

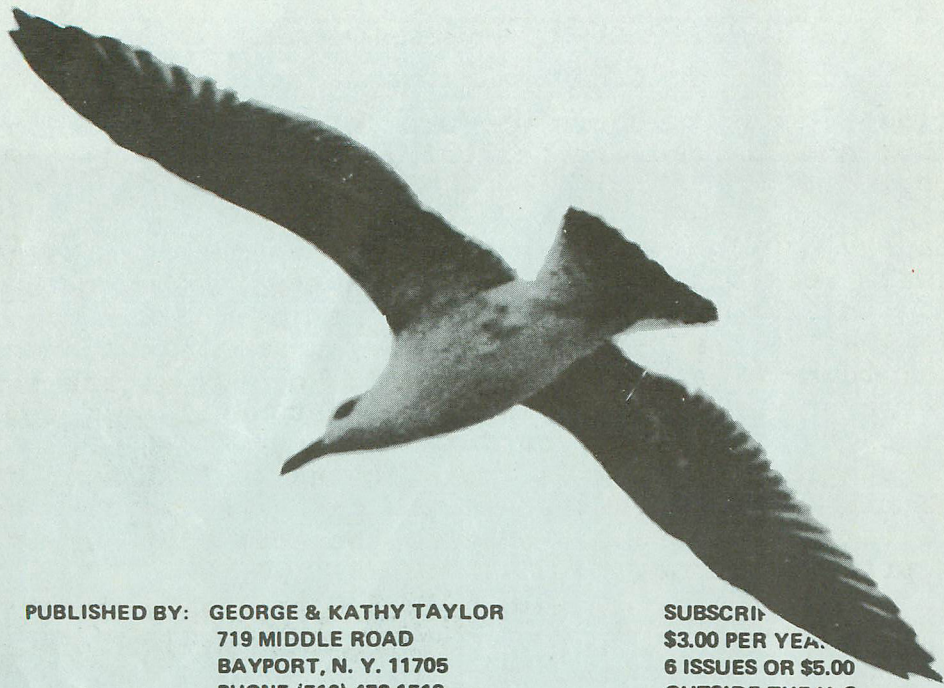
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OUTSIDE THE U. S. . . .

FROM THE EDITOR....

Kathy and a friend of ours spent a whole evening in a photo lab printing a nice set of soaring seagulls for our cover. A few days later our copy of SOARING arrived... with a seagull on the cover. Well, we decided to use them anyway.

DUSTER POLL The response from the self-addressed post card included in the July issue was gratifying and worth the extra expense. They returned at the rate of one a day for over a month and now nearly half of them are back. If you haven't returned yours yet, we would still be happy to hear from you - even if you're still not past the thinking stage. A sampling of the responses appears on page 4.

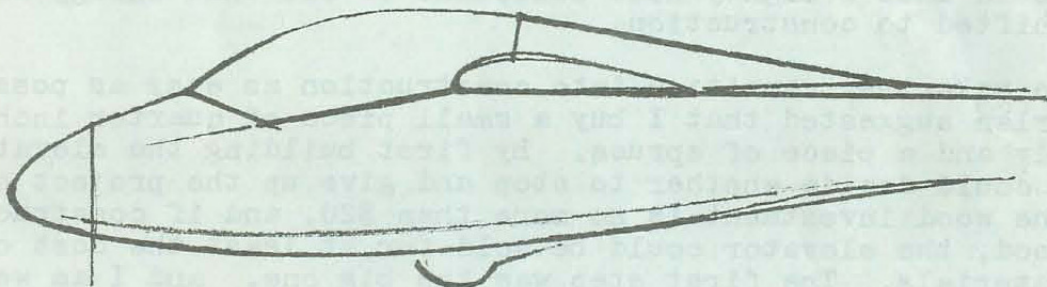
The DUSTER PLAN HOLDER'S list is updated in this issue. Please contact the Dust Rag if you have moved or sold your plans. It is also important to let Hank know so that you may receive design change information. The plan holder list is a continuation of the November-December 1973 issue which is still available to anyone who needs a copy.



