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"MEETING AT COLLEGE PARK AIRPORT--THE OLDEST AIRPORT IN THE U.S.A"

"MAX FACTS"

JUNE-JULY NEWSLETTER 1977

NEXT MEETING: July 6, 1977 at 7:30 PM at College Park airport--slides of the F.A.C. contest in Durham Conn. Come to this one and catch up on the summer schedule of events!

CONTEST SCHEDULE:

July 17-- SCHOOLYARD SCALE R/C EVENT --sponsored by MASS and D.C. Maxecuters--at COMSAT Field. See reminder notice in this newsletter.

July 10 -- Warminster Pa. old timer, free flight, rubber scale etc. see Model Aviation for details.

AUGUST 21 -- Warminster Pa. -- Annual Eastern States CHAMPIONSHIPS -- includes R/C, controlline, and FREE FLIGHT Events--sort of a one-day NATS.

AUGUST 27 -- D.C. Maxecuters late summer fun fly--at COMSAT--see notice about this in this issue of the newsletter.

late September-- Cleveland Free Flight Society Fall Meet--more on this later

October 3 -- F.A.C. Fall Meet at Durham, Conn. Usually has embryo, P-Nut, No Cal, F.A.C. Scale, Thompson and Greve Racing, and Spirit of St Louis Events. Plan to attend this one!

ITEMS OF INTEREST:

- 1) Dow Corning #33 silicone lubricant can be ordered from TEK BEARING CO. Woburn Industrial Park, Woburn MA. It comes in 2 and 8 oz sizes. Ask for medium consistency for use as rubber lube. Don't know costs yet but it goes a long way according to Fred Hall.
- 2) White laquer and laquer thinner are being used by the F.A.C.ers for painting rubber scale planes--thin 3parts thinner to one part laquer--get less shrinkage than dope. Can mix silver powder (from local art stores) to make great silver paint--thanks to Tom Nallen for this tip.
- 3) DUES OF \$6 are due as of July 1, 1977. So dig deep into that pocket for your six clams that you had planned on spending of that spool of FAI contest rubber or for that quart of Cox red can. Come on guys, cough it up for the greater glory of the MAXECUTERS. Maybe you can even make it tax deductable, Ha! Send checks or cash to Ray Rakow at 9111 Crosby, Silver Spring, MD, 20910

COVERING MATERIAL WEIGHTS by Cliff McBaine

As we all know, weight is the number one problem in flying scale models. This is particularly true in the case of the peanut scale variety. The covering materials constitutes a significant percentage of the total model weight. Thus, I have investigated the significance of weights of various types and sources of covering materials, as shown in the enclosed table. I have listed them in ascending order of weight. All weights were made on an analytical chemical balance scale with an accuracy of 0.001 grams. All areas of tissue weighed, averaged approximately 11 sq. ft., and were weighed at the same time to minimize any error in comparison due to air humidity.

One unexpected surprise in this investigation was that in three different types and sources of the tissue, the colored tissue was noticeable lighter weight than white tissue by from 4 to 16.4% (Peck 4%, Micro-X Ultralite 8.4% and AristoSuperlite 16.4%). This could hardly be an error or a coincidence when three different types were weighed. I always knew that white dope was the heaviest of pigmented dopes, but I never expected this to be the case with bare white tissue also. I suppose we will have to go to the paper manufacture to find the answer to that question. In any event, guy's start using colored tissue, if you want a little weight advantage. I think that perhaps we have been conditioned psychologically to use white paper because when its doped its very transparent and thus looks light weight.

One other conclusion, is that we can just about eliminate the type and sources below the horizontal line I have put on the table, as the percentage weight increase starts to increase rapidly below it. Of course, if you are building static scale you can hardly beat bamboo paper for that application as it really produces a beautiful finish.

For those who might want to estimate their models complete covering weight, I have measured the weight that can be expected when adding dope. These unit weights are from brushing and would perhaps be less when spraying. Also each person will have his own brushing or spraying techniques which will vary these weights somewhat, but they are good for first estimates.

First coat...50:50 nitrate dope 0.372 gm/Ft²

Second coat...50:50 nitrate dope 0.207 gm/Ft²

(Note: Average peanut covering is just about one sq. ft.)

Hopefully as new covering materials become available we can add to this list.

WEIGHTS OF COVERING MATERIALS

Type	Color	Source	Weight gm/Ft ²
aluminized mylar	chrome	Aerospace Industries	0.274 to 0.314
condenser paper	tan	Micro-X	0.525
Japanese tissue	red	Sig	1.062
Early Bird Tissue	tan	Creative Native	1.113
Aristo Superlite	orange	" "	1.134
Ultralite Japanese tissue	yellow	Micro-X	1.142
Japanese tissue	colored	Peck-Polymers	1.147
Japanese tissue '60's	red	unknown	1.173
Japanese tissue	white	Peck-Polymers	1.195
Ultralite Japanese tissue	white	Micro-X	1.238
Micro-Span	white	"	1.270
Aristo Superlite Japanese	white	Creative Native	1.320
Japanese tissue (VA-166) * Tissue	grey	Vintage Aero	1.614
Artists tissue	white	Sterling	1.628
Silkspan lightweight	red	art supply store	1.671
Aristo Rayspan	white	Sig	1.709
Aristo Bamboo paper	yellow	Creative Native	1.986
Bamboo paper	white	" "	2.000
Origami paper	white	Sig	2.182
	colored	Creative Native	5.540

* Vintage Aero is suppose to have a new lighter weight material out.

Just received this addendum from Cliff...An important up-date on the covering material weight chart. As was noted at the bottom of the chart, Vintage Aero was coming out with a new lighter weight Japanese tissue. Well, it sure is by a significant amount. In fact, it has just been received and weighed and is the lightest Japanese tissue I have found! Only condenser paper is lighter. I have also received the Dennis Norman silver Japanese tissue and have weighed it as well.

Ultra Fine Japanese tissue (type VA-167)	White	Vintage Aero	0.826
Japanese tissue	silver	Dennis Norman	1.390

Both of these are however quite expensive. The VA-167 is 50¢/sheet (18" x 23.5"), and the silver tissue is \$7.00/12 sheets (58¢/sheet). On a peanut though this would run about 17-20¢. On a large unlimited rubber job it would be well over \$1.25.

Also a correction...the unit weights of dope coats should be divided in half for one surface. Thus the .372 gm/Ft² should be 0.186 gm/Ft² and the 0.207 should be 0.103 and the total of 0.579 should be 0.289 gm/Ft².

Sacre Bleu! Was is das einen geflugen un gehurling skyvard mit einen grossen wooden propellern? I say old boy, it was a jolly good scrap. Racers hurteling skyward with huge props clawing the ozone, graceful embryo endurance jobs floating in Hung's thermals, and scale jobs all over the place. The F.A.C. contest at Phineas Pinkham Memorial Field (aka Durham Meadows) was really a fantastic show! I am especially proud to say that the Blue Flight fo the Potomac Pursuit Squadron (aka the D.C. Maxcuters) arrived in force to engage in all manner of flying, F.A.C. style, on this past June 6. And to top it off, we all had a great time. Allow me to digress a little and tell you non-believers about it.

Arriving on Saturday, June 5, at the home of the notorious Nallens (known for more combined air victories in the great F.A.C. than any one family) myself, Allan and Chris Schanzle were treated to a great and glorious feast prepared at a moments notice by Tom Nallen's better half, LIL. It was almost like they were fattening us up for the KILL! Especially when I remember the barely concealed smirks when they looked at our racers--all 2 pounds of it--not bad for a P-nut! Anyway, after the feast we proceded to spend half of the evening (till 2:00 AM) reading old F.A.C. News and talking about great raceplanes--especially Gee Bees. Almost hated to turn in, except we knew that our mettle would be tested early Sunday at Pinkham Field and so we finally did. Musn't keep Hung waiting!

