Stardust

Dedicated to the
ACTIVE Homebuilders

August 1982

AUGUST 1982

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

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WE WOULD LIKE TO THANK ALL OF THIS ISSUES CONTRIBUTORS AND RESPOND TO ONE AND ALL FOR SOME INTERESTING INFORMATION AND PHOTOS.

WE HAVE ENCLOSED TWO AGREEMENT FORMS IN THIS ISSUE WHICH THE PRESIDENT FEELS IS IMPORTANT TO UTILIZE WHEN APPLICABLE.

COVER PICTURE - SA300 STARDUSTER TOO OWNED BY JOHN A. CHENEY OF NO. BALTIMORE, OHIO. A REAL EYE CATCHER. MORE INFO. PG. 24

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

N.A.S.A.D.

(NATIONAL ASSOCIATION OF SPORT AIRCRAFT DESIGNERS)

AIRCRAFT BILL OF SALE

FOR EXPERIMENTAL-AMATEUR BUILT AIRCRAFT. THIS FORM SUPPLEMENTS & DOES NOT REPLACE FAA FORM AC8050-2. N NUMBER (IF ASSIGNED:) N_____
SERIAL NUMBER (OF BUILDER'S CHOICE:) _____ THIS AIRCRAFT IS A FACSIMILE OF AN AIRCRAFT KNOWN AS A: _____

This aircraft is not designed or built to meet any standards of airworthiness as with a certified aircraft. This aircraft does not have a FAA Form 317 Statement of Conformity on file, since there is no FAA approved data to conform to. This is an experimental aircraft and the registered owner is the experimentor. The aircraft was not built in a permanent jig and parts are not interchangeable with any other aircraft of the same facsimile. FAA records list the registered owner as the manufacturer of an experimental-amateur built aircraft. The registered owner is free to make any modifications or changes he so wishes. The aircraft is an example of the owners creative ability. The new owner of an experimental-amateur built aircraft becomes it's manufacturer, when it is registered to him. He becomes responsible for it's aerodynamic and structural concept. The new owner is responsible for the performance and fit for purpose of every part and piece on the aircraft. Warranty is not expressed or implied for any feature or part of this experimental-amateur built aircraft.

I this _____ day of _____ 19__, do hereby sell, grant, transfer, and deliver all rights, title, and interest in and to such aircraft unto:

PURCHASER

NAME: _____

ADDRESS: _____

_____

SIGNATURE: _____

SELLER

NAME OF SELLER: _____

ADDRESS: _____

_____

SIGNATURE: _____

This Bill of Sale must be signed by both parties. The seller keeps the original and gives the copy to the new owner. A photocopy of the original should be sent to FAA with the canceled registration (if registered.)

GUEST RECORD AND AGREEMENT

Aircraft Built by: _____ Model: _____ Registration No.: _____

This is to certify that the Experimental Aircraft identified above is sole property of the Owner whose signature appears below. It is further certified that the Owner hereby grants permission to the Guest signed below, and the Guest agrees, (for himself, his heirs, administrators and assigns) to operate this Aircraft in accordance with the following stipulations:

1. The Guest is aware of risks and potential dangers involved when flying Experimental aircraft and knows that this type of "amateur-built" aircraft does not, nor is it required to, comply with Federal Aviation Administration's safety standards for commercially sold aircraft, nor with any other standards.

2. The Guest agrees and understands that the builder of said Aircraft has the sole responsibility for its manufacture, design and workmanship. He also understands and agrees that no warranties, neither explicit nor implied, neither verbal nor written are given by the Builder, nor the Owner, nor by their suppliers, as to the performance expectations and safety of this Experimental equipment. The Guest acknowledges that he has read and agrees to comply to the letter with all instructions of the Owner as well as of those contained in the Manuals of Vendors' parts and components. The Guest states without reservation that he/she possesses the skills and knowledge necessary to operate said Aircraft, and that he/she is currently in compliance with all requirements of the FAA and will operate said Aircraft pursuant to all applicable instructions and flight rules governing said flight.

3. **FOR THE PRIVILEGES AND COURTESIES EXTENDED TO THE GUEST WHILE OPERATING, OR RIDING IN, OR BEING EXPOSED TO THE SUBJECT EXPERIMENTAL AIRCRAFT, THE GUEST AGREES TO ASSUME THE RISK AND TO HOLD (FOR HIMSELF, HIS HEIRS, ADMINISTRATORS AND ASSIGNS), THE OWNER, BUILDER, DESIGNER, MATERIALS OR PLAN SUPPLIERS, AND ANY OTHER THIRD PARTIES ASSOCIATED IN ANY WAY WITH THE CONSTRUCTION, DESIGN, APPROVAL, LICENSING AND/OR OPERATION OF SAID AIRCRAFT, ITS PLANS OR ANY PART THEREOF, HARMLESS FROM AND IDEMNIFY THEM AGAINST ANY AND ALL LIABILITIES, DEMANDS, CLAIMS, SUITS, LOSSES, DAMAGES, CAUSES OF ACTION, FINES OR JUDGMENTS, INCLUDING ALL COSTS OF LITIGATION, AND EXPENSES INCIDENT THERETO, CAUSED OR OCCASIONED BY OR ARISING FROM THEIR ACTS, NEGLIGENCE AND/OR OMISSION, OR FROM ANY OTHER CAUSE IN ANY INCIDENT RELATED CONSEQUENTIALLY OR INCONSEQUENTIALLY TO HIS USING OR BEING EXPOSED TO THIS AIRCRAFT.**

4. The Guest also agrees to replace, repair or adequately compensate the Owner and/or third parties for any equipment or materials which he may consume, wear out, lose, damage or destroy in the course of his using, acting upon and/or operating said Aircraft. He also agrees to use all reasonable care and precautions to prevent accidents, and to obey safety rules, regulations and instructions of the FAA, local officials and of local Airport management.

5. No one is authorized to modify or waive these conditions, and the Owner admits no liability by accepting this Release. The Guest shall carry one executed copy of this Release with him while operating the Aircraft, and the Owner shall file the second copy in his records.

6. The Owner further certifies that he grants this permission, and the Guest receives it, of their free will and accord, and no compensation in any form for it has been exchanged or promised between them. This permit is valid only for the date(s) shown below.

Additional Owner's Instructions: _____

_____

_____ _____ _____

Guest Date Owner

_____ _____

Guardian, if under legal age Guardian, if under legal age

I find it hard to believe that it is already July, and we are on our way to Oshkosh "82". We have been busy trying to let everyone know that "82" is STARDUSTER year, and we believe there will be more Stardusters and Acrodusters at Whitman than ever before.

Starduster Corp. is not bringing items for sale to Oshkosh. We will be prepared to socialize and inform everyone of new products and policies - and as usual, solve builders' problems.

Don't know what happened to our forum time block. Peter Chapman assured us time for Our Fly-By - how many days, we are not sure. We were denied our request for a hospitality tent, and I was personally very disappointed, having been previously assured that it would be ok - 'nuff said.

I am sure we are all going to have a great time, and it is always a pleasure to meet old friends and make new ones.

Take care, and have a safe trip to OSHKOSH "82".

Stolp Starduster Corp.

