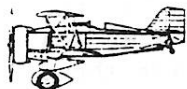


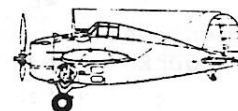
Wright F3W-1



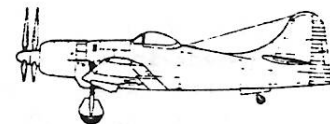
Boeing F4B-2



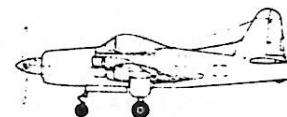
Curtiss F11C-2



Grumman XF4F-2



Boeing XF8B-1



Ryan XF2R-1

# MAX - FAX

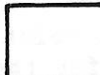
THE NEWSLETTER OF THE D.C. MAXCUTERS

JULY/AUG 1984

## MEMBERSHIP

Dues for membership in the D.C. Maxcuters is \$10.00 per year for residents of the U.S.A., Canada, and Mexico, and \$11.00 for all other countries. Your mailing label indicates the year and month of the last issue of MAX-FAX for your current membership. A red mark in the box below is a reminder that your current membership is nearing its end. Send a check, payable to D.C. Maxcuters, to the Treasurer.

DUES REMINDER



## PRESIDENT

DAN DRISCOLL  
2000 S. Eads St., #301  
Arlington, VA 22202

## SECRETARY

TOM SCHMITT  
11014 Marcliff Road  
Rockville, MD 20852

## TREASURER AND NEWSLETTER EDITOR

ALLAN SCHANZLE  
20008 Spur Hill Dr.  
Gaithersburg, MD 20879

## MEETINGS

The D.C. Maxcuters hold meetings on the first Wednesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

## UPCOMING EVENTS

EVERY FRIDAY EVENING: FUN FLY AT COMSAT FOLLOWED BY A SANDWICH AT ROY ROGERS

JULY 14, 15: FAC NATS, UTICA, MI

SEPT. 8: MAXCUTER SUMMER FUN FLY AT COMSAT

## CLUB NEWS

ALLAN SCHANZLE

IT WOULD BE remiss to start this issue with anything except a big 'THANKS' to Claude Powell and all the folks down at the Patuxent Naval Air Station. The facility was the Rotary Wing Hanger, and was everything Claude had led us to believe. At a place like this, indoor CO<sub>2</sub> is an event for the future. And clean!!! Gads, the place would have passed a white-glove inspection. They even mopped the floor the day before the contest! Would we return? At a moment's notice, Clyde - at a moment's notice.

The department of recreation down there in St. Mary's county also deserves substantial credit. It was with their backing that Claude got final approval. So thanks, folks, to all who made this event possible, as well as those who attended. Plans have already been initiated for another event next year. Plan on it - it's a super place.

WHILE WE'RE ON the subject of contests, there are several things that should be mentioned about our Summer Fun Fly this coming September. First of all, the "MODERN" mass launch event will be run by Dudley Prisel, and is open to all aircraft designed after January 1946. Well, almost all aircraft. Ya see, Dudley has as much love and affection for the Lacy, Fike, and Cougar as your editor, and while these aircraft are not going to be excluded, you can bet your last piece of 4 pound balsa that your editor will have the radar in his F8U-2 Crusader (photo in last issue) homed in on any such beasties. At 5 ounces and swinging a 16 inch diameter fiberglass reinforced prop, the F8U-2 is an awesome threat to most pieces of balsa and tissue. YOU HAVE BEEN WARNED!!!

Another noteworthy item dealing with our summer contest will be the distribution of Brown CO<sub>2</sub> engines. These motors are being provided by A.H. Zed Aircraft, who are promoting CO<sub>2</sub>. They are also developing special props for these engines. Let's hear 3 cheers for the fellows at Zed Aircraft!!!

THE FRIENDLY POSTPERSON brought a couple of notes that should be of interest to some of you. Paul Spreiregen sent a postcard which gave the address of a fellow who has parts for the old Cox engines. Contact Don Hatcher, Customer Service Manager, Cox Hobbies, 1505 E. Warner Avenue, Santa Ana, CA 92702, (714) 546-2551.

The next communication came from one of our West Coast members, Ernie Wrisley. He noted that one of his recent projects, a 3/8" scale Cleveland model of the Boeing 95 mailplane, flies like gangbusters. Apparently, many of the CD designs were noted for their inability to climb into the atmosphere, but this one seems to contradict that reputation. Your editor built a few of these in his younger years, and if I recall, they had two general flaws:

1. The stabs were usually too small, and
2. The stabs were set at zero degrees relative to the wing chord. These two characteristics sure make it tough for the stab to "stabilize".

Tony Peters sent a note which supplements Mark Fineman's contribution on prop blades in the last issue of MAX-FAX.

"A footnote to Mark Fineman's article on props. They are indeed a marvelous, indestructible substitute for wood. In addition to sticking them into balsa spinners (I just finished a Curtiss Ascender and mounted three plastic blades in a foam spinner. The blades only took moments to make, although it took me the better part of an evening to figure out which way they should go). I have inserted them into the sides of a disk cut from a hardwood dowel to mimic a wooden propeller, and into the ends of a slightly longer section of dowel to stand in for a metal propeller. Appropriately painted they not only perform well, but they look much better than commercial plastic or wood props. Incidentally, I attach them with white glue, not hot stuff as Mark mentioned, since I like the glue joint to be the weakest part as it is the most easily repaired."

IF YOU'RE LIKE me, you consider many of the procedures we use for rubber powered models as relatively new - at least post WW-II. But get a load of the following, which was lightfingered from MAN, April 1930 - that's right, 54 years ago.

"Your little fighter is now ready for its final test. Put on twelve strands of 3/16" flat rubber band, draw them out to about three times normal length and wind with a mechanical winder. At first give only about fifty turns with 4-to-1 winder, and up to eighty turns after the rubbers have worked in. The rubbers will give better results and last longer if treated with a solution of glycerin and castile soap."

Stretch winding, winders, and rubber lub. T'aint there nothin' new around?

BY NOW, YOU know that this issue contains another full size foldout plan, compliments of our local master draftsman, Hurst Bowers. After nearly 18 months of abstinence from the addiction of balsa dust and ambroid, we welcome Hurst back with expectations of more of these Golden Age beauties. This one is a Lincoln "All Purpose" (AP). While not the most attractive of the multitude of high wing aircraft, it was functional, and should be a superb flying model. In addition to this building plan, Mark Fineman offers another constructive hint, this one dealing with silver paint. For our historical contribution, you'll find an interesting article on the EARLY history of model aircraft. I say "early" because it was taken from the April 1930 issue of JUNIOR MECHANICS AND MODEL AIRPLANE NEWS, which ultimately became just plain M.A.N. Finally, you'll find an article from SPORT AVIATION.

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#### PHOTO PAGES

1. Craig Leszkiewicz, a new member, with his Peck Cub. Craig is a fast learning young man with the encouragement of Allan Schanzle.

NAS/NATC and St. Mary's Parks and Recreation  
Indoor Model Airplane Contest  
April 1984

2. Claude Powell, a prime organizer of the contest, winds his great flying F4B-4. Thanks again Claude for a terrific day.
3. Local EAA chapter members were enlisted as scale judges. They did a fine job and enjoyed the task which is never easy.
4. Kevin Sharbonda holding his original design Boeing MB-3A. It is a good flyer and scheduled for publication in MAX-FAX.
5. Paul Gaertner winding his Hawker Hurricane, Allan holding. Paul reduced the Doug McHard plans to fit the Guillow canopy and cowling, a neat trick.
6. Evelyn Phillips, Bert's daughter and ever willing assistant, holding his Sig Mr. Mulligan. Evelyn is now building her own models. There is no discrimination in the MAXECUTERS; welcome aboard Evelyn.
7. Randy Kleinert and his much rebuilt Fairchild. It gets prettier every time Randy.
8. A fine flying Sommer monoplane by Rich Hensel. Rich makes his own wire-spoked wheels which look great.
9. Dan Driscoll gets pinned by Ada M. Barrett, a member of the Maryland chapter of the "99s". Ada was a gracious spectator along with Donna Smith, also of the "99s". Ada gave out all the award buttons and insisted on pinning each one individually. As Max would say, "she is one terrific lady".
10. Paul Speiregen's Fairchild took second place in the Golden Age Monoplane event. Photo by Dan Driscoll.
11. Bill Bell repairing his pretty Douglas Y10-43, another great Golden Age kit by Joe Fitzgibbon.
12. Dan winding his Loening Kitten, Glen Simpers holding.
13. Bill Mitchell and his second place FAC scale Gadfly; it took first place at our March contest and hopefully will be a future MAX-FAX plan.
14. Dave Rees winds his Martinsyde S-1 for a first place win in WWI; Don Snull holding.
15. The Photo Editor with his No-Cal Airabonita XFL-1. Photo by Dan Driscoll.
16. Don winding one of his latest creations at 'Shangrila'; a Baka Bomb with a monocoque balsa sheet fuselage.
17. Rolfe Gregory enjoying his favorite pastime this past Spring. Rolfe has had a little interruption in his building and flying because of a recent operation. He is recovering nicely and should be back on the flying field this summer. Best wishes Rolfe from all the Maxecuters.

# D.C. MAXECUTER'S '84 SUMMER

## FUN FLY

Sept 8

### AMA SANCTION

1050

### CONTEST DIRECTOR

Allan Schanzle  
20008 Spur Hill Dr.  
Gaithersburg Md. 20879  
301 840-5884



9<sup>00</sup>  
to  
6<sup>00</sup>

### EVENTS

#### FAC SCALE:

Judging starts at 11:30 AM. Qualifying flight must be made by this time.

#### FAC POWER SCALE:

For electric, CO<sub>2</sub>, and gas power. FAC scale rules. No tank restrictions. Qualifying flight by 11:30 AM.

#### MASS LAUNCH:

THE RACES 1:00 PM. A single launch for all racers.  
WW I 1:30 PM. Multiwings only.  
WW II 2:30 PM. Combat WW II aircraft only.  
GOLDEN AGE 3:30 PM. Any aircraft built from 1920 to 1935 and any plane not designed for military use from 1935 to 1940. Planes eligible for the races excluded.  
MODERN 4:30 PM. Post WW II aircraft only.

#### EMBRYO:

FAC RULES.

