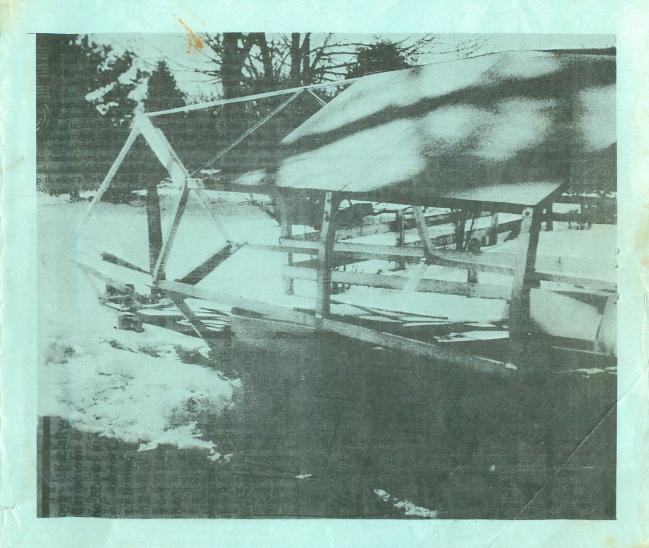
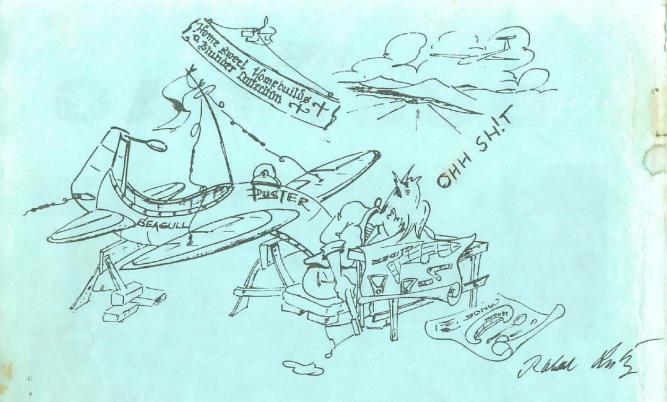
DUST RAG



THE OFFICIAL JOURNAL OF THE DUSTER SAILPLANE ASSOCIATION



FEBRUARY 1978



FROM THE EDITORS

"What are you doing about a trailer?" is the question we hear most- a question we haven't answered yet for N12GT. So, during an interval between snow storms, we flew up to Meriden, Connecticut, to share a frosty afternoon with Elmer & Jeanne Zook and look at theirs. Elmer's basic trailer is an 18 foot EZ Loader boat trailer (EZ for Elmer Zook?) with aluminum extensions and a plywood deck. Elmer is enclosing this with aluminum bracing and $\frac{1}{4}$ -inch plywood. As you can see from the cover photo, it has a diamond cross-section to allow for the Duster's generous center-section. By the way, I only got to navigate on that trip-Kathy got her Single-engine rating at the end of last December.

During the course of construction of my Duster I kept record of my progress with a camera as many of you have done. But there is another kind of record-keeping that I suggest that you all do. Save all your receipts for the materials you buy! When you register your sailplane with the Federal Government, the State will also be notified and will have it's hand out for a sales tax because they don't know a Duster from a Beech Baron and will assume you bought it from a dealer. I received a form-letter approximately a year after the Duster was registered which stated in part, "Information available identifies you as the owner of the aircraft described above (1976 Aircraft- 12GT). The Sales Tax Law requires that a casual sale or purchase must be reported within twenty (20) days etc." followed by some formulas for figuring the tax and penalty. I returned the form with a statement that the aircraft was home-built and the tax was paid on the materials. In any case, I will be prepared to back up that statement with some tangible evidence. Will you be able to do that too?

