

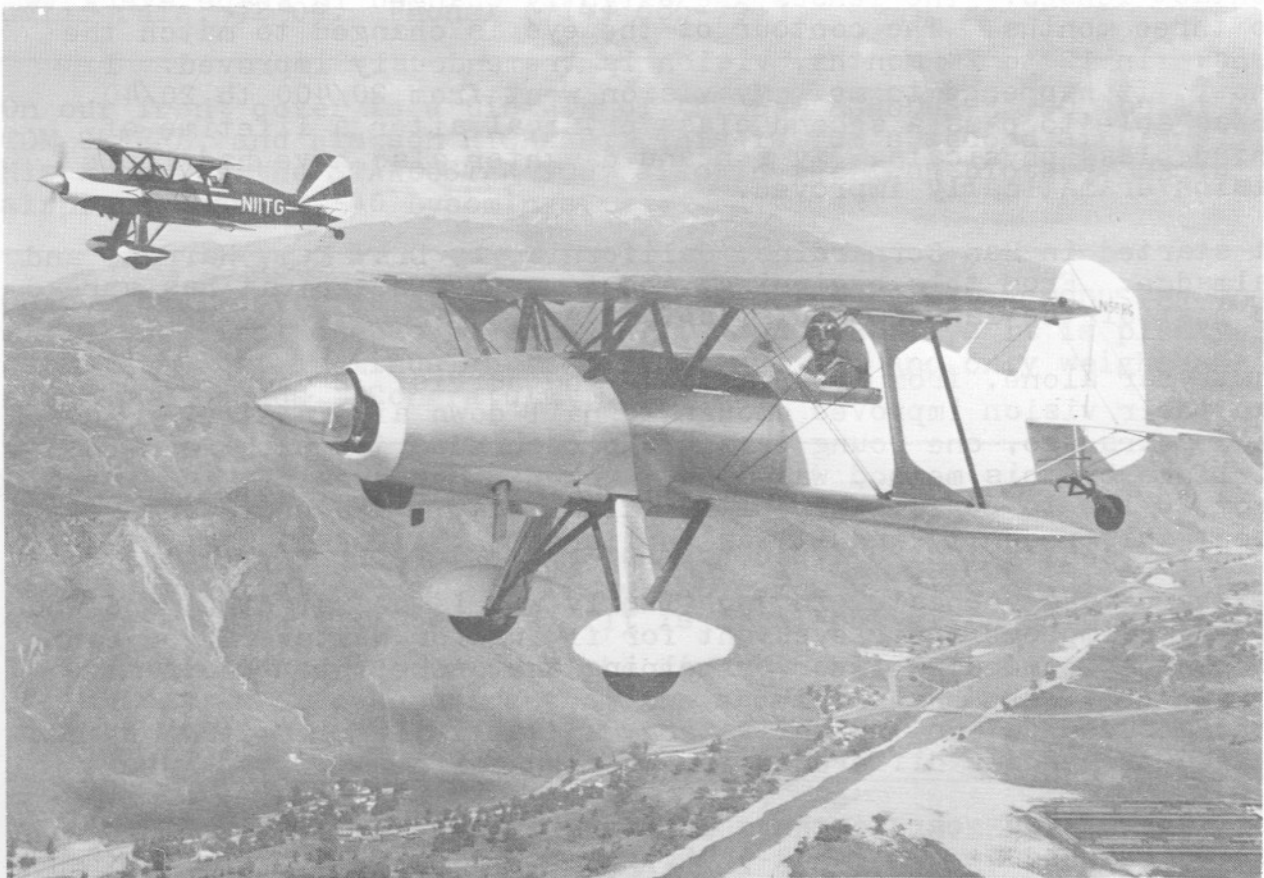
THE

Starduster

APRIL 1980

MAGAZINE

DEDICATED TO THE ACTIVE HOMEBUILDER



APPLEBY'S POINTS TRIP. I HOPE IS IS A ROAD SHOW. WATCH FOR IT.

PAGE 1

I M P R O V I N G V I S I O N



Outside of unrequited puppy love, hardly anything can be more devastating to a young person than the strong desire to become a professional pilot for the military, the airlines, or some other facet of the fly-for-pay business, and be stymied from so doing by not being able to pass a physical because of bad eyes.

Usually, the trouble is nearsightedness. About 60 per cent of our young people are nearsighted to some degree. It happened to me. It may have happened to you. It happens to many people every day. A kid who wants to make his lifetime work flying, is just unable to pass the eye test.

Fortunately, a new method of treating nearsightedness is now gaining medical acceptance across the country. It is called by a jawbreaker of a name, ORTHOKERATOLOGY, or something like that. It is the science of reshaping the nearsighted eyeball so that vision becomes normal, or close to it. It is done by wearing HARD contact lenses. The lenses are slightly changed in shape every two to three months. The contour of the eye is changed to match the lens. In 12 to 24 months, vision is tremendously improved. I know. It happened to me. My vision went from 20/400 to 20/40. I was able to pass a second class physical after a lifetime of third class physicals. My son and daughter also have had their vision dramatically improved.

It started in San Bernardino, California, by Drs. May, Harris, and Talmadge. From this beginning, about ten years ago, it has spread to most of the larger population centers.

Last year alone, from Drs. Talmadge and Harris, 32 young people had their vision improved enough to nail down airline flying jobs. Four years ago, one young person who secured a job with Western Airlines by this method was Cindy Rucker. Her eyesight was improved from 20/100 to 20/20, where it remains today. She wrote an article about this recently and it was published in "AIR PROGRESS"

If there is a youngster in your family who is nearsighted, and who wants to improve their eyesight for flying (or whatever) you can do them a tremendous favor by helping them take this treatment.

It takes dedication and motivation, and a little money, but it can make a tremendous difference in a persons life.

For those of you near Southern California, Dr Talmadge or Harris can be reached at (714) 889-9741. Their address is 910 East Highland Ave, San Bernardino, California.

THE STARDUSTER MAGAZINE IS DEDICATED TO THE PROPOSITION THAT THE ULTIMATE IN SPORT AIRCRAFT WAS REACHED WITH THE DESIGN AND DEVELOPMENT OF THE OPEN COCKPIT, TAIL DRAGGING BIPLANE---AND THAT EVERY THING ELSE HAS BEEN DOWNHILL-----EVER SINCE.

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The STARDUSTER MAGAZINE is a quarterly publication, published in January, April, July, and October of each year. Subscription rate is \$6.00 per year. Back issues are \$1.50 each, or \$6.00 per year. Published by STOLP STARDUSTER CORPORATION, 4301 Twining, Riverside, California, 92509. Phone: (714) 686-7943

On our front cover is a picture of the new ACRODUSTE TOO, built by TOM GREENE, and his son RICHARD. This is Tom's second airplane. His first is the STARDUSTER TOO, also in the front picture. Both airplanes has IO-540 Lycomings.

On our back cover is a picture of GENE GUTHAN'S new ACRODUSTER TOO. It is the first one to have 180 H.P., and Gene says it is plenty "spritely". It is minus an electrical system, and only weighs an even 1000 pounds. Congratulations, Gene.