We arrived at that most hallowed ground, Pinkham Field, a little after 0800 on Sunday morning and the first site we spied was the red and yellow tent with the F.A.C. banner proudly waving from the top of it. We knew that G.H.Q. (general headquarters) was on the scene. Sure enough the great General Dave Stott and Major Bob Thompson were there getting ready to sample the ozone! A few minutes later the field was straffed (or at least buzzed) by the other half of the Blue Flight expedition. Stu Meyers along with Ray and Glen Rakow proceded to buzz the field for sveeral passes in Stu's goergeous Bellanca. AT LAST!! Our F.A.C. friends knew the mighty maxcuters had arrived!

Sunday morning was one of Hung's finest--not a breath of wind at least until 2 PM or so. The morning was spent with several contestants trying to qualify some 30 or so racers in the Shell Speed Dash. The top twelve Greve and top twelve Thompson racers were then selected for the BIG races to be held that afternoon. The remainder--at least 12 or so -- competed in a last man down mass launch called The Aerall. It was a great site--12 or so beautiful racers all zooming skyward at once. Its hard to believe the excitement of it unless you actually seeit and try it yourself. Meanwhile, other flyers were busy competing in Embryo Endurance, No Cal and F.A.C. Scale, not to mention P-Nut Scale and the Spirit Of St. Louis events. Our best showing in Embryo was a 5th by Allan Schanzle's Pre-Fetus(the plans of which are in this issue of Max Facts). Not bad for a greenhorn! Allan's design shows a great deal of promise --especially when he gets the right rubber and prop combo. Ray and Stu also gave it a good try but had a little bad luck (motors exploding etc.) If my memory serves me right, Fred Hall won Embryo with a great flying plane. Nice to know that Fred practices what he preaches in his great book of Indoor Flying.

I was so busy that I didn't pay too much attention to P-Nut Scale but I know Fred Hall's Aeronca Defender won a 1st there. Several great P-nuts were evident. Dennis Norman's beautiful Jap Zero and Phoenix bipe were fantastic. Dennis and his compatriot, Gordon Robert's , journeyed all the way from Cleveland area to make the pilgramage to Pinkham! Gordon had two lovely planes--a TA152 and a P-82, both of which were fantastic.

Well, I finally manage d to qualify my Toots for both the Greve and Thompson events with a score that tied me for 3rd in the Schell Event. I was ecstatic! However, Lady luck turned the other way for I broke a wing while hoping to at least place in the Greve. And in the Thompson, I made a poor launch and was eliminated about halfway through.

I choked! We had come so far with such high hopes, only to be dealt a dastardly blow by Lady Luck. My able mechanic, Glen Rakow, was crushed. I was forlorn! Well that is the way it goes in the races, anyone can win. And as it turned out, Luck was with Bill Henn--he didn't need much-- for he won the Greve handily with a great flying Chambermaid, a plane capable of 2 minutes in calm air! But Luck ran out on him in the Thompson--he blew a motor on his Mr. Smoothie (surly a winner) and Royal Moore and Herb Shipley were left to battles it out. Royal was flying a geared Gee Bee that is really something to see! How it flies I'll never know, but it FLIES! Any way Herb's Caudron was the better racer that day, but old Royal gave it all he had. The races were a great event and I am sure of one thing--the Maxcuters will be heard from again!

The F.A.C. scale event, a great way to rid the skies of Lacey's, Fike's, and other such trash, was won by Hank O'Dwyer's Suzy Racer which flew OOS. He did get it back though. A lot of really interesting planes were in this event, including Tom Nalles Sr's XP-55 Ascender (a pusher canard) some great bipes and several racers and such. The No Cal was won by a V.W. racer. I took 3rd with the O-43 and Chris Schanzle got 6th with his No Cal plane. They were very impressed by our foam planes! Start cutting some mor? Joe!

The combination of great planes, nice weather, and nice people left a lasting impression on us Maxcuters. I'm sure we left an impression on them as late in the afternoon, Stu buzzed the field several more times on his way back to D.C. We were sad to see the day end, but we all vowed to return again in October. The meet was truly one of the finest I have seen--even more fun than the NATS--there, I've said the unsayable, but it is true! Bob Thompson and Dave Stott sweated blood making it such a success and I'm sure they are sincerely appreciated by all who were there. Thanks F.A.C.s, we had a great time!

CLUB NEWS -- by Pat Daily

Well we told you all about the F.A.C. Event so that sums up the contest scene for now. I thought I might fill in some space with some reports on what various Maxcuters are building, or at least thinking about building. We have informally been discussing the WW I and WW II events at the flying field and such and it seems that we want to make sure that all the various belligerent countries participating in each war are fairly represented at our contest. So with this in mind Allan Schanzle is building a great looking Mig 3 in order that we not slight the Soviets. Chris says he is going to start on a Corsair. The Rakow boys are building Poliparkov (Glen) and P-40's (Scott) Ray Rakow seems to be leaning towards a Wildcat. Don Srull already has a great flying Heinkel fighter in the air. Yours truly seems to be leaning towards a fat little Fiat G-50. How about the rest of you guys, what are you going to fly for glory and fame? As far as WWI goes, Jim Daily is almost finished with a good looking Fokker DVII, Don Srull has several ready to go including a Siemens Schukert Mono, a BAT Baboon or A DH 6, I have started an Ansaldo. Several more good possibilities so start building. That goes for Racers Too! I here murmurs about Ray Rakow's Suzy racer and Jim Daily's "GOON" and Allan Schanzle's Hughes Racer. With just a few more efforts we could really have a great race! If anyone needs plans for racers, I got em and you can have em! So start stripin balsa!

We have been having some great outdoor sessions at COMSAT--come on out on any Thursday evening and sample some late evening ozone --you might even catch one of Hung's thermals laying in waiting for you! Speaking of YOU, where are you Carlton Molesworth, Gordon Lyon, Phil Airulla, Ron Ekstrom, Eddie Chidakel, Bill Weaver, John Thornhill, John Strong, Dave Schenken, and Claude Short#???

Come join the N E FUN !

TECHNICAL TOPICS

Dacron and Nitrate

While Dacron may be looked on as the answer to all problems as a covering material, it is not without its drawbacks. One of the main problems with this material is the difficulty of bonding the dope to the fibers. Organic fabrics such as cotton or linen are wet by the dope, and adhesion is not such a problem; but the inorganic fibers do not wet, and in order for dope to stick, it must completely encase or encapsulate the fibers. Butyrate dope does not do this as well as nitrate, so although the main dope film will be butyrate, for its fire retardant qualities, the first coat should be a high-solids nitrate dope.

Thin this Nitrate in a ratio of about two to three parts dope to one part thinner, and carry only as much dope on the brush to the fabric as can be pushed through the fabric to surround and encapsulate every fiber. It should form a wet film on the inside, but be careful not to allow it to drip through the opposite of the structure. After this coat dries thoroughly, brush on a full bodied coat of nitrate, thinned only enough that it will brush on without pulling.

Dope Adhesion

The prime coat of nitrate provides a good bond to the fabric and the butyrate build-up and topcoats will bond to the nitrate. The solvents used in butyrate will soften the film base of either dope, but the nitrate solvents will not soften the butyrate base and therefore, nitrate cannot be used over butyrate. The main difference between the two dopes is the film base. Nitrate uses a special cotton dissolved in nitric acid, while the cellulose fibers in butyrate dope have been dissolved in acetic acid and mixed with butyl alcohols. The plasticizers in the two dopes are different and the resin balance and solvent balances are different.