Published by

George & Kathy Taylor 719 Middle Road Bayport, New York 11705 U.S.A. Phone (516) 472-1518

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Some of you must know by now of the sad news that a third Duster has crashed. I don't know the details of this most recent accident except that it ocurred in New Zealand and the pilot did manage to bail out. After featuring Gilles André Séquin's beautiful canary-vellow Duster in our center-fold, he wrote, "Was glad to see my son in that last issue of the Dust Rag. But I almost had a tear to see my ship in one piece. A flutter in the tail ocurred at 70 knots and the sailplane started to shake violently. The fuselage broke and my partner had to jump. It happened at 3000 feet AGL. It spun all the way "Anyone who has not received plans for stiffening the tail, please write to John Sinclair. Many of you who have never experienced flutter, myself included, may be thinking of flying without making the change as I was. But consider this if you are still a non-believer. If you are carrying insurance, you might as well cancel the policy. You can be sure that unrelated incidents will be blamed on the tail whether or not it is at fault. I sympathize with any individuals who bought completed Dusters and find that they still have not escaped the wood, sawdust and glue stage. I still do not know where I am going to find a place to do the work but it will be done somehow.

GETTING STARTED IN ONTARIO

Many thanks for your kind offer to rough-cut my wing ribs, but since the Douglas fir shortage in Canada extends further than wing ribs, I have decided to use the wood-only kits from DSK. I am however building my own hardware.

I will be working with Martin Slater (#301) and Dave Gibo (#325). Dave is using the DSK buy-as-you build program, and has received the first two kits (though only after a struggle with Canadian Customs.) Very impressed with the quality of wood and hardware.

We fly with the York Soaring Association which has a membership of around 100 members and a fleet of 13 sailplanes which are as follows: 6 x 2-33, 2 x 2-32, 1 x Blanik, 2 x 1-26, 1 x 1-23 and 1 x 1-35. Towplanes are 2 x 150 hp Super Cubs and 1 x 180 hp Super Cubs. Several privately owned sailplanes are also operated including 1-26, Blanik, Kestrel, Libelle and PIK-20. The Club has a 200 acre field with 2 x 3000 ft grass runways. Tows to 2000 ft are \$4 and soaring ranges from \$5.00/hr to around \$10/hr depending on what you happen to be sitting in.

Instruction is free. Altogether, a good club and not expensive. Annual dues are \$135.

I would be interested in hearing from Duster constructors in Southern Ontario and Upstate New York.

Alex McCallum #323. Ontario, Canada.

BACK TO THE U.K.

This is a very quick note to let you know of a change of address, as I will be returning to U.K. in March for good, and then maybe when I have re-settled, I can start thinking of Duster-building. Maybe I'll actually be able to report some wood-cutting next time I write. My new address is:

Don Clarke Wraysbury, Staines, Middlesex, U.K.

WHO IS THAT MASKED DUSTER PILOT?

Thank you for your letter. I have been busy setting up shop to build my Duster, and almost forgot to order the back issues of the Dust Rag. I ordered the prefabricated fiberglass parts from John Sinclair and found them to be of high quality construction. I have finished building a work table and am ready to begin a full-fledged attack on that pile of plywood in the corner. It may be a while before anyone hears from me again, as I have locked myself in the shop and will not come out again until it is finished.

I have a private power license with 100 hours on it, and have taken 4 hours of dual and 2 solo flights in a 2-33. I soar out of Skylark Field at Lake Elsinore, California. My only previous building experience is with models, but they all flew and I am confident that I can get this one off the ground.

I saw a Duster at Lake Elsinore a while back, but could not find out who it belonged to. San Diego is about 100 miles south of me. I would be glad to have the addresses of anyone in Southern California who is building or have built a Duster.

Dana Sprague Anaheim, CA

ELIPTICAL CROSS-SECTION DUSTER

I hold plan No. 314 and am delighted with the clarity and detail of the plans.

I have enclosed two photos of the fuselage, which you will notice looks slightly different. I have changed the box cross sections to elliptical and circular. The canopy mould is only rough finished in the photos. The stations remain the same and the controls will be identical. The stringers immediately behind are structual and final contours will be aerodynamic and follow a proper curve by using foam and fiberglass. Put it this way, even although the cross sections and the profile have been changed, standard Duster controls, wings and tail will fit. The fuselage is covered with 1 mm and 1.5 mm aircraft birch ply and has Sitka spruce stringers and 7-ply formers giving a weight of 35 lbs. for the fuselage at this stage as shown in the photos. It is surprisingly rigid, even at this stage but the inside will be covered with fiberglass (epoxy & woven) and the outside foamed, sanded to final contours and fiberglassed. This will bang the weight up to the weight of a standard Duster fuselage. I must repeat that I am delighted with the plans. I simply photograph the metal parts, cut out the paper, paste on metal and cut. This saves hours of measuring up and setting out, etc. The shrinkage on the paper cut-outs is negligible and I don't use a water-base glue for this purpose so no problems.