OUR TWO INFLATION FIGHTING POLICIES--

1. We give 3-5 pounds of short lengths of 4130 tubing free, with each substantial order. It is suitable for welding practice. No size selections will be made. It is free, but given only on request.
 2. A 10 per cent discount will be given to all walk-in customers who select their own tubing from the short lengths rack. No cutting will be done, and it is self service.
-

ON WEDNESDAY NIGHT, JUNE 18, THE EDITOR GETS TO ATTEND A STUDIO PREMIERE OF "STUNT MAN", WHICH FEATURES OUR NIEUPORT 28 AND JIM APPLEBY'S FOKKER TRIPE. I HOPE IS IS A GOOD SHOW. WATCH FOR IT.

I N S T A L L I N G T H E E N G I N E

One of the most intricate and time consuming jobs related to building an Airplane is the proper installation and hookup of the power plant. It is also one about which there is a scarcity of information.

We will take the job in steps. Our steps will be, 1. Mechanical, 2. Cowl, 3. Fuel, 4. Inverted Oil, and 5. Controls.

1. Mechanical Installation- To do this job we start with hanging the engine off the front end of the fuselage. We need a firewall, in position, an engine mount, a set of mount rubbers and spacers, a set of mount nuts and bolts, and, if we are building a STARDUSTER TOO or an ACRODUSTER TOO, we need a set of front wire pulls.

Start by mating the engine mount to the fuselage. It probably won't fit perfectly. It should fit close, with no hole out more than 1/8". This is one place where the "if it won't fit, use a bigger hammer" philosophy comes close to being appropriate. If a little gentle persuasion won't make it fit, then heating up a cluster to red hot and then applying force is the way to go. Let the cluster air cool, and strength should be unimpaired.

At this time I would like to say that all engine mounts we make are jig welded, and all are very close to correct dimensions, I would say within a 1/16. However, a slight misalignment in the fuselage or incorrect hole spacing can sometimes make for a touchy situation.

The ideal solution is to wait until you get your mount from us before welding in your engine mount bushings. Then bolt your bushings to the engine mount, place them on the fuselage, and weld in place. Using this method makes sure that you get an acceptable fit.

If you are building an ACRODUSTER TOO, the mounting bolts should be installed with the heads to the rear. There will be bolt head interference with the longeron. One side of the bolt should be filed down and installed against the longeron. This makes sure the bolt won't turn, and makes tightening the bolts from the front easy.

If you are building a STARDUSTER TOO, you have a choice between bolts 5/16 in diameter, or 3/8 in diameter. All of our Starduster engine mounts are sold with 5/16 holes in the bushings. HOWEVER, the bushings are thick enough so that they may be reamed to 3/8, in case you built your fuselage bushings to that diameter. Either size bolt is strong enough, so you may use either one.

Once your mount and fuselage have been checked and found to fit well, it is time to install the mount. First, install the bolts, heads to the rear. Next install the finished firewall. Over the bottom two projecting bolts, install the wire pulls, common to the STARDUSTERS and ACRODUSTERS. There should be a slot cut in the flange of the firewall which allows the wire pulls to stick out. Do not worry about installing spacers on the top bolts. The thickness of the wire pulls has been allowed for in the engine mount jigging. Install a steel washer over each projecting bolt, and screw on an AN310 type castle nut. Tighten to about 18 foot pounds for 5/16 plated aircraft bolts and to about 36 foot pounds for 3/8 aircraft bolts. Do not use any lubrication. Do install 1/16 stainless steel cotter keys.

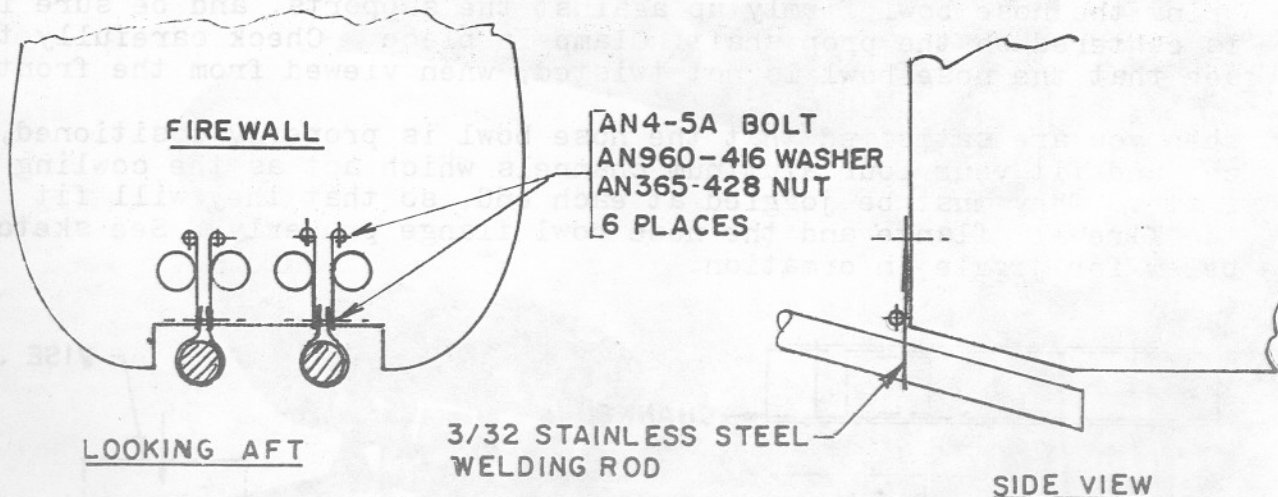
Now we are ready to hang the engine. Expect trouble here, because the dynafocal configuration makes it necessary to get the engine right up next to the mount, in the installed position, before it is possible to get the bolts thru the engine. However, the fact that the bolts point inward instead of straight ahead has fooled more than one builder into thinking something was wrong, when really, it wasn't.

The rubber donuts are split and fastened one half on each side of the mount donut. A steel spacer goes in the center. Bolts go in from the rear. As I said in the previous paragraph, the engine must be snugged right up against the rubber donuts in order to install the bolts. Once bolts are installed, washers, AN310 type nuts, and stainless steel cotter keys are installed. Torque nuts to about 57 foot pounds. It is necessary that the steel spacers inside of the rubber donuts be bottomed out. This makes the rubber donut act as a unit instead of two separate halves, and insures a long life for your installation. If the spacers are not bottmed out, you can expect trouble.

Now that your engine is properly hanging, the next thing to go on should be the exhaust stacks. Check to see that the flanges are flat on top and fit correctly. Install copper exhaust gaskets between the flanges and the engine. Install lockwasher and exhaust nut on each stud. Torque to 17-18 foot pounds.