#### TRANS-COMSAT SPEED AND NAVIGATION RACE:

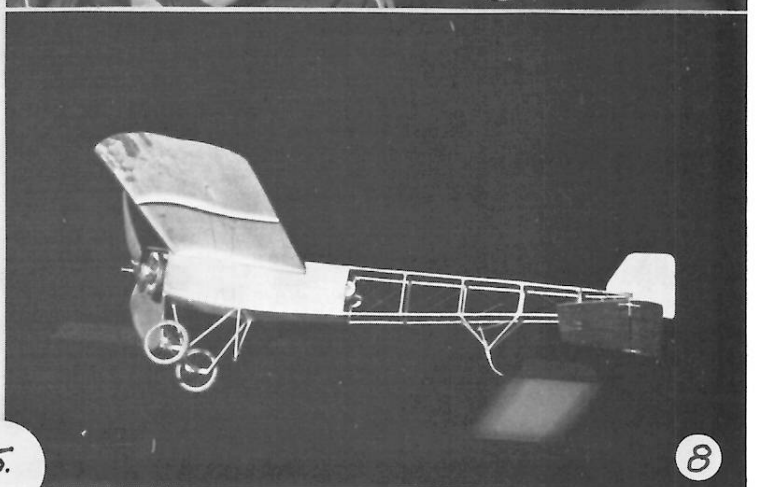
Two events for a single mass launch. For all scale models with at least 40 FAC points, excluding bonus points.

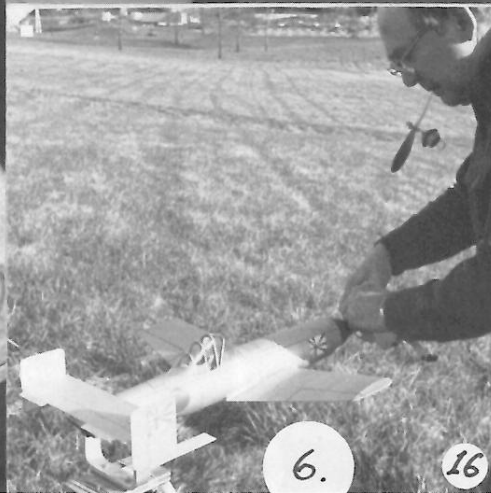
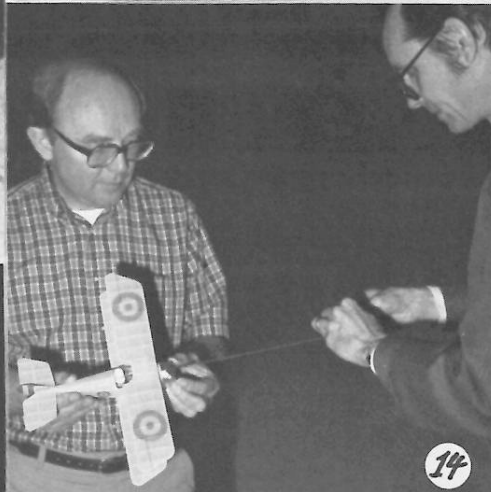
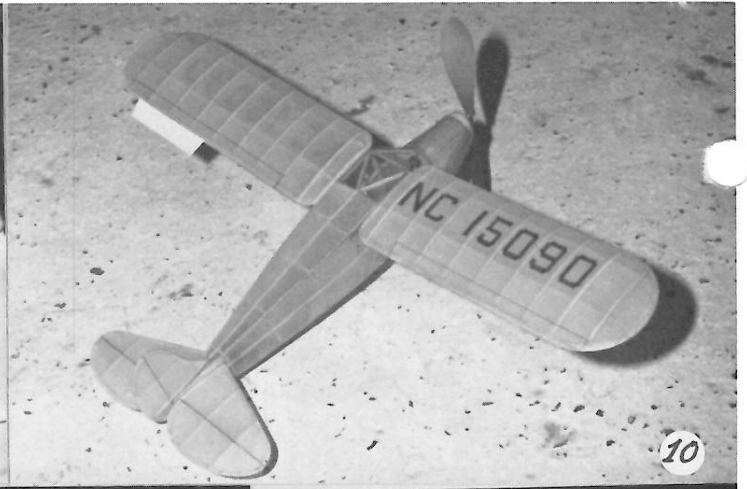
#### H.L. GLIDER:

Per AMA

#### CATAPULT GLIDER:

Must use MAXECUTER launching pole. AMA H.L. scoring.





## HI-HO SILVER!

Mark Fineman

One of the most disagreeable jobs in all of modeldom has to be creating a believable silver paint job on a model airplane. Silver tissue, of the type Dennis Norman has sold, is nice but tends to dull with the application of a top coat of dope. The result? A kind of silvery gray that is good for some circumstances but not when you want a really metallic finish. I've also had very little luck with silver dope or silver Floquil: too gloppy and opaque for my tastes. There's something else about a silver finish that you may have noticed as well, that silver tends to magnify every covering flaw on the model. With a silver finish, what would have been trivial sags or wrinkles in a non-metallic finish now look like major disasters. Too often the finished model looks just plain wrong.

Do not despair fellow modelers, there is a solution. Like most of my best ideas in modeling, this one isn't my idea at all. It was given to me by that master builder, Dave Stott. What I'm about to describe is my own adaptation of Dave's system:

To begin with, you may want to try Dave's practice of finishing tissue with a mixture of dope and clear lacquer, the kind of lacquer you buy in the hardware store. First mix up working solutions of the lacquer and the nitrate dope: cut the lacquer with an equal volume of lacquer thinner and the dope with an equal volume of nitrate dope thinner. Next make a working solution of the two finishes: combine 70% of the thinned lacquer with 30% of the thinned dope. In practice I may even add a bit more dope thinner to obtain a good working consistency. Two coats of the mixture are brushed onto the tissue.

Why lacquer? Nitrate dope, while good, tends to shrink a great deal as it cures, increasing the probability of obtaining warps, particularly in tail surfaces. Lacquer, on the other hand, hardly shrinks at all. (As a matter-of-fact, you may want to just use the straight lacquer solution on fragile surfaces like the single-covered wings of No-cals to keep warps to a minimum). The mixture of the two lets you control the rate of shrinkage: the more dope there is in the mixture, the greater the shrinkage. Thus, by carefully misting the tissue on the model structures with rubbing alcohol and then finishing with two coats of the dope/lacquer formula, almost perfect control over shrinkage can be obtained.

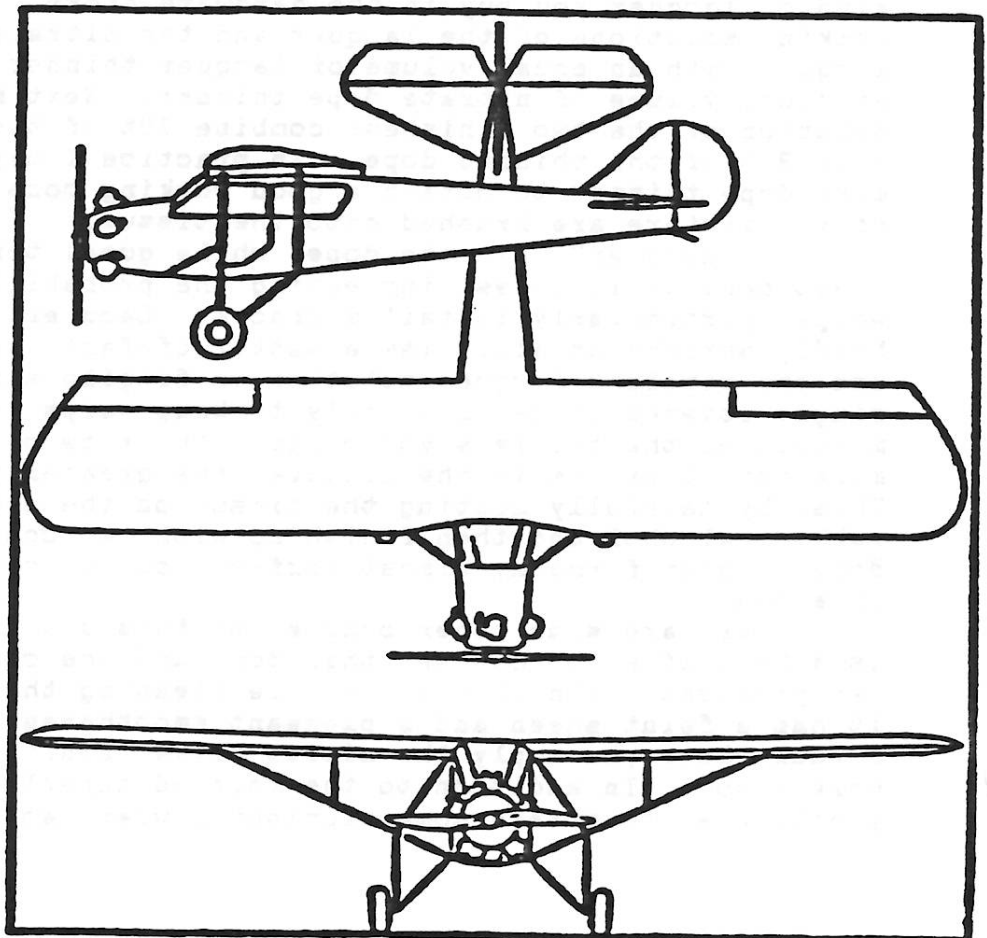
There are some other bonuses to this system as well. Lacquer is a heck of a lot cheaper than dope and the combination of the two produces a finish that is more pleasing than a doped finish; it has a faint sheen and a pleasant smoothness. Finally, the formula lets you apply the nicest silver finish you've ever seen. Here's how: In addition to the thinned dope/lacquer mixture, you'll need to obtain some aluminum powder, sold at most art

supply stores. A little bit of aluminum powder goes a lo-o-o-ng way.

I use a two ounce mixing bottle that I fill half-way with the dope/lacquer mixture (thinned, of course, as described above). To the mixture I then add an extremely small amount of aluminum powder. The way I usually measure the powder is to dip the tip of an old plastic prop into the powder and extract an amount on the tip of the prop about half the size of the nail on my little finger. Very unscientific, but it works. Trust me when I say that it is always better to use too little aluminum powder than too much. Then fill the remainder of the bottle with dope thinner. If you've kept up with me you will recognize that most of the silver mixture is composed of thinner!

The silver mixture is then sprayed onto the model, which has been covered with white Japanese tissue and finished as I described earlier. Don't use an airbrush. Instead, try an artist's atomizer, a handy gadget that looks like two metal tubes attached at right angles to each other. Pick one up at the art supply store where you buy your aluminum powder. Dip the long pipe into the silver mixture and blow through the short pipe so as to create a fine mist. When the silver goes on, it will look like hell, very wet and wrinkled, but have no fear, because when it dries, it will produce what looks like tissue that has been dyed silver. While the tissue is wet you may not even believe that it will eventually appear metallic, but when it dries, WOW! The tissue remains transparent but is unmistakably metallic. A little bit of aluminum powder also does a lot of reflecting. Once the tissue has dried, you may decide you want a more opaque finish, in which case you can spray on another light coat of the silver mixture.

LINCOLN A.P.