Since the photos were taken I have contoured the canopy mold properly and covered it with felt. A canopy will be pulled but if the inevitable distortion is excessive, I will have to blow a canopy. I have molded a fiberglass seat etc. and there is plenty of room and comfort. This week I intend foaming and fiberglassing etc. I must say that I am very pleased with the progress-just now I will want to borrow a set of Duster tail and wings and fly!

Don't be mislead by the "sticks" sticking out of the fuselage. It's just a jig to steady the fuselage while working on it. A friend of mine (also a sailplane pilot) has almost completed a Fly Babyjust got to be covered with fabric, and guess what ? He's fitting it with a tow hook and a beefy engine!

Eric N. Evezard
East London, Rep of South Africa

A NEW INSTRUMENT PANEL

Please find enclosed a further subscription to the 'Rag plus a little more for postage to this remote place.

No. 255 is going together rather slowly, partly because of the still unresolved mess created by an old-style DSK kit purchase. However, some of the metalwork is complete, and I'm looking forward to our approaching southern summer to get some glue set. There are currently five Duster projects operating in NZ, one of them having turned out a fine flying sailplane. Congratulations to Alex Taylor for his job on ZK-GKP.

I didn't like the design of the Duster instrument panel- rather too much sharp metal exposed against the pilot's legs. I have therefore done a mod. which some readers may like to adopt. (See photo) Instead of angle braces, reinforcement is incorporated in an angle fairing attached so as to cover the entirety of the panel sides. This fairing is best made by bending up long strips of aluminum sheet, with a generous radius. Judicious hammering or rolling plus bending yields the compound curve required, then attach these pieces by rivetting to the *front* of the panel, with the free sides projecting behind the panel.

Nigel Newman Nelson, New Zealand

CLOSE TO THE FINISH

After one and a half months of trying to get together with the FAA we finally connected. I had the whole thing signed off at one time.

N85968 now has it's wing center section covered up. Working on canopy frame & turtle deck which are the only two things I need to build.

I just got back from Mena, Arkansas. The Memphis, Little Rock, Dallas, Tulsa Group get-together during Thanksgiving week for some fun and hopefully some wave flying. The hills at Mena are only 12- 1500 feet AGL but we had some real good soaring. One of the Memphis group got over 17000 feet in wave. Not bad for a 1500 foot hill. One day two tow planes made 38 flights of 30 minutes duration getting 15 sailplanes into the air. Each sailplane made a number of flights.

Next year I'm planning on doing a little "Dust" flying in that wave myself.

Robert M. Warren Tulsa, Oklahoma.

THE HURRIER I GO THE BEHINDER I GET

When looking through past Dust Rags I came across my letter in the December '76 issue. I said I would have my ship done by December '77 at the latest and I haven't made it yet, so I thought I'd send along an article for the Dust Rag. (Deadlines are nice by the way, because they let you know how far behind you are!) I always enjoy getting the Dust Rag and I hope other builders or would-be builders find the article of some use. (See Hal Porter's article on page 9Ed.)

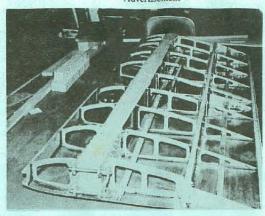
Best of luck and keep up the good work with the bust Rag.

Hal Porter San Jose, California.

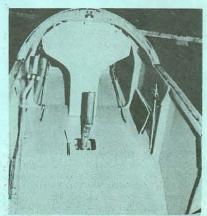
Continued on page 10



FOR SALE







We recently heard from Michael Kuyt of Rochester, New York and he is forced to sell his nearly-completed Duster. The items for sale include the complete kit which is 85 per cent complete. The fuselage and wing center section are ready for inspection and closure. The wing outer panels and tail sections are in advanced stages of construction. Mike's new address is 9 Revere Dr., Rochester, NY 14624. The phone number is 716 247-4467. The photos above are his wing panels and fuselage that are for sale.