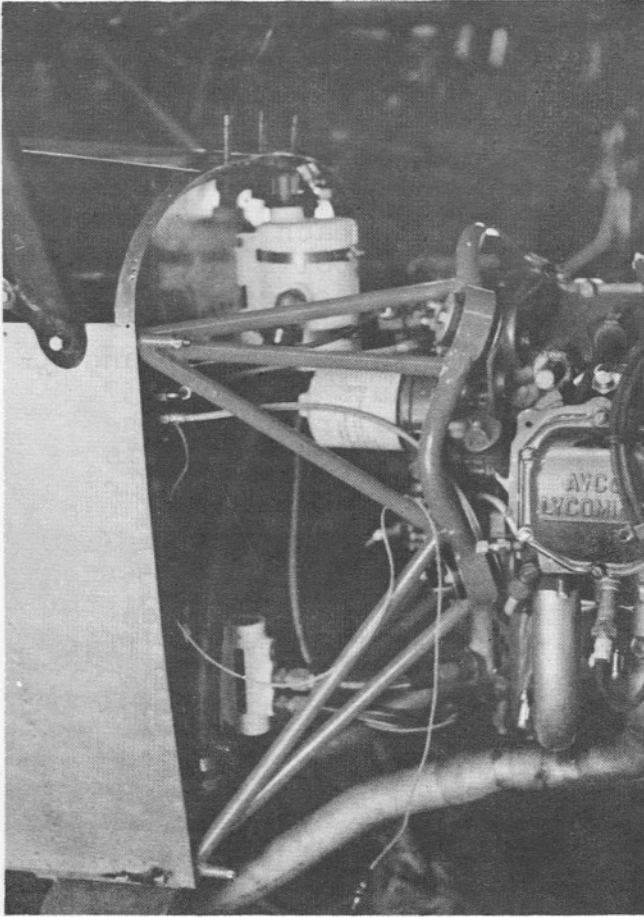
Your tail pipes install off the back of the headers. There is a slip joint on the tail pipe which slips up over the header. Once the tail pipe has been properly positioned, drill a hole thru the tail pipe and header and install the ring clamp with small projection thru the hole you just drilled.

Do not just let the tail pipe hang cantilevered from the header. It must be supported from the firewall. A good support can be made from stainless steel welding rod, as shown in sketch below. Othersupports can be made from asbestos fiber which is clamped to tail pipe and bolted to firewall. Remember, the tail pipe must be free to move. Do not weld tabs on tail pipe or clamp two pipes together and use one support. Give each tail pipe individual support. See below.



TAILPIPE HANGAR INSTALLATION

NOT TO SCALE



On some Lycoming engines, the oil filler dipstick interferes with the engine mount. When that happens, you have two choices. You can get a shorter dipstick assembly from a Lycoming dealer, or, you can shorten and recalibrate the dipstick that came with your engine. The picture at left shows an Acroduster I with a modified dipstick assembly.

The dipstick tube is made of plastic and screws into and out of the engine block with a minimum of trouble. It can be removed, shortened, and replaced quite easily. Then the dipstick is shortened and recalibrated.

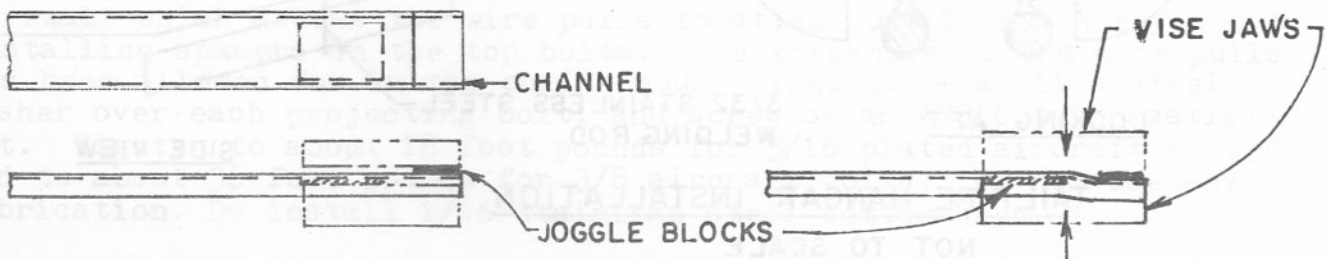
Now that the exhaust stacks are in place, hang the baffles.

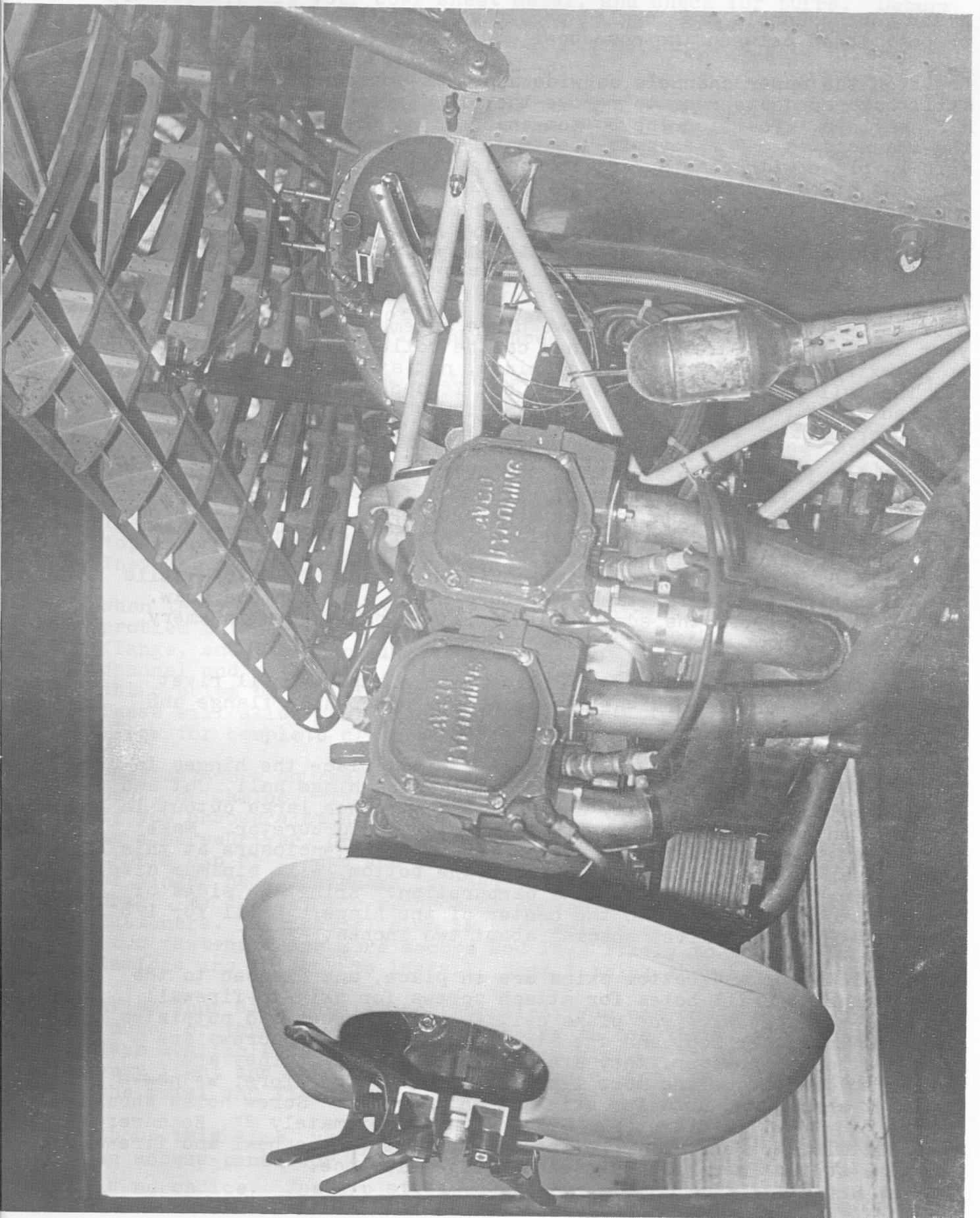
As the baffles are received from Starduster Corporation, they are oversize. This is to allow for trimming to fit your cowl installation. Install all the pieces, and hold to engine with screws around the exhaust rocker arm covers. Pop rivet the baffle parts where they overlap. For now, this completes our mechanical installation.