Nitrate Dope

"Nitrate dope is made from the short fibres of pure cotton dissolved in nitric acid. This earns it the name of nitro-cellulose. Cotton fibres dissolved in a carefully controlled mixture of 12.5% to 13.5% nitric acid is called Gun Cotton which is used in the manufacture of smokeless powder and other explosives. The type we use is dissolved in a mixture of only 11.5% and 12.4% plus some sulphuric acid to help in removing water from the cotton. This is probably why it burns so nice.

The whole is made wet in denatured alcohol to remove all traces of water and then is "dried out" to a 30% alcohol mixture, which is not explosive but quite inflammable. This mixture is quite stable for shipping purposes. The various plants that make dope and lacquer process the raw nitrocellulose to suit their various needs. They must remove most or all of the alcohol as it has a tendency to go bad for short shelf life. This gooey mass is then thinned with other solvents such as ethyl acetate, acetone or some other strong solvents including some of the synthetic alcohols. This mess is then further thinned with the same or other blended solvents.

Most dope or lacquer thinners are composed of several constituents. One or more of the solvents plus other compatible liquids to cut the cost of the thinner or to add desirable qualities such as better leveling, slower drying, anti-blush, etc. The synthetic alcohols that can be used to dissolve the original cellulose mass (or Pyroxylin as it is known in the trade) are the same synthetic alcohols that are used in the formulation of epoxy thinners. Hence the reason epoxy sticks to nitrate dope. The thinners in the epoxy attach the cellulose and "weld" the epoxy to the dope. Ethyl alcohol that is activated with other chemicals such as ethyl acetate or nitromethane is a solvent for nitro-cellulose and straight ethyl alcohol is a partial solvent, the reason nitrate dope is not fuel proof. Plasticizers are added to the nitrocellulose to make it less brittle and most modelers add a little more plasticizer in the form of castor oil. Nitrate dope as it comes from the can is quite viscous, which is surprising as it contains only about 11% of solids. Wood finishing lacquers have 20% - 30%, paints and varnishes 30% - 40%, and up to 60% in epoxies. We usually thin it 50% further so end up with only 6% solids. With 3 to 5 coats of this really thin dope to seal the tissue we must be real careful in the amount of epoxy used to fuel proof the dope.

K&B Superpoxy or Hobbypoxy is about 45% - 55% solids. It is easy to see that one good coat of epoxy can weight more than 3 or 4 coats of dope. Brushing on the epoxy is very undesirable as the thinners in the epoxy attach the nitrate and prevents the spreading out of the epoxy as far as it should be. The author sprays on the epoxy with about 30 psi air pressure to get good atomization. He holds the surface in a strong light and in such a position so he can just see that the little droplets just flow together, reflected light off the surface shows how the epoxy is going on the surface. Colored epoxy is too heavy for free light models so he puts about 20% of colored epoxy in with the clear, the same color as the tissue, as this "fixes" the color and the tissue color doesn't fade with them.

Epoxy over nitrate seems to be the "In" thing with the West Coast modelers now. Another product should be very light if applied properly is urethane varnish that is formulated to be alcohol proof. It is mostly used for bar tops and now seems to be very popular in Europe. I tried the epoxy over nitrate on my last .020 OT model but the tissue seems to be very brittle. Should probably use more plasticizer in the dope and a thinner coat of epoxy. Looks like a recovering is in order. K&B is now selling nitrate dope but it would probably be cheaper to use one of the aircraft types like Randolph. Of course, no fuel-proofing is required on rubber models or gliders. Epoxy can be sprayed over butyrate dope too but it must be sanded or roughened first which is kind of hard on tissue covered models but not too bad on balsa sheeted surfaces. I've seen this on some CL models."

This information stolen from Man & Randolph.

C. A. V. U.

By Rolfe Gregory

This year we are celebrating the 50th. Anniversary of Lindbergh's flight from New York to Paris, (May 20-21, 1927). Nothing can ever detract from that wonderful flight and what it did to bolster aviation. But - lest we forget - another man repeated the feat just two weeks later, (June 4-6, 1927), and at the same time carried the first passenger, Charles A. Levine, non-stop from New York to Germany. You may have heard of him - Clarence D. Chamberlin. Today, hardly anyone remembers. But, fifty years ago, in 1927, he suddenly became almost as well known as Lindbergh. Just as two weeks before, all the newspapers were filled with pictures and stories about Lindbergh, so two weeks later, the papers were filled with Chamberlin, Levine and their airplane, the Bellanca, "Columbia".

Today, June 6, 1977, as I write this, it has been exactly 50 years since Chamberlin landed the Bellanca at Mansfeldt, near Berlin, Germany. The flight lasted 43 hours, covering a distance of more than 4000 miles, officially 3905 miles in a straight line, and thereby hanging up a non-stop distance record that stood for years, (295 miles farther than Lindbergh).

It is not generally well known, but Lindbergh and his backers first tried to buy the Bellanca. They knew it was the best airplane available and that it could do the job. The airplane proved itself the second week of April, 1927, when it set a non-refueling, world endurance record of 51 hours, 11½ minutes, with Chamberlin and Acosta (there's ole Bert again!) sharing the piloting. They cruised back and forth over Long Island, in the vicinity of Curtiss, Roosevelt and Mitchel Fields so that they would have a place to land in case of emergency. Lieutenant-Colonel Benjamin D. Foulois, then Commandant of Mitchel Field, had the flood lights left on all through both nights, making it possible for them to land if necessary. They laid courses over the Atlantic parallel to Long Island and over Long Island Sound, practicing compass navigation in anticipation of the trans-Atlantic flight.

The Bellanca, or more correctly, the Wright - Bellanca as it was known because it had been built by the Wright Aeronautical Corp., under direction of Mr. G.M. Bellanca, was not for sale. Very disappointed, Lindbergh went to the Ryan people to build the Spirit of St. Louis.

The Wright-Bellanca, with its problems would, in itself, make an interesting story. They were not airplane problems but people problems. The Wright Company refused to sell to Lindbergh for \$25,000, but then sold it, for \$15,500, to Mr. Charles A. Levine, who, with Mr. Bellanca, formed the Columbia Airplane Co., to manufacture the airplane in quantity. There was constant bickering among the principals as to when the airplane would fly, where it would fly, and who would fly it. It was finally grounded by a court order on the very day Lindbergh started for Paris.

The airplane itself was an excellent airplane, practically without a fault. Giuseppe M. Bellanca may not have been an outstanding business man, (few designers were), but his ability to turn out record-breaking airplanes was unsurpassed. His airplanes would not only get off the ground with a heavy load, they were also fast! Just ask our own fellow member, Stu Myers, who has a Bellanca (of later vintage) and I bet he will tell you his airplane, power for power, will out-run anything being built today.

Had Chamberlin owned the Wright-Bellanca himself, there is no question in my mind that he would have been the first to make the N.Y. to Paris flight, not Lindbergh, and pick up the Raymond Orteig prize of \$25,000. Chamberlin was ready (and capable, as he proved) and the airplane was ready in April of 1927. Take off was finally scheduled for May 8, but on that date the two Frenchmen, Nungesser and Goli started their ill-fated flight and the Bellanca owners decided to await the outcome of that attempt. The flight was rescheduled for May 13 but Mr. Levine was superstitious and cancelled that start. Then more arguments, and finally, the court order on May 20. Lindbergh took off that morning for Paris, and you know the rest of the story.

Another little known fact is that Levine sold the Bellanca, "Columbia", a few years later, and the new owners flew it across the Atlantic for the second time. Unfortunately this historic airplane was destroyed in a hanger fire many years ago.