FROM M.A.N.  
APRIL '30

## The History of Model Building

*THE record of Prof. T. N. de Bobrovsky, an experimental scientist and for sixteen years a professor of aerodynamics, establishes him as a notable authority on the subject of which he writes.*

*He has been working with models for more than twenty years and lectured in Europe for some time. He was president of a model and gliding club for several years, has constructed hundreds of scientific models and a number of gliders, and has published innumerable books and articles on the theme.*

*With his helicopter, he won two first prizes and made two world's records, which are still retained by him. During the World War he was chief engineer of the Austro-Hungarian Flying Corps.*

*At present Prof. de Bobrovsky is in charge of the wind tunnel and is technical adviser with the Tubular Air-Craft Corporation of Secaucus, N. J.*

THE EDITOR.

**C**AN serious and exact tests be made with the small flying model? Can they lead to results? These are questions brought up time and time again in regard to model flying. In the

eyes of the public, flying models are nothing but an interesting and modern toy. The majority of aviation experts disregard the model entirely, others find the flying model merely a good example to use in instructing the younger element in aeronautics, while a few experts consider the model a great aid for serious, scientific research. This unfavorable attitude of the majority of flying experts toward the small model is not to be wondered at, as I know several designers of aircraft who even disbelieve results shown by a wind tunnel model.

Every day we, in our laboratories, hear the statement, "Oh, yes, this little model flies beautifully but try to build it on a large scale and see what happens!" It is this wrong attitude, and the belittling of flying model tests, that have prompted this series of articles dealing with the use of models as an aid to aviation. These articles will be illustrated with photographs and sketches of scientific model tests heretofore unpublished.

I have been asked if it is worth while to write of scientific flying models. It is worth while. Thousands of boys are building models in this country and we know that the inventive genius is developed in a boy's mind around the ages of fourteen to nineteen, so, therefore, it is imperative that he should, in addition to building models copied from blueprints published in periodicals, also give vent to his ideas and learn that model tests, properly conducted, lead to big results.

Anyone who makes a statement to the effect that the

# MODELS As Scientific Aid to Aviation

By

Professor T. N. de BOBROVSKY

proper behavior of the small model does not prove that the same thing would be practical on a large scale does not know, or forgets, that today's airplanes are the result of the small model.

The small model has its own interesting history. A flashback in the history of the model can be placed in three groups up to the year 1910. Just as oftentimes happens today, the youth and inventors of yesterday did not have enough funds to complete their inventions on a large scale. Therefore, in order to demonstrate their ideas to secure financial backing, they were forced to use the small model, which is so neglected and belittled by the designers of today.

In the first group, we find those inventors who experimented with flying models from the days of Leonardo da Vinci (1452-1519) up to the year of 1860. Models made in this era are far more elementary than the most primitive flying model and there is no proof that any of them made an actual flight.

In the second group, we have those who experimented with flying models from 1870 up to the time of the first flight by the Wright brothers (1903). When the French Aero Club moved to more spacious quarters in the early nineteen hundreds, they found among their dusty, half-forgotten records an unopened package addressed to the one-time president of the club, M. Giffard, and bearing the name of the unknown sender as M. Penaud. While the pioneers throughout the world feverishly searched for the possibilities of mechanical flight, this dusty package was opened in the secretarial chambers of the French Aero Club and found to contain startling information. It was found, after systematic investigation of its

contents, that the sender, Penaud, a Frenchman who lived his life in a wheelchair, both hands and legs being completely paralyzed, had laid down the theory of flight on paper mathematically. In addition, it was learned that in 1872 in the auditorium of the French Academy of Science Penaud introduced the first flying model to the learned men of France. The first flying model! The immortals of the French Academy of Science laughed and left Penaud in his wheelchair with his only friend, who conducted the demonstration by following the instructions of the helpless inventor. This led to a tragedy. Penaud on his return home wrote a last letter and ended his life. In his letter he wrote that, while he could understand the members of the Academy doubting his figures and theory, but to laugh at the actual flight of his model was too much for him to bear. Before he died, he mailed his papers dealing with his theory to the then president of the French Aero Club, where it remained unopened until about thirty years later.

In the same group, we find the "American Leonardo da Vinci," Samuel Pierpont Langley, professor at the Smithsonian Institute, who conducted whole series of scientific flying model tests and who was one of the pioneers of aviation. This group includes, among many others, the Italian Professor Forlanini and the French mathematician, Tatin, both of whom greatly aided the possibilities of mechanical flight based on their experiments with models.

In the third group are those model experimenters who conducted their tests following the first actual flight of the Wright brothers up to the year of 1910.

The first official flying model competition was staged by the French Aero Club in Paris in 1905. The next race was sponsored by the same club in 1907, in which year the English Aero Club also held its first official race. Subsequently, these events were held regularly every year.

How closely these flying models resembled the actual flying machines can be judged by the names of the winners of these model competitions. Among the leaders we find Paulhan,

with the aid of models the correct flying position of an airplane. Before that time, the tail of the plane had always been kept hanging lower than the rest. To raise the tail of a plane in a horizontal position in flight was considered out of the question at first. This accounted for the limited distance of an airplane flight, as the plane was unable to gain enough flying speed with the tail down. Henry Farman, the first man to fly a complete closed circle, also flew in this awkward stalled position, keeping the wings of his plane absolutely level while making his turns; ailerons being unknown then. Latham squatted on his heels for hours watching a model fly in a circle with the wings in a bank of forty-five degrees. This model showed that it was necessary to make a bank while going around a curve and led to the installation of ailerons. Captain Ferber in 1908 proved what was then considered impossible: that if a motor stopped while in flight, it would not necessarily mean certain death by a crash and proved, with the aid of a model, that it will glide to earth in steady flight.

A model constructed by the Frenchmen, Lexilleux and Fordu, equipped with automatic elevator and rudder controls made the first, hitherto unheard-of, "stunt flight" in 1908.

Peugeot used models to ascertain the possibility of making a loop before he made the first actual loop on record.

The period following this third group in model flying, in spite of the fact that it is now merely an interesting pastime, has shown a few very striking developments. For instance, the so-far most successful helicopter, built by Pétroczy-Karman, is the result of long model tests. Then there is the most outstanding event in recent months, the flight of Fritz Opel in the Opel-Saunders rocket plane. Before Opel entered the plane, one year's experiments were conducted by the Rhön-Rossitten Company with models.

Flying models, up to the present time, have always preceded the actual flying machine. Before Glenn H. Curtiss left the waters of the Hudson River in a plane equipped with floats, a model of the same construction had already done the same. This also applies to the de la Cierva autogyro, the Junkers machines, the cabin planes of today, the parasol type planes, the Prest baby-plane, the Bellanca Tandem plane, the Fernick Tandem plane, etc., where models have preceded the actual machines by years.

one of the greatest flyers prior to the World War, who, with the Frenchman, Tatin, made an actuality of Penaud's dream by building a plane according to that unfortunate man's ideas. Paulhan was also the first to build a flying machine with cantilever wings, which appendages were collapsible. For four years he conducted model tests. Among the winners we also find Peyret, incidentally, the winner of the first model flying contest ever held, who later became assistant to Bleriot. Bleriot and Kapferer built airplanes along the lines of Peyret's prize-winning model but without the desired good results. Peyret, however, did not take defeat and twenty years later, a successful manufacturer, he rebuilt his first plane, only to find it a better glider than a mechanically propelled flying machine. For years his glider held world records.

**T**HE winner of the first English model contest, a twenty-seven metre flight, was won by a then unknown Englishman, A. V. Roe, today one of the leading manufacturers of aircraft in the world (Avro Avian, etc.).

Indicating that in those days, model flying was not children's pastime, one of the most learned officers of the French Artillery, Captain Ferber, won special recognition with his models in the flying model contest of 1908. He was one of the greatest experimenters with models in his day.

The famous Voisin biplane is also a development of the small flying model.

During the French flying model contest of 1909, mechanics flew small commercial flying toys after the contest and from that day on, model experiments and model flying took a downward trend and was only used by youngsters as a fascinating toy.

After this model race, serious contestants could only be found in the contest held by the Hungarian Aero Club in 1912 and in the national model race in Italy, where noted Italian military and civilian authorities participated.

What has model flying contributed to aviation today? In the first days of mechanical flight, it was determined by a small flying model that the tail of an airplane taking off would have to be raised horizontally off the earth before leaving it. Prior to that, it had been the opinion that the tail had to remain on the ground until the machine actually took off. Voison and Delagrangé determined

## A.T.C. #373 (10-1-30)

### LINCOLN "ALL-PURPOSE", AP-K5

Bearing the unmistakable touch of Ensil Chambers, versatile design-engineer for Lincoln Aircraft, the model AP-K5 as shown, was the first in a series of 3-place monoplanes designed specifically to replace the time-honored all-purpose biplane. Familiar with the peculiar requirements necessary for handling the chores of the average flying-service operator, Lincoln studied the cabin monoplane concept in this light. They felt it would be entirely suitable for these varied duties, even in a more practical and profitable manner. Not motivated to create a "beauty" of appealing line or proportion, but only striving to formulate a design that was meant to replace the open biplane for general service, Lincoln craftsmen dealt only in predetermined requirements that were to be adapted to the characteristics of the monoplane, with an eye for doing the job much better. After all design factors were translated to lines on paper and eventually into a finished airplane, the form was more or less straight-forward and quite plain; but a sturdy character and amiable nature held priority above all else so no compromise was even considered. The preliminary tests of this craft had the flavor of a dream come true and the AP-K5 posed right then and there as an answer to the prayers of the flying-service operator, or even the private-owner pilot who hauled family and friends for the fun of it. Fitting all the basic qualifications for a practical and profitable general-purpose airplane to a tee, and in this case with extra features not usually found in an airplane of this type, one would guess that the AP-series should have taken the country by storm in a great back-log of orders. Sad to say, this was not the case. The flying-folk who really needed this type of airplane, the one-man flying service operator and the private-owner pilot who generally flew just for the fun of it, just had not the way or the means to invest \$4000. in a new airplane. With the market fairly glutted with last-year models at slashed prices and used bargains at a give-away, the new-production airplane had very slim chances. Fate and the circumstances of the times had a habit of dealing harshly with the dreams of many good men, and thus this particular period of aviation history was being shaped.