On the opposite page there is a picture of an engine installation with the nose bowl held firmly in position. This is the first step in making your cowling assembly.

Start by bolting two angles, or channels, onto the starter gear ring. These should extend out a foot or so each side of centerline. They act as locating supports for the nose bowl, which you slipped over the prop shaft just before you bolted your supports in place. Now bring the nose bowl firmly up against the supports, and be sure it is centered on the prop shaft. Clamp in place. Check carefully to see that the nose bowl is not twisted, when viewed from the front.

When you are satisfied that the nose bowl is properly positioned, cut and fit your four aluminum channels which act as the cowling frame. They must be joggled at each end, so that they will fit the firewall flange and the nose bowl flange properly. See sketch below for joggle information.





After your channels are joggled properly for both ends they should be positioned between the nose bowl and firewall.

Position the upper channels as wide apart as you can have them, and still have adequate room to remove the oil dipstick on 180 and 200 H.P. engines. Position the bottom channels so that the back end of the channels is 6-7" above the bottom of the firewall. Hold the channels in place with clamps. Drill and install two #632 nutplates at each end of each channel. Install #632 Screws. You now have completed your cowling framework.

With the nose bowl firmly anchored to the engine and the channels firmly anchored to the firewall and nosebowl, we are in good position to put the top on.

Start by cutting to length the two hinge assemblies that come with your cowling material. This hinge can be rolled. It does not have to be extruded. And it may be aluminum, not steel. The hinge should run the full length of the channel, but it should not extend into the joggled areas. Center a hinge on each top channel. Apply clamps to the lower part of each hinge to hold them in position.

Now cut and fit the top skin. The top skin should project back over the fire wall flange approximately $3/4$ " and forward over the nose bowl joggle. The skin should come down over each hinge, to as close as you can get to the hinge centerline. After the skin is cut to size, be sure and "edge" the metal. Take the burrs off with file, emery cloth, fine sandpaper, or something similar. STARDUSTER sells a metal edging tool which takes the burr right off with one draw, for \$6.95. However, the edge should still be polished with emery or crocus cloth.

Install the top skin and hold in place with clamps. Drill rivet holes with #30 drill thru the top skin, the upper hing flange and the channel. Rivet spacing should be about 2".

After the top, install the bottom skin. First place the hinges in proper position and hold with clamps on the top hinge half. Cut and fit the bottom skin. You may have to make a rather large cutout in the skin on order to clear the fuel injector or carburetor. Make the cutout. Do not build the air box or injector enclosure at this time. Wrap the skin completely around the bottom, with minimum size cutouts for the exhaust pipes and carburetion. Bring the sides of the bottom skin right up to the center of the hinge. Drill for $1/8$ " rivets.(#30 drill). Rivet spacing about two inches.

Now that our top and bottom skins are in place, and clecoed to the four channels, drill holes for attach screws for skin-to-firewall and skin-to-nosebowl. The plans call for #632 screws and nutplates for the Acroduster Too, and the Starduster Too. #632 screws are plenty strong. However, they are harder to install. They are easier to overtorque and more likely to break. Therefore, we now use #832 screws and nuts for skin attach purposes. Screw holes should be drilled $5/32$ " in diameter. Spacing is approximately 2". Be carefull when drilling to be exactly in the center of the nose bowl and firewall flanges, so that you will have enough edge distance.

Disassemble all your cowl sheet metal, and check for burrs. Deburr all holes and edges. Remove all scratches with fine sanding paper or cloth. Paint with a metal etching zinc chromate primer, both sides. Also paint the channels.

Now, reassemble your channels and top and bottom panels. Rivet Panels thru hinges, to channels. Use #832 plate nuts at firewall, and use An365-832 locking nuts at nose bowl. Do not overtighten.

Cut and fit your side panels. You have a decision to make, at this point. Shall you leave the side panels open at the rear, as the plans suggest, or shall you have the side panels tight fitting and exhaust all the cooling air out the bottom?

My vote is for the tight fitting side cowls and all the exhaust air to be ducted out the bottom. I feel that one opening is both better looking and has less drag than three openings.

If you decide for tight fitting side panels, you can omit the .071 stiffener shown at the back side of the side panels. You can also omit the fasteners shown on the front edge. Also you may have to cut holes in the side panels to clear the corners of the back cylinders. If so, cut them small, with only about $3/8$ to $1/2$ inch clearance.

The side panels are riveted to the lower part of the hinge at the top and fastened to the bottom channel with Dzus or camloc fasteners. They are not fastened at all to either the nose bowl or the firewall.

When the side panels are riveted to the hinges, there is a clearance problem between the rivets sticking out the bottom of the hinge flange, and the channel. The bucked rivet head impinges on the channel and will not let the side panels close completely. Solve this problem by drilling $5/32$ Diameter clearance holes in the channels. These will allow some place for the bucked rivet heads to go, and allow for complete closure of the side panels.

The fasteners on the bottom edge of the side panels may be either Dzus, or Camloc. They may also be slot headed or winged headed. If you choose slot headed you will have to have an opening tool, such as a screwdriver, or, in some cases, a dime. The winged headed fasteners can be opened and closed with your fingers. The disadvantage of winged head fasteners is that they present infinitesimally more drag. My choice, for reasons of convenience, is the winged head fasteners. My choice, also is for Camlocs over Dzus fasteners. Dzus fasteners are more secure and less likely to come out. However, Camlocs are so easy to install, that I think they have the advantage.