JJ Glider Repair

GLASS

WOOD

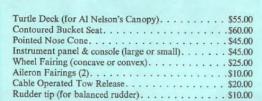
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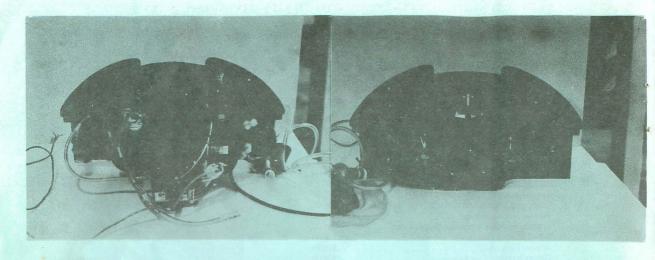
\$75

\$11 QUART

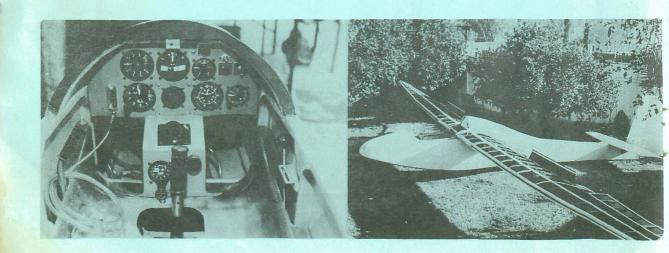
\$18 HALF GALLON 10 LB. 15 LB. \$30 GALLON

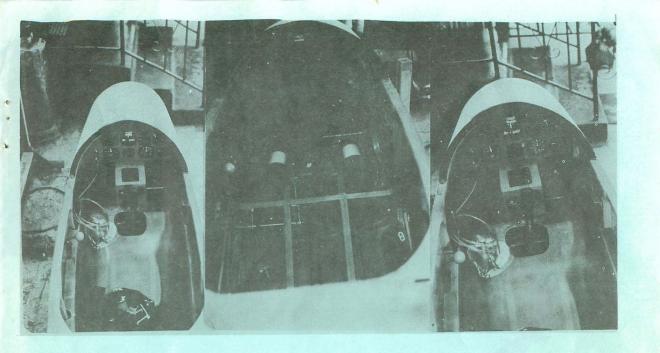
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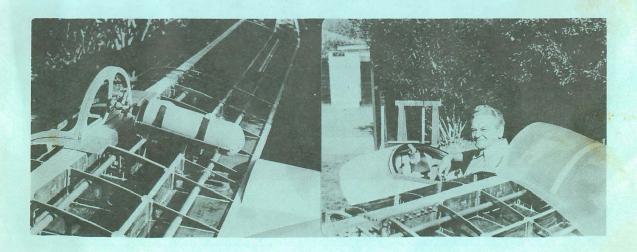


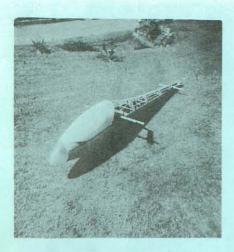






Robert Lutz' instrument panel and fuselage interior.





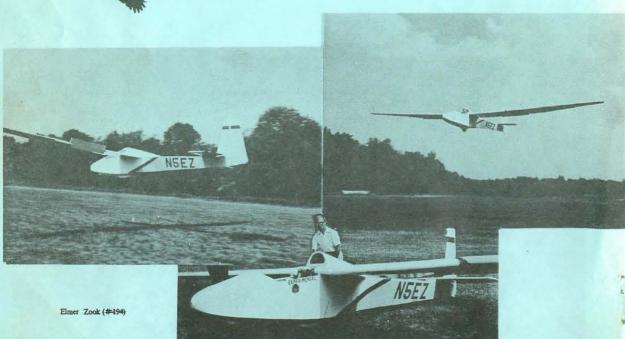
Nigel Newman's modified instrument panel





This South Africal Duster will have an eliptical fuselage.