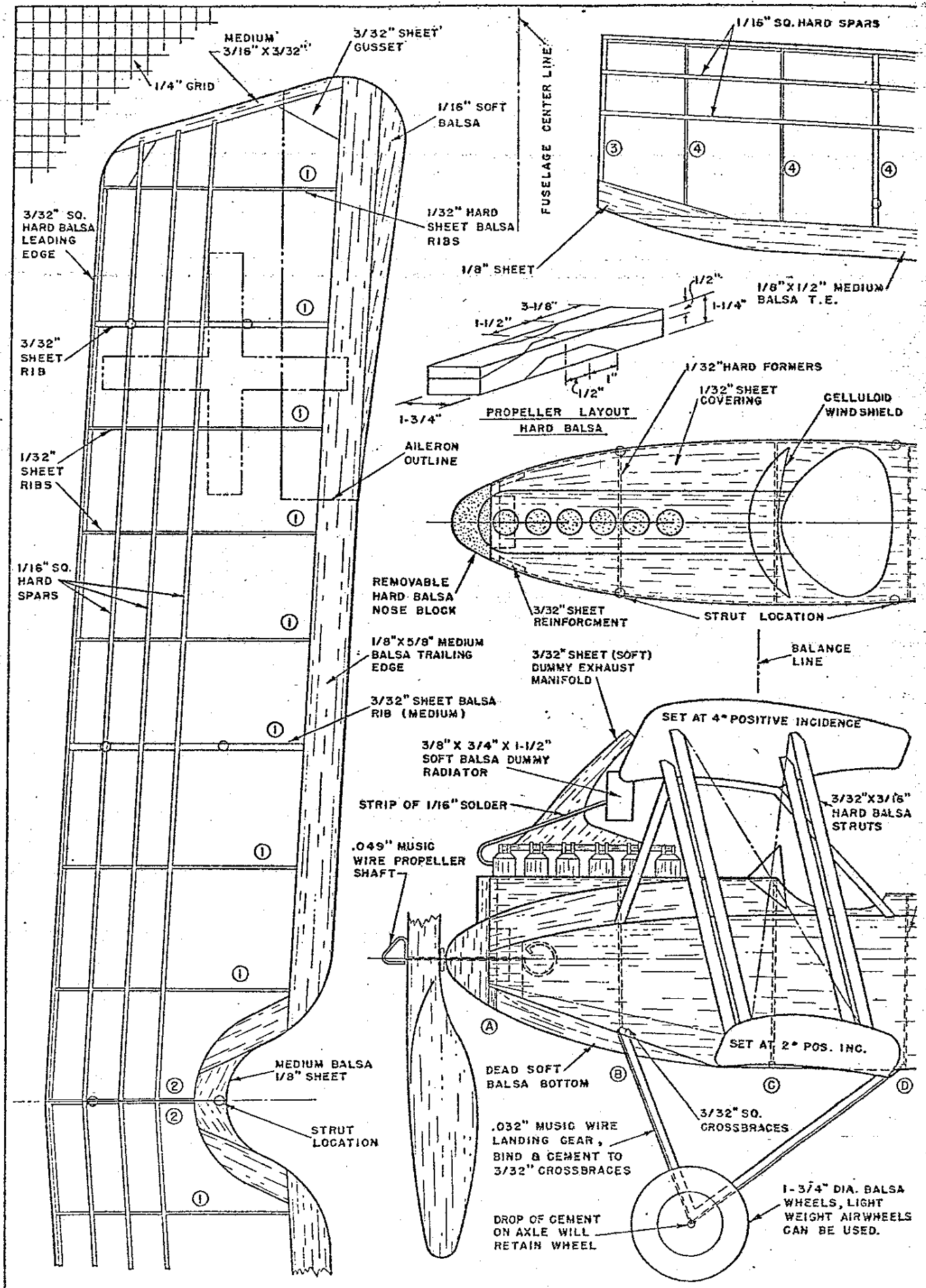
Eight months ago, Oct. 31, 1976, Clarence D. Chamberlin died in Connecticut at age 82. He was inducted into the Aviation Hall of Fame in 1975.

Today I walked over to the new Smithsonian Air and Space Museum. Nowhere is there a photo, a model, or any mention that I can find, of Chamberlin or his historic airplane. Tonight the radio and TV commentators have talked about the 33rd. Anniversary of D-Day, but no mention was made of the 50th Anniversary of Chamberlin's flight.

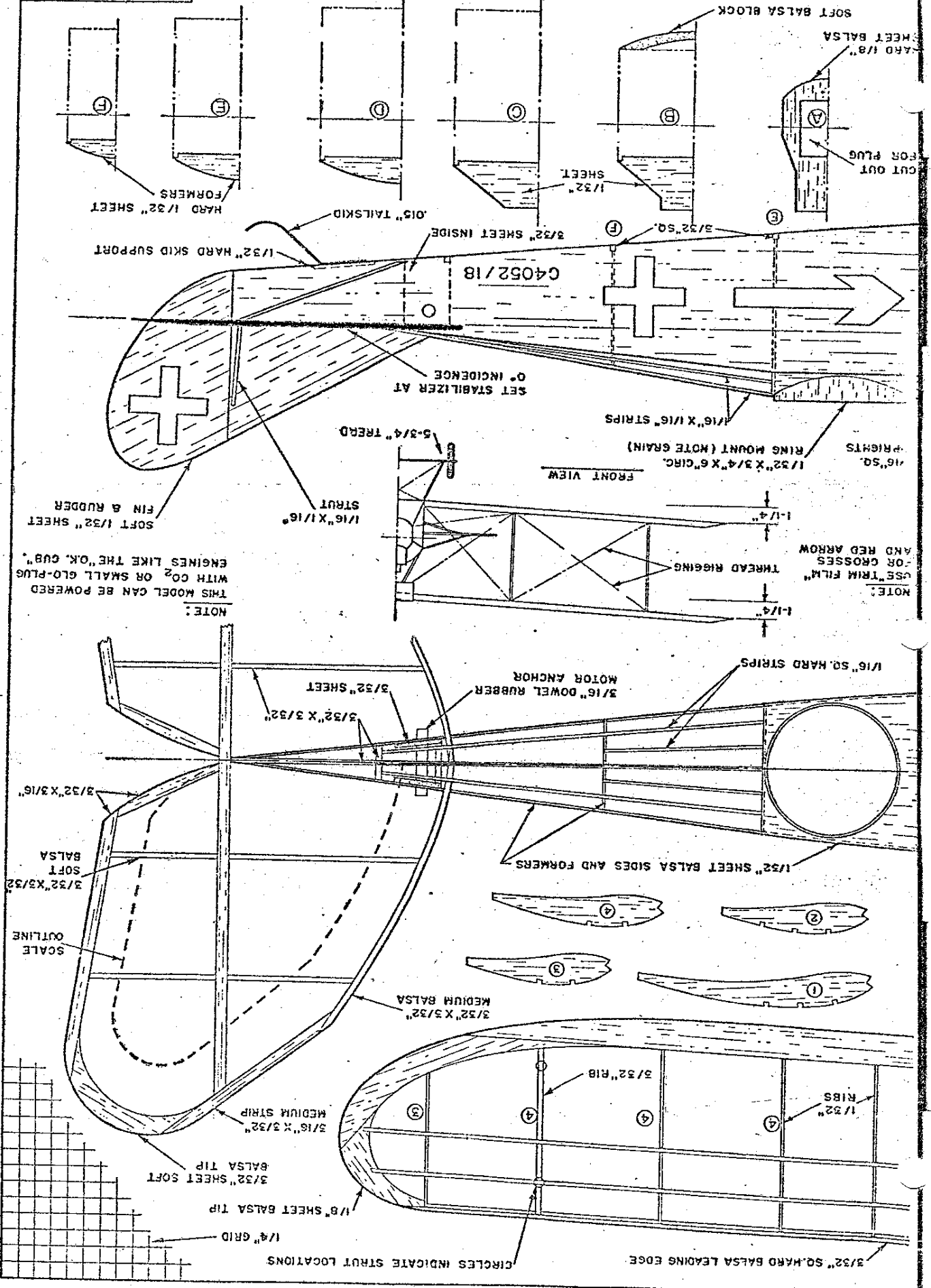
Lest we forget, Chamberlin was the guy who almost beat Lindy out of his spot in history.