Bill Clouse

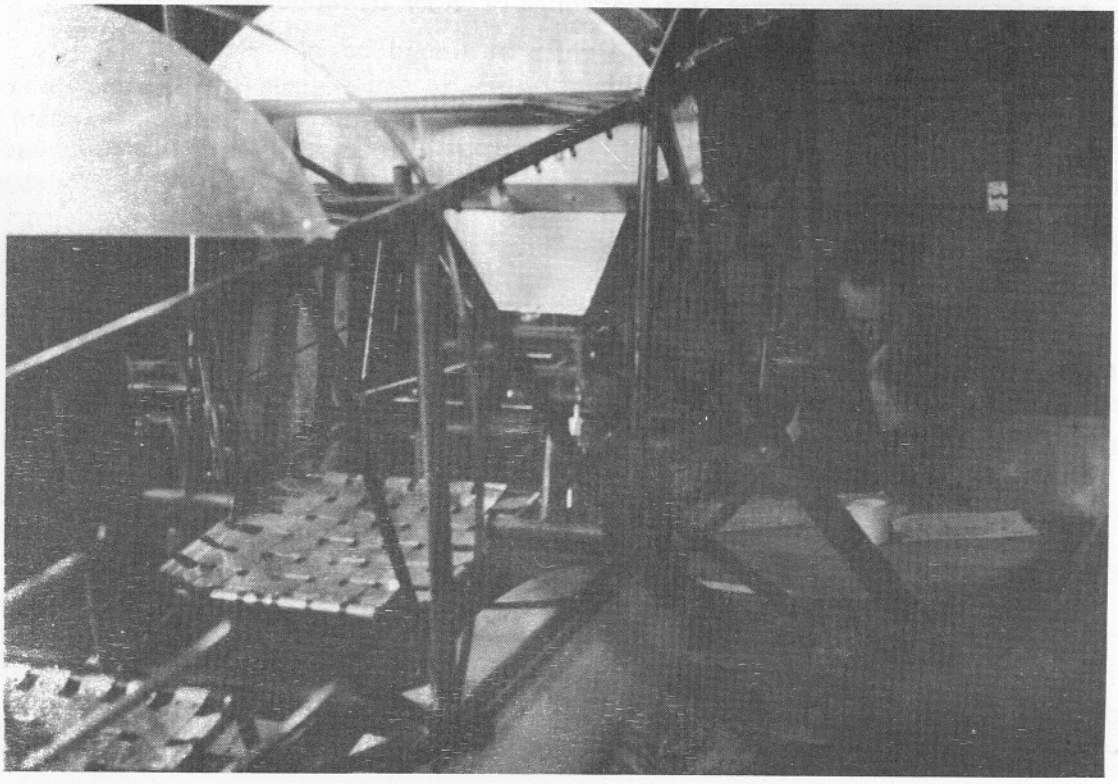
Bill Clouse
President

Hi' to whoever at Starduster reads this,

After a three year moratorium on production here at the Johnson aircraft works, in beautiful downtown Mt. Clemens, I'm happy to say construction has been resumed. (I did'nt know dust collected at a rate comprable to moderate to heavy rime).

After a week of dusting, cleaning and reorganizing, an airframe began to emerge from under the rubble. (lawn mowers, garden spreaders, rakes, hoses and other implements of suburban life). Once my workshop was once more fit for human habitation, I invited EAA Designee Bob Henks, of chapter 13, over to advise me whether the work I had so far was ever destined to fly. Or if I should donate it to a museum titled SCULPTURE IN 4130. Bob assured me that the former would most probably be true, but the latter would get me a definite tax break.

After I informed my dear wife of my estimate of costs to completion, the crying and moaning was terrible. But I didn't stop until she gave me the checkbook. So as a testimonial to the adage, perservearance pays off. I have sent along with this letter an order for much needed parts and supplies.



I would also appreciate it if you could quote a price for a Lycoming IO-360-A1B in all it's various forms, mags, wiring, pumps, etc.

Included in my order are 4 HEIM F45-19M rod ends to use in place of the FANIR RE4F5 ends called for on SA750-38-10. At the time I ordered parts for sheet 38 they were not in stock. It appears to me the HEIM end is better and cheaper, (note the key word here is cheaper, as presently I am living in the poverty belt of Reganomics.) If for some reason the HEIM end won't do, just send me what I need to do the job.

And on a final note, how about sometime offering all of us amature builders a bargain grab bag of AN hardware to make up for the odd missing part that the family dog knocked down the floor drain with his tail, or the kids used on their bikes or the UPS driver kept. (probably to start his own hardware bussiness.)

You all have a great day,
Sincerely, Al Johnson

MEMBER OF
LIVERPOOL SPORTS COUNCIL

Liverpool & District Model Aircraft Society

Mr. T. Ditchfield
77 Holmfield Road
Aigburth
Liverpool L19 3PF
England

Dear Sir,

As you can see from my letter head, my leisure acticity is building and flying radio controlled model aircraft.

The photograph enclosed shows one of my latest efforts, a 3 inch to 1 foot scale model of your SA 500 Starlet. This is based on the only example ever built in England by a Mr. Lid Miles.

The model, like it's full size counterpart, is very attractive and gains a lot of admirimg attention where ever I take it. Although the photo does not do it justice it does show that although the outline is well represented it does lack a lot of detail.

Continued on pg. 21

Dr. H. Edward Bartee
4006 North Ninth Ave.
Pensacola, Florida
32503

Dear Bill,

Looks like you'll rebirth an exciting airplane, the Super Starduster One. I've been a Starduster One builder for too long, maybe 12 years, (lately an abstainer). I was none the less disappointed when Jim dropped the One, this happened about the time I began my project.

Man, from the photo here (April issue-center fold) I can see a bunch of changes, over 16 I could just off hand see with out all out study, many of which I attempted to get advise and make changes on my project, with no luck, and have attempted on my own, with little experience, that would end in not hours, days but sometimes months. Like push/pull tubes to ailerons. Change wanted; 4 ailerons, one piece spring gear, hoizontal attach, and elevator trim.

For the long legged ones a little more depth or slanting the seat back support, station.

Bill, are these changes going to be available to a S/D builder? And I like the gear legs, are they available and at what cost ? I did not like the profile of the gear Jim used on his Acroduster, they appeared too wide and no taper. At present I have on hand 600x6 wheel and axles.

Oh well, the dowm line, I was not planning Oshkosh this year. Think you'll have the S.S.1 finished and there?

Thanks,
Ed Bartee

S.S.1 Changes

1. Spring landing gear. I want
2. 4 ailerons. (I was doing to mine.)
3. Elevator trim. (I have installed)
4. Rudder trim. (I don't have)
5. Tuttel deck.
6. Fire wall shape change.
7. Int. panel appears higher.
8. Push pull aileron control. (I have attempted the change.)
9. Gas tank, appearance changed, larger? Gallons ?
10. Tail - H&V stableizer, rudder & elevator shape change.
11. Rudder construction change.
12. No center section bay or tank.
13. Bailing access good.
14. Wing walk gone.
15. Airfoil doesn't look like a 4412, looks like a new plane.

Dr. Edward Bartee

4006 North Ninth Ave.

Pensacola, Florida 32503

Dear Ed,

Thank you for your letter and continued interest in the "Starduster". I have both good news and bad news for you - mostly good though. I was impressed with the amount of changes you noticed, most of which were needed to make a very strong, highly aerobatic airplane. Unfortunately, the "Super Starduster One" is a completely new airplane - dimensionally very close to your airplane, but enough difference exists that would create some problems for you to just "add" on. The landing gear would be simple, ($500.00). The wing is a new symmetrical airfoil and best results will be with 150 plus horsepower. Horizontal stabilizer with Servo Elevator could be easily adapted. At this point, there are no plans only factory built fusilage. Very soon wing drawings and kits will be available. (Nov-Dec '82.) The "S.S.1" will not make OSHKOSH '82. There have been too many delays and time consuming research. We will keep you all posted, and thanks again for your interest. See you at Oshkosh.

Respectfully, Bill Clouse

T. Peterson
4217 One Mile
White Cloud
Mich. 49349

Bill,

N8492P should have 24 hrs by the time you read this. Not at all sure about Oshkosh yet. Best bet looks like Saturday to Tuesday I will have my wife and camper there. I have to go home Wednsday, Thursday or Friday. I will try to fly 92 paha over (only 142 miles). Wish me luck.

Tod

'MAGNIFICENT MEN' Build
OWN FLYING MACHINE

Remember those magnificent men in their flying machines? Well they're still around and Clark and Jerry Wilcox are two of them.

As Clark tells it, Jerry went a little crazy one day and came up with the idea to build their own plane. Clark says he felt it probably was a crazy idea, but he wanted something to work on so they sent for the plans to a bi-plane.

Three and a half years, several thousand dollars and two garages later; the 'Starduster too' was ready. The garages, Clark explains, one his and the other Jerry's were built just to house the plane while it was being constructed. "I guess neither of them have ever been used for the purpose most garages are built to house an automobile."

The plane has a wing span of 24 feet and a fuselage of 22 feet. It runs on a 150 horsepower, four cylinder Lycoming engine and weighs about 1,150 pounds empty.

Jerry says it took at least 3,200 hours to build the plane which is modelled after the First World War vintage model. The fuselage is metal and the wings made of sitka spruce and mahogany. The total craft is covered with dacron fabric and 16 coats of aircraft 'dope', which is a lacquer. It took 27 gallons to arrive at the finished product of beige trimmed with tangerine, orange and red.

