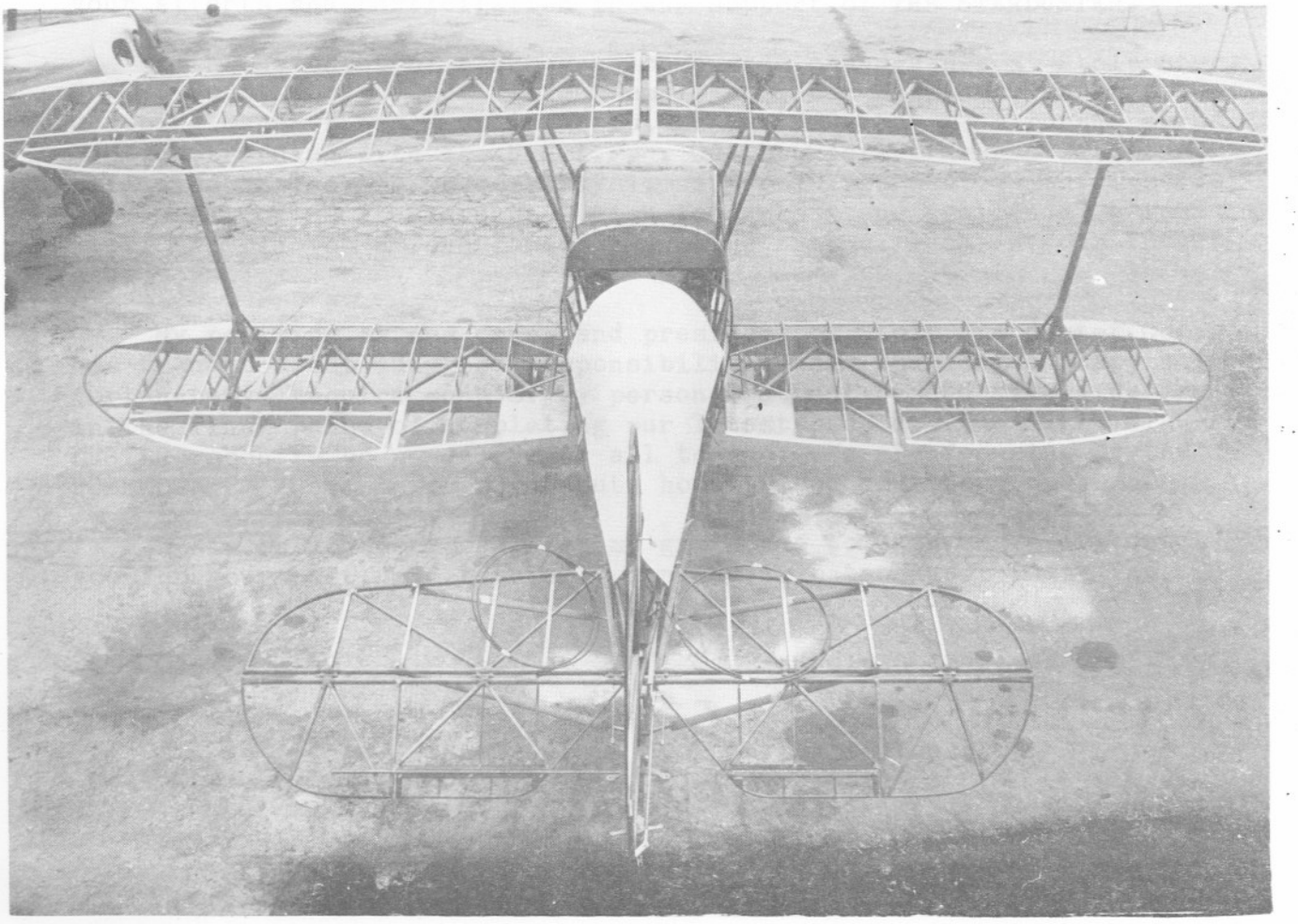
THE

Stardust er

APRIL 1982

MAGAZINE

DEDICATED TO THE ACTIVE HOMEBUILDER



To my readers. Once again I feel obligated to extend my sincere apologies for the lack of my personal contributation to our previous issue of Starduster magazine. To those of you who submitted articles used in the January 82' publication, we would like to thank you for your efforts and participation in the support of THE STARDUSTER.

With the onset of a new year came some changes her at Stolp Starduster Corp. One of our former employees, Leo Williams, who was our shipping manager and graphic artist since 1979, has left pursue aeronautics training with the U.S.A.F. . Our bookeeper, Hanako Osbourne, will also be leaving us come May 1, after 10 years of faithful servvice. All of us at Starduster wish to express our gratitude to you both. We bid you a fond farewell and the best of luck in your future endeavors.

My position as new owner and president of Stolp Starduster Corp. has brought about many new responsibilities and challenges that, unfortunately, require much of my personal attention and time. We are in the final phase of completing our latest project, the SUPER STARDUSTER, soon to be unveiled for all to see. We are focusing on the "OSHKOSH 82'" event for our debut, hope to see you there too.

Again, allow me to express my gratitude to each and every one of you for your past, and hopefully continued, patronage. Thank You.

ed.

Stolp Starduster Corp.

Bill Clouse

Bill Clouse
President

LIGHT WEIGHT SPLINE DRIVE ELECTRICAL POWER SYSTEM

B&C SPECIALTY PRODUCTS is pleased to introduce another breakthrough in lightweight aircraft alternators. This new alternator has been designed to mount on a standard vacuum pump pad. This extraordinary system was specifically developed to meet the rigorous demands of today's weight sensitive homebuilt designs. The B&C SPECIALTY PRODUCTS power system is far more than an improvement in alternator weight. We use the latest state-of-the-art advances in solid state electronic regulation as well as incorporating a modern lightweight alternator. By using rotating permanent magnets for the field, all brushes and slip rings are eliminated, making for a very reliable alternator. There is clearance for the tachometer drive and the oil screen housing with temperature bulb on Lycoming engines. B&C SPECIALTY PRODUCTS is proud to offer you this innovative lightweight power system!

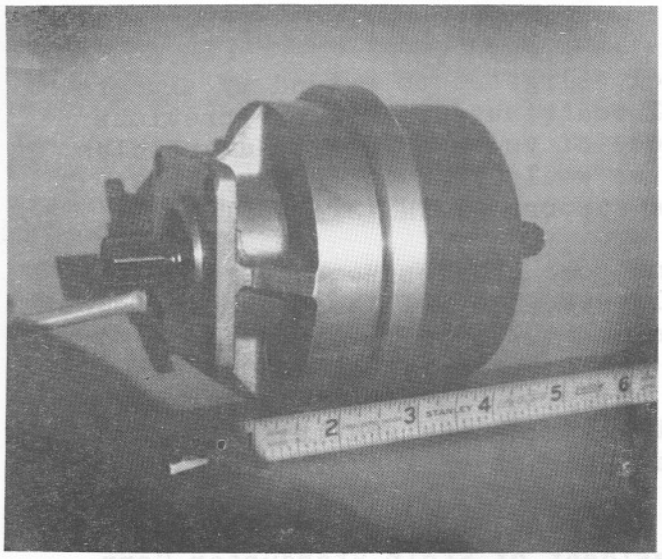


TABLE OF SPECIFICATIONS

MODEL	SD
DIAMETER	3.875"
LENGTH	Overall 5.875" From Mounting Surface 5.0"
TOTAL SYSTEM WEIGHT*	3.8 lbs.

*The total system weight includes alternator and regulator. No battery or battery cable included.

RATED OUTPUT	14.6VDC-8 Amp
DRIVE	Spline

MODEL SD
ONLY $375.00 COMPLETE

Spline driven 8 Amp-12 Volt power system for mounting on a vacuum pump pad. Price includes alternator assembly with male spline, regulator, regulator wiring and connectors ready to install. (Price includes UPS within the U.S.)