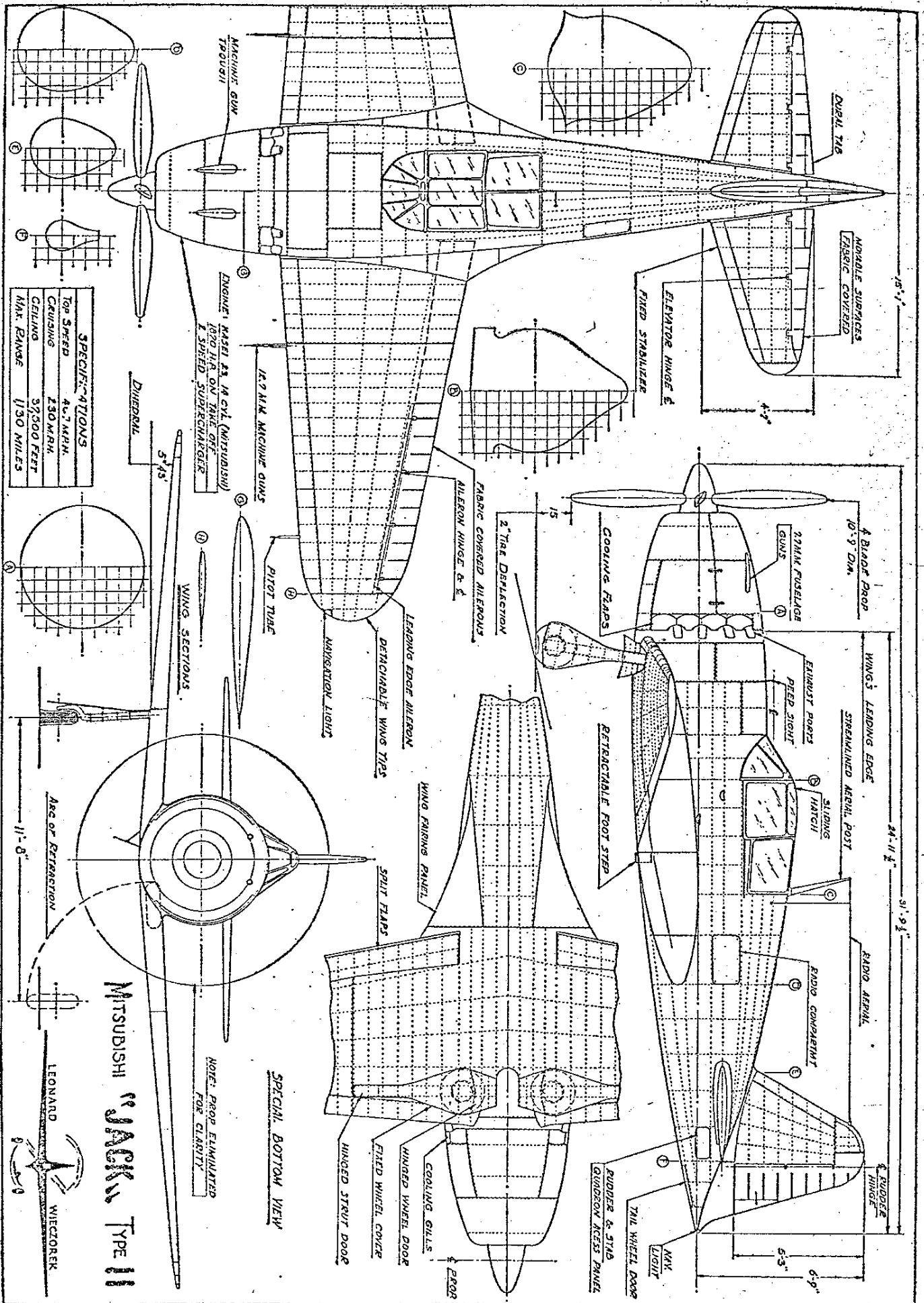
Due to an exorbitant amount of work required to put out "MAX FACTS" we will now publish every other month and have a slightly larger Newsletter

The editor has spoken!



WALTER A. MUSCIANO

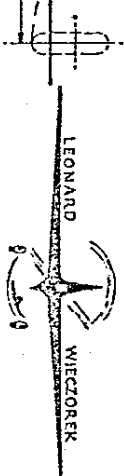




SPECIFICATIONS

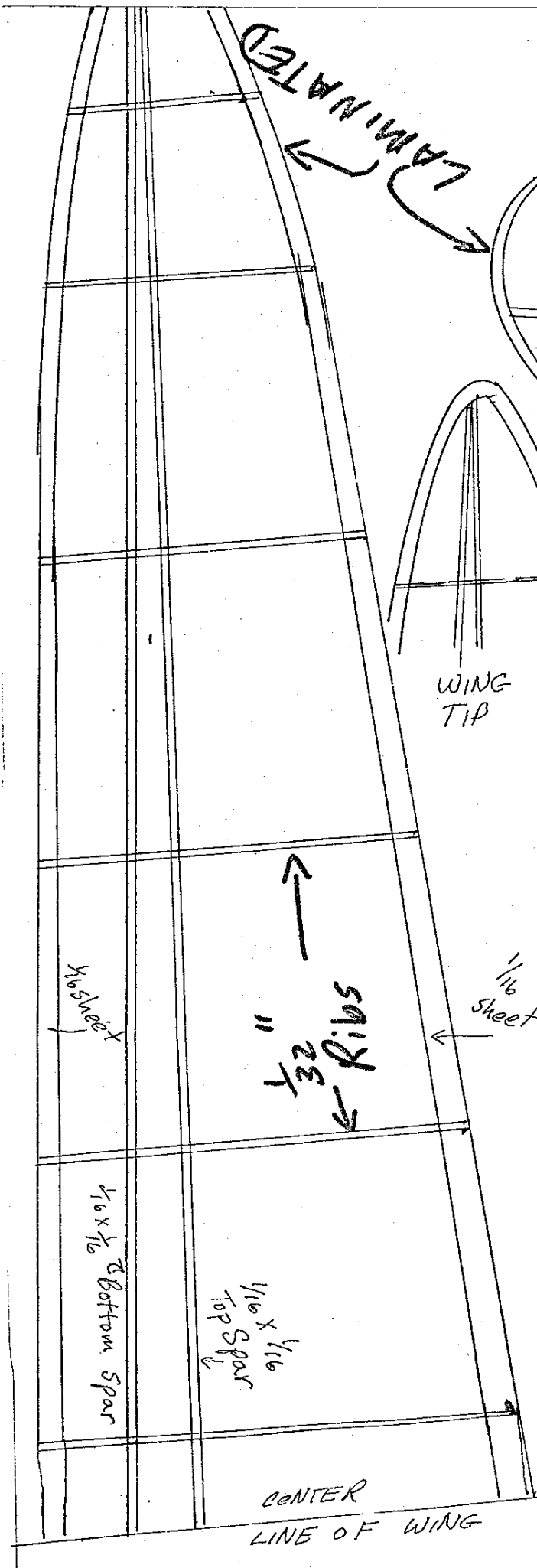
TOP SPEED	407 MPH
CRUISING	250 MPH
CEILING	37,500 FEET
MAX RANGE	1,130 MILES