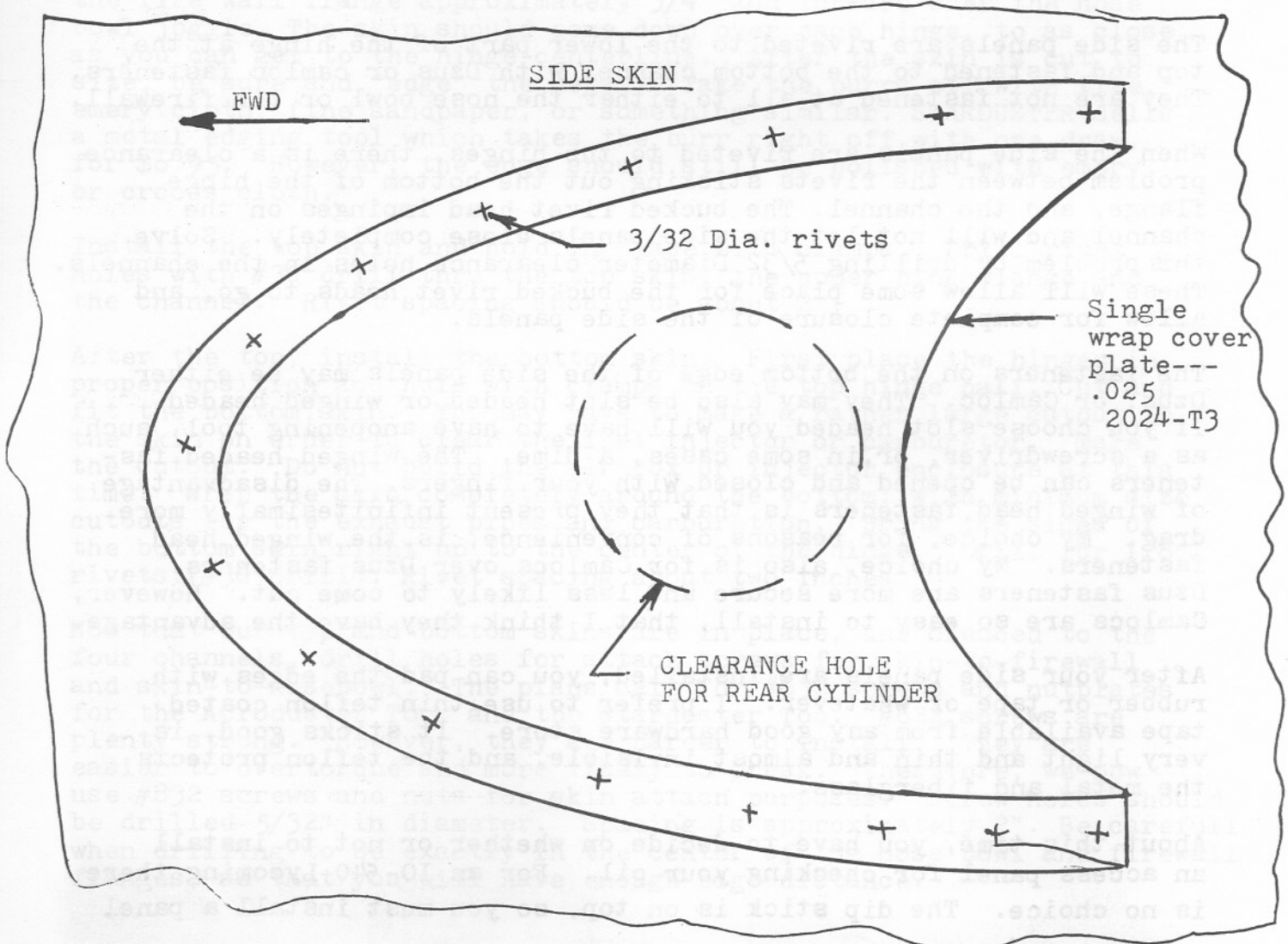
After your side panels are installed, you can pad the edges with rubber or tape or whatever. I prefer to use thin teflon coated tape available from any good hardware store. It sticks good, is very light and thin and almost invisible, and the teflon protects the metal and fiberglass.

About this time, you have to decide on whether or not to install an access panel for checking your oil. For an IO-540 Lycoming there is no choice. The dip stick is on top, so you must install a panel

which will allow you to check your oil. If you have one of our Gerdes with a remote control drain valve, you can also drain your gascolator thru this access door.

The one thing you can't do thru a small access door is get a good look at the engine compartment. Many builders consider this so important that they insure this by omitting the access door on the IO-360 installations. This insures that the hood will be raised before use to check the oil and drain the gas, and maybe, the pilot will then take a good look at the engine compartment. Such good looks are doubly important in new aircraft, and should be done before every flight to check for chafing, looseness, oil leaks, cracks, and what have you. If you do put in the door, you should still raise the hood and look the engine compartment over carefully before each flight. At least for the first 50 hours.

Now back to the side panels which may have little holes in them with the rear cylinders peaking out. We have to cover up these holes some way. They can be completely covered with small bulging cover plates made of metal or fiberglass. However, in order to cover completely, compound curvature is necessary. A much easier way, and better looking, is to make flat wrap covers out of sheet aluminum. The fact that the back is open is unimportant. The rubber seal on the baffles will effectively seal the air. See below for cover plate sketch.



During all the time that you have been building the cowl, you have also had to be concerned about the baffles and their clearance to cowl.

As mentioned earlier, your baffles, as they come from "Starduster" are oversize. Trim them to clear the cowl, as it is being built, by $3/8$ to $1/2$ inch. Install neoprene rubber, wide enough to overlap the inside cowl by $1/4$ to $1/2$ inch. Fasten the rubber to the baffles with AAL-42 large headed aluminum pop rivets. Space rivets every 1-2 inches.

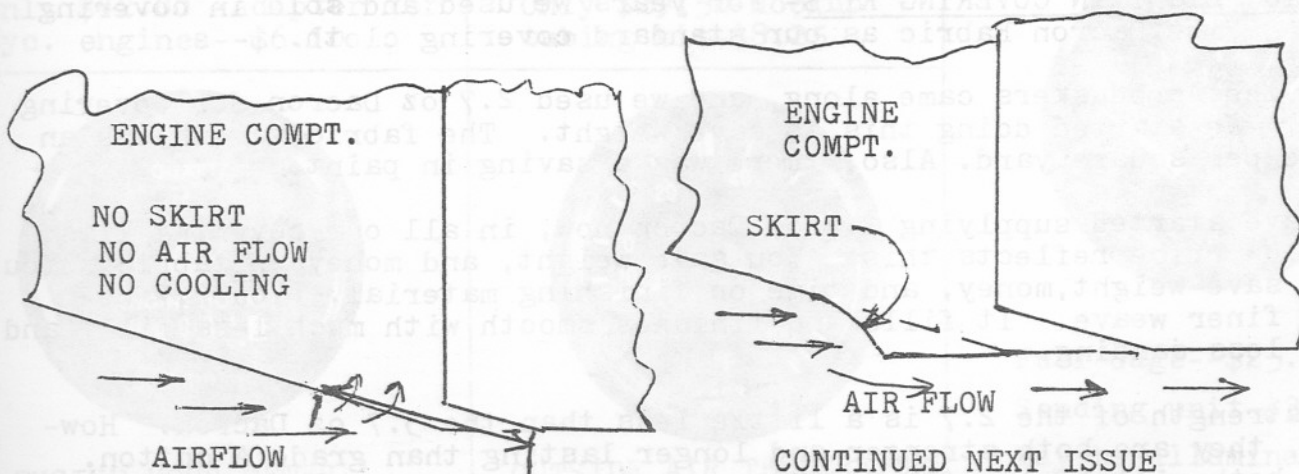
The rubber should overlap the inner side of the cowl and lay forward, so that the incoming higher pressure air will tend to seal the rubber against the cowl.