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

APRIL 1982

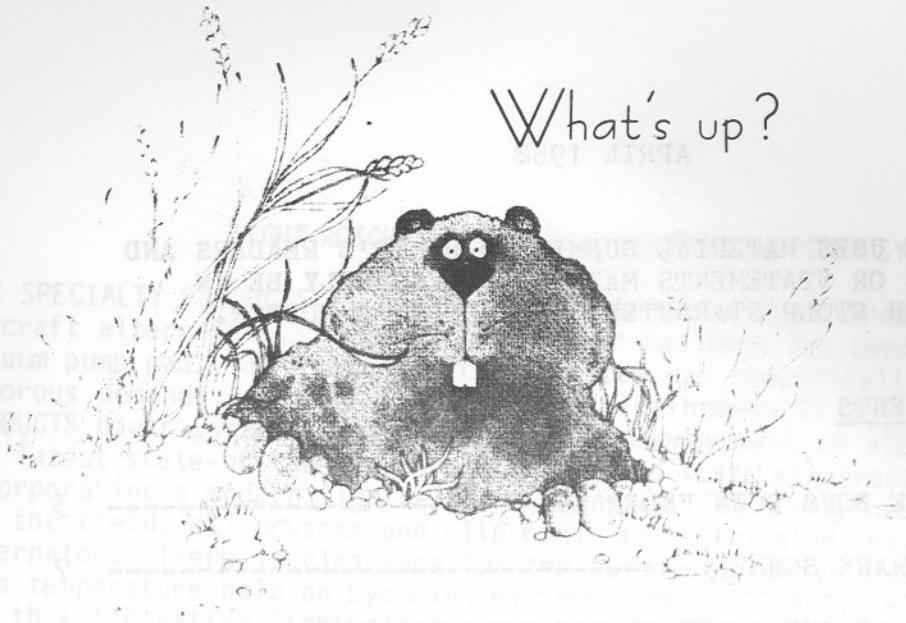
THIS MAGAZINE USES MATERIAL SUBMITTED BY IT'S READERS AND SOME ARTICLES OR STATEMENTS MAY NOT NECESSARILY BE IN AGREEMENT WITH STOLP STARSUTER CORP. OR IT'S EDITOR.

TABLE OF CONTENTS

COVER PICTURE - THE SUPER STARDUSTER ONE BEING BUILT HERE AT STOLP STARDUSTER CORP. RIVERSIDE, CALIF. COME SEE!

BACK COVER - SA 500 STARLET. PROUD OWNER AND BUILDER IS BILL KELLY OF TORRANCE, CALIF.. COLOR IS ORANGE AND GRAY.

THE EDITOR IS STILL LOOKING FOR TECHNICAL AND EDITORIAL CONTRIBUTIONS TO THIS MAGAZINE, WHICH IS DEDICATED TO THE HOME BUILDER AND SPORT AIRCRAFT ENTHUSIAST.



Allow me to take this opportunity to elaborate on the transitions here at Starduster Corp. during the past year. As mentioned previously, Hanako is retiring. Presiding as bookeeper will be Sumiko Hampson, a nine year veteran with Starduster. We're confident she will continue to maintain the same professionalism and efficient manner which Hanako has in the past.

As for "me", my name is Ronna, most recent member of the Starduster crew. My position here as "Girl Friday" (actually its Monday through Friday --- Saturdays too!) entails various tasks, of which I take pride in carrying out. Any requests for literature concerning our products, price catalogs, brochures, plans, magazine subscriptions, etc. are directed to me. Your requests will receive my prompt attention and I will anticipate your future correspondence.

Now responsible for the prompt and efficient processing of your orders is our new shipping clerk, Frank Orzochowski, who joined our staff this past February.

Frank has brought to the organization not only his enthusiasm, but his own unique sense of humor. Always good for a joke, he occasionally even elicits a laugh.

In conclusion, I wish to express my own pleasure in being affiliated with an organization in which the atmosphere is so charged with enthusiasm, professional pride and a spirit of camaraderie.

Stolp Starduster Corp.

Ronna Noreen Pleiman

Ronna Noreen Pleiman

J.T. Gumley
S Woburn Way
Kelmscott
W.A. 6111
Australia

Dear Sir,

Some years ago I purchased a set of plans and a kit to build an "Acorduster Too" from your firm. Unfortunately due to work commitments I have had little time to proceed with the construction of my machine but now, hopefully I will have a little more time to devote to it. unfortunately the "SA 750" is not approved by our Department of Transport for construction in Australia and it is for this reason that I am writing to request your assistance. I have enclosed a copy of a page from our Sport Aircraft Association magazine which outlines the procedure we have to follow to get approval. I hope you can be of assistance to me on this matter and look forward to hearing from you.

Yours Faithfully,
J.T. Gumley

from the

FEDERAL TECHNICAL DIRECTOR
W.J. WATKINS
39 GRANDVIEW RD.
BOX HILL 3128
MELBOURNE VIC.
AUSTRALIA

One of my direct responsibilites as FTD is to obtain Department of Transport acceptance for amateur-built category types which satisfy the airworthiness standards specified in their Air Navigation Orders 101.28.

Australian amateurs may only construct aircraft which have been approved by DoT as satisfying ANO 101.28 standards. As I continually receive enquiries from many new members concerning acceptable types, and the reasons why acceptance frequently takes so long, I thought the following information would be of value to them and to our overseas colleagues who generously assist me with DoT approval processes.

The main objective of DoT is to ensure that the types of amateur-built in Australia have established an acceptable airworthiness quality in regard to structural sufficiency and handling characteristics. This does not imply that such types satisfy the normal Type Certified Airworthness Standards, hence the special classification of Amateur-Built Category with the associated limitations and placards.

The two main methods for Department of Transport acceptance are ;

(1) The provision of a rudimentary but adequate structural analysis, plus factual evidence that the prototype has completed about 100 safe flying hours (This is the simplest method, and enabled us to achieve Dot approval status for the Vp-1 in the record time of 16 weeks during 1971).

OR

(2) Factual evidence of a satisfactory operational history of five to seven examples of the type, each of which have completed 100 flight hours (This is our usual method).

A major problem with the second method is that while many aviation magazines publish "pretty pictures" of many new, exciting, overseas amateur-built ("Experimental") types, it takes a year or more for the prototype to achieve 100 hours, and a further three to five years before several other examples achieve a similar service history. This is where our greatest delays occur.

As an Association, we have established a high standard of integrity with DoT at the technical level, and generally receive excellent co-operation from overseas designers and vendors of plans. (Note too that the Australian market for plans and parts is relatively small - probably only 1% of the USA sales - hence perhaps some reluctance at times for them to readily assist us with our more elaborate DoT imposed approval of type system.)

DoT also requires a most recent set of designer-approved plans for their master files, to aid their surveyors in inspecting construction progress against the designer's reguirements. (Incidently, the SAAA expects that builders only purchase new sets of plans if they are to construct an aircraft. This ensures that they obtain the most recent issues, and the usual two years of advisory service from the designer. Also, from an ethical point of view, the designer deserves his small royalty if you build his design.) However, the plans are the last item required for DoT approval...until the airworthiness quality is established, the plans have no significance in gaining approval.

DoT considers it best for all concerned that the Approval of Type procedure for overseas types be processed directly through me as the Federal Technical Director of the Association. We have developed a satisfactory procedure, and a system of proformas acceptable to the Department.

We have had some complaints from overseas designers that they often provide support data to our members, expecting them to carry out the approval process. Our advice to all designers and vendorsof plans is to work direct with me if they require DoT Amateur-Built Category Approval.

The SAAA advises that members only build types already approved. However, they may build other overseas types at their own risk. I suggest they seek my advise first before purchasing plans and materials. If the type has a good potential for approval it will be added to my list for approval action...but I expect the builders's co-operation. I would want a new brochure, an indication that he desires to build the type and his assistance in following up progress of overseas operational examples.

If you plan to build a type not approved, but which I indicate has a good chance to achieve approval status, advise your DoT Regional Office, but donot rush ahead with construction or the purchase of expensive materials.

Please do not deviate from the standard plans without the formal written approval of the designer, which is to be recorded with DoT, or obtain qualified aeronautical engineering justification for any structural changes or deviations.