## LETTER FROM THE DESIGNER

Eds. note. Those builders who are interested in modifying the canopy should read the following answer to my letter from Hank Thor.

....A canopy configuration such as that used on the Walters' Duster will very likely reduce performance in the low speed range due to flow separation in the area of the wing root. It is imperative that the canopy fairing maintain a cross section equal to or greater than that which occurs at the  $\frac{1}{4}$ -chord (chord-wise pressure peak point) at least until past the trailing edge of the wing. If you intend making a compound-curve canopy I suggest adhering to the existing profile over the wing and making your greatest volume change forward of the wing leading-edge where it would do the most good anyway as regards pilot headroom.



Suggested compound profile to retain good wing-root flow.

While on the subject of drag reduction and design compliance I'd like to caution those builders that are deviating from the designed nose cone shape about the possibility of airspeed error due to faulty location of the static orifices. The "stagnation-cone" on a pointed nose such as that shown on the front cover of the July issue of the Dust Rag will be quite small, possibly resulting in the location of the static orifices being too far

LETTER FROM HANK THOR continued....

aft. This would cause the ASI to read too high which is potentially dangerous for obvious reasons. It happens that the designed nose cone shape was also chosen for aerodynamic reasons. Its shape will affect profile drag as well as the flow around the area of the wing-root at high angles of attack.

Hank Thor

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### THE PSYCHOLOGY OF GETTING STARTED

My real reason for writing is to convey my experiences in building my own Duster. I haven't done any wood work since junior high and was very nervous about undertaking this project. The person most responsible for getting me started was Arlan Moore (see cover of SOARING, Jan. 74). Arlan had seen quite a number of people fret for years over deciding to start. Three years of fretting could make a mighty nice sailplane if all that energy was shifted to construction.

To make the transition into construction as easy as possible, Arlan suggested that I buy a small piece of quarter inch marine ply and a piece of spruce. By first building the elevator, I could decide whether to stop and give up the project or go on. The wood investment is no more than \$20, and if construction is good, the elevator could be sold for at least the cost of materials. The first step was the big one, and I am well into construction with no intention of giving up. To other insecure persons, I suggest the same approach.

Bob LeDoux





POST CARDS

- #43 I tested my Duster on the 21st of July- the ship flew better than I ever dreamed of-..... Kenneth Gooch.
- #55 Bulkheads cut out All ribs cut out Working on metal work now. Garage is  $\frac{1}{2}$  built to build the Duster in. Al.
- #64 Building from plans only. FAA OK to cover fuselage & tail has been done. Center section done and ready to cover. Still must fab wing & all fiberglassing, and am not looking forward to it. Cliff
- #88 I am now bolting controls in fuselage. Tail surface framework is done. Wing spar laminated. Wing ribs cut out. Most metal work done. Jim
- #94 My interest has shifted entirely to man-powered aircraft .....but I still have the Duster in the back of my mind for later on.... Stuart Kellogg
- #105 I started my Duster early in 1973. I can only find time for about 30 hours a month & have worked 450 hours so far. I have made good progress; it would perhaps be easiest to say my Duster is complete except for the following....canopy....control installation..... L.M. Ludwick
- #111 .....Fuselage- all woodwork completed. Wings- varnished and ready for top skins Tail- needs leading edge and tips and I hope to start the glass cloth and resining soon. Started in Nov 72 with raw materials kit from DSK, and having seen Bob Walter's Duster fly often, I can't wait to try mine..... Gil Alexander
- #129 My Duster is progressing rather slow. My wife just gave birth to our first child. A girl. I have completed the Stab & rudder and have started on the dive brakes & ailerons.....I am building my Duster from scratch. I am a purist!... James Jepson
- #132 I have all the ribs cut to shape. I am beginning on the dive brakes, which is the first assembly procedure for me. Completion is at least a year away. Charles A. Tabscott



POST CARDS continued.....