We then get some clear silicone sealant from the hardware store, and seal all cracks around the engine that might let air escape. Seal cracks between the baffles and the fins. Seal all other openings and cracks, so that a maximum amount of air is forced to go thru the cooling fins, in order to escape. This will make for a cooler running engine.

At the bottom rear of the cowl we have to make provisions for the escape of an adequate amount of cooling air. We have a built in stainless steel exhaust tunnel. The exhaust pipes probably protrude partly out of this tunnel. We now have to cut an opening that is approximately 10 per cent larger than the openings for the incoming air. We measure the opening for incoming air by the amount of space left above the front baffle which seals off the lower part of the front cylinders. We do NOT measure the size of opening in the fiberglass. That could be very deceiving. We are interested in the amount of air admitted to the cylinders, not the size of the hole cut in the fiberglass.

The exit hole on the bottom should contain 10 per cent more square inches than the incoming holes. If a moveable cowl flap is to be installed, then the exit area is figured with the cowl flap wide open. This will take care of the worst situations. Othertimes the flap is closed to cut down on drag.

For a fixed opening, a skirt is usually required. This gives a good draft, like a chimney. Without the skirt, air will enter the bottom opening instead of exit from it, and your cooling will be totally unsatisfactory. See Sketches below.



PRODUCT INFORMATION

GEL CEL BATTERIES - We have been informed by Herb Andersen, of PITTS AERBATICS, that our Gel Cel Battery has been approved for use in Certified Pitts airplanes. The drawing numbers involved are Pitts drawings 2-2125 and 2-7602.

This should make it easier for owners of other certified airplanes to get FAA approval for a gel cel battery installation.

NEW NOSE BOWL - We now have available a three hole, smooth nose bowl that is 37 inches wide at the widest point. This is 2" wider than the older, standard three hole nose bowl that has been so popular around the country. It is equal in width to the open "Commanche" type nose bowl that has been a STARDUSTER trade mark for years. We now prefer the three hole nose bowl over the Commanche type, because of the increased strength to weight ratio of the three holer, and because we feel that a little better streamling is available with the three holer. The 37" width will now make it easier to get a smooth cowling job. Remember, the "Commanche" nose bowl is 37" wide. The three hole nose bowl is either 35" or 37" wide. You must specify.

RADIAL COWL RINGS- Many years ago, when we built the Sopwith triplane, we had tooling made for aluminum cowl nose rings. These rings are 43" in Diameter, 7" deep, and have a front opening 29" in diameter. They are made of spun 6061-0 Aluminum, and were made for WW1 rotary engine airplanes. They also fit nicely over Warner 125, 145, and 165 engines. They will not fit over a Continental 220 H.P. radial.

By welding flat wrap aluminum on to the rear of the nose piece, radial cowlings of any depth can be made. For replica builders, these are completely authentic nose pieces.

We had occassion recently to make another nose bowl for a museum, so we had two others built at the same time. These are for sale at \$500.00 each. They could be used on any round engined airplane that will accept a 43" diameter cowl.

FABRIC WEIGHT IN COVERING KITS- For years we used and sold in covering kits 3.7 oz Dacron Fabric as our standard covering cloth.

Then the Acrodusters came along, and we used 2.7 oz Dacron for covering them. We started doing this to save weight. The fabric saving was an ounce per square yard. Also, there was a saving in paint.

We have started supplying 2.7 oz Dacron now, in all our covering kits. Our low price reflects this. You save weight, and money on fabric. You also save weight, money, and time on finishing material. You 2.7 oz is a finer weave. It fills and finishes smooth with much less fill, and much less sanding.

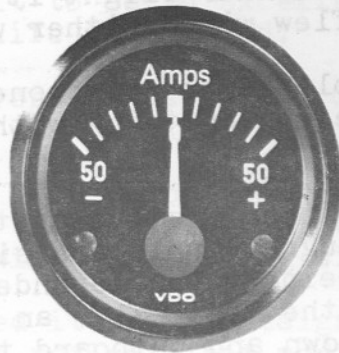
The strength of the 2.7 is a little less than the 3.7 oz Dacron. However, they are both stronger and longer lasting than grade A cotton. They both will last until it is long past the time when you should strip and inspect and repair as necessary your airframe.

VDO INSTRUMENTS- FOR SEVERAL YEARS NOW WE HAVE BEEN USING VARIOUS VDO INSTRUMENTS IN OUR AIRPLANES. OUR OPINION IS THAT THEY ARE EQUAL TO, OR BETTER THAN, THE FINEST AIRCRAFT INSTRUMENTS YOU CAN BUY. DEVELOPED IN GERMANY FOR FINE MOTOR CARS, THEY ARE PRODUCED BY THE MILLIONS. THEIR QUALITY CONTROL IS EXCELLENT. WE ARE PROUD TO SELL THEM. YOU WILL BE PROUD TO OWN THEM. SEE BELOW FOR LISTINGS.



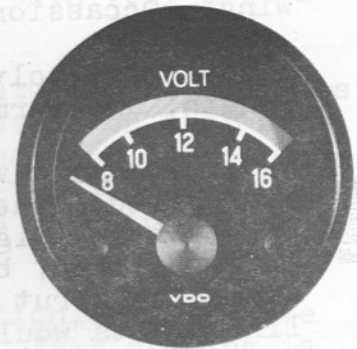
QUARTZ CHRONOMETER

Accurate to within a few seconds a month. Battery power. Only \$59.50. Wiring kit only \$3.25



AMMETER-50 AMPS

Illuminated-12 Volts. Wiring kit available. Ammeter only \$18.40 Wiring kit only \$14.00



VOLTMETER-8 TO 16 V.

Illuminated-12 Volts Wiring kit available. Voltmeter only \$29.95 Wiring kit only \$3.25



OIL TEMPERATURE GAGE

8' Tubing with sender Only \$42.00 -Adapter for Lyc. engines--\$6.10



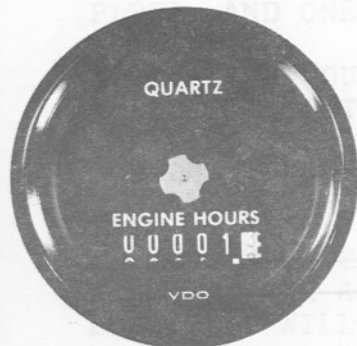
OIL PRESSURE GAGE

Reads to 100 PSI Only \$29.50-Hookup tubing kit-\$8.25

FUEL PRESSURE GAGE

Same as at left, except gage reads from 0-30 PSI. \$51.10-

Hookup tubing kit \$8.25



ENGINE HOUR METER

Only \$46.00 Wiring kit \$3.25



OUTSIDE AIR TEMPERATURE

Only \$66.80 includes bulb and all wiring



Fuel Gage--\$25.95.