CORRECTIONS

1. The words types under consideration by DoT should read simply Types Under Consideration. DoT do not get into the act until I am able to submit my complete Airworthiness Reoprt--and this is dependent on obtaining all required data as outlined.

PROPOSAL -- EXPERIMENTAL CLASSIFICATION

From time to time Regional Technical Directors and members suggest consideration be studied for an Experimental Classification for Austrlian Amateur-Built, Vintage/Antiqu/Classic/Warbird/Historical, Rotorcraft, Sport Aerobatic and Ultralight aircraft...much the same as in the USA, but with some agreed variations.

The philosophy behind this suggestion is that such types be accepted with lesser formalities than required at present time, and operated under certain acceptable constraints and area restictions.

DoT does have ANO 101.31 Developmental Category,but this seems only to be applicable to some first flights of a first type. The proposed Experimental Classification would provide for acceptance of type, if the type has already been approved by a recognised responsible authority in the UK, NZ, Canada or USA, and accepted by the SAAA National Airworthiness Athority. When a particular local example of the types has logged 80 or more flight hours, its Experimental classifiaction may be reviewed.

The identification of such aircraft as Experimental would indicate to the builder/owner/operator and public, that the particular aircraft is subject to possible reservations concerning normal airworthiness quality and standards.

An alternative philosophy is that all kinds of aircraft "the construction or reconstruction of which is carried out for recreational and/or educational purposes" should come under some uniform special classification, and their operations limited to less than 60 hours per annum, and restricted to specific areas or corridors, with variations for attendance at fly-ins, air shows and exhibitions.

Such proposals could be administrated by the Association's developed Technical Organization. Member's comments would be of value at this time.

GENERAL AVIATION STUDY

This GA study which was commisioned in 1979 was released to the public and industry earlier this year. It created considerable reaction within the GA industry, with the result that many of its inappropriate proposals will not be implemented. Incidently, in spite of the severe criticism of this study, it does contain many useful reference statistics of GA operations.

Our own submissions were prefaced with our long held philosophy that our kind of aviation is considerably different to GA (Commercial) and we suggested a new identifacation was neccesary to differentiateGA (Commercial) from GA (Recreational). We also emphasized the urgent need for Departmental officers to make exclusive, direct on-the-spot studies of the rules and conditions applicable to our kind of aviation overseas particularly in the USA. In the past the Dept. has only made such studies by general reference discussions, without giving the matter direct specialist attention. We consider the cost involved with such an inquiry would benefit all concerned, and eventually reduce Dept. involement cost.

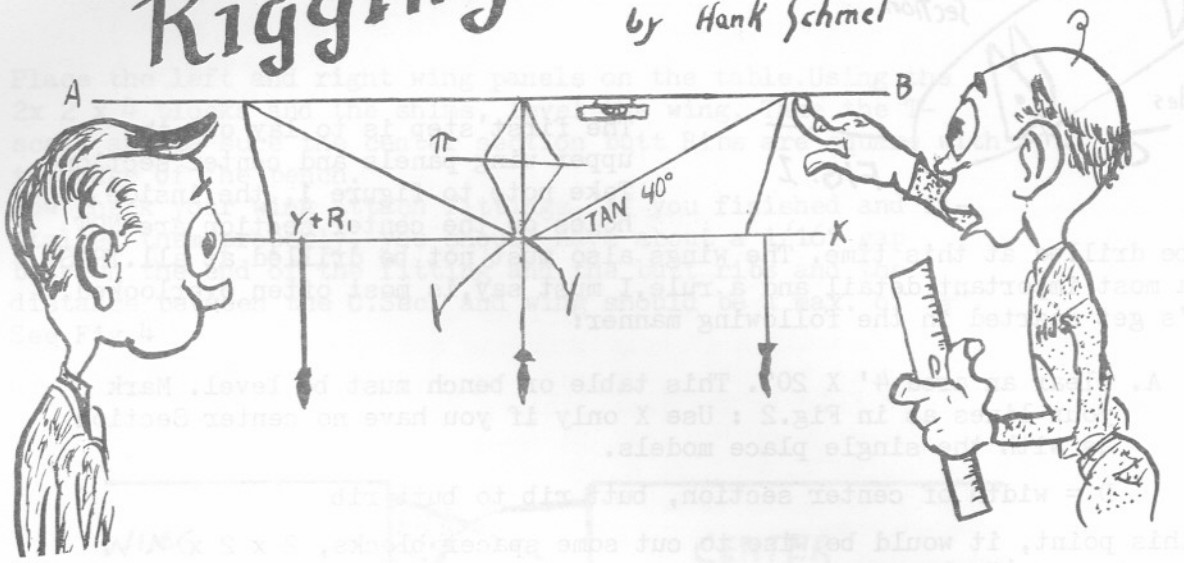
Our request for administrative support funding is also intented to provide a more cost effective process, and allow us to self administer our activities. We believe a taxpayer's dollar alocated to us would provide a greater measure of overall value within certain technical administrative areas, than if used by the Dept. with its high overheads. We intend to pursue this theme further-- but it needs enthusiastic support of qualified and experienced members, willing to provide a service to our enthusiasts. (Refer to the Gliding Federation system).

Stolp Starduster Corp.
4301 Twining
Riverside, Ca. 92509

Anyone willing to offer their assistance regarding this matter, your co-operation will be greatly appreciated. Please forward the required information necessary for DoT acceptance, as outlined in the above article, to Bill Clouse of Starduster Corp. Thank You.

Rigging

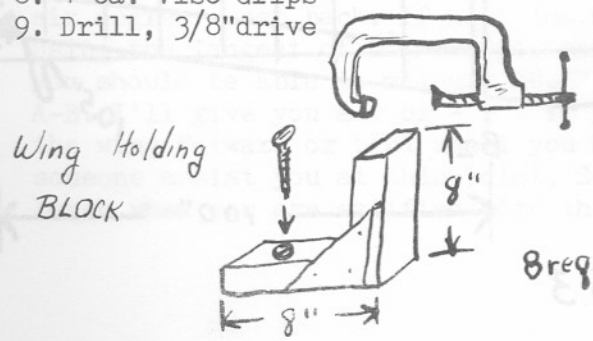
by Hank Schmel



The plane I will refer to in this article is the Acroduster II. The same basic principals can be applied to any bi-plane.

Rigging an airplane is by no means a difficult task, provided that the proper building procedures and attention to details, were followed. Bear in mind, that I had the best teacher available in the plane building business, good ol Jim Appleby of Antique Aero. He would tell you that good rigging starts with the first spar laid on the wing building table. Since proper rigging is dependent upon proper hole drilling, I will be very detailed in Part 1. I must assume that you have a basic airframe, complete with uncovered tail feathers, an uncovered center section and four each uncovered wing panels. Along with these parts you will need the following items:

1. Table or flat, level area 4'X20'
2. Carpenters snap line & marking pen
3. Level - longer the better
4. T- square
5. 4 ea. plumb bobs
6. Tape measure
7. 8 ea. C-clamps
8. 4 ea. Vise Grips
9. Drill, 3/8"drive
10. $\frac{1}{4}$" drill bit: 9/32 bit
11. 5/16" reamer
12. open end wrench set:3/8 soc set
13. 1" masking tape
14. Hammer
15. 5/16 drive bolts
16. Hardware; Clevis pins nuts, bolts, etc.
17. "I" struts and Flying Wires
18. One set of horses and a good friend.
19. Anything I left out.



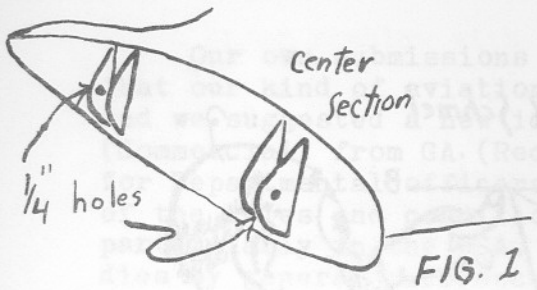


FIG. 1

The first step is to lay out the upper wing panels and center section. Take note to figure 1, the inside holes on the center section are NOT to be drilled at this time. The wings also must not be drilled at all.THIS is a most important detail and a rule,I must say,is most often overlooked. let's get started in the following manner:

A. Clear an area 4' X 20'. This table or bench must be level. Mark your lines as in Fig.2 : Use X only if you have no center Section as with the single place models.