"It's totally handmade except for the tires and engine," says the two, adding that the craft is stressed for the aerobatics although performing stunts are not allowed without a special permit from aviation authorities.

While Jerry worked on the fuselage in his garage, Clark was busy with the wings. Then the fuselage was brought to Clark's garage for final assembly.

The 'Starduster's too' maiden flight was in mid-October; but although Jerry and Clark are both licensed pilots;neither piloted her first flight. "You think we are crazy going up in something we built," says Clark jokingly. Seriously, he admits, it had been 16 years since he had last flew and a few years for Jerry plus the fact a bi-plane is a bit different to pilot. "We thought someone with experience on that type of craft should take the 'Starduster too' up."

John Inman, originally from California, now living in Fredericton, was that experienced pilot. "He said she flies like a dream," says Clark.

Why a bi-plane, what's the special attraction? "There is no canopy over the top and you really feel the thrill of flying," echoed the two.

The plane has about 16 hours flying time now so it can't be taken more than 25 miles from the airport until it has passed the 50 hour mark.

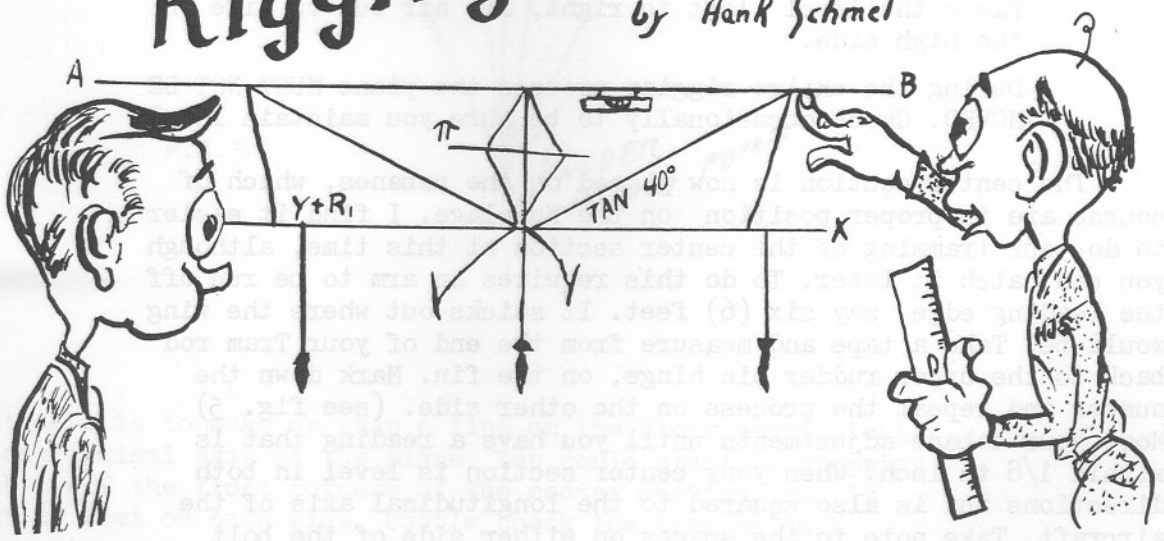
"Then who knows," says the two. "It's flying at it's best.

Artical taken from The Daily Gleaner - Fredricton, N.B.

" Magnificent flying machine " built by Clark and Jerry Wilcox.

Rigging

by Hank Schmel



Well,now that summer is upon us and you have laid down your plane building tools for the ol' swimmin hole.... I shall endevor to proceed on the RIGGING procedure.

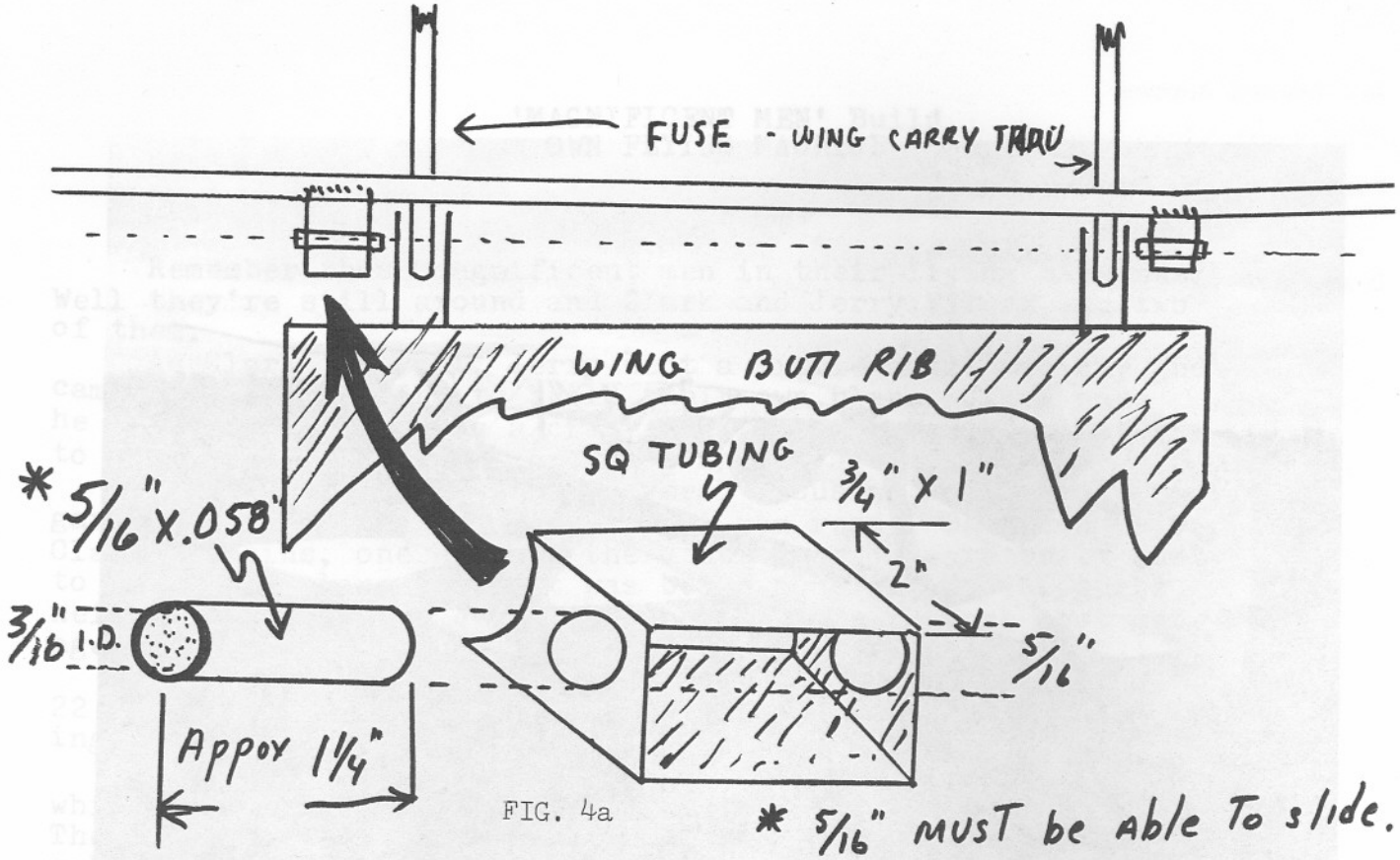


FIG. 4a

Roll out the fuselage.
Place Wheel chocks in their appropriate possitions.
Level the fuselage.

Now this is important. I mean it must be absolutely level, Fore and aft ; port to starboard.
To level fore and aft, place the level on the underside of the rear cockpit longeron or on the lower wing attach fitting. I prefer the latter. Check this on both sides.

To level port to starboard go back to the cockpit longerons. Place the level ,left to right, let air out of tire on the high side.

During the entire rigging process the plane MUST NOT BE MOVED. Check occasionally to be sure you maintain level.

The center section is now placed on the cabanes, which of course are in proper position on the fuselage. I find it easier to do your tramming of the center section at this time, although you can catch it later. To do this requires an arm to be run off the leading edge, say six (6) feet. It sticks out where the wing would be. Take a tape and measure from the end of your Tram rod back to the upper rudder pin hinge, on the fin. Mark down the number and repeat the process on the other side. (see fig. 5) Move your cabane adjustments until you have a reading that is within 1/8 th inch. When your center section is level in both directions and is also squared to the longitudinal axis of the aircraft, Take note to the spaces on either side of the bolt attach points. Measure these spaces and make spacers from bushing stock. Don't forget, label or number them for easy I.D. later in the game.