#137 I have yet to complete the canopy and decide what finish to use and build a trailer. I'm hoping that my attendance at Elsinor Duster Gathering will help. See you there

Aloha  
John M. Bryce

#141 Fuselage is now in the jig and I'm putting in the intercostal bulkheads. I'll cover it next month. Tail surfaces are ready to cover. I'm making up all the metal parts myself. I built the wing spars myself using my building table, a router and two 1" X 4" beards for taper guides.

A good source of aircraft spruce is Posey Mfg. Co., Hoquiam, Washington. All the spruce for my Duster cost me \$140.....

Robert LeDoux

#148 ....(I)..bought out Mikelsen/Allen...and..I'm ready to start assembly of the fuselage. Also have wing ribs cut out, sanded, and marked for spars and lightening holes. All horizontal and vertical ribs are finished and cut up. However some will have to be re-made due to tool marks around the cut-outs. Hope to have fuse assembled prior to Nov. prior to Squadron deployment...Am only active builder in the Bay Area as far as I know.

Doug Bell

#153 I'm having to build a shop to build the Duster. I have accumulated most of the tools. Actual construction won't start until late '75.

G. W. Beaty

#194 I just started July 15 during my vacation... All tail ribs and spars finished, also dive brakes & aileron ribs. Hope to start glued assemblies this week.....

Elmer



POST CARDS continued.....

#159 My Duster is progressing quite well, with the metal fabrication about 50% complete and the fuselage erection going on now. Time, materials and money are a constant problem and just about in that order. I hope to do the wings next spring. This gives me an optimistic completion date late next summer.

Robert W. Bowman

# 57 Who? Me? Oh. I started in Jan. '73. Building from plans & buying the hardware. Tail FAA'd. Fuselage done. All wing spars and ribs cut out, capped and laminated- maybe spring '75.

Ed.

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PHOTO CREDITS      Seagulls- Phil Pasquarelli  
Prints by Jim Todaro

ART WORK              Don Hollister & Strat Ryan.

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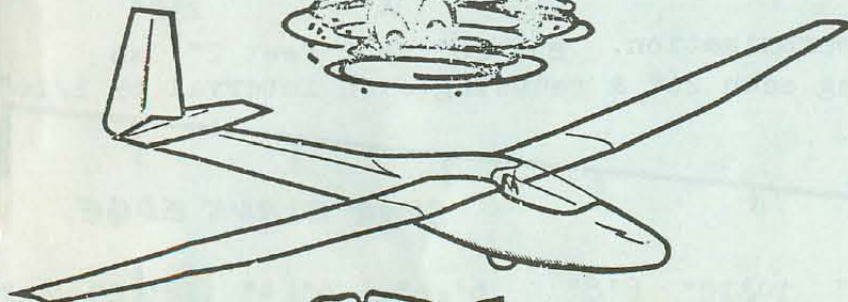


PLAN HOLDERS continued.....

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**BUILDING TIPS**  
**(wing spars)**  
 by George Taylor