Sending unit-\$34.40

May be illuminated-Wiring kit--\$3.25

WING HEAVINESS SOLVED

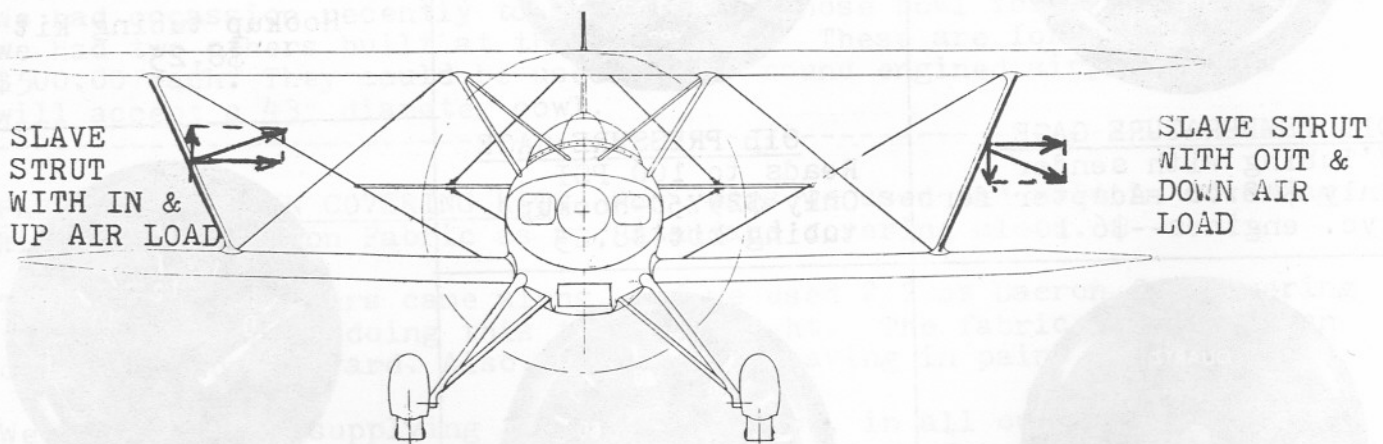
Several months ago, I had a telephone call from a customer. He described a most unusual problem. His STARDUSTER TOO flew with one wing heavy. The most unusual thing was that the wing heaviness shifted from side to side. One one flight it might be the left wing heavy. Later on, on another flight it might be the right wing. Occassionally, it flew with neither wing heavy.

I could not solve the problem over the phone. We discussed it at length, and terminated the converstaion with no solution in sight.

Several months went by. He called again to say that the problem was solved. The wing heaviness was due to the streamlined slave struts being tightened enough to hold a position when placed in that position, but still being moveable under load. Due to the angle the strut make with the vertical, an airload on the stream-line struts would have a down and outboard thrust, or an up and inboard thrust, if the strut was not perfectly aligned with the slipstream.

These vertical components of the slave strut airloads was moving the ailerons in flight. The owner finally figured out the cause when he noticed a snaproll could change the wing heavy condition from side to side. A left snap roll would produce left wing heaviness. A right snap roll would produce right wing heaviness.

The solution was to tighten up the slave strut snubbers so that they would not be moved by sudden airloads.



GOD BLESS AMERICA-----AND-----PLEASE HURRY

DRAWING CHANGE

After 3 years and 400 hard aerobatic hours we decided to give our ACRODUSTER TOO a thorough annual inspection. We stripped all the fabric off, and examined it from the bare framework up. It will sport a new cover job and new paint at Oshkosh.

All in all, we found it to be in excellent shape, with very little evidence of the hard life it has led.

The most significant repair was on the Cabane struts, sheet 5, items 4 and 5. One of them was cracked, and the brace strut on that side was carrying no load. This is not a dangerous condition, as one brace strut can still take compression as well as tension loads. Also, if both were removed, the crossed wing wires would then come into play and prevent the wing from moving sideways.

Nevertheless, we fixed it with a design modification, and we have changed the drawing to reflect that modification. That drawing is on page 15-16.

If you are still making your ACRODUSTER TOO, we recommend that you make the changes shown on the revised drawing. We have also beefed up the outboard ends of the sway braces.

If you are already flying your machine, we recommend that you keep a careful eye on these sway braces, and carefully inspect them both visually and by shaking, before your first flight of the day. You should change them at the next annual inspection.

The list of material for drawing five is changed as follows:

ITEM 4 becomes one .125 clip which replaces the old -4 and -5 clips.

ITEM 5 becomes the new end of the sway braces. It is made from .090 sheet.

The nominal length of the sway braces was changed to 30-1/4".

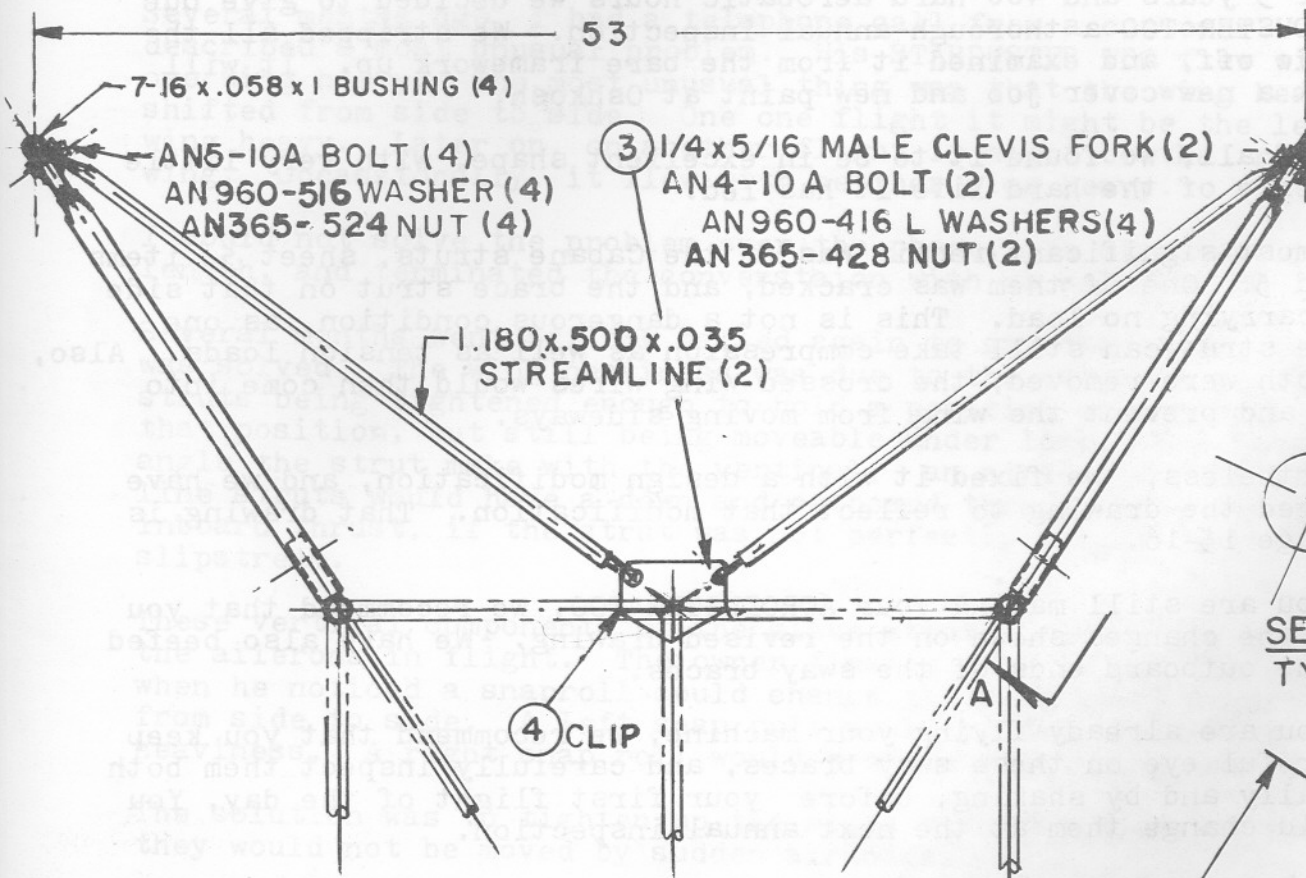
NEWS FLASH -CINDY RUCKER, FLYING HER NEW ACRODUSTER ONE, TOOK FIRST PLACE IN THE INTERMEDIATE CLASS OF THE RECENT IAC SANCTIONED CONTEST THAT WAS HELD AT APPLE VALLEY. SHE WON OUT OVER NINE SINGLE PLACE PITTS, AND ONE DECATHELON.