D = width of center section, butt rib to butt rib

At this point, it would be wise to cut some spacer blocks, 2 x 2 x 4. Also cut some $\frac{1}{4}$" ply sqs.

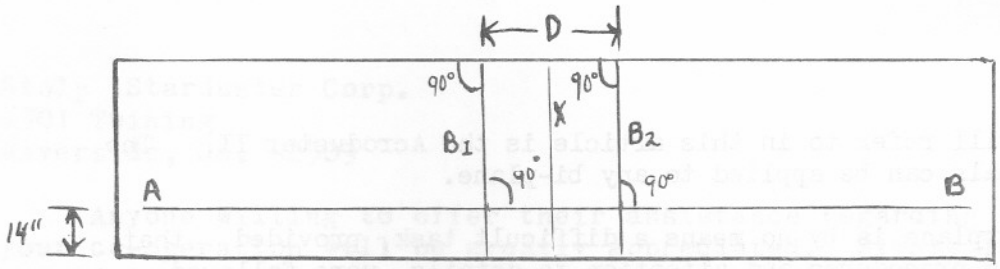


FIG. 2

B. Place the center section on the table with the butt ribs lined up on B_1 and B_2 and the front spar behind line AB as in FIG.3.

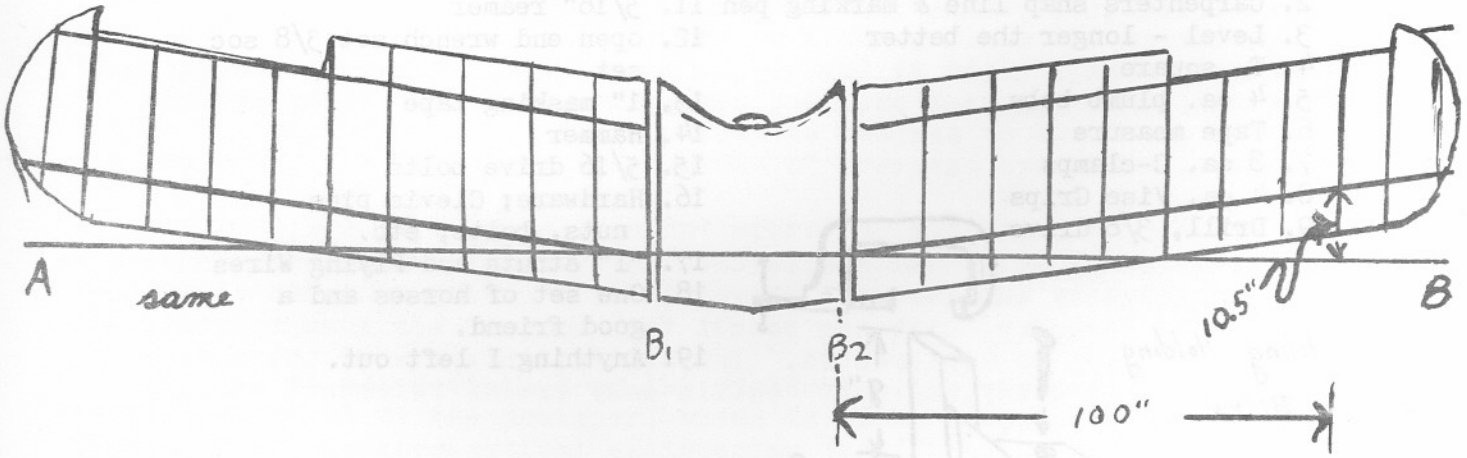
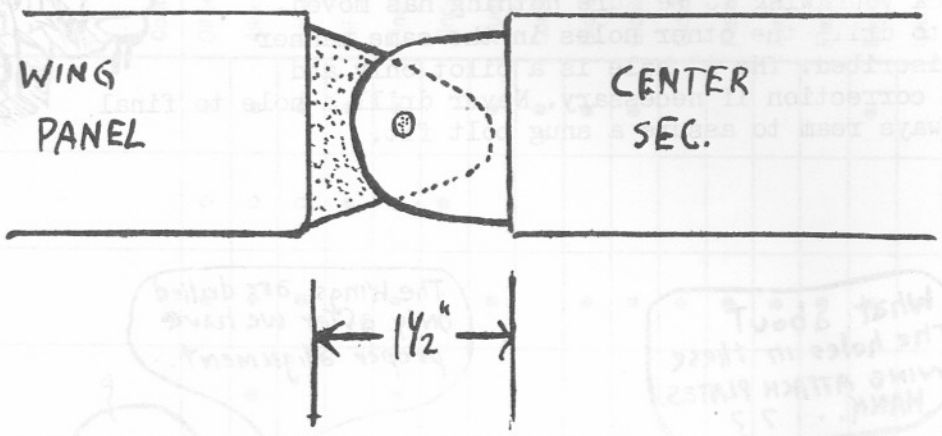


FIG.3

C. Place the left and right wing panels on the table. Using the 2x 2 x 4 blocks and the shims, level the wing. Take the T-scale and be sure the center section butt Ribs are square with the edge of the bench.
Now check your wing attach fittings, if you finished and installed them properly, you should have about a 1/16" gap between the end of the fitting and the butt ribs and the distance between the C.Sec. and wing should be a max. of $1\frac{1}{2}$". See Fig.4

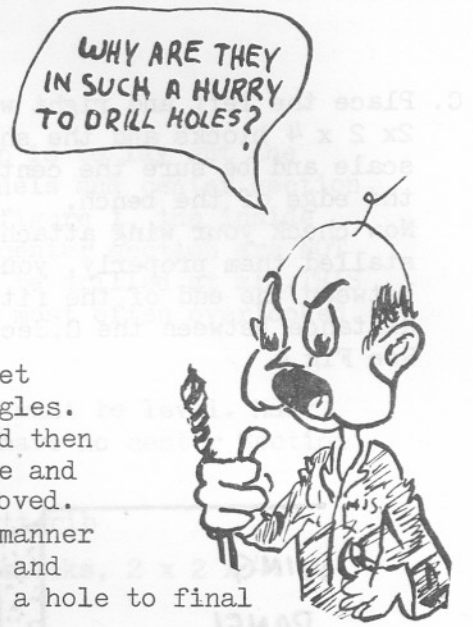


Remember, maintain a $1\frac{1}{2}$" gap on both sides of the center section.

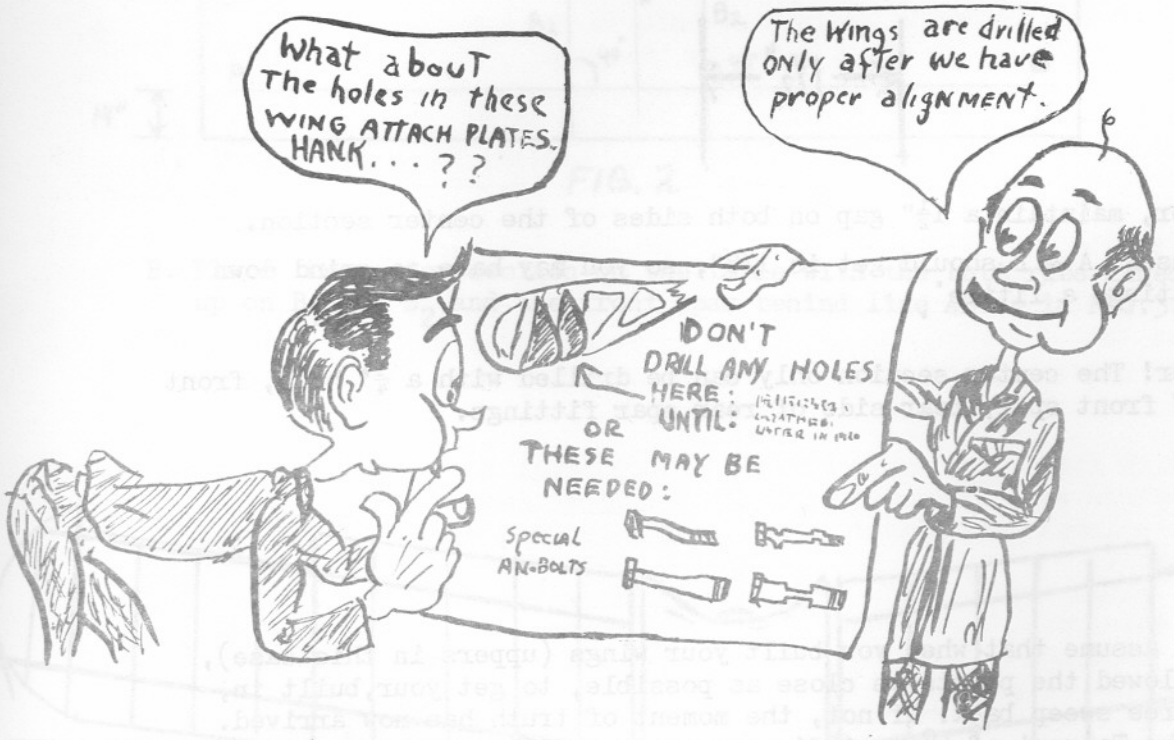
The closest A & B should get is 1/8", so you may have to grind down the fittings a little.