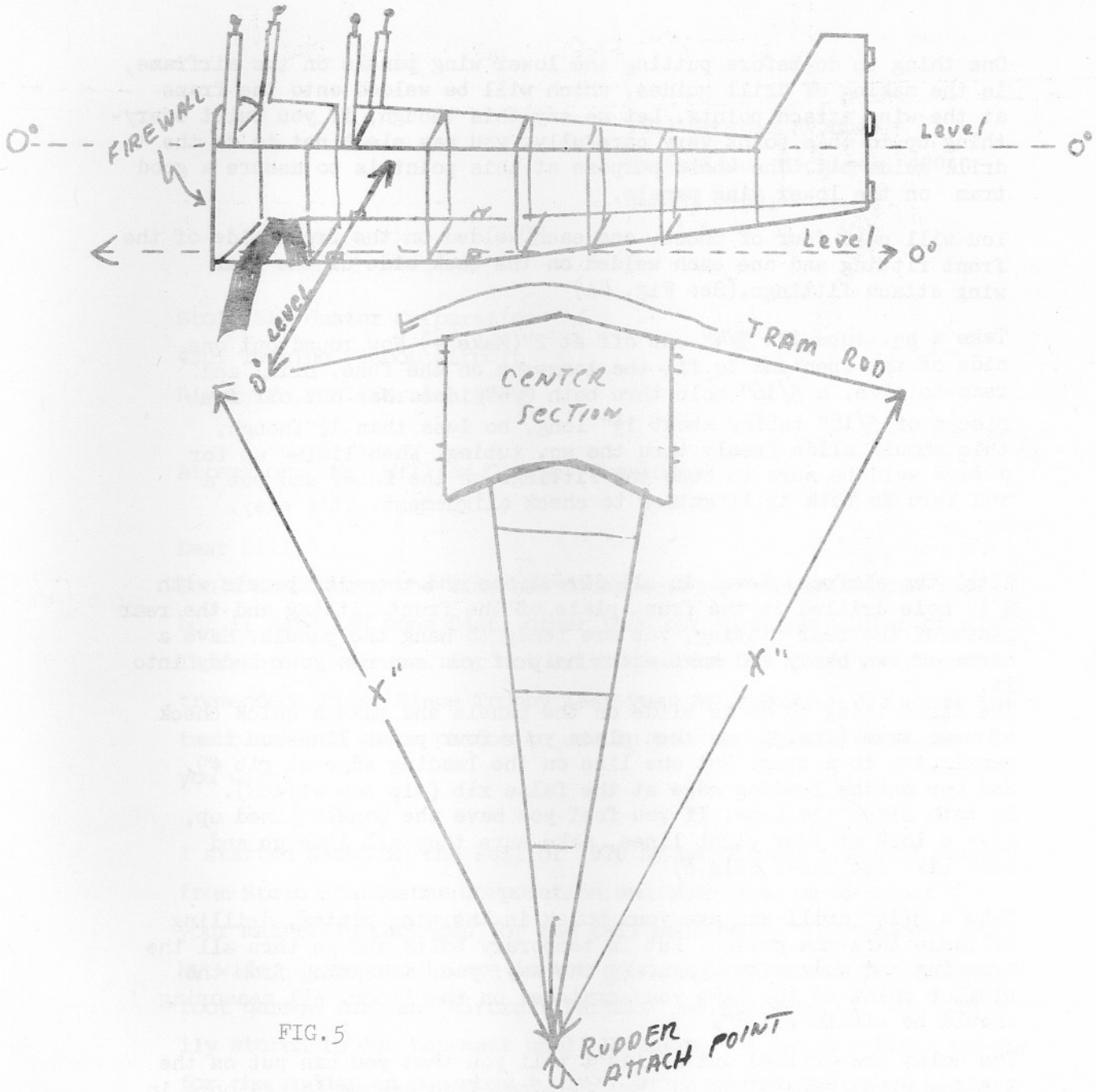


FIG. 5

Your next move is to make or snap a line on the floor perpendicular to the longitudinal axis of the plane. You could start by dropping a plumbob off the front corners of the center section, run it out about 10 feet on each side. Double check the tram on this line by running a tape back to the tail wheel attach point. The measurements on both sides should be within $\frac{1}{4}$". This line will be used to square the bottom wings. (see fig. 6)

One thing to do before putting the lower wing panels on the airframe, is the making of drill guides, which will be welded onto the frame at the wing attach points. Let me say this though, if you built everything up to this point very carefully, you may elect not to do the drill guide bit. The whole purpose at this point is to assure a good tram on the lower wing panels.

You will need four of these, one each welded on the front side of the front fitting and one each welded on the back side of the rear wing attach fittings.(See Fig. 4A)

Take a sq. tube 1"x 3/4" cut off at 2"(Make 4) Now round out one side of the open end to fit the longeron on the fuse. Drill and ream to size, a 5/16" hole thru both 3/4"sides. Now cut off four pieces of 5/16" tubing about 1½" long, no less than 1¼"though. this should slide freely thru the sq. tubing. When lining up for a tack weld be sure to bush the fittings on the fuse. and put a rod thru to both drill guides to check alignement. It's easy.

With the airframe level in all directions and the wing panels with a ¼" hole drilled in the front plate of the front fitting and the rear plate of the rear fitting, you are ready to hang the panels. Have a horse or two handy and have extra help if you can con your buddy into it.
The first thing to do is slide on the panels and make a quick check of your tram (fig.5) and then place your four plumb lines on the panels,two to a wing. Put one line on the leading edge at rib #9, and one on the leading edge at the false rib (tip bow attach). Do both sides the same. If you feel you have the panels lined up, give a look at your plumb lines, make sure they all line up and look like one line. (fig.6)

Take a 3/16" drill and mke your holes in the wing plates, drilling of couse thru the guides. Put in temporary bolts and go thru all the tramming and measuring again. By the way, your measuring from the plumbob point to the line you scratched on the floor. All measuring should be within ± 1/8".

The holes are drilled and I didn't tell you that you can put on the landing wires before you do the drilling. I do assume things once in awhile. Like you might have used the horses for supportting the wings. You are going to ream the wing attach to 5/16" after you are all thru rigging and disassemble the craft.

Next step; placement of the"I" struts .The easy way is two people. One to hold the top wing panel which you have just attached to the center section. Remember now,these should go on with no trouble if you did the table layout right. Slide the "I" strut in place, along with the hardware to hold it. Do the same to the other side and then put on all the wires. Make sure that when putting on the wires, they all tighten clockwise , if you are standing at the leading edge and face the wing tip.

From this point on it's a matter of descipline. That is not to say it shouldn't have been that way from the very beginning.

CONTINUE ON PAGE 28

1533 Georgia Avenue
Marysville, Michigan 48040
June 7, 1981

Stolp Starduster Corporation
4301 Twining Flabob Airport
Riverside, California 92509

Attention: Mr. William Clouse, President

Dear Bill,
Don't know where the time has disappeared to since Oshkosh 1981 but it sure has gone fast, other than our Michigan winter of 81-82. There are no excuses for not writing sooner to thank you for the tremendous First Place Trophy last year at Oshkosh. Enclosed are two black and white photos to use in your Starduster Magazine if you wish.

I started N30RG in the Fall of 1970 by purchasing a set of plans from Stolp Starduster Corporation and then placing an order for your materials packages for the tail sections, landing gear, etc. My wife, Helen and I were in the process of converting our 26 x 28 foot garage into an "Aircraft Factory" so the material was temporarily stored in our basement until November. I cut the first tubing for the rudder on December 1, 1970 after several hours of plans review, practice welding and shop equipment purchases. The tail sections were completed in early January 1971 - boy was I really moving - only another couple of years, I thought! Next came the rudder pedals, controls and other miscellaneous small parts plus more material orders from Stolp Starduster Corporation. Nothing to this aircraft building. By May, I had the fuselage tacked and started to finish weld. In the mean time jumping around to jigging and building the landing gear.