MITSUBISHI "JACK" TYPE II



NOTE: PROP. ELIMINATED FOR CLARITY

SPECIAL BOTTOM VIEW



AN ORIGINAL D.C. MAXECUTER DESIGN



LAMINATED

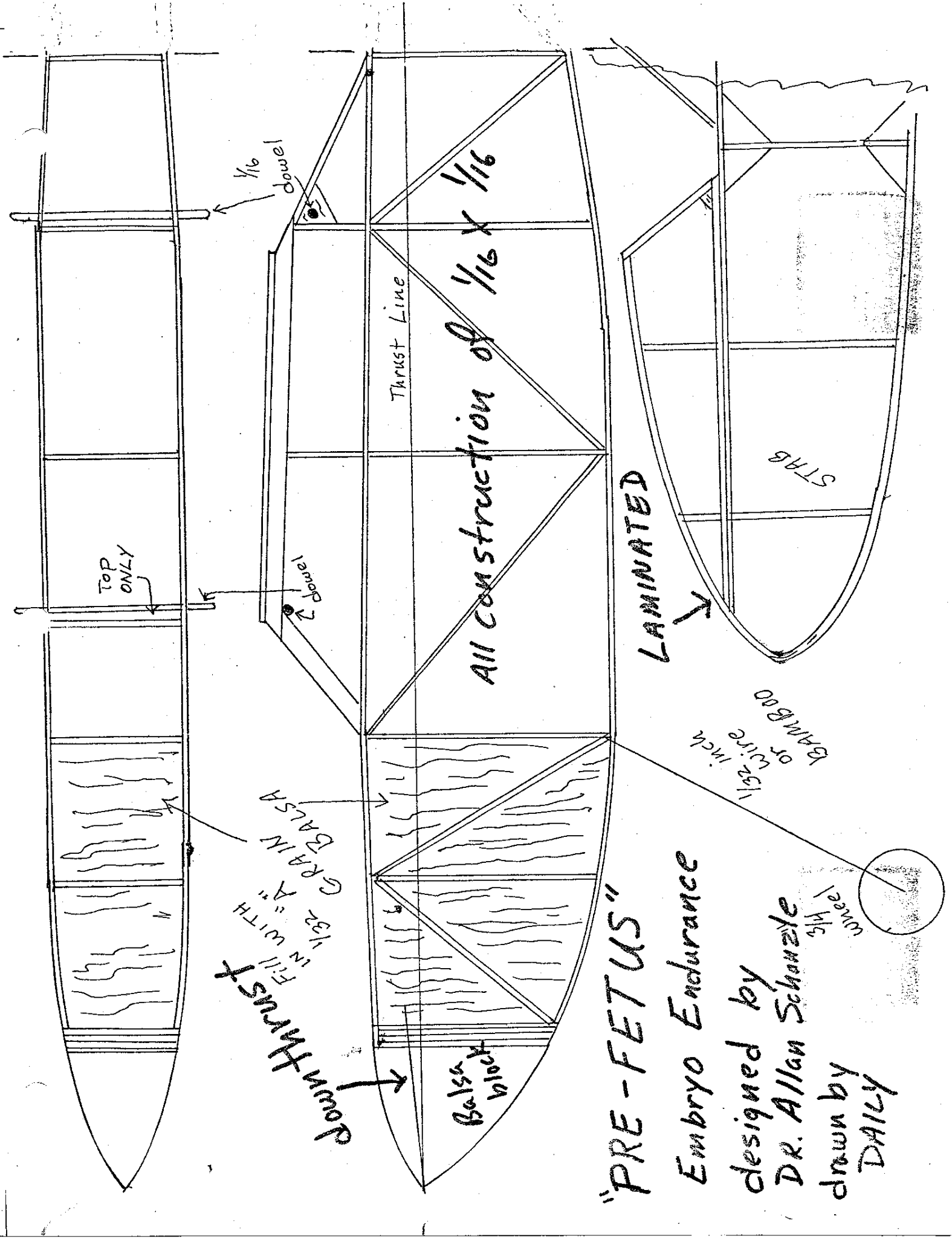
WING TIP

elevator

SUB RUDDER

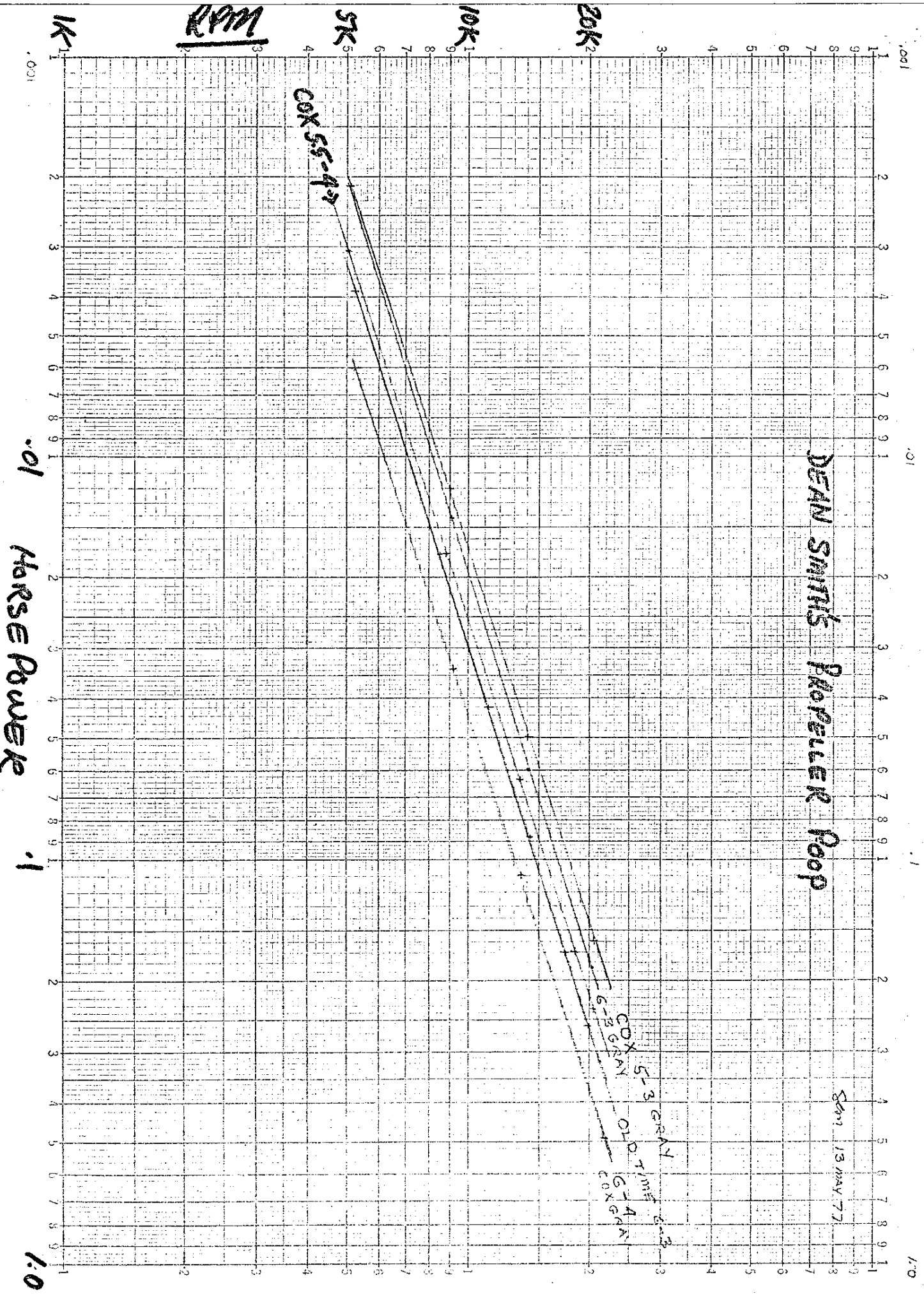
use 8" Prop 1/8" rubber 2-loops

CENTER LINE OF WING



DEAN SMITH'S PROPELLER POOP

Edm 13 May 77



RPM

5K

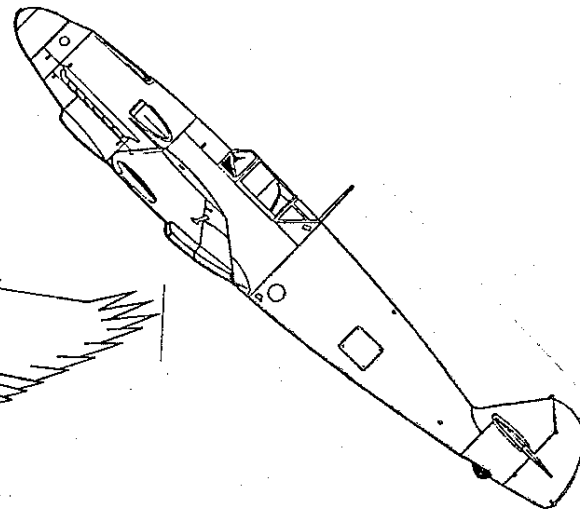
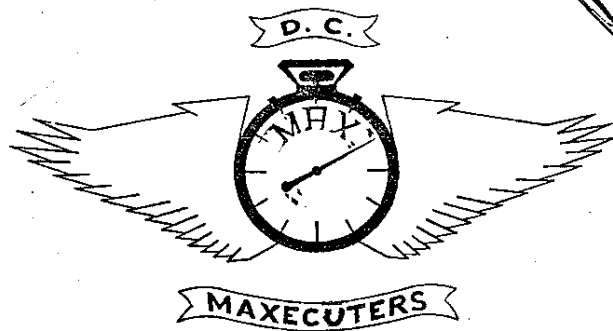
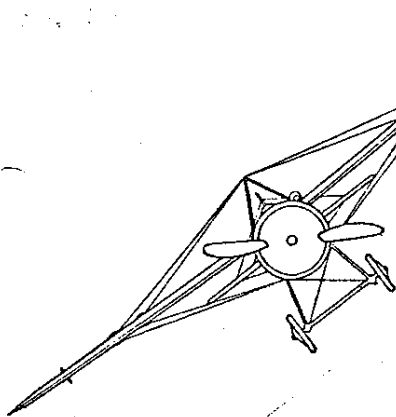
10K

20K

1K

.01 Horse Power .1

1.0



ANNOUNCING

D.C. MAXECUTERS LATE SUMMER FUN FLY

DATE: AUGUST 27, 1977 Saturday

TIME: 9:00 AM till dark

EVENTS: EMBRYO ENDURANCE -- using F.A.C. Rules

WORLD WAR I COMBAT -- using F.A.C. Thompson Trophy
rules and mass launch
-- rubber or CO₂ powered

WORLD WAR II COMBAT -- same rules as WWI event
-- must be a fighter type
aircraft

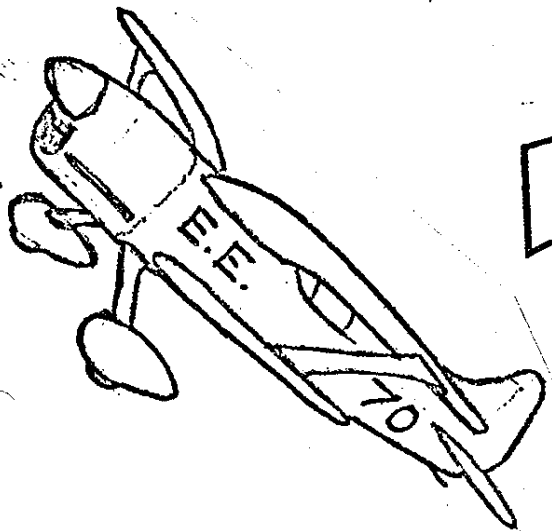
THOMPSON-GREVE TROPHY RACE-- using F.A.C. rules

OUTDOOR HAND LAUNCH GLIDER

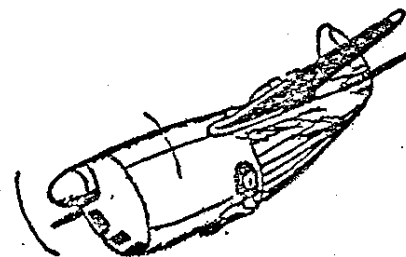
PRIZES AND AWARDS WILL BE GIVEN TO WINNERS!!!