The Lincoln model AP-K5 was a straight-sided and very honest-looking high wing monoplane with seating arranged for 3 in the confines of roomy cabin comfort. Especially designed to handle the varied chores of all-purpose service, the AP monoplane was in many ways the ideal for charter trips off the beaten path, for pilot training, light cargo hauling, or as just a sport-plane for the owner-pilot. Inherently reliable because of its robust frame and inherently stable because of good aerodynamic arrangement, the AP-K5 was almost fool-proof to operate. The more economical of the 2 models in this series, the AP-K5 was powered with the 5 cyl. Kinner K5 engine of 100 h.p. and rendered an all-round performance well above the norm for this type of airplane. Loaded to its gross weight, the AP-K5 broke ground easily in about 650 ft., climbed out at a rather generous rate and a landing run usually amounted to around 250 ft. Seated in the roomy comfort of this gentle airplane, the owner-operator could easily relax even while on a busy schedule and certainly didn't need to act or look the part of the "intrepid aviator". Of the several monoplanes designed to replace the open biplane for general-service, the Lincoln AP (All-Purpose) was perhaps the best approach thus far. The type certificate number for the Lincoln model AP-K5 was issued 10-1-30 and according to record, only one example of this model was built by the Lincoln Aircraft Co., Inc. at Lincoln, Neb. Victor Roos was president and general manager and Ensil Chambers was chief of design and engineering. Feeling the pinch from a steady loss of sales through 1930, plans had been made to form a merger between the Lincoln Company and the American Eagle Aircraft Corp. of Kansas City, a move calculated to re-finance and strengthen the structure of both companies. In the re-shuffle of company executives, Victor Roos became president of the new merger and E. E. Porterfield, Jr. the president of American Eagle, became sales manager. The Lincoln facilities, more modest of the two, were moved to the American Eagle plant where a continued production was planned for the combined line of models manufactured under 15 different approved type certificates (ATC); most of the emphasis was placed on the building of the little "Eaglet", the Lincoln PT training biplane and the Lincoln "All-Purpose" monoplane. Somewhere along in 1931, Lincoln de-

veloped an ultra-light "pusher" monoplane called the "Playboy" with seating for 2 and powered with a modified version of the Wright-Morehouse "twin" engine called the Lincoln "Rocket". Outside of the development of this one prototype, very little else is known of this project or why it was dropped.

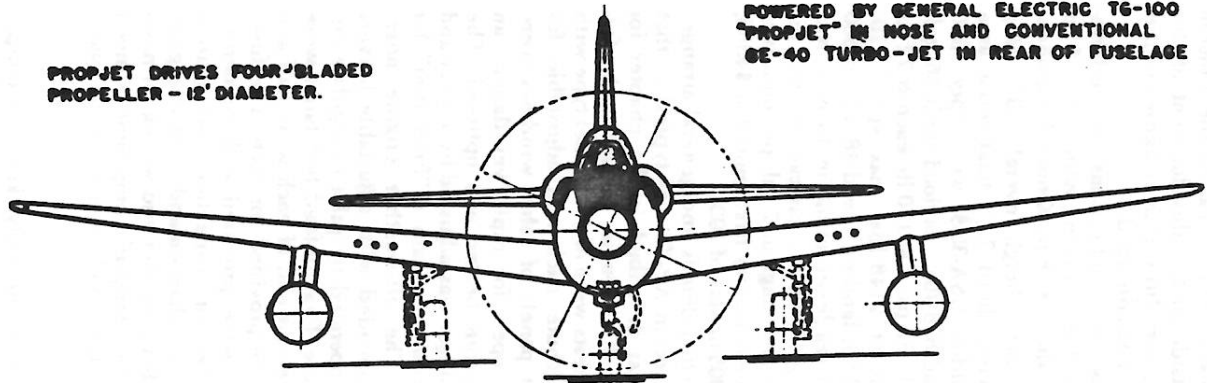
Listed below are specifications and performance data for the Lincoln model AP-K5 as powered with the 100 h.p. Kinner K5 engine; length overall 26'0"; height overall 8'3"; wing span 37'0"; wing chord 72"; total wing area 206.4 sq.ft.; airfoil USA-35B; wt. empty 1320 lbs.; useful load 828 lbs.; payload with 36 gal. fuel was 412 lbs. (2 pass. at 170 lb. each & 72 lb. baggage); gross wt. 2148 lbs.; max. speed 110; cruising speed 93; landing speed 48; climb 580 ft. first min. at sea level; climb in 10 min. was 4500 ft.; ceiling 12,000 ft.; gas cap. 36 gal.; oil cap. 4 gal; cruising range at 7 gal. per hour was 450 miles; price at factory first quoted at \$4395, reduced to \$3995 in May of 1931.

The construction details and general arrangement of the Lincoln AP-K5 was typical to that of the AP-B5 as described in the chapter for ATC # 372 of this volume, including the following. Cabin seats were of the bucket type with wells for parachute pack and adjustable for height. Center panels of cabin windows were split to slide open for rapid ventilation; an exhaust-muff cabin heater was optional. The horizontal stabilizer was adjusted by a lever and screw mechanism to obtain a "finer trim" for varied loads. The all-weather engine nose-cowling was provided with adjustable louvers that could be operated by pilot to regulate engine temperature. Gravity-feed fuel tanks were mounted in the root end of each wing half and fuel gauges were provided for each. The fuse-lage and wing were provided with numerous inspection plates for inspection and maintenance of control mechanism and other vital gear. A Fahlin wooden propeller and wiring for navigation lights were standard equipment. A metal propeller and Heywood engine starter were optional.

Listed below is the only known example of the Lincoln model AP-K5 as gleaned from registration records:  
X-42N; Model AP-K5 (# 901) Kinner K5.  
X-424V was originally tested as model AP-K5 but soon after modified to model AP-B5 with 125 h.p. Kinner B5 (R-440) engine.

PROPJET DRIVES FOUR-BLADED PROPELLER - 12' DIAMETER.

POWERED BY GENERAL ELECTRIC T6-100 "PROPJET" IN NOSE AND CONVENTIONAL GE-40 TURBO-JET IN REAR OF FUSELAGE

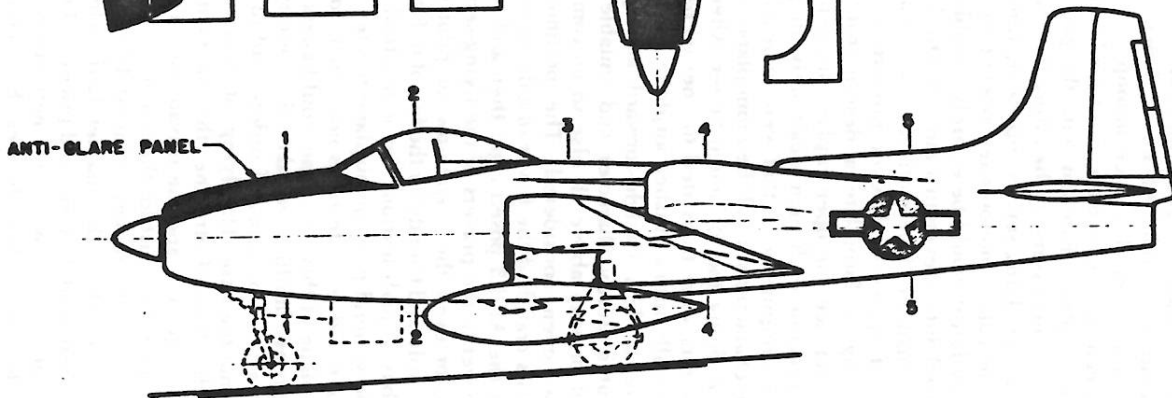
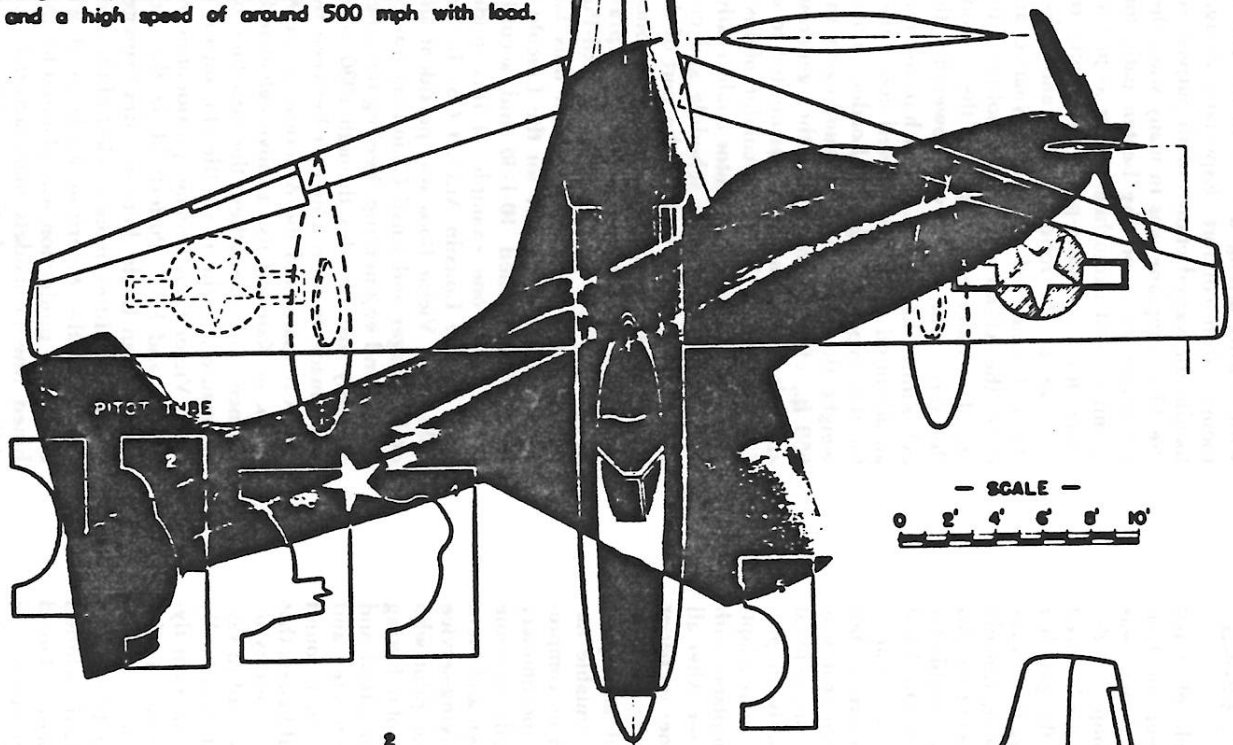


TOP SPEED --- OVER 500 M.P.H.  
GROSS WEIGHT --- 19,500 LB.