N3ORG


EXPERIMENTAL

In the Summer of 1971, the Air Force Reserve had a nice trip to Alaska for my Unit so off I went to Elieson Air Force Base for a couple of weeks. The Reserve sure cut into my building progress by taking at least 2 to 4 weeks every year plus at least one weekend each month. After returning from Alaska (where it was always daytime in the summer) the fuselage was finish welded, landing gear fitted, and cabanes jigged but not welded to fuselage, fuel tank fitted and one year of actual hands on building time had drawn to a close. At this rate I thought another year and a half and this baby will be flying.

A call to Mrs. Stolp obtained the engine mount as the jigging did not appear to be worth the effort. Also, the mount fit perfectly and the desired degree at thrust angle was right on the money. Fittings were cut and welded to the fuselage and the engine mount was in place.

Another call to Mrs. Stolp and the wing package was obtained (Oh yeah!! a few bucks each time). I started with the center section after several hours of cutting the wing fittings, cleaning and painting. Boy the Summer of "72" really went fast and by Fall (after time out for Oshkosh, of course) the center section box was ready to use for attaching the cabanes to the fuselage. This was no big deal other than the front diagonal tubing kept pulling in the cabanes at the front center section attach point. After several attemps to cut and reweld I finally cut, fish mouthed and bolted the diagonals for a perfect fit.

After 2 years of building my original schedule of 2½ to 3 years did not look too good so to heck with the schedule and go ahead regardless. Wings were started in December 1972 and my wife Helen helped whenever I needed a third and fourth hand. Finally, by July 73 we assembled the airplane to measure for landing and flying wires and tailplane wires plus aileron installation and control tube cuting fitting and trial installation. Another year went by before all this stuff was finally set aside as "almost" completed.

The following Summer (74) the center section, wings and fuselage were ready for the FAA precover inspection. No sweat - everything was great with the inspector - a real milestone. Next came the covering of the fuselage, wings and tail section with Stitts fabric. I was surprised how easy it was for a "first timer". A good winter job that was not finished until summer with a jillion rib stiches. Boy, the time was going swiftly with no big accomplishments that really showed after the wings and fuselage were covered. The inside work such as full upholstery, plumbing, engine controls, instruments, electrical system, etc "ate-up" almost 1½ years mainly because I was a first timer to airplane building and the thinking part was going rather slowly. Also a considerable amount of time was spent making sure everything was located properly for a one time only cut-fit and installation. This planning really paid off, no junk parts but a heck of a lot of cardboard templets were cut, tired and recut before the parts were completed.

The summer of 1977 finally arrived and painting was begun. Most of the summer was consummed either for painting - sanding - painting - masking - painting or waiting for low humdity air and good drying conditions. Boy this airplane really looks great with its red and white Stitts paint job but Fall was near and no hope for flying until at least early winter so I bit the bullet and decided to concentrate on the small things to make flying the big job for 1978.

On Memorial Day 1978 my friend Herb Burns and I towed N3ORG like a trailer to my hanger at the county airport for rigging and final assembly. The FAA boys were real co-operative in their pre-flight inspection with nothing required.

The first flight was performed by my good friend and Chapter 13 Member Nick Seriphinoff. He had a little trouble reaching the brake pedals because he is short on the bottom end. The aircraft had a rolling tendency toward the left which after wash in and wash out on the lower wings didn't fully correct - but a small trim tab on the right lower aileron corrected on the first attempt.

The first fly-in "The 1979 Michigan EAA Regional" we were awarded "Grand Champion" and of course the "1st Place Starduster" award from you in 1981. Lou Stolp certainly designed the prettiest bi-plane ever when he put this design on paper and built the pro-type.

Before closing, I would like to mention those who contributed with words of encouragement, helpfull hints and 3rd and 4th hands when needed - of course Herb and Nick, Ray Anderson, Red Denman, Jim Fisher and Bob Thoms and most important my beautiful wife Helen. without whose help and patience this project never would have rolled out of our garage aircraft factory.

Thanks again Bill for the beautiful trophy and please accept my appology for not responding sooner.

Roy Garrett

May 14, 1982

Dear Bill,

While talking with an EAA Designee I happened across a very concerning error in my SA300 drawing that should be noted by all Starduster builders/ owners. The fuel system sketch on page 16, of the SA300 plans, indicates that the main fuel shut-off valve be located on the engine side of the firewall near the gascolator. I know of at least three Starduster Too's flying with this configuration. The problem with this installation is that should an accident occur involving damage to the lower portion of the firewall, the valve can easily sustain damage. If this valve is broken, fuel will not be contained and will be allowed to contact hot engine parts i.e. exhaust system, cylinders, etc. The location of the main fuel shutoff valve is addressed in the Federal Aviation Regulations Part 23, see attachment A. The FAR states that the valve should <u>not</u> be located on the engine side of the firewall.

One way to solve this problem is with a bracket like the one shown in attachment "B." I make this bracket up to fit an Imperial Hi-Duty Shut-off Valve Model No. 104-HD which I am using on my Starduster Too.

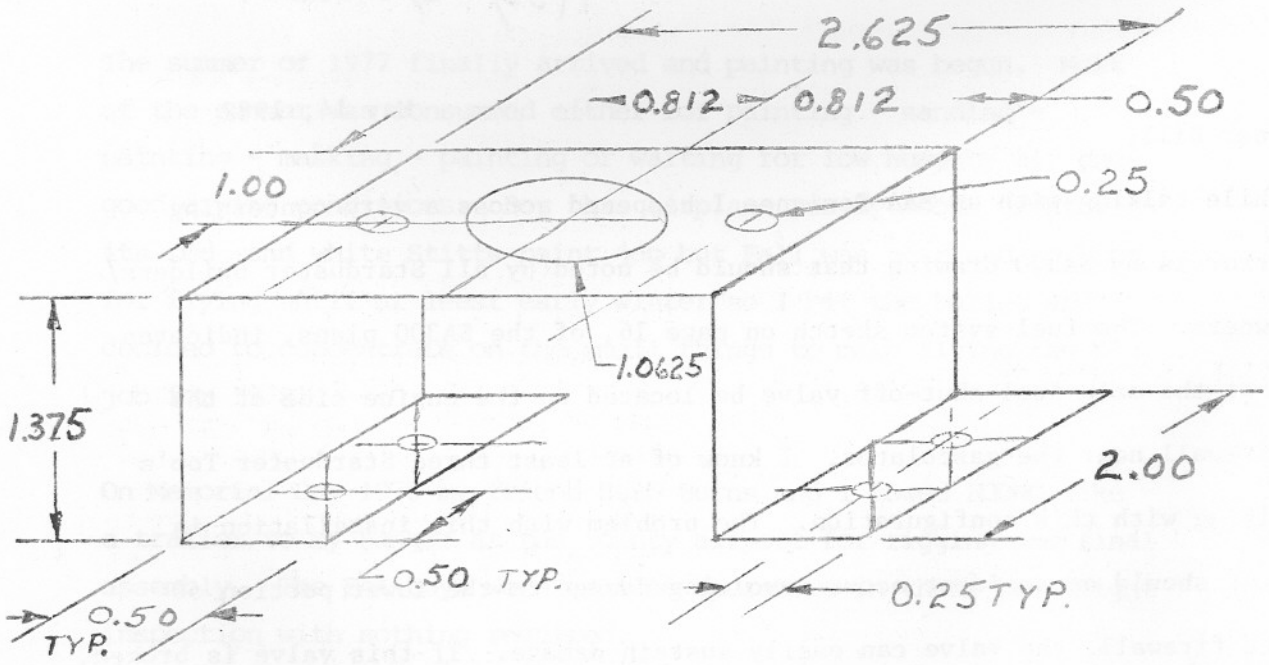
I feel that the Starduster Too is an extremely well designed aircraft. I am only trying to bring to light an oversight.

Sincerely,

W.C. Dannecker

W.C.Dannecker
19335 Caribbean Ct.
Tequesta, Florida 33458
(305) 746-8967

MAIN FUEL SHUT-OFF BRACKET



MATERIAL: 300 SERIES STAINLESS STEEL OR 4130

THICKNESS - .040 TO .065

(c) *Warning means.* If both the normal pump and emergency pump operate continuously, there must be a means to indicate to the appropriate flight crew-members a malfunction of either pump.