Reminder! The center section only can be drilled with a $\frac{1}{4}$" hole, front side of front spar, rear side of rear spar fittings.

D. We must assume that when you built your wings (uppers in this case), you followed the prints as close as possible, to get your, built in, six degree sweep back. If not, the moment of truth has now arrived. Using the Tangent of 6° = .1051, measure out 100". At that point you should be able to measure 10.5" from the front spar to line A-B. I'll give you a + or - $\frac{1}{4}$". If you have it, fine, If not, move the wing forward or back until you have it. It's a good idea to have someone assist you at this point. Secure your wing panels to the bench when you are satified with the angle.



E. Now you can drill your first holes.... NO ! not yet. Let"s check the leading and trailing edges. They should line up pretty good if you did your buiing right. If they don't line up ...fix it ! Now... drill a $\frac{1}{4}$" hole thru one set of fittings. Be sure to guide straight, no angles. Now drill a 9/32" hole in the same fitting and then ream to 5/16". Place a pin or bolt in the hole and then check your wing to be sure nothing has moved. Proceed to drill the other holes in the same manner I just discribed. THe $\frac{1}{4}$" hole is a pilot only and allows a correction if necessary. Never drill a hole to final size, always ream to assure a snug bolt fit.



This is the end of part 1. We will finish off the job in the July issue.

Thank you Hank

Here are a couple of helpful charts taken from TIME-LIFE books.

CHEMICAL MATCH- PAINT OVER PAINT = re: TIME-LIFE
WORKING WITH PLASTICS pg.118

PROTECTIVE PRIMERS FOR METALS = re: TIME-LIFE
WORKING WITH METAL pg. 128

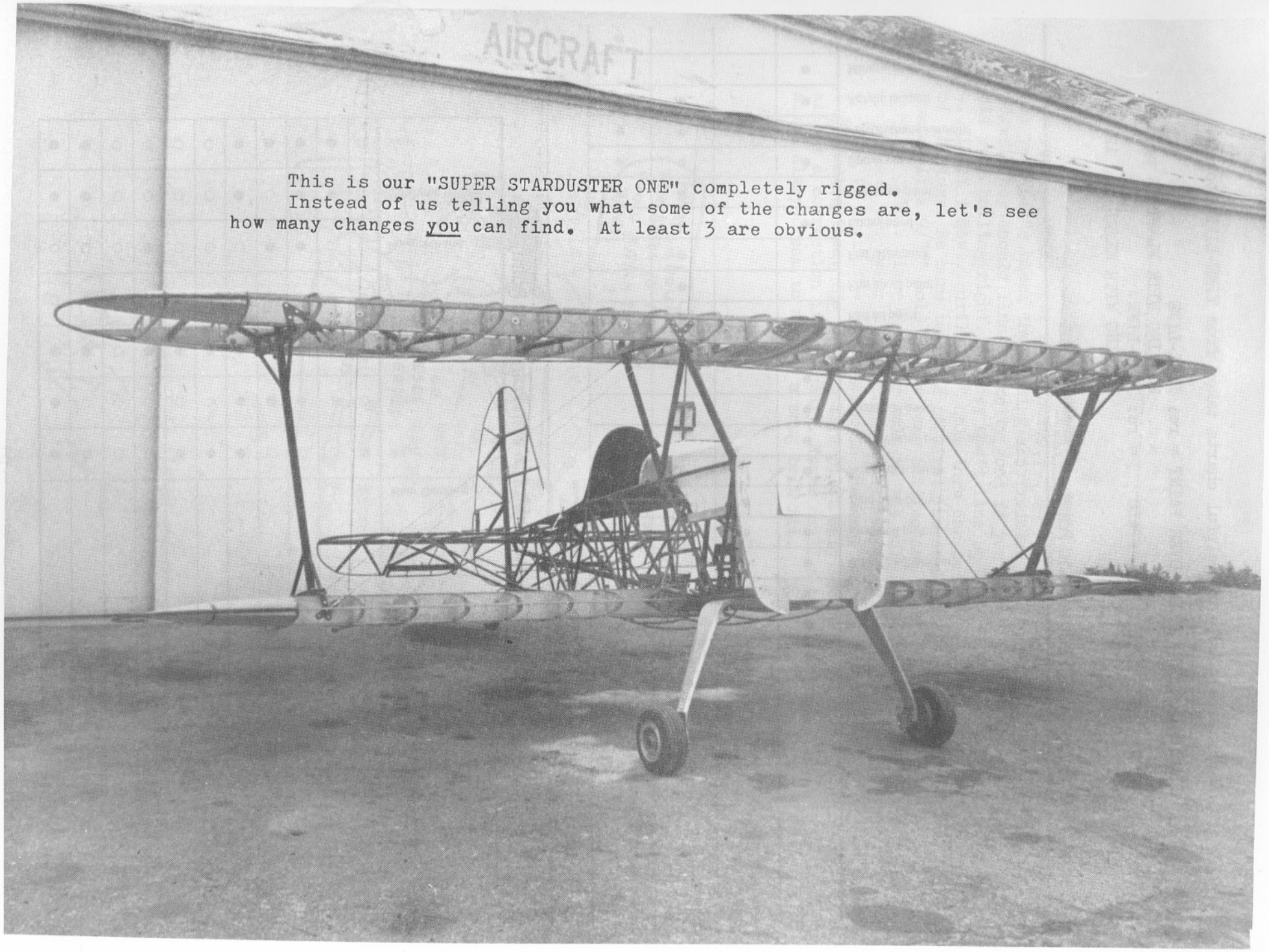
Protecting the Surface with Primer and Paint

Metal / Coating	Oil primer	Alkyd primer	Latex primer	Oil-cement primer	Zinc-rich primer	Zinc-dust primer	Aluminum paint	Combination primer/paint	Glossy oil paint	Glossy alkyd paint	Glossy latex paint	Flat oil paint	Flat alkyd paint	Flat latex paint	Epoxy paint	Urethane paint	Epoxy varnish	Polyurethane varnish	Acrylic lacquer	Mineral or linseed oil	Acrylic or paste wax
Iron or steel	●	●	●	●	●		●	●	●	●					●		●		●	●	
Galvanized metal	○	○	○	●	●	●															
Aluminum	●	●	●		●		●		●	●	●	●	●	●	●	●	●	●	●		
Copper, bronze or brass		●			●											●	●	●	●		●

● Denotes compatible coating for metal specified.
○ Use a type formulated for galvanized metal.

