Flying - Roland Friestad



AEROMODELLER DECEMBER 1952
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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 in publication. We have the following collections currently available ---

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

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

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

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

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

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

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

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

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

All prices include postage worldwide

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