LOCATION: COMSAT FIELD (north of Gaithersburg on Rte 270)

FOR MORE INFORMATION CALL PAT DAILY 460-1298



**FLYING
ACES**



The M.A.S.S. + The D.C. MAKECUTERS
are announcing a

Schoolyard SCALE R/C CONTEST

DATE: JULY 17, 1977 (SUNDAY) rain date July 24

LOCATION: COMSAT FLYING FIELD (on 270 north of Gaithersburg, MD)

TIME:

FLYING STARTS AT 9:00 AM and goes until dark!!

RULES: Max engine size .051, any scale aircraft eligible as long as it is R/C and engine is less than .051 --any size electric engines allowed. See attached rules for events etc.

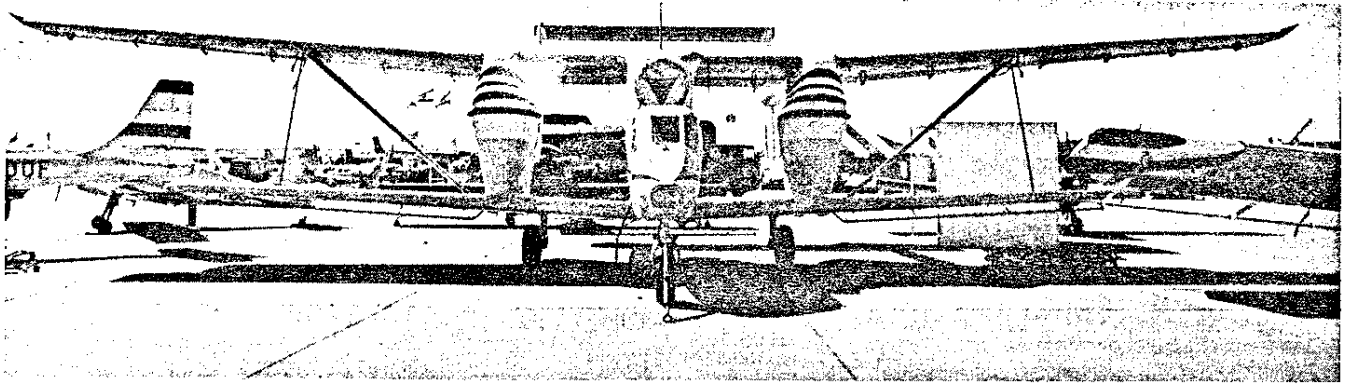
EVENTS: ~~SINGLE CHANNEL~~ (only Pulse systems or escapement)
MULTI-CHANNEL (two or more channels)

FOR JUNIORS UNDER 16 A NONSCALE EVENT WILL BE HELD ALSO

PRIZES: FLYLINE MODELS WILL PROVIDE KITS TO WINNERS!!!!

COME ON OUT AND HAVE SOME FUN WITH US!!!!

NOTICE: JUDGING WILL BE HELD SATURDAY NITE (JULY 16) AT 7:30 PM AT THE HOME OF PAT DAILY, 14908 Rocking Spring Drive, Rockville, MD. Call 460-1298 for directions. BRING YOUR OWN BEER AND KENTUCKY FRIED CHICKEN AND JOIN THE PARTY!!!