[(d) Operation of any fuel pump may not affect engine operation so as to create a hazard, regardless of the engine power or thrust setting or the functional status of any other fuel pump.]

§ 23.993 Fuel system lines and fittings.

(a) Each fuel line must be installed and supported to prevent excessive vibration and to withstand loads due to fuel pressure and accelerated flight conditions.

(b) Each fuel line connected to components of the airplane between which relative motion could exist must have provisions for flexibility.

(c) Each flexible connection in fuel lines that may be under pressure and subjected to axial loading must use flexible hose assemblies.

(d) Each flexible hose must be approved or must be shown to be suitable for the particular application.

(e) No flexible hose that might be adversely affected by exposure to high temperatures may be used where excessive temperatures will exist during operation or after engine shutdown.

§ 23.994 Fuel system components.

Fuel system componentss in an engine nacelle or in the fuselage must be protected from damage which could cause the release of fuel as a result of a wheels-up landing.

§ 23.995 Fuel valves and controls.

(a) There must be a means to allow appropriate flight crew members to rapidly shut off, in flight, the fuel to each engine individually.

(b) No shutoff valve may be on the engine side of any firewall. In addition, there must be means to—

(1) Guard against inadvertent operation of each shutoff valve; and

(2) Allow appropriate flight crew members to reopen each valve rapidly after it has been closed.

(c) Each valve and fuel system control must be supported so that loads resulting from its operation or from accelerated flight conditions are not transmitted to the lines connected to the valve.

(d) Each valve and fuel system control must be installed so that gravity and vibration will not affect the selected position.

(e) Each fuel valve handle and its connections to the valve mechanism must have design features that minimize the possibility of incorrect installation.

(f) Each check valve must be constructed, or otherwise incorporate provisions, to preclude incorrect assembly or connection of the valve.

§ 23.997 Fuel strainer or filter.

There must be a fuel strainer or filter between the fuel tank outlet and the inlet of either the fuel metering device or an engine driven positive displacement pump, whichever is nearer the fuel tank outlet. This fuel strainer or filter must—

(a) Be accessible for draining and cleaning and must incorporate a screen or element which is easily removable;

(b) Have a sediment trap and drain except that it need not have a drain if the strainer or filter is easily removable for drain purposes;

(c) Be mounted so that its weight is not supported by the connecting lines or by the inlet or outlet connections of the strainer or filter itself; and

(d) Have the capacity (with respect to operating limitations established for the engine) and the mesh to ensure that engine fuel system functioning is not impaired, with the fuel contaminated to a degree (with respect to particle size and density) that is greater than that established for the engine in Part 33 of this Chapter.

§ 23.999 Fuel system drains.

(a) There must be at least one drain to allow safe drainage of the entire fuel system with the airplane in its normal ground attitude.

(b) Each drain required by paragraph (a) of this section and § 23.971 must—

(1) Discharge clear of all parts of the airplane;

A STORY OF N750AL

by John Helton

What would you do if your good friend Billy Clouse, President of Starduster called you up and said, "I want you to fly our newest Acroduster II, 750AL. It has about 8 hours on it, and I want 25 hours in the next couple of weeks so I can ship it to the Italian Aerobatic Champ, Aldo Locatelli, in Milano."

Well . . . If you had flown Acroduster II's as much as I have, been through as much high adventure in them as I have, and love them as much as I do, you would put on a big grin and start rounding up your 'chute and helmet. I did fly the machine 9 flights and 14 1/2 hours, so Billy asked me to put down my comments for the enjoyment of his owners and builders. This is being written on board a 747 in the middle of the night, over the Pacific, and while I'm the only guy on board with my own lighted desk, there is no telling how much sense it will make.

This is an unusual SA750. It is sleek and beautiful in silver, awaiting its color scheme in Italy. The 260hp IO540D4B5 temporarily spins a metal fixed pitch McCauley 80x69 prop which is loaner, since Aldo will probably install the symmetrical-three blade Hoffman wooden prop in Italy. The ailerons are symmetrical, canter hinged with perfect fit, leaving no gap, and increased thickness to enhance airflow when deflected. Therefore, the total wing airfoil is smooth right over the ailerons and gods can tell how happy this makes the lifting airflow when you try to stall this beauty.

The wings are placed forward two inches, which together with the fixed prop sans constant speed hub creates a more aft CG, and that, to an aerobatic pilot is a joy. The three blade wooden prop should not alter this situation much, so Aldo will still enjoy a less stable airplane which will not be too quick to take over from the pilot and point its nose to the center of the earth in recovery from unusual attitudes. This machine will in fact just "lay" there and wait for you to tell it what to do in minimum airspeed situations - terrific!

It has 600 x 6 low profile tires and the Starduster spring aluminum gear which is low drag, amazingly stable for landing and all ground handling, and in my opinion, the only way to go. I flew open cockpit from both holes and I'm sure Starduster readers know how good the visibility is from the entire line of Stardusters.

I'm a pilot, not a builder, so I'll get on to things I know something about. Bill Clouse and Hank Schmel had already flown off 8 hours, so I was confident that the bird would bring me back if I treated it right. The first thing I noticed was heavy aileron pressure. Indeed Bill had said that he is unhappy with this. I'll say what I told him, the geometry of the aileron spades needs tuning to take more of the load off the stick. I think Bill would like to try aileron servos and I'm sure they would do the trick, nothing new there. The aileron travel should be increased because the roll rate is slightly less than it could be and it's obvious that they don't deflect far enough.

On my first flight I did stalls positive and negative, many kinds of rolls, including snaps left and right, inside and outside loops and lights, hammerheads vertical rolls, inside and outside spins. The one most impressive feature

is the low stall speed - forty IAS upright and zero inverted. I'll have to explain that. When you do a vertical roll and cap off upright, you can fly away without a bobble if you have forty IAS, and if you lay out inverted following a vertical line up, you can fly away without losing it with zero IAS - astounding! It's due to the aft CG allowing the attitude to remain unchanged with little tail force and those beautiful airfoils top and bottom which I have already commented on.

Inside - outside 8's are so easy . . . I don't exaggerate when I say that you just sit there and move the stick a little fore and aft, keeping the wings level, coming off the power on the down hill to maintain RPM and pushing it up on the up side. No pressure is required on the elevator, again because that aft CG is working to "sling" the tail out. Personally, I would prefer to have no aerodynamic counter balance or overhang on the elevator for any aerobatic aircraft. This machine could actually use a little more elevator pressure on the stick. If there should be too much, then a servo tab will adjust the load to just what the pilot desires on the stick. Most importantly, the absense of the aerodynamic counterbalance will allow more positive recovery from full stall maneuvers, such as snaps positive and negative, and spins.

As for spins, the positive or upright entry is clean and immediate with recovery clean and predictable, although more lead is required for the left spin. Inverted stalls are reluctant requiring that you fly into the spin by kicking rudder to encourage the entry just when youwant it, without waiting for the nose to drop. Inverted spin recoveries are right on because the airplane has no desire to remain stalled inverted. I did not explore the flat inverted spin, although it is one of my "funnest" tricks, because of the aft CG characteristics - it's Aldo's airplane and he might not understand IF . . . I'd planted his airplane in an inverted plan view.

This airplane just wants to fly. In 14 1/2 hours of ham-fisted, non-proficient flopping about theskies, it never once burbled or snapped out of a maneuver on me, it turned me into a mere passenger as has happened in other aircraft. The fixed pitch prop does not always extract full power from the engine, so that you do not have as much energy (speed) at any given point in your sequence of aerobatic maneuvers, as you would have with a constant speed, however, it motors through a sequence so well without loss of altitude, that I would sure like to try it with the wooden constant speed.

My daughter Janet was dusting off the cobwebs of many months of ground time when we realized that she had never flown outside loops. Visibility was typically lousy, with no horizon in obscuring phenomena, but after one demonstration, she started trucking around outside like she knew what she was doing. We did a BUNCH of them and found that this bird is happy entering at 120IAS, which is remarkable, when youconsider that a similar bird, which I flew in contests, had to have 160IAS to get over the top without snapping out. I mention this so you will appreciate what I am trying to tell you about this new bird. A young friend was trying his first outside loops with a 140IAS limit imposed to protect the airframe in case he should do what he did. We put 5 negative Gs on, the airplane pitched around so fast the ground, lake and sky were blurred, but we did not stall or snap out. It had to be one of the smaller radius outside loops ever flown.