Making a Chemical Match with Paint over Paint

Existing surface / New Coating	Alkyd	Epoxy	Latex	Phenolic	Polyurethane	Synthetic rubber	Vinyl
Alkyd	●	○	●	●	○	○	○
Bituminous (roof coating)	○	○	●	○	○	●	●
Cement paint	○	●	●	○	●	●	●
Epoxy	○	●	○	○	●	○	●
Latex	●	●	●	○	○	●	●
Oil	●	○	●	●	○	○	○
Phenolic	●	○	●	●	○	○	○
Polyurethane	○	○	●	○	●	○	○
Silicone	○	○	○	○	○	○	○
Synthetic rubber	●	○	●	●	○	●	●
Vinyl	●	●	●	○	○	●	●



This is our "SUPER STARDUSTER ONE" completely rigged.
Instead of us telling you what some of the changes are, let's see how many changes you can find. At least 3 are obvious.

BUILDING THE STARDUSTER TOO "X" WING

Oscar Bayer, Arroyo Grande, CA

Back in early 1979 after agonizing over just which Biplane to build, I settled on the Starduster Too - I wanted two seats, open cockpit (Scratch the Christian Eagle), good looks, proven design, and a nearby supplier (Scratch Skybolt). A visit to FLABOB Arpt. with check book in hand soon had me in possession of a wing materials kit, but not the familiar flat bottom airfoil seen on Stardusters at any Fly-in. It seems that Jim Osborne had recently, (in 1979) added a 23012 (X) airfoil wing option for the "TOO" and lucky me I could have that wing if it wanted it (I wanted it!). Similar in design to the Acroduster wing, the "X" wing never-the-less has the same basic dimensions as the standard wing, with claimed improved performance both upright and inverted.

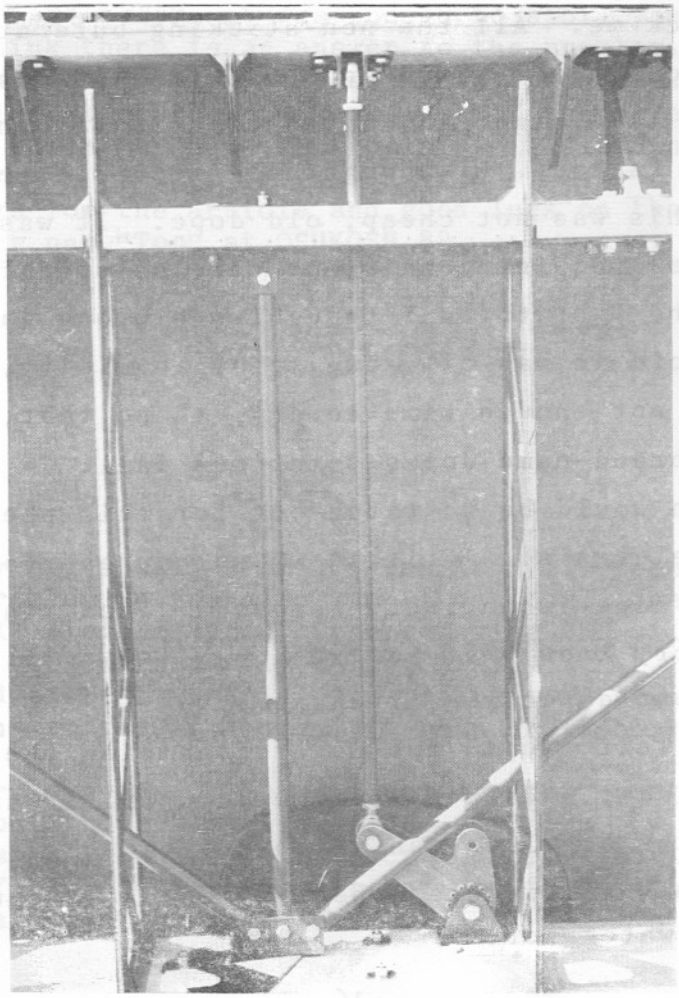
Fortunately for me, "Starduster Magazine" began a series of two articles on "How to build a Wooden Wing" in the January 1979 issue. I had never built an airplane bigger than a balsa wood "Miss Tiny", so the information in the articles was invaluable to me. Unfortunately for me, there are no printed plans for the "X" wing, so I was in the position of using the original wing plans for the TOO and the Acroduster wing plans. Heres where being close to the supplier came in, I was able to visit the Starduster Corp. on several occasions to look, take pictures, ask questions, etc. as construction progressed. I followed the procedures in the magazine articles pretty closely, making most of the metal fittings first and then proceeded to build the top wing center section. The use of both sets of plans worked OK so I next built the two top outboard panels. Again no big problems occured since about the only major change was in the airfoil shape, and only a few small metal parts had to be remade to fit the "X" airfoil.

The lower wings however, provided a number of challenges. First of all, I found that the aileron drive was to be in accordance with the Acroduster plans, but modified to fit the Starduster dimensions. This required new spar-to-fuselage fittings to lower the wing on the fuselage, new aileron bell cranks, new aileron hinges (all which I had cleverly constructed way back when), and new aileron drive and slave strut fittings.

The attachment procedure for the ailerons became a trial fit, measure, and refit before drilling exercise, since I had no measurements to go by. I also had to add spar plates to the top and bottom of the rear spar to provide additional "beefing up" since the aileron push rod goes through the spar, rather than under it as on the original wing. Other changes included modifying the tie-down fitting to the new airfoil and moving them outboard to accomi-date the aileron bell cranks on the front spar.

Since Starduster Corporation does not sell this wing in kit form anylonger (only as completed, ready for cover units) I haven't tried to provide too much detail in this narrative. My main purpose is to show that a rank amateur can build an airplane if he is not afraid to take his time and to ask questions. The Starduster people, each and every one, my local EAA Designee, and other builders all provided help and encouragement.

I hope that in the near future I will be able to provide Bill Clouse and his people with complete test results of the "X" wing on Starduster Too N490B.



Dear Bill and Friends,

As I near completion of my Starduster Too I ran into a problem which I thought I might share with you. During the covering of the wings (dacron, nitrate, buterate) the buterate began to crack and separate from the nitrated surface. This usually occurred where the tapes met the fabric. Some of the cracks were small, others quite large. If more dope were used to fill in the cracks, the crack would just get bigger.

Finally I just got mad at one point and pulled one of these cracks-and the entire dope film lifted from the wing like a large sheet of plastic! I decided to recover the entire wing thinking somehow some oil, spray, or something had gotten into the dacron. A lot of work down the tubes!

The next wing I made sure there was a lot of nitrate. Then buterate. Same thing! It came off in sheets, Calls to the factory and everyone I could think of resolved nothing.

Then it struck me. All the non-sticking buterate came from one batch. So I tried another brand of dope. The results were like night and day. Beautiful! The dope was bad from the factory. I thought the mechanic (me) was hopeless. This was not cheap, old dope. It was brand new, unopened cans. Doping conditions were as specified. Absolutely the last thing I thought was wrong was the dope. I had been told it was oil, bug spray, humidity, applied too heavily, not enough time to dry, this, that, etc.

Moral--even brand name dopes sometimes fail.

My suggestion would be to watch out for this phenomena on a per panel basis. If it shows up you can go no further untilthe bad dope is entirely removed. Then its time to let the factory know what you've got. They will usually replace the bad dope free of charge.

In my case I felt stupid for not recognizing the problem earlier. In fact I didn't realize it until I was emptying the last of the 5 gallon can which was bad.

I hope this may allow some other builder a little foresight into what to watch for.

I hope to see you all in Oskosh in August. I'm trying desperately to get my Too finished in time. 99% done, 99% more to go.

Best wishes,

Charlie Largay

Charlie Largay
Miami Fl

This can be the most frustrating, time consuming part, of finishing your aircraft. After years of work and many dollars to end up with a problem like that.

The same thing happened here one time, but it was color dope that did not stick to the silver. When the masking tape was pulled off after shooting the second color, it was enough to spoil your day.

I don't think there is an answer to the problem. We maintain no more than a monthly inventory to keep fresh products.

Charlie did not state the brand name of the dope or lot number, if there was one, which may have been helpful in clearing the shelves of the bad stuff.

Much thanks for the article and good luck on the last 99%. Hope to see you and your new "Too" at OSHKOSH 82.