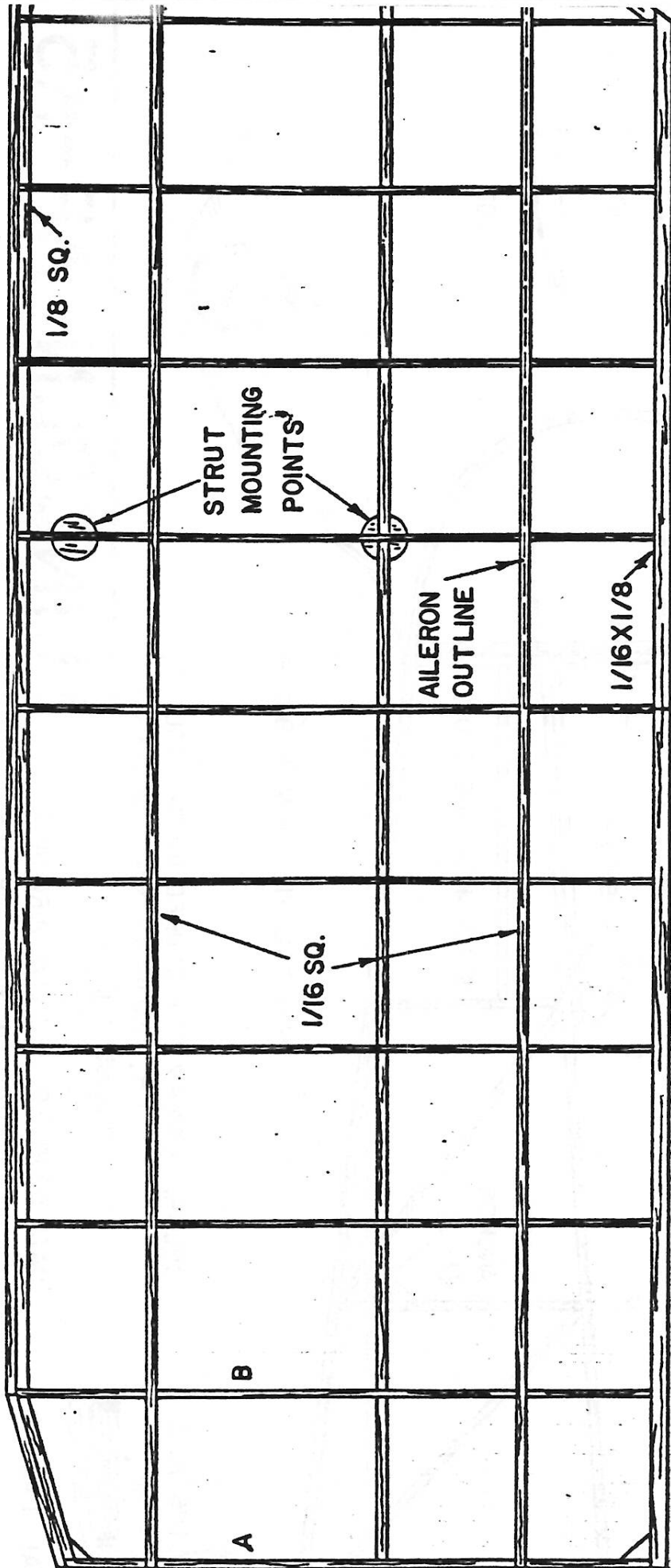
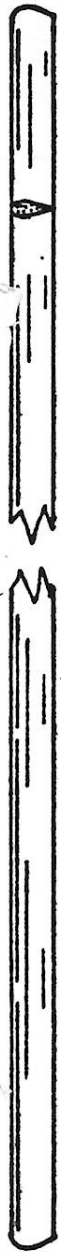
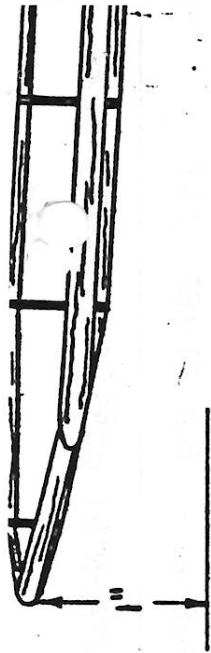
WING SPAN --- 50' 6"  
OVERALL LENGTH --- 44' 8"  
HEIGHT (3 PT.) --- 13' 6"

● The XP-81 was the first U.S. airplane to use a turbine powerplant to drive a propeller. The aircraft was originally scheduled to act as an escort for B-29's and was designed to have an operating range of 1,500 miles, a combat ceiling of 37,000 ft., and a high speed of around 500 mph with load.

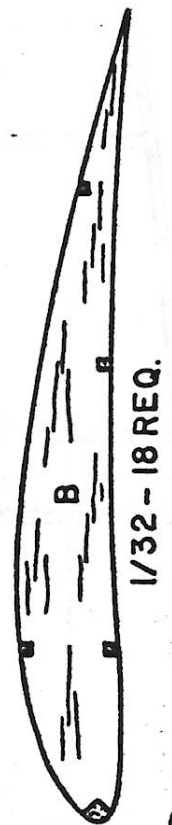
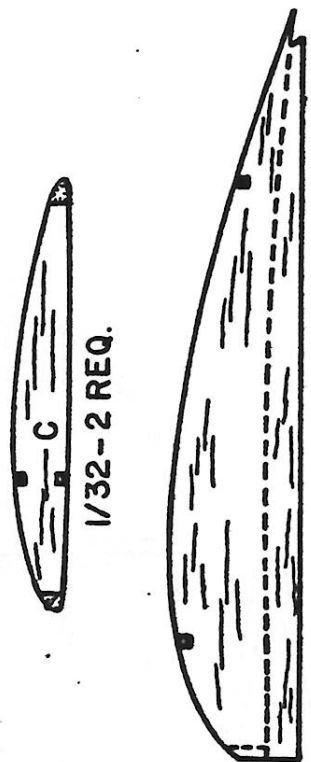
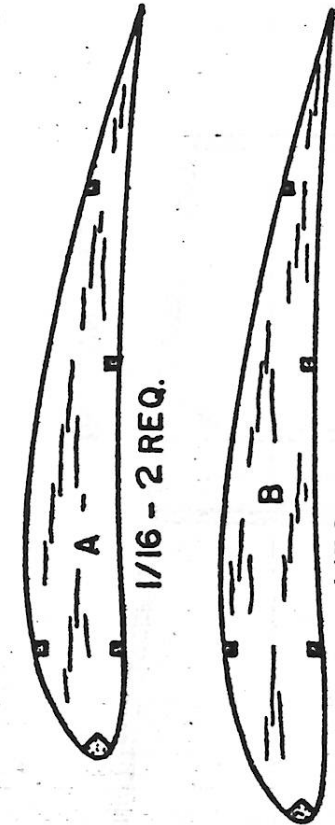
# CONSOLIDATED VULTEE XP-81



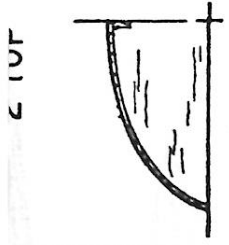
STRUTS 1/4 X 3/32



RIGHT WING PANEL



6 SIDE



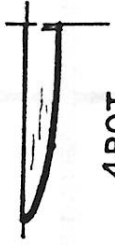
3 TOP



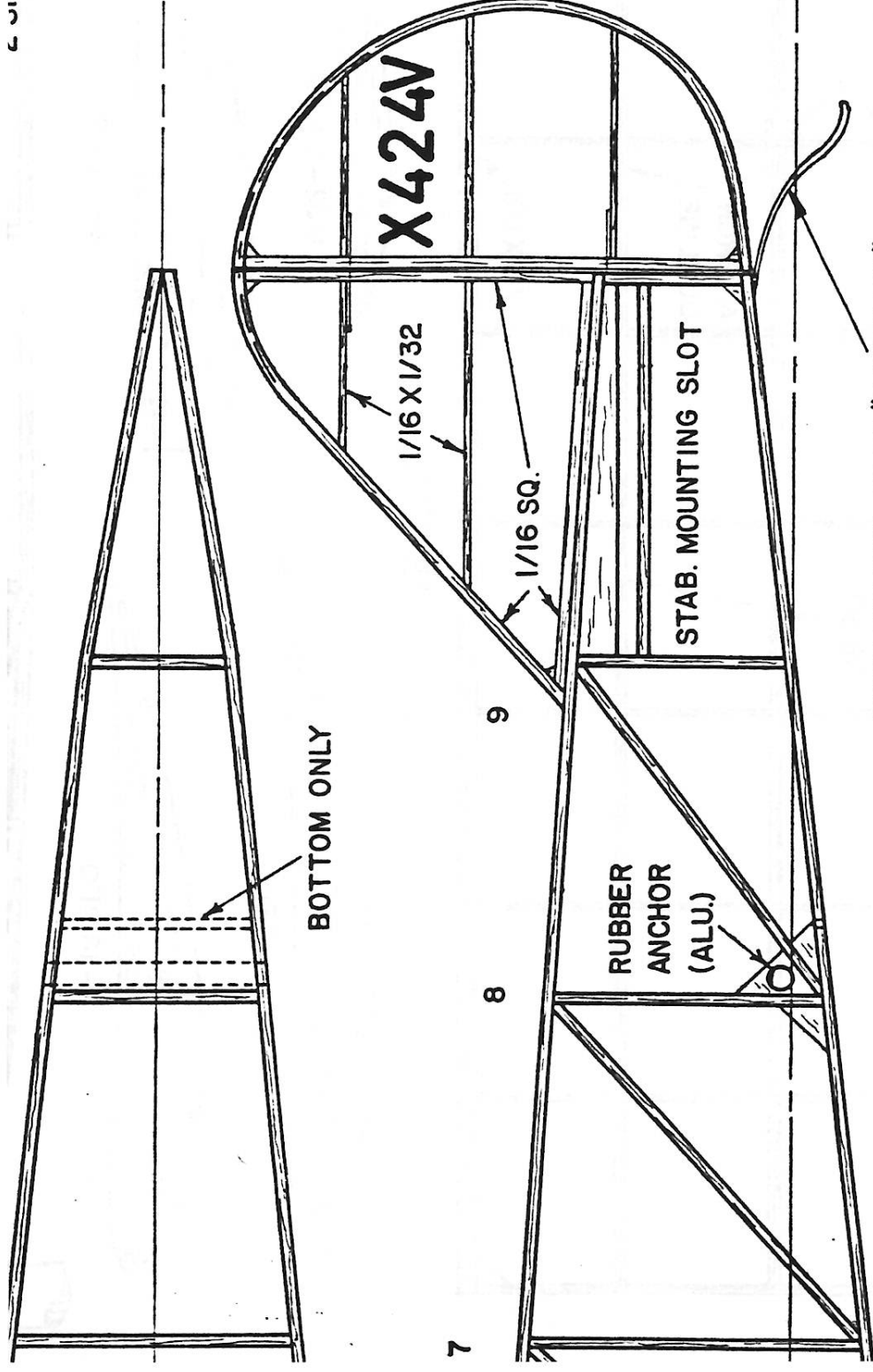
2 BOT.



3 BOT.



4 BOT.



BOTTOM ONLY

X424V

1/16 X 1/32

1/16 SQ.

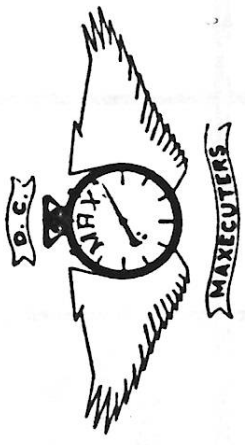
STAB. MOUNTING SLOT

RUBBER ANCHOR (ALU.)