If you are inclined to fly a perfectly good aerobatic plane straight and level under positive G, I'll tell you that I loaded 37 gallons of 100LL and cruised for a total of 2.7 hours. At 2600 RPM and 140IAS at 5000, we were pulling about 20 inches and passing up all kinds of spam cans around the not-so-local

area (would you believe Mohave?). Upon our return to Flabob, the Starduster crowd was treated to flybys at 80IAS with full rudder yaws left and right (fish-tail), dutch rolls (bank 60° left and right), one wheel landings, tail wheel touch at 80IAS and a lot of steep 80IAS Climbouts. Remember, this is 200% of the stall speed, but don't be mislead, a sink rate will develop before stall at 1 G. All this is significant when you know that we flew a previous 260hp Acroduster II at 120IAS on final.

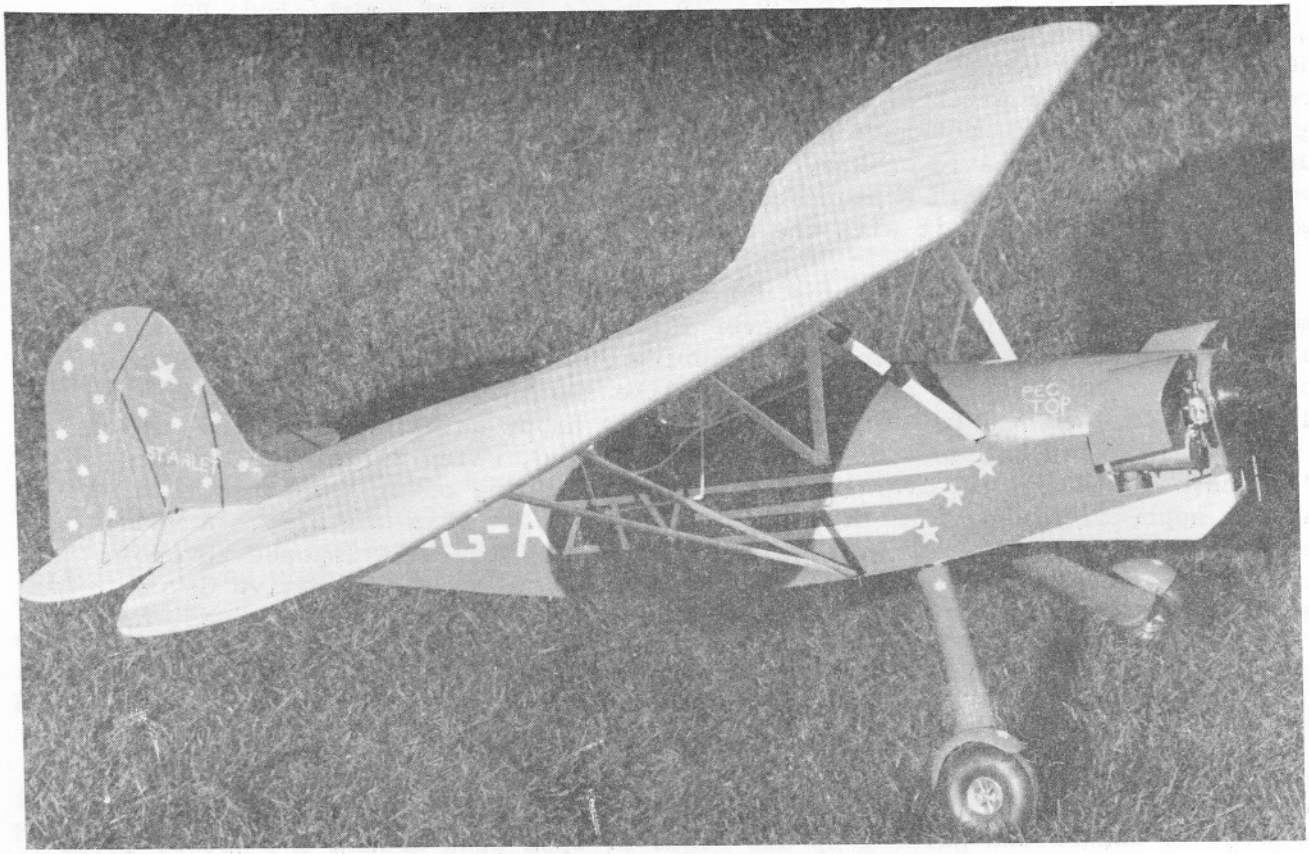
About all that I know about "briefing room" aerodynamics is that the wings fly, everything else goes along for the ride. Consequently I single out those airfoils along with their placement and the good power-to-weight ratio for giving Aldo Locatelli the best acroduster II that I have flown. It is one heck of a good airplane. I want one.

To the readers,

Bill and I would like to thank John very much for this in formative article about N750AL. Having flown the aircraft, I must agree with him 100%. Between us we Had pulled a +7G's and -5G's. Thanks again John.

Respectfully,

Hank



The plans from which the model was built were drawn up from a small three view and some photographs of the original.

Apart from the pleasure of building and flying models, I like to enter scale competitions, up to now not very successfully. But having seen how much attention my Starlet gets and also there are one or two others, built by different modellers who seem to get the same attention I do, I am sure that a much better reproduction would have a very good chance of winning, this brings me to the reason for my letter.

The only full size example of your aircraft has now changed hands and as far as I can discover is no longer kept in this country and it was the only example, scale model rules are such that you have to prove the real one existed, everyone who has modelled a Starlet have used it as their prototype.

I therefore whould like to request from you information, if possible, so that I may accurately reproduce an exact copy of a Starlet and if possible colour photographs of examples of Starlets built and flown in the states so that my aircraft will stand out from the crowd. I have seen photographs of some beautiful examples of your Starduster and feel sure that equally attractive Starlets have been built.

The particular areas that I require details are the cockpit layout, instrument panel undercarriage wing strut bracing and small external details, pilot tubes, inspection panels etc.

The details of the current model as I've mentiond 1/4 full size 75" span, weight about 6 pounds and flys very realisticly on a 46 cubic inch two stroke moter, although it requires a surprisingly high take off speed for a large parosol wing, must check the incedence sometime. It performs all the sedate aerobatics very easily, snap rolls would not look right. It makes a very good demostration model as it is highly manoeuverable and can therefore be flown in a small area.

If you can oblige me with the information I require I will be most grateful. Thanking you for having the time to read my letter, it's a bit longer and more formal sounding than intented and also thanking you in anticipation of your assistance .

yours faithfully,
T. Ditchfield

FOR SALE

Specifications " N78WM "

Starduster Too : SA-300

1. Canopy, sliding (2) piece.
2. Single ailerons, bottom wings.
3. IO-360 Lyc, fuel injected (Bendix). E/W oil cooler, air filter, muffler & very good cabin heat (works below 30F.)
4. Both fuel tanks (wing and main.) Main is inverted system with selector valve.
5. Electric "Dukes" fuel pump for take off boost as well as engine. Mechanical E/W fuel press. gage & "on" light indicator.
6. Full "IFR" panel, rear seat basic panel front.
7. Narco escort - 110 Nav-Com transistor intercom.
8. Electric trim with control on "F-4" stick grip along with "mike" button & intercom button on stick grip.
9. Hartzell constant speed, appx. 100 hrs since new.
10. Scott 8" tailwheel (new).
11. Wheel covers & cleveland brakes.
12. Nav & panel lights.
13. (2) baggage compartments.
14. All electric on hinged CKJ panel.
15. Dry vacum pump for D.G. & horizon. (2) electric turn bank.
16. CHT & EGT, vacum, fuel gage & E/W tank selector switch, voltmeter, clock, m.p. (2), Tach (2), VSI, fuel pressure, oil pressure (2), oil temp., D.G., horizon, T/B (2), Tach (2), A.S (2), mike/phone both seats. All ckt breakers on switches, alternator, master switch (2), trim up and downboth seats, keg type mag. switch. Airforce 3 element quadrants both seats, (throttle, prop & mixture). Brakes both seats, fuel tank selector both seats. Alternate air valve in air intake, heat/ cold mixer box.