Polish WSK-Mielec M-15 agricultural biplane jet is powered by a Soviet-built Ivchenko AI-25 turbofan engine. Single-place cockpit is set well forward of the wing and the large spray hopper is located between the wings.

WSK-MIELEC M-15

On 1 March 1971, an agreement was concluded in Warsaw between the Polish and Soviet governments regarding the development and production of new aviation products, including large and medium-sized agricultural aircraft, light single- and twin-engined helicopters, sailplanes and powered sailplanes. The USSR has not manufactured any specialised agricultural aircraft, apart from a small quantity of An-2Ms, since it transferred production to Poland of the Antonov An-2 in 1960. Consequently, following the 1971 agreement, one subject of discussion between the Polish Ministry of Civil Aviation and the Soviet Ministry of Aircraft Industry was the development of a new, large agricultural aircraft known as the M-15, together with associated agricultural and ground support equipment.

The Soviet government has indicated a requirement for about 3,000 such aircraft, and on 2 December 1971 signed an agreement with the Polish government for large-scale production of the M-15.

Initial design of the M-15 was undertaken by a design bureau at Mielec under Soviet chief consulting engineer R. A. Ismailov and Polish designer K. Gocyla, and staffed by Polish and Soviet specialists. The agricultural equipment for the aircraft is being developed jointly by the Instytut Lotnictwa at Warsaw (which see) and the Soviet Research Institute of Special and Utility Aviation at Krasnodar.

A prototype, designated L.P.-M15 (Laboratorium Latajace Prototyp M-15; Flying Laboratory Prototype M-15), was flown on 20 May 1973; the first fully-representative M-15 prototype made its first flight on 9 January 1974. On 2 April 1975 five pre-series M-15s were sent to the USSR for evaluation, and series production (reportedly of an initial batch of 20) began in the same year.

A passenger version has been proposed, in which the agricultural hoppers would be replaced by enlarged between-wings fairings, equipped as passenger cabins with nose baggage compartments.

The following description refers to the agricultural production version:

TYPE: Three-seat agricultural aircraft.

WINGS: Biplane wings, of mainly metal construction and unequal span, built chiefly of aluminium and steel alloys and glassfibre laminates. The upper wing has a constant-chord centre-section and tapered outer panels; the centre-section is faired to the top of the engine pod. The shorter-span lower wings, which house the agricultural dispersal pipes, are of generally similar planform and are joined to the fuselage nacelle at floor level. The entire trailing-edge of the upper wing is hinged, and is made up of hydraulically-operated double-slotted flaps and single-slotted ailerons. There are automatically-operated slats on the leading-edge. In line with each tailboom, and occupying the full depth of the gap between the upper and lower wings, is a narrow streamlined hopper for agricultural chemical, and there is a single outward-sloping bracing strut outboard of each hopper fairing. Trim tab in port aileron.

FUSELAGE: Central semi-monocoque nacelle, of narrow rectangular section, built of same materials as wings.

TAU UNITS: Cantilever metal/glassfibre structure, consisting of twin sweptback endplate fins and rudders, bridged by high-mounted tailplane and full-span elevators, supported on two slender tailbooms located at approx one-quarter span on the upper wing.

LANDING GEAR: Non-retractable tricycle type, with single wheel on each unit. Main wheels and tyre size 720 x 360; nosewheel and tyre size 700 x 250. Nosewheel steerable hydraulically, 50° to left or right. Brakes on main wheels.

ONLY IN POLAND!!!

After 74 years of unhampered aviation progress, the Polish show their true engineering ingenuity with this WSK Mielec M-15 agriculture jet bi-plane. According to rumor, it sprays prune juice on wheat to produce that well known Polish drink, "Whisky-a-go-go."

As most of us know, jets are normally used at high speeds, but who wants to dodge crows and field mice at 450 mph? So the Polish did the only logical thing - slow the bloody fool thing down by adding drag; i.e., a second wing!!! Viola! With technological capabilities like this, I can only ask, why did the Germans invade Poland so early in WWII? Who's going to worry about 'em? Mien Gott in Himmel!!

POWER PLANT: One 14.7 kN (3,306 lb st) Ivchenko AI-25 turbofan engine, mounted in a pod on top of the fuselage. Five fuel tanks in the upper wing.

ACCOMMODATION: Seat for pilot in fully-enclosed cockpit in extreme nose of fuselage. Two seats in cabin, to rear of pilot's compartment, for carrying ground staff during ferry flights. Cockpit air-conditioning by engine compressor bleed air.

EQUIPMENT: Full flight and navigation instrumentation, including stall-warning indicator. VFR radio/navigation equipment optional. The two between-wings hoppers have a combined capacity for 2,900 litres (638 Imp gallons) of liquid or 2,200 kg (4,850 lb) of dry (powdered or granulated) chemical. Ivchenko AI-9 APU, normally removed from aircraft during agricultural operations, provides power for engine starting, ground refuelling and filling of hoppers with liquid chemical. Twin landing lights in nose.

DIMENSIONS, EXTERNAL:

Wing span:
 upper 22.33 m (73 ft 3 3/4 in)
 lower 16.43 m (53 ft 10 3/4 in)
Wing mean aerodynamic chord (upper)
 1.84 m (6 ft 0 1/2 in)

Length overall 12.72 m (41 ft 8 3/4 in)
Height overall 5.34 m (17 ft 6 1/2 in)
Wheel track 4.32 m (14 ft 2 in)
Wheelbase 4.90 m (16 ft 1 in)

AREAS:

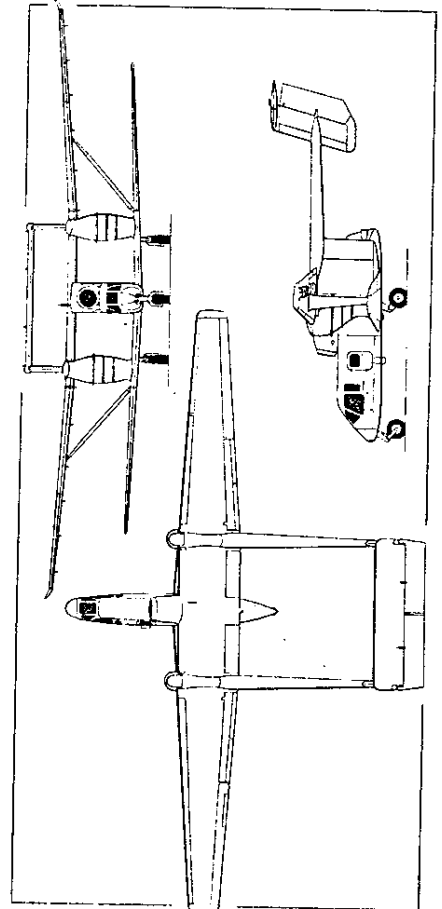
Wings (total) 67.50 m² (726.6 sq ft)
Ailerons (total) 9.03 m² (97.20 sq ft)
Trailing-edge flaps (total) 4.99 m² (53.71 sq ft)
Fins (total) 5.53 m² (59.52 sq ft)
Rudders (total) 4.00 m² (43.06 sq ft)
Tailplane 5.92 m² (63.72 sq ft)
Elevators (total) 4.08 m² (43.92 sq ft)

WEIGHTS AND LOADING:

Weight empty 3,090 kg (6,812 lb)
Max T-O weight 5,650 kg (12,456 lb)
Max wing loading 84.0 kg/m² (17.2 lb/sq ft)

PERFORMANCE (at max T-O weight):

Max cruising speed 108 knots (200 km/h; 124 mph)
Normal operating speed
 75-89 knots (140-165 km/h; 87-103 mph)
Stalling speed 58.5 knots (108 km/h; 67.5 mph)
Max rate of climb at S.L. 290 m (950 ft) min



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