MAKE TAILSKID FROM "BOBBY PIN"

1/16" ALU. TUBE

TYPICAL LANDING MOUNTING DETAIL



COLOR: X424V IS PICTURED IN TWO COLORS, SILVER, AND AGAIN IN A DARK COLOR, PROBABLY RED.

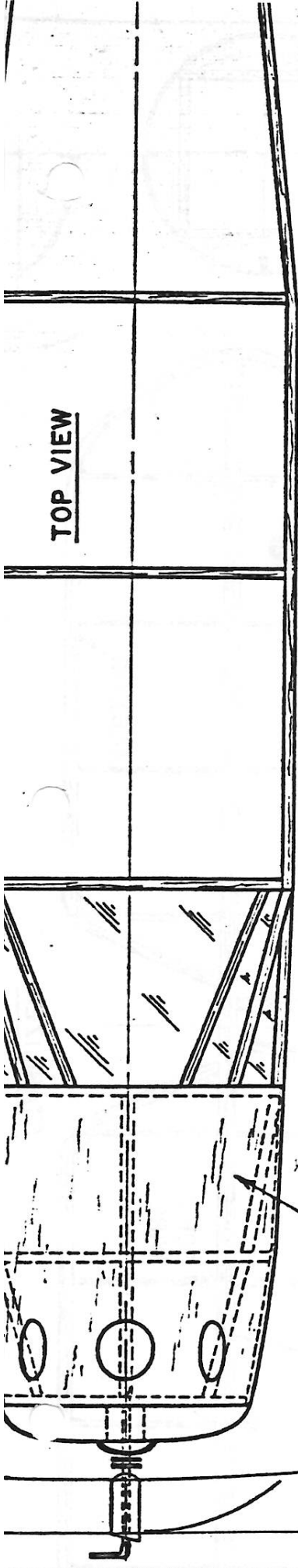
DATA SOURCES: U.S. CIVIL AIRCRAFT, VOLUME 4, BY J. JUPTNER, AND AERO DIGEST, CIRCA 1935.

# LINCOLN AP-K5

26 1/4" WINGSPAN - FOR RUBBER OR CO2

DESIGNED/DRAWN BY HURST G. BOWERS, MAY '84

TOP VIEW



5

4

1/32 SHEET Balsa

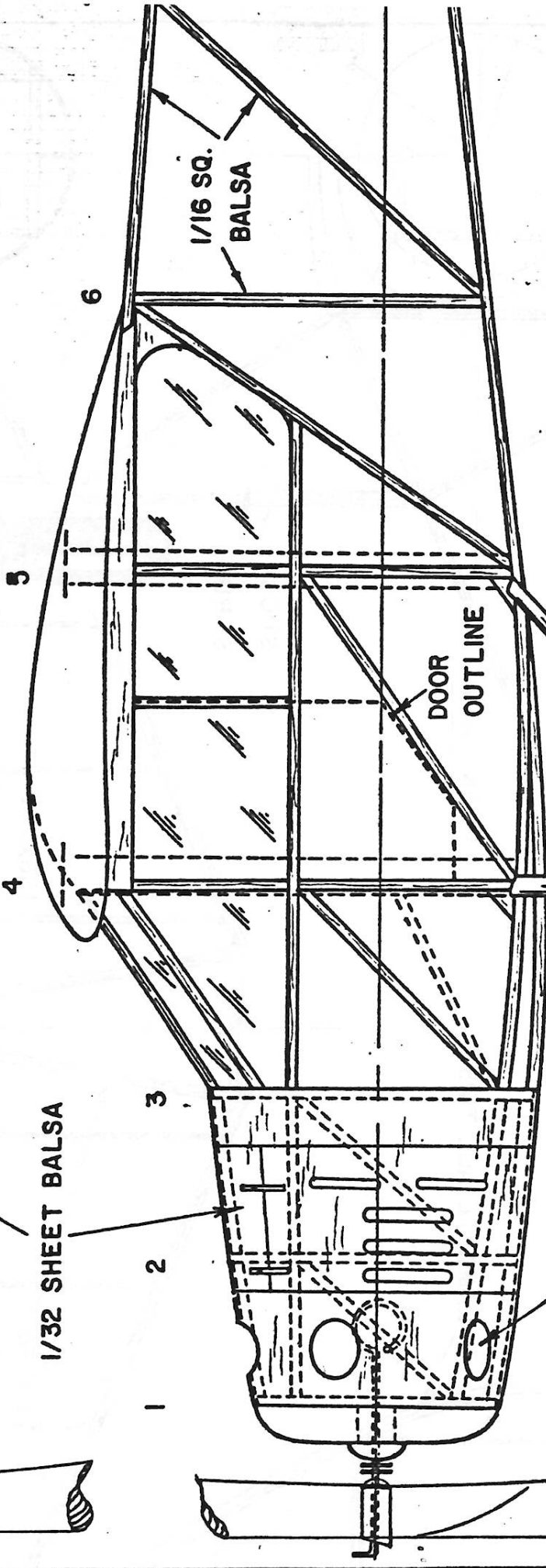
3

2

1

6

1/16 SQ. Balsa



DOOR OUTLINE

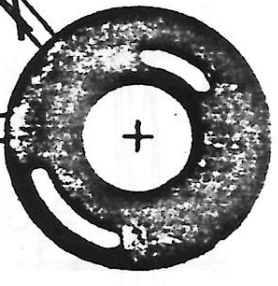
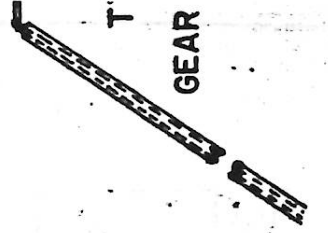
SIDE VIEW

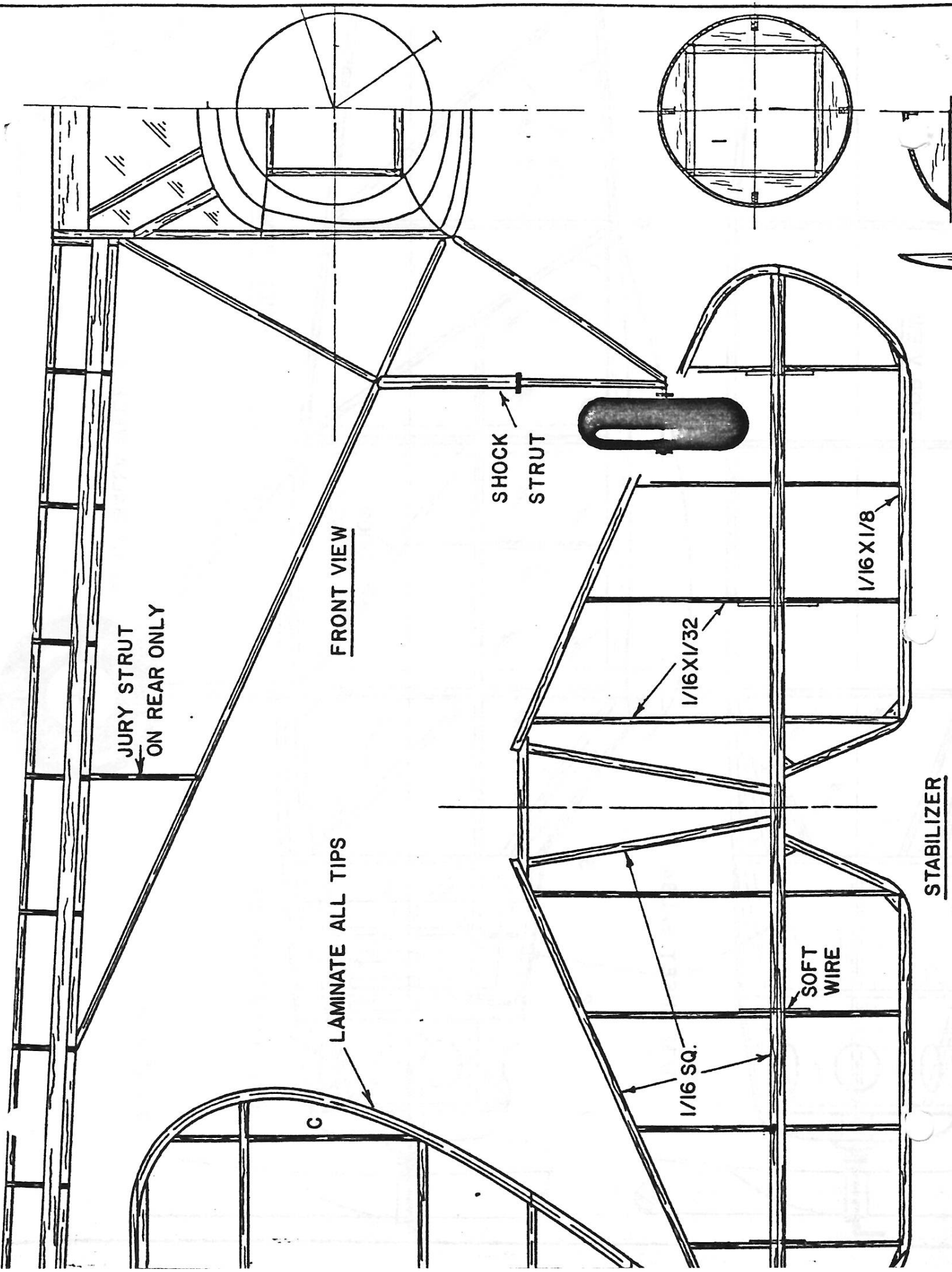
CYL. LOCATIONS (5)

STEPS

7-8" PROP.

LIGHT Balsa WHEELS





JURY STRUT  
ON REAR ONLY

FRONT VIEW

SHOCK  
STRUT

LAMINATE ALL TIPS

C

1/16 X 1/32

1/16 X 1/8

1/16 SQ.