Bill

BUILDER BEWARE

I recently had a call from Joe Hamilton of Greensboro, S.C. to advise me of a problem he found on his Starduster. Joe is modifying his wings to the "X" Airfoil type. Upon removing the aileron bay fillet they found the ribs were mostly rotted away.

Most Stardusters have this area pretty well sealed up, but if moisture happens to get in there (via rain or washing) it has no place to go.

Joe's spars are fine. But we know that rot progresses and in time the AFT spar would have been affected.

So I advise all owners to inspect and drill small holes in the bottom of the fillet to let any air out and to let the air circulate.

Thanks again for the call Joe.

INSTALLATION INSTRUCTIONS
FOR
FIBERGLASS TURTLE DECK MOUNTED
COMMUNICATIONS ANTENNAS

1. INSTRUCTIONS

1.1 GENERAL. These antennas have been designed by Bob Archer of Torrance california utilizing concepts common to military aircraft and space vehicles. The antenna performance is superior to most in use today in private aircraft. The only requirement for maximum performance is that the antennas must be installed in accordance with the installation instructions contained herein. The turtle decks into which these antennas are installed must be built of dielectric (plastic) material and must be large enough to contain the antenna.

1.2 INSTALLATION. If at any time there is a conflict in the technique of installation this document shall take priority, unless the conflict is of a mechanical nature. If the latter is true, the installation mechanic shall make the decision. Follow the rules contained herein for electrical information and for any mechanical techniques, an aircraft mechanic should be consulted.

2. ANTENNA DESCRIPTION

2.1 GENERAL. The turtle deck communications antenna is designed for reception of vertically polarized energy in the range of frequencies of 118 to 136 MHz. The antenna is constructed of .020" thick aluminum sheet together with appropriate pieces for impedance matching and cable connections. The voltage standing wave ratio (V.S.W.R.) is less than 1.5:1 over the frequency range of 118 to 136 MHz. There may be variations in V.S.W.R. due to installation variations. If two radios are being installed one antenna may be installed and connected to the two radios through a coaxial switch.

3. INSTALLATION INSTRUCTIONS

3.1 Before beginning installation it must be decided how the antenna is to be grounded. It is recommended that small tabs be welded to the top side of the top left longeron just to the rear of the cross tube at the rear of the baggage compartment.(See Drawing).These tabs should be at least three in number and be spaced evenly along the the bottom of the grounding strip on the antenna.It also would be permissible to use clamps to attach the antenna ground strip to the steel tube of the fuselage but it must be emphasized that the antenna must be very well grounded along the bottom. Also carefully read the instructions and study the installation drawing to be sure the entire installation is well understood.

3.1 COAXIAL CABLE. A length of coaxial cable is required for the flush mounted antenna in the fiberglass turtle deck. The coaxial cable is not supplied. It is recommended the RG-58 C/U (50 ohm coaxial cable) be used for the antennas. This cable has a stranded center conductor which contributes to a longer life. Any other coaxial cable which has the same electrical charachteristics (or better) and physical properties may be used. RG-58 C/U cable is approximately 0.25 inches in diameter. A compatible connector for the radio end of the cable is also required. A check at the local electronic supply house should reveal all necessary information.

3.2 CABLE INSTALLATION. Run sufficient cable through the fuselage to reach from the radio equipment to the antenna with enough excess cable at the antenna to facilitate connecting the cable to the antenna. (Check installation drawing). Secure the cable to minimize cable movement to complete the cable installation.

3.3 INSTALLING ANTENNA IN FAIRING. Prior to mounting antenna in the fairing be sure the fairing is trimmed and ready to install. Drill appropriate size holes in the tabs welded to upper logerons and match drill holes in ground strip of antenna. Install antenna on tabs on longeron letting the antenna flex inward toward center of the fuselage. Install the fairing on the fuselage temporarily but with enough fasteners to accurately position the fairing. At this time the the upper part of the antenna may be fastened permanently to the inside surface of the fairing by rivets, screws or it could be bonded in with strips of fiber glass. This may be accomplished in place or the fairing with the antenna fastened securely to the inside may be removed for permanent antenna installation.

3.4 CONNECTION OF CABLE TO ANTENNA. With the antenna permanently installed in the fairing and the fairing permanently installed on the fuselage the cable may be connected to the antenna.

1. With the cable cut to the desired length remove 1.25" of outer insulation from the coaxial cable. Be careful when cutting the insulation not to cut the braid underneath.

2. Comb out the coaxial cable metal braid and then twist into a wire for insertion into the provided lug. Trim braid wire to 0.75".

3. Strip 0.25" of insulation from the coaxial cable center conductor.

4. Remove large wire terminal from the ground side of the antenna connections and install the lug on the twisted braid by using a standard crimping tool.

5. Remove the small wire terminal from the antenna and install the lug on the center conductor of the coaxial cable by using the crimping tool.

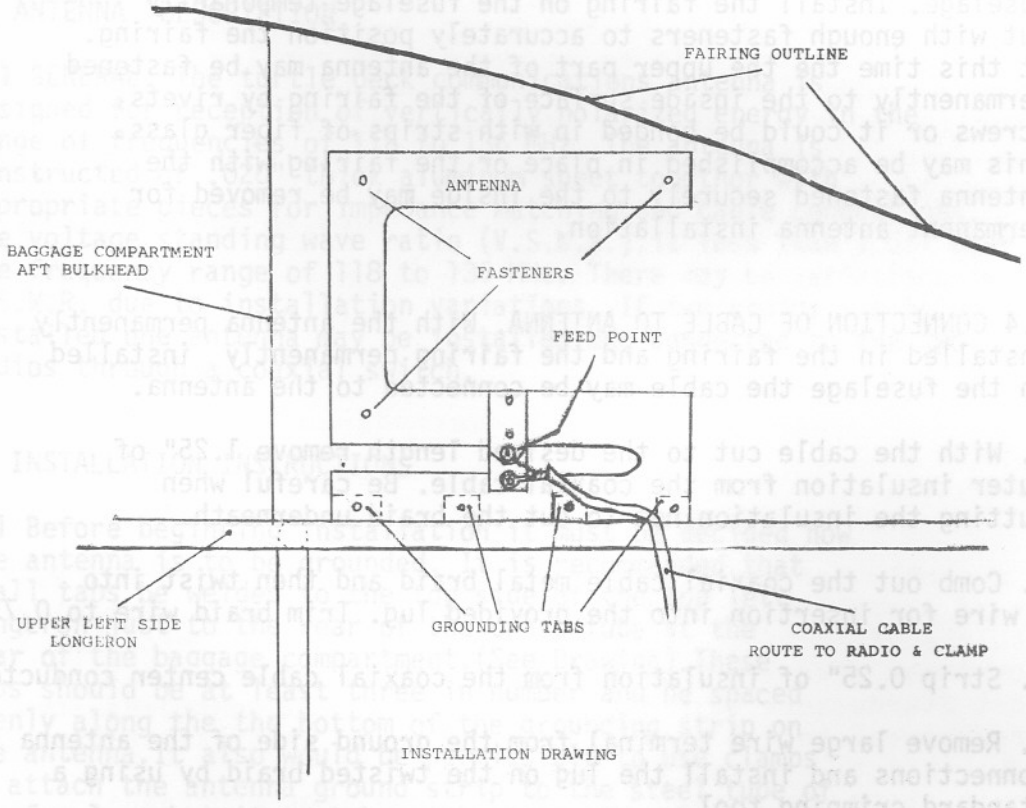
6. Replace the terminal lugs on their respective terminalson the antenna and tighten the nuts on the lugs. Make sure the lug on the braid side of the coaxial cable goes to the ground side of the antenna.

3.5 FINAL COMMENTS.

1. Large mettalic items located in the baggage compartment would cause some degradation of antenna performance.

2. If two transmitters are required it is reccomended that a coaxial switch be installed to switch the two transmitters to the antenna.