BUILDING TIPS

I'm a long way from finishing my Duster but I've been working long enough to pass on a few ideas that were helpful to me. I'm really directing my comments to the first-time builder and if any of my thoughts seem obvious to some of you please just overlook it. I don't want to discourage anyone from building a Duster or other ship, quite the contrary. To build anything right takes time and you won't just whip one of these things out in a few months. If you're not at all interested in building, and that goes for anything, I'd be honest with myself and ask if this is really the best way to go. It's a question of time and money of course, but remember that no one works cheaper per hour than a homebuilder. It seems unreasonable to me that if a person has really never shown an interest in building anything before that everything will change because you want to build a sailplane as a means to an end. As I said, be honest with yourself.

I bought a complete kit from DSK and picked everything up at once. It's nice to have everything on hand if you can do it that way. Store all your skins *flat* and not standing on edge so they won't buckle because they'll be there a while before you start to use them.

First of all I bought a heavy pair of carpenters overalls. They accomplish the following: they hold tools, sandpaper, etc. and will save many steps, they're warm in the cold months, they give your knees some protection when you're kneeling on a concrete floor, (I'm a sissy, huh? Wait and see!). I also seem to wipe glue all over myself no matter how many rags I have handy so they'll keep your clothes a bit cleaner. They are definitely too warm on the hottest days and you'll discard them. Most important they'll make you feel "Official" and will fool others into believing that you know what you're doing!



When you build your table give some thought to the things it can accomplish for you. I didn't have any saw-horses and after considering how many 2 X 4's it would take to make just three, I decided to bolt 2 X 4's to the table instead. (fig. 1) I made them 31 feet long and used five evenly spaced in between with about a foot and a half left over at each end of the table. (I put them off center because I needed more walk around room on one side than the other .) By the way, I built the table the way they recommended, a 2 X 12 and a 2 X 4 underneath. Those two little gems cost \$60.00 two years ago and at that the best dried 2 X 12 I could get was bowed across and I had to shim it down the middle and cover it with 3 inch ply. At any rate, however you do it, build it solid, brace it well, and carefully level it. You'll be glad you did the longer you use it. Counter sink the bolt heads into the 2 X 4's and shim them as needed. Take the time to get everything level and check it each time you remove them and put them back on. I used 1 X 2's bolted through the same holes (2 in each 2 X 4) to hold the spars to the table and blocked them as needed to keep the top line of the spar straight. You can use the same 1 X 2's to hold the spars in place when you use the 2 X 4's for "outriggers". (Fig. 1) You'll end up spending some money for nuts, bolts and washers but if you get them full threaded and figure the lengths right you can use them for everything.

The 2 X 4's are also handy to clamp blocks to so that the open wing structure won't move around while working on it. When you go to buy materials anywhere, take a ruler and measure what they're giving you. (I didn't want to embarrass anyone by being so crass as to whip out a ruler and challenge an aircraft materials supplier, but after bringing home the wrong sizes twice, I grew up.) Also, they'll sell you what ever they have in the shop so look over the material and make sure its not something that's been rejected by six guys before you.



Hal Porter

The fuselage supports (fig. 2) are made of $\frac{3}{4}$ inch particle board. Two other local builders put them together and were kind enough to let me use them. They are glued and nailed together making them very solid. The faces are large enough so that the bulkheads can be clamped in all four corners. Shim them as needed to keep everything square and check them as you draw them down to the table with bolts.

I decided to add half ribs between the leading edge and main spar. The skins will dip after a while between ribs and the half-ribs should help minimize this. (Fig. 1) I don't think the additional weight would be justified by doing this in any other bays and doubt that there will be much dip because there is less curve in the skins from the spar aft.

Contrary to what Easterners may think, it does get cold in California, at least cold enough to slow down glue drying. I have been tenting areas as I glued them and can usually raise the temperature about 20°, sometimes more. When it rains here the local newspaper covers it's papers with a foil-backed paper when they drop off the bundles for the boys. They get Lipton's Soup sheets about 4 X 6 feet. (Don't rush out and start taping together your old Lipton's Soup bags! Look for something similar, like a space blanket.) They're great because you can shape them around parts and they'll stay and you can roll and crimp the ends shut. I put the foil to the inside and used one or two clamp-on type 100 watt lamps. Try to avoid direct light close to the wood and depend on the warm air from the heat of the bulb to warm things up. I usually leave the light on all night and that day too, if its really cold. You fellas in the colder climates may not be able to work all year in unheated garages but you can certainly extend your working time in the spring and fall.