SOFT  
WIRE

STABILIZER

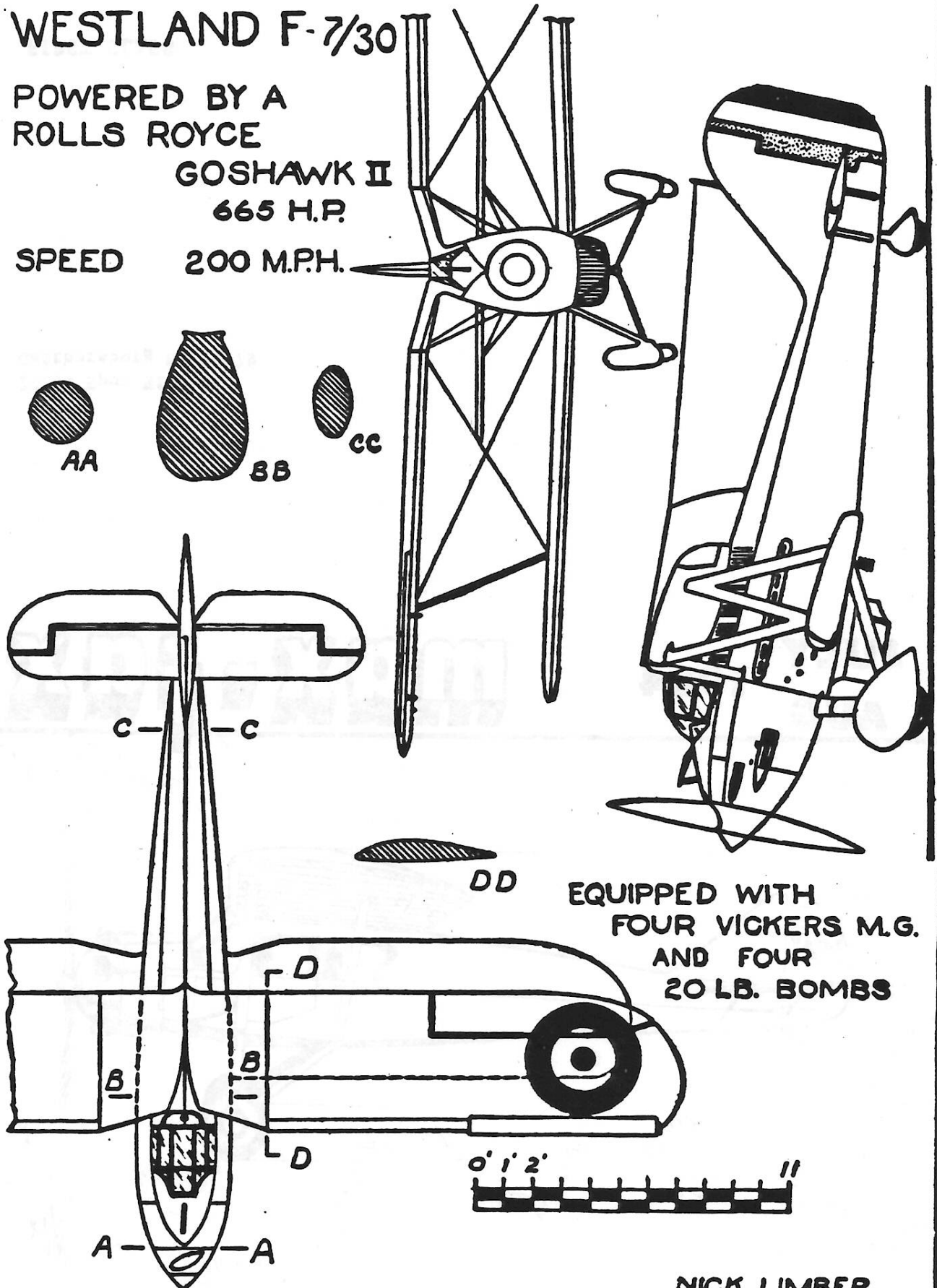


PRESENTING THE NEW WESTLAND EXPERIMENTAL BOMBER

WESTLAND F-7/30

POWERED BY A  
ROLLS ROYCE  
GOSHAWK II  
665 H.P.

SPEED 200 M.P.H.



EQUIPPED WITH  
FOUR VICKERS M.G.  
AND FOUR  
20 LB. BOMBS

NICK LIMBER

PRESENTING THE NEW WESTLAND EXPERIMENTAL AIRCRAFT

FIRST CLASS

POWERED BY A  
ROLLS ROYCE

GOSHAWK II

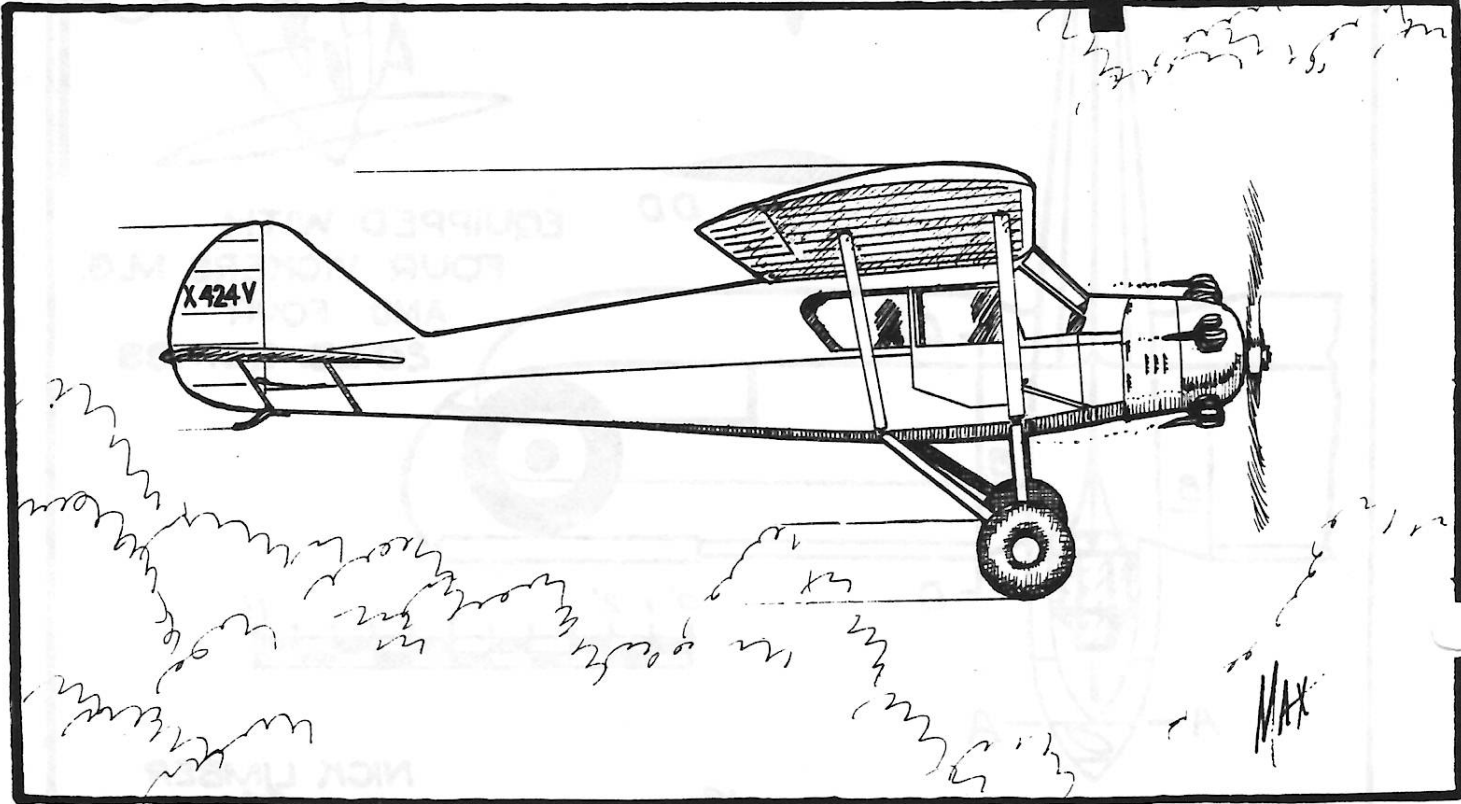
650 HP

SPEED 300 MPH

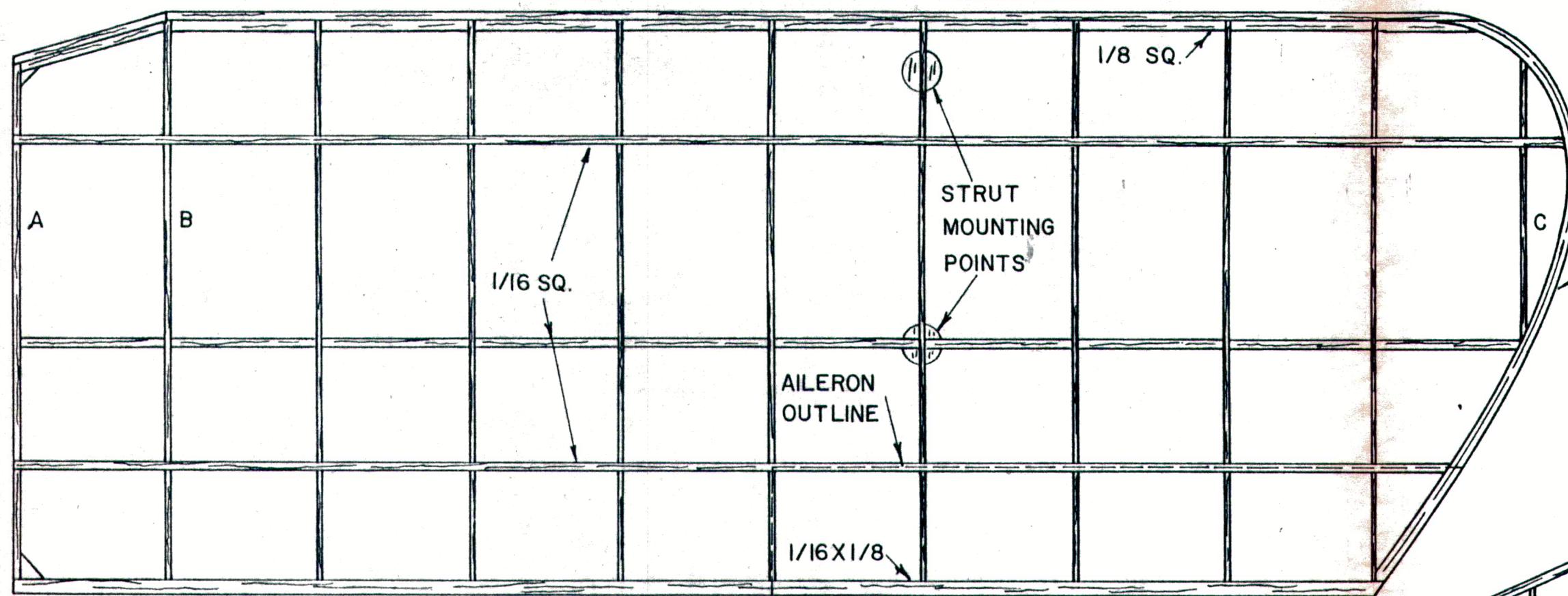
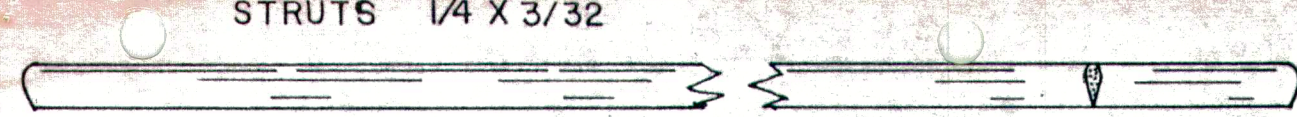
2008 Spur Hill Dr.  
Gathersburg MD 20879