3. Try to keep the bends in the RG58/U cable installation at 2.5 inches or greater.



INSTALLATION DRAWING

I want to be a pilot

I want to be a pilot when I grow up because it's fun and easy to do. Pilots don't need much school, they just have to learn numbers so they can read instruments. I guess they should be able to read maps so they can find their way if they get lost. Pilots should be brave so they won't get scared if it's foggy and they can't see or if a wing or motor falls off they should stay calm so they'll know what to do. Pilots have to have good eyes so they can see through clouds and they can't be afraid of lightning or thunder because they are closer to them than we are. The salary pilots make is another thing I like. They make more money than they can spend. This is because most people think airplane flying is dangerous except pilots don't because they know how easy it is. There isn't much I don't like, except girls like pilots and all the stewardesses want to marry them so they always have to chase them away so they won't bother them. I hope I don't get airsick because if I do I couldn't be a pilot and would have to go to work.

A fifth grader

TSGT Leo Williams
PSC Box 3823
Altus A.F.B., OK. 73523

April 13,1982

Dear Bill, Tony, Norm, Hank, Sumiko, & Hanako & Frank,

How is everybody? I hope this finds everybody in good health and happy.

I'm here at the basic flight engineer's school at Altus Air Force Base, Oklahoma. I must say this course is certainly a challenge! I took my first test today on engines, hydraulics, fuel systems, and environmental systems - I got 86% - which is passing, but I could have done better. Suppose I'll have to apply myself a little more.

Next week we'll be studying math (square root, ratio & proportion, begining grafts.) Now is when it starts getting interesting.

Sure is strange to find myself suddenly back on active duty! But luckily the town here is full of freindly people and 2 race tracks! I'm doing some interior aluminum work on one of the local late model open competition cars in my spare time. The season opener is this coming Saturday night and the car I'm working on is the local defending champion - needless to say it is imperitive that we're ready in time!

I tried to locate some local homebuilders, only they apparently don't exist. But I'm still looking.

If I don'tfail any blocks I'll be home around June 4th. But I have to be back on June 19 for the second part of school, which is the aircraft (C141) systems - also some flying involved there.

I'm going to be bringing the family back with me to spend the summer (girls should love it!) so it won't be so damned lonely! I should be done with all schools by September. Then I go back to being you basic civilian.

I sure do miss you all there at Starduster and am really looking forward to resuming a somewhat normal civilian life. Although my life will probably never be "normal" like it was, what with being a flight engineer and all.

Anyway, I just wanted to say "Hi" and sort of let everybody know what's happening.

You all take good care of yourselves and I'll see you in June (God willing).

I would certainly wellcome any correspondence!

your faithfull friend,
Leo

Lowell Slatter
Rt 2
Filer Idaho 83328

Dear Bill,

Enclosed is a picture of Acroduster Too N300AD just before first flight April 26, 1982. The two girls are Emmeli and Rachel, age 3 and 2. They enjoyed the first flight almost as much as I did.

The project was started in February 1976 and that summer a flood got all my wing work and the fuselage box. In December 1977 after rebuilding my dads J-3, also in the flood, I started over salvaging the rudder and horizontal tail.

Its a little hard to see in this picture, but a two place canopy was installed and is operated some what like an Eagle. It also has only one instrument panel which has worked fine.

I need to install wing fairings and then I will be able to give some performance figures and better pictures.

Lowell Slatter

Dear Lowell,

Very nice looking plane and girls are beautiful. Your perseverance paid off. I am looking forward to flying your Acroduster soon. Hope to see you at Oshkosh 82'. Happy landings.

Bill

P.S. We will renew your magazine subscription with this issue.

Dan Collier
957 Tantau Ave.
Cupertino, Ca. 95014

April 14, 1982

Dear Bill Clouse,

Enclosed is a money order for $100.00. It is the first part of the $172.52 which I owe you, as stated on my last bill. The remaining balance will be in the mail in exactly one week. The quadrants are beautiful. Thank you.

I would like to thank you again for the courtesy and consideration you showed to Brenda and me when we went down to see you last month. The mexican food was great (as you promised) and I learned some valueable pointers on covering and finishing an airplane, and enjoyed the conversation in general.

I will be mounting the control quads in about two weeks (if not sooner.) Please either try to get your hands on more 1/4" x 3/8" x .049 rectangular tubing, so I can make the quad to quad linkage, or please let me know what you can come up with as a substitute.

As Always,
Dan Collier

Dear Dan,

It was my pleasure entertaining you and Brenda and I enjoyed your company. Glad to have been able to help you with your project.

As of this momentthere is no 1/4" x .049 tubing available, but I will advise you when I find some. Installation drawings will be available in the near future using round tubing. Thank you for your letter.

Bill

During the past few months we had the privilege of having with us some proud Acro. and Starduster owners and builders. Visiting from as far away as Iceland, was Gardar Gislason who is building a SA 750.

Others that visited us were John Sterling of Virginia who flies a SA 300. Jim Stevens from West Babylon, New York brought a freind, Ken Wile. They are flying a SA 750. Gene Hudkins from Florida is in the process of building his Starduster.

Jim Stevens' Acroduster was in a previous magazine showing his double canopy.

Many eyebrows are going to raise when Genes' Starduster makes its debut.

F.J. BURKHARDT
255 TAM O SHANTER
MONUMENT, COLO. 80132

Hi Bill,

I would like to register my first complaint since to date it has been perfect the way I order and your firm delivers.

I order sheet # (?) and when it comes U.P.S. I could inventory the items, especially those in brown bags and the AN #'s on the bag. My last order was in part by correspondence and part through you by phone. With you I ordered the I Strut (#37) and Wing Final assy. (#42).

Two weeks ago I recieved a U.P.S. shipment #12 lbs. on invoice #34963, indicating some 27 items of which I got half. This included a few bolts to big to use on the A/C. The AN bolts and hardware were not in brown bags with AN #'s on them, they were in plastic bags with no numbers. This system will not work for a home builder, brown bags and numbers is the only way. Your invoice indicates I got 8 each AN5 -21A bolts to be used in part to connect upper wings to center section. These AN5-21A should be about 2 7/32" long. I assure you the longest AN5 sent me is 2" long.

I ordered a tail wheel and spring and it has not been delivered and the same applies for the I Strut.

There must be U.P.S. box missing since I got only half the items listed on the invoice #34963 dated 4-12-82.

I want to fly this airplane in early September and with your help this date is easy to make.

I'll send back each bolt and nut sent me not needed as suggested for a future credit.

Sincerely,
F.J. Pech Burkhardt

Dear F.J.

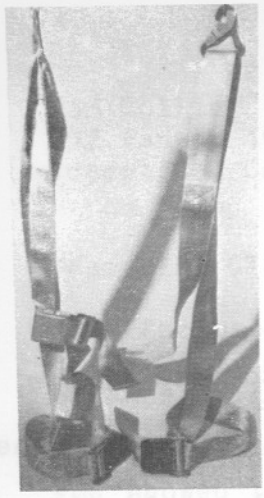
While I thought the plastic bags would be easier for us and all of us could see what the baggies held. I must concede that the brown bag with inventory on outside is much easier for you.

I am confused about the invoice showing more than you received. Make a list of what was missing and return what is not needed. We will "try harder" .

You should have your other items by now. Hope we can assist you in getting your bird in the air by Sept. '82.

Thank You for your comment,

Bill



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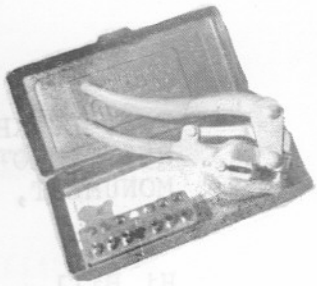

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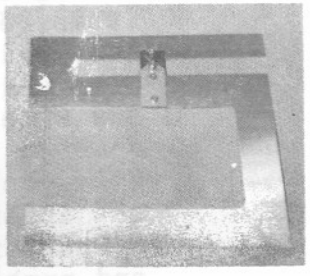

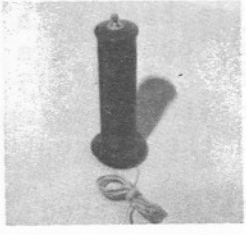

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