17. Stainless flying wires from Starduster.

18. All material new. Glue, used Aero-Lite.

19. Fabric 100% Stitts poly fibre & dope.

20. Tubing primed & painted with "Imron".

21. Engine appx. 100 hrs.

22. All metal primed & painted "Imron". Fabric - Stitts poly dope, (white/red).

23. Upholstry - custom black naugahide.

24. Floor - carpeted.

25. All material is certified, new, and all systems were installed with "yellow" tag new or repaired as airworthy.

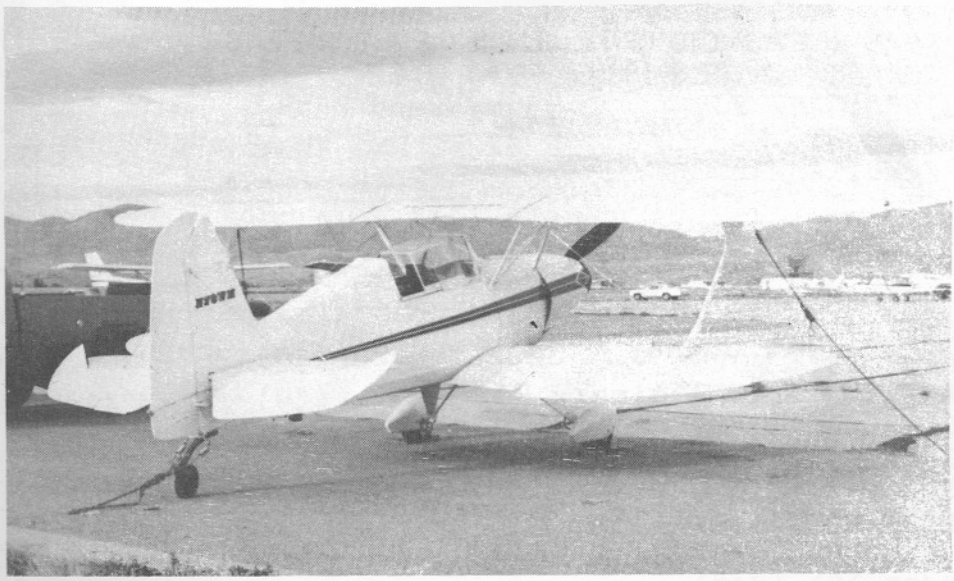
26. The aircraft with canopy closed will cruise appx. 150 mph at 10 gal/hr. Oil consumption is appx. 1 qt/ 4-5 hours. No oil leaks.

27. All welds were made using heliarc, including the fuel tanks.

28. Heated pilot tube " " type.

Bill, this list is far from complete however is representitive of the aircraft. Nothing was substituted to save $ and all equipment is airworthy. The plane flys "hands off" and the landing roll is very stable. No tricky stuff at all yet is very nimble in the air.

If interested contact : Wesley J. Maughan
Tele. - (208) 385-8647 office
(208) 375-7230 home



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I built the entire airframe over a 6 year period. It is a good solid airplane, handles well and a real eye catcher.

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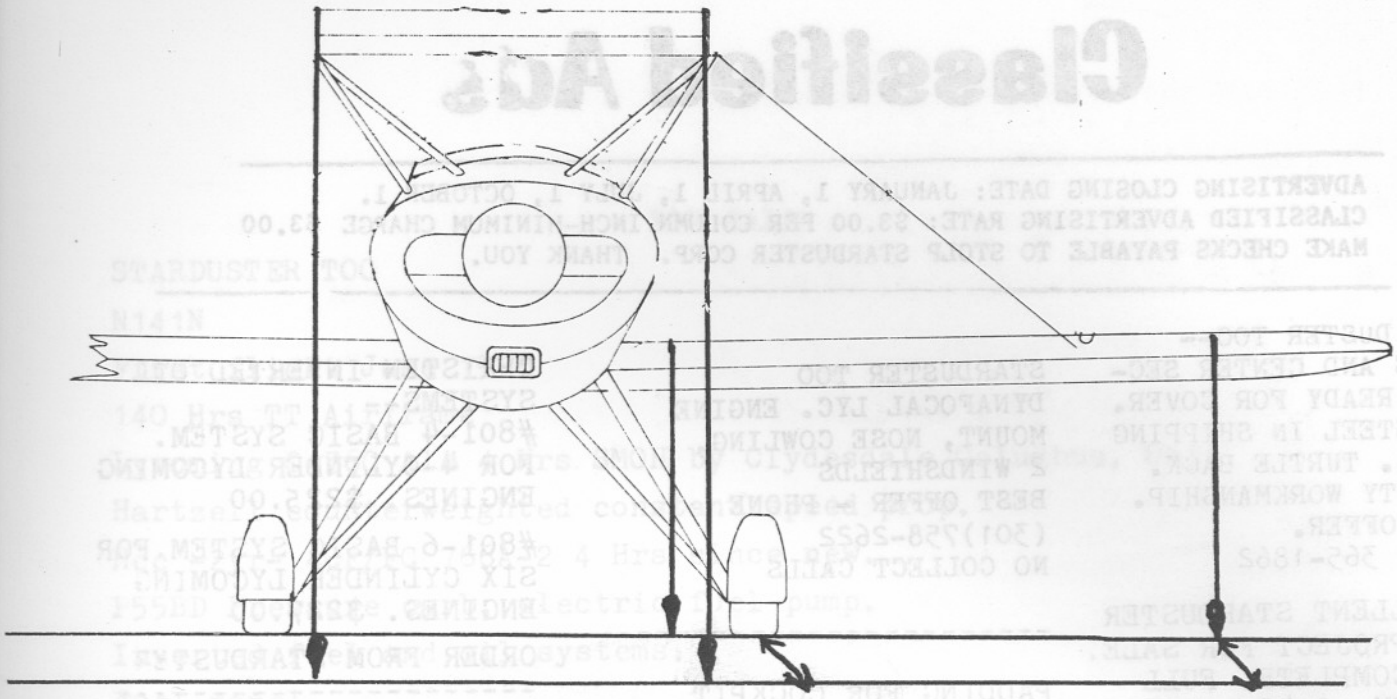

FIG.6

You must adhere to the tolerances. Zero degrees means zero, not $\frac{1}{4}$ or anything else. Go check the tram on the top wing to be sure nothing has changed since putting on the center section.

Tighten all the wires, constantly checking levels in both directions. If you want this to fly like N750AL keep it flat, top and bottom wings the same.

TAIL FEATHERS

There is nothing difficult here. Just make your assembly and keep everything ZERO/ZERO. Don't forget, the wires tighten clockwise when you stand at the leading edge. You will be making adjustments to the tail and the wing tips right into your first few hours of flying.

Control linkage should be done at this time, such as ailerons. I've been setting 5" up and 4" down with $\frac{1}{4}$"droop on all four ailerons in the neutral position.

Basically that is it for the primary rigging. Take care in your workmanship, follow the numbers I've given you, and I guarantee you'll have a sweet fly'in ship.

I'll be back with you again. Next is COVERING.

Thank You
Fearless Hank

"Cover Photo" contest

COME ON ALL YOU CAMERA BUFFS !!! LET'S SEE WHAT YOU CAN DO.. WHAT WE ARE TRYING TO DO IS GET SOME REALLY NICE PICTURES FOR OUR NEW "STARDUSTER" MAGAZINE FORMAT. WE NOT ONLY WANT OUR READERS TO ENJOY THE INFORMATIVE ARTICLES BUT ALSO THE PHOTOS. SO.... WE DECIDED TO AWARD A GIFT CERTIFICATE FOR THE BEST PHOTO SUBMITTED AND ENDING UP ON OUR COVER. WHAT WE ARE REALLY LOOKING FOR ARE GOOD AIR TO AIR OR GROUND TO AIR SHOTS. STATIC SHOTS SHOULD HAVE UNOBSTRUCTIVE BACKGROUNDS. THERE ARE SO MANY BEAUTIFUL ACRO'S ,STARDUSTERS, STARLETS,ETC. OUT IN THE BLUE, IT'S A SHAME WHEN WE GET PHOTOS WITH PHONE POLES AUTOS AND EVEN FACTORY BUILT AIRCRAFT PLACED THRU, BESIDE AND BEHIND YOUR YEARS OF WORK. NOW DON'T GET YOUR FEATHERS RUFFLED,BECAUSE WE APPRCIATE ALL AND ANY PHOTOS. WE ARE LOOKING FOR SOMETHING SPECIAL.....O.K.!

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