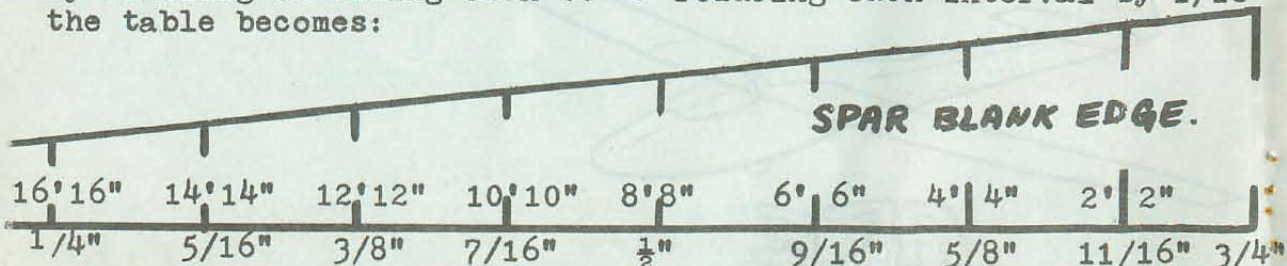
My next major job was to bevel the wing spars for the laminations. The spruce arrived from the lumber yard nicely planed to a 3/4" thickness. The edges of the planks were not smooth enough or straight enough to draw a line or attach a taper blank so I thought for a while and came up with a good alternate method of shaping the blanks for a uniform taper. I would also like to mention that I could have the blanks tapered for \$200 at the lumber yard if I would build my own jig to hold the blanks at the proper angle. I bought a \$12 jack-plane and embarked on my body-building course instead.

The way I decided to tackle the bevel problem was to establish what thickness the spar should have at certain intervals and rely on the size of the jack-plane and a fair "shop-eye" in order to turn out a uniform bevel.

I discovered a numerical curiosity when I set up my table of dimensions. The spar blank is approx. 210" long and must decrease by 1/2" of thickness over that interval. A convenient unit of measurement on a draftsmans scale is 1/16". What distance along the spar will it decrease by that much thickness?

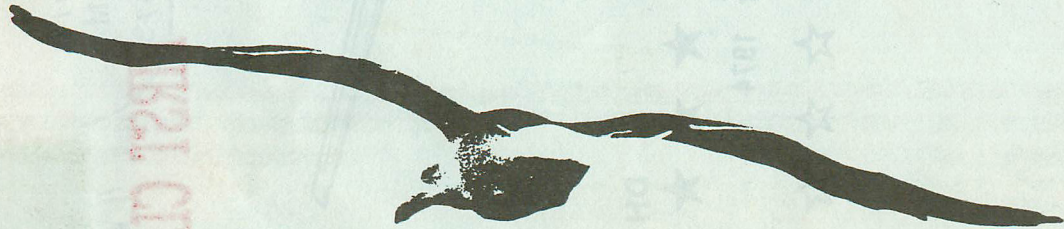
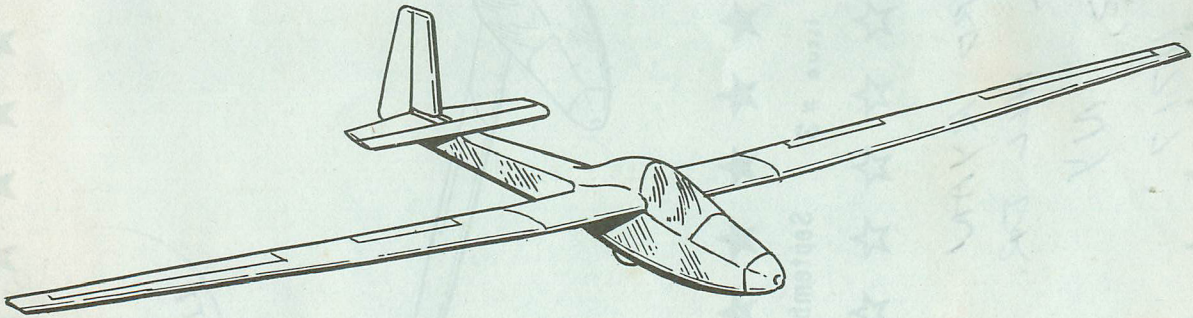
by proportion of similar triangles:  $\frac{1}{16} \div X = \frac{1/2}{210}$  or

26" as a good approximation. But 26" is 2 feet 2" so by doubling or adding each 26" & reducing each interval by 1/16" the table becomes:



I tried the method for clamping the spars described in the last issue and highly recommend the method to anyone who is building his own spars. Use a 4" flexible plaster's blade to spread the glue.





1921 Q1722

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# DUSTER



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