**JULY**  
**AUG 1984**

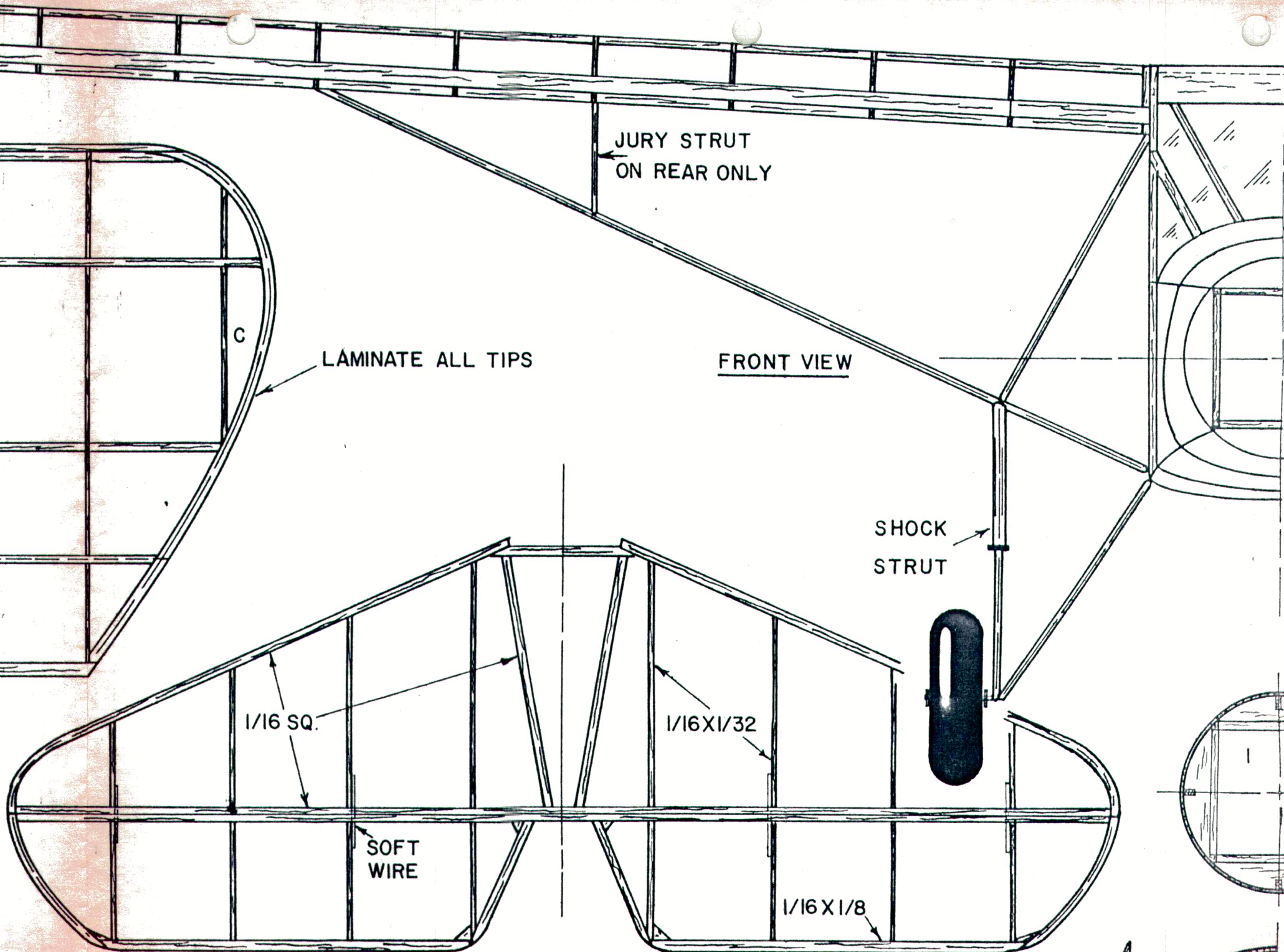
# max-fax



STRUTS 1/4 X 3/32

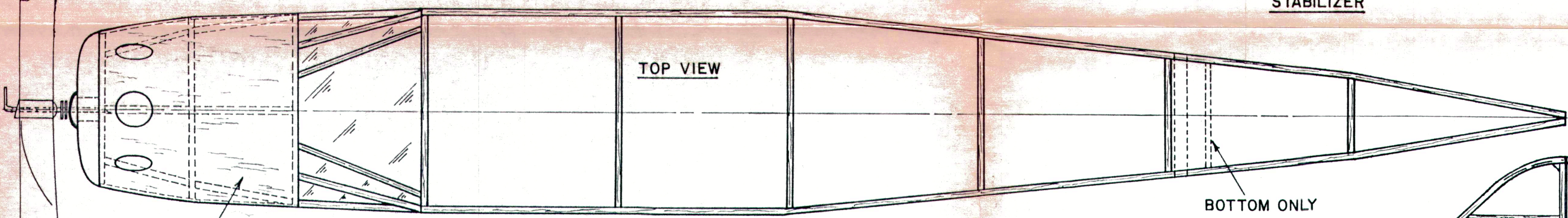
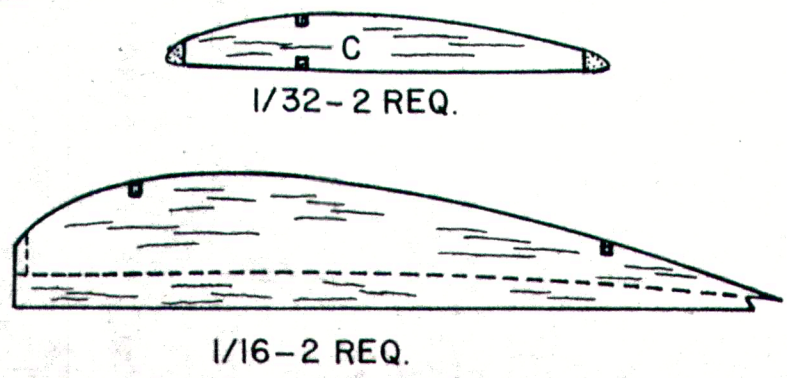


RIGHT WING PANEL



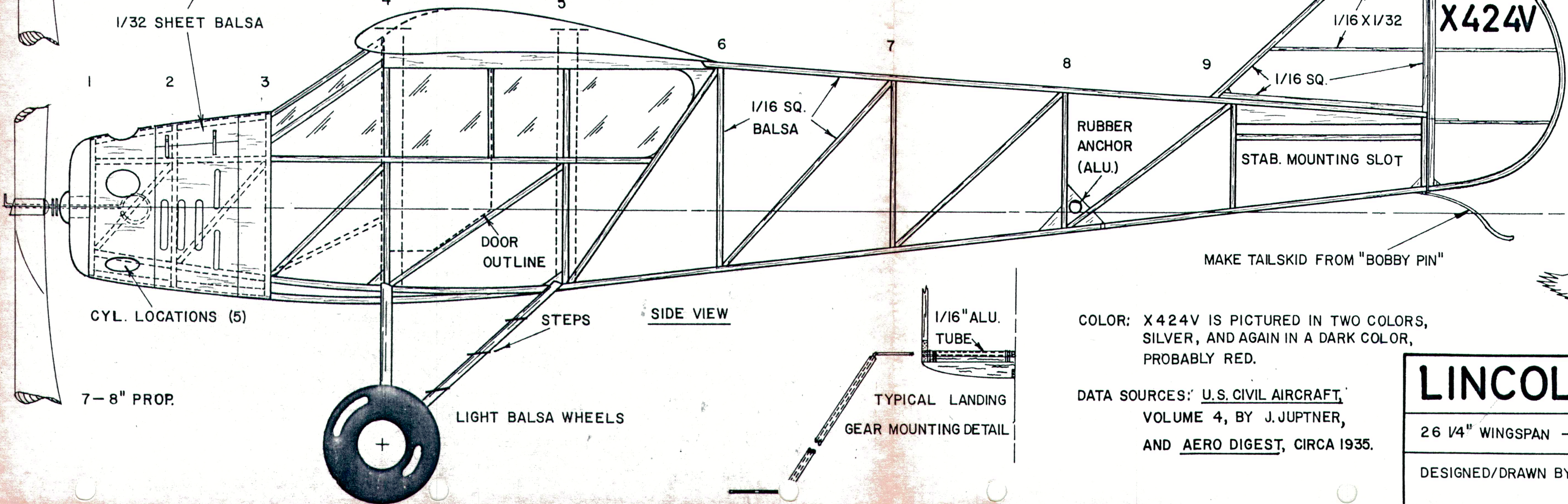
FRONT VIEW

STABILIZER

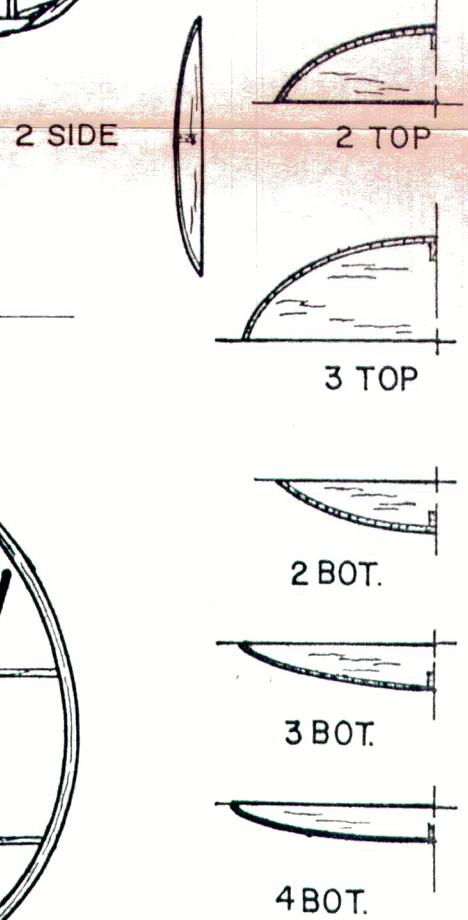


TOP VIEW

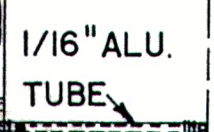
BOTTOM ONLY



SIDE VIEW



X424V



TYPICAL LANDING GEAR MOUNTING DETAIL

COLOR: X424V IS PICTURED IN TWO COLORS, SILVER, AND AGAIN IN A DARK COLOR, PROBABLY RED.

DATA SOURCES: U.S. CIVIL AIRCRAFT, VOLUME 4, BY J. JUPTNER, AND AERO DIGEST, CIRCA 1935.



# LINCOLN AP-K5

26 1/4" WINGSPAN - FOR RUBBER OR CO2

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