DOES SOMEONE NEED A DRILL JIG?

My Duster #269 is coming along fine. Wings are ready for inspection, fuselage is covered, and Γm in the process of installing the controls. A new house and our first child (due in March) have set things back a few months. And the plane has moved from the basement of our appartment to our cosier attic.

I'm using exclusively a cold cure epoxy that mixes easily. 2\$1 (great for small batches) and has a delightful viscosity, and best of all comes in at \$8.00/quart plus postage. I recommend it to everyone. The company address is:

Hi Tech Products, Ltd. 1524 ½ 17th Ave. East Seattle, Wash. 98112

Tell them you're building a Duster sailplane. These people also sell resins for covering your plane at comparable discounts.

Someone sent me a letter asking to borrow a drilling template. Γ m sorry the letter got lost in the move, try me again who ever you are.

John Malick 3136 N.E. 20th St. Portland, Oregon 97212

URGENT HELP NEEDED

After two and a half years work all that remains to be done is the following- Make up dive brakes, fit control tubes to outer wings, skin outer wing sections, trim and paint. The fuselage, tail section, centre-section and turtle deck are all finished and painted. All controls plus instruments are fitted to the fuselage. The only other job is to fit perspex to the canopy frame, all being well. I hope my Duster will be ready to fly in three months.

That's all on the building side! NOW- Because we in Australia have to deal with the Government body, The Department of Transport, to get Type Approval before a new design can fly, I am asking for *URGENT HELP* of the Dust Rag, all Duster builder/pilots that are flying and also a few moments of Hank Thor's time to fill in one of the forms enclosed in this letter.

R.C. Dunn 18 Trevan St. Whyalla Norrie South Australia Australia

WORTMAN AIRFOIL ON DUSTER

I'm scratch building and started last March. The fuselage, tail, and center section are nearly ready for cover. I've gone to a 16% Wortman airfoil with 4 inch spaced foam ribs and expect a slight increase in low speed performance. High speed should remain about the same, but the thicker spar will add a little extra strength for the addition of a retractable engine assembly.

Roger Bloomfield Jackson, Wyoming.

EAA MANUALS HELPFUL

I have about 75% of my hardware completed. Many of the other small items are ready for assembly. The fuselage is in the jig ready for the longerons and for skinning and should be completed by late summer. All of the wing ribs are cut to size. Once the fuselage is out of the jig I'll be able to start laminating the main spars. The center spar is already laminated. The stabilizer and elevator need trimming, fitting to the fuselage, and skinning.

I have constructed a small bending brake similar to one detailed in one of the EAA Aircraft Building Tips booklets. With a little modification I am able to bend any thickness metal used in the Duster. Also there are several tips on scarfing of plywood in the EAA booklets which other builders might consider. The Dust Rag has provided many tips and I thoroughly enjoy each issue.

Richard A. Walker Gwinn, Michigan.

Owing to increased air traffic, airline schedules, airport alterations etc. we have moved our club 35 miles inland to a beautiful airport, well maintained, but used only as a standby for airlines, military etc. during extensions to the local airport. The Parachute Club, however, has been operating from this airport for some time. They were kind enough to let us knock a hole through the wall of their bar so we could "hangar" our Blanik until we complete our hangar. The good news is that the Parachute boys found their watering hole 35 miles inland- rather far and now have one in town and it looks as though we will inherit the building decorated as it is with old parachutes, walls with graffiti and unquotable quotes, etc. We are in their good books because we gave them a "first". We allowed one of them to jump from the Blanik- helmet, parachute, boots and nothing else- not the first S. African skystreaker- but the first to skystreak from a sailplane. Rumor has it, that when he climbed out and sat on the wing he took off like a scalded cat. The wing was either too hot (S. African sun) or too cold (altitude) but he never waited to find out!

Our CFI has threatened to brick up the Blanik inside the bar until we complete the large hangar we are building. This is rather awkward as we are down to 4 members and I am building a Duster and one is completing his Bowers Flybaby (covering and finishing). Our Supercub tug has just been covered and looks beautiful. Once we resume flying properly the club will be back to normal complement. The hang gliding explosion hasn't helped membership either. Conditions are reasonable soaring all year round. We also fly at a club 85 miles inland. There, conditions are very good year round-ridge, thermal and occasional wave off a winch! This club has an ASK-13 and Olympia and a privately owned Phoebus, Ka6E, and Fournier RF5. Clubs further inland have excellent conditions year round. At the last S. African Champs- 2 world and 6 foreign national records were broken. This set included a 475 mile (750Km) triangle for all classes.

You asked me why I decided to build a Duster- well I think it was the picture of Bob Walter's beautiful Duster and Stan Hall's excellent and inspiring articles in <u>Soaring</u> magazine that triggered off something I wanted to do since I started gliding 12 years ago. You mentioned that my variation of the Duster was the most exotic you have ever seen. I thank you. I will send more photos as work progresses. I thoroughly enjoy building and take great pride in meticulous workmanship- a very satisfying and rewarding hobby indeed.

Eric N. Evezard East London, S. Africa

BUILDING TIPS continued from page 9

Buy and use a dust mask. I tried a plastic and foam filter job but it didn't fit my face well. I then bought a rubber mask with a felt filter and it works great. Wear it especially when sanding glass and glue areas. These are only particle masks and will filter paint particles but not the fumes so I wouldn't advise using this type of mask to spray paint with, expecially indoors. It's well worth the money to get a good mask when you consider you'll be breathing the stuff for 2 to 3 years.

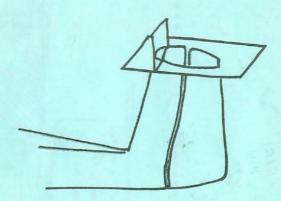
I made a scarfing jig from a drill motor and a drum sander. There are several ways to set it up, but I patterned mine somewhat after the one John Sinclair has, Basically what you want to do is to tilt the drum through a hole in a flat piece of plywood at a 1 to 10 scarf angle. I screwed a guide on the underside and this slides along over the end of the table. The skin also comes to the end of the table so the guide gets cut out a bit where the drum sets. The shaft is run through the drum far enough so it will insert a bearing at one end and the secured drill motor at the other end. I used a metal screen door track wheel and have just put the second one in. You'll probably have to make a longer shaft for the drum, or do as I did and grind the head of the shaft off, it was just long enough. Also, I think the bigger the drum the better, and use it like a plane and work gradually inwards from the edge with as straight a scarf as possible as you go along. I set it up to scarf only the $\frac{1}{8}$ and $\frac{3}{32}$ skins and move the guide in or out to make this adjustment.

One final thought. When I have a question I'll usually send off a brief note to John Sinclair as he says in his ad- if you send a self-addressed envelope along you'll have your answer back very quickly. John has been very helpful to me and the other three local builders and his fiberglass parts are excellent. I certainly recommend at least giving some thought to the seat.

Hal Porter San Jose, California

Now that you have decided to go ahead and do the rudder mod (you are going to do it, aren't you?) you might be interested in a few ideas on the subject. Except for the cracks between the fin and the rudder being in different places now, the shape of the top remains the same. So why not make a mold to duplicate that curve? Chock the rudder straight and cut a tear-drop shaped hole out of a plank and stuff it down over the rudder and fin. Now with a sharp hand saw cut through the top of the fin at the point where the new fin should end and the mass-balanced rudder should begin and insert a thin plywood wall. The next step is to oridge the original gap between the rudder and fin with tape. Lean the fuselage to the left and pour plaster onto the right side of the top and vice versa. This leaning will eliminate the need for building sides for the mold. Knock the mold off before it gets too hard and set it aside for further hardening. Now place a white handkerchief in your left pocket and carefully cut away the tops of the fin and and rudder that you so pains-takingly carved. Now, take the handkerchief from your pocket and wipe away the tears. The fiberglass rudder top that John Sinclair has for sale for \$10.00 is a bargain when you consider that you have to make a special trip to the lumber yard for a \$2 bag of plaster plus some glass cloth and resin. It is the best route to go if you haven't already carved and sanded your rudder top.

From the editors



COVER PHOTO

Elmer Zook's trailer. Back cover cartoon by Steve Kidd. Other cartoon by Robert Lutz.

Volume 6 Number 1

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