NEWS FLASH- OUR ACRODUSTER TOO WILL COMPETE IN THE UNLIMITED WORLD AEROBATIC CONTEST TO BE HELD AT OSHKOSH. IT WILL BE FLOWN BY ITALIAN CHAMPION, SR. ALDO LOCATELLI. ALDO DOES NOT WANT TO BRING HIS ACRODUSTER ONE FROM ITALY BEACUSE OF ITALIAN GOVERNMENT RED TAPE. HE SAYS HE PREFERS TO TAKE HIS CHANCES IN OUR TWO PLACE.

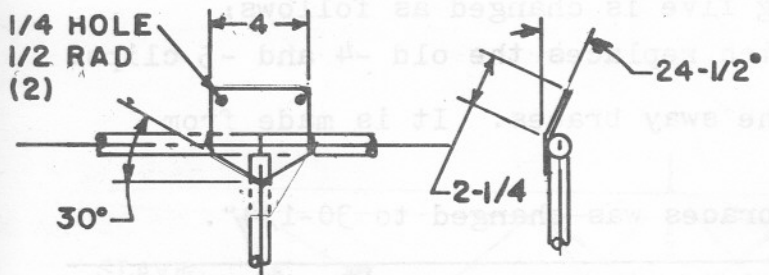
WE HOPE YOU GET TO SEE BOTH THE IAC FONDULAC CONTEST, WHERE CINDY WILL FLY HER ACRODUSTER ONE, AND THE WORLD CONTEST, WHERE CAPTAIN LOCATELLI WILL FLY OUR ACRODUSTER TOO.

SEE YOU THERE.

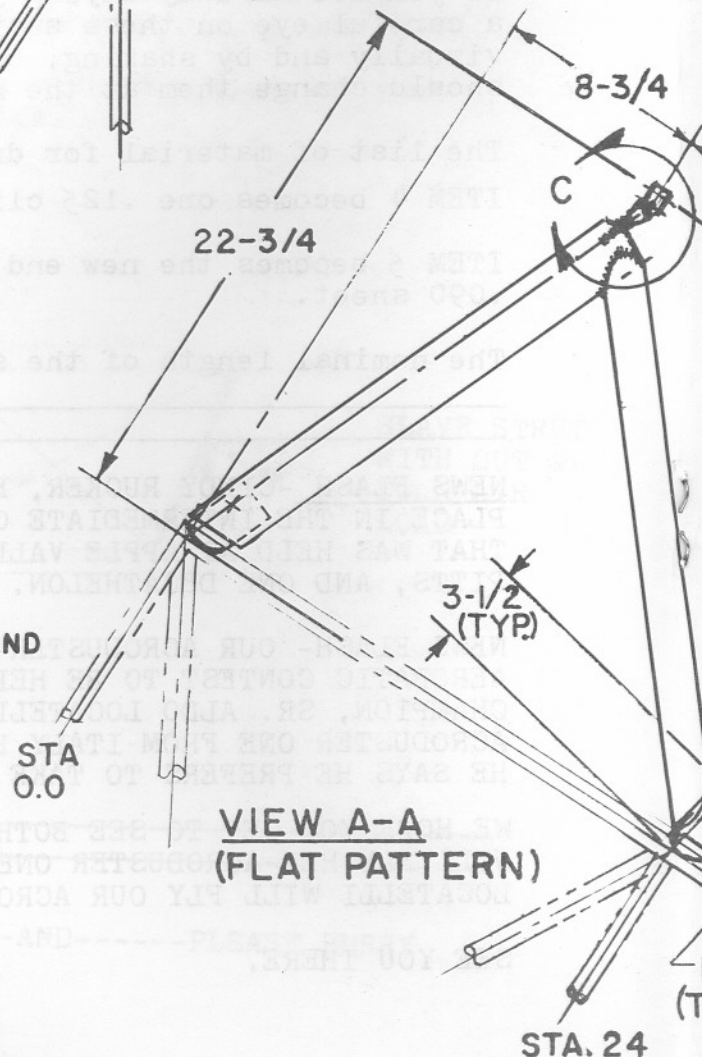
AN316-624 NUT (4)



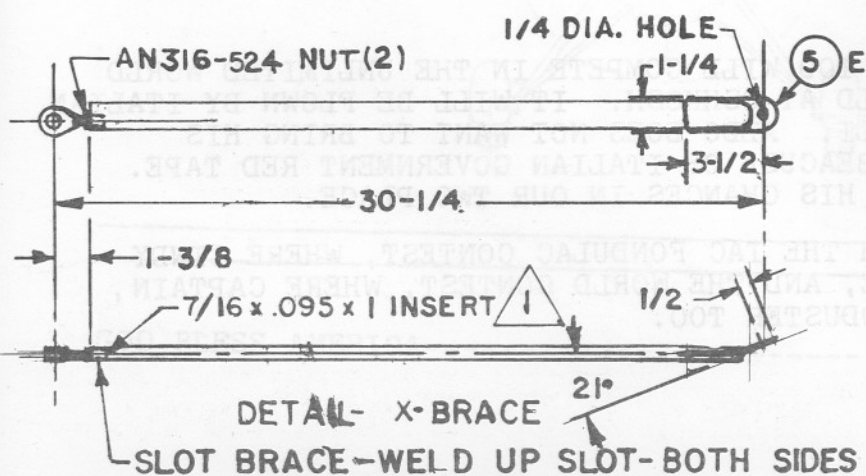
SECTION B-B
TYP. 4 PLACES



DETAIL-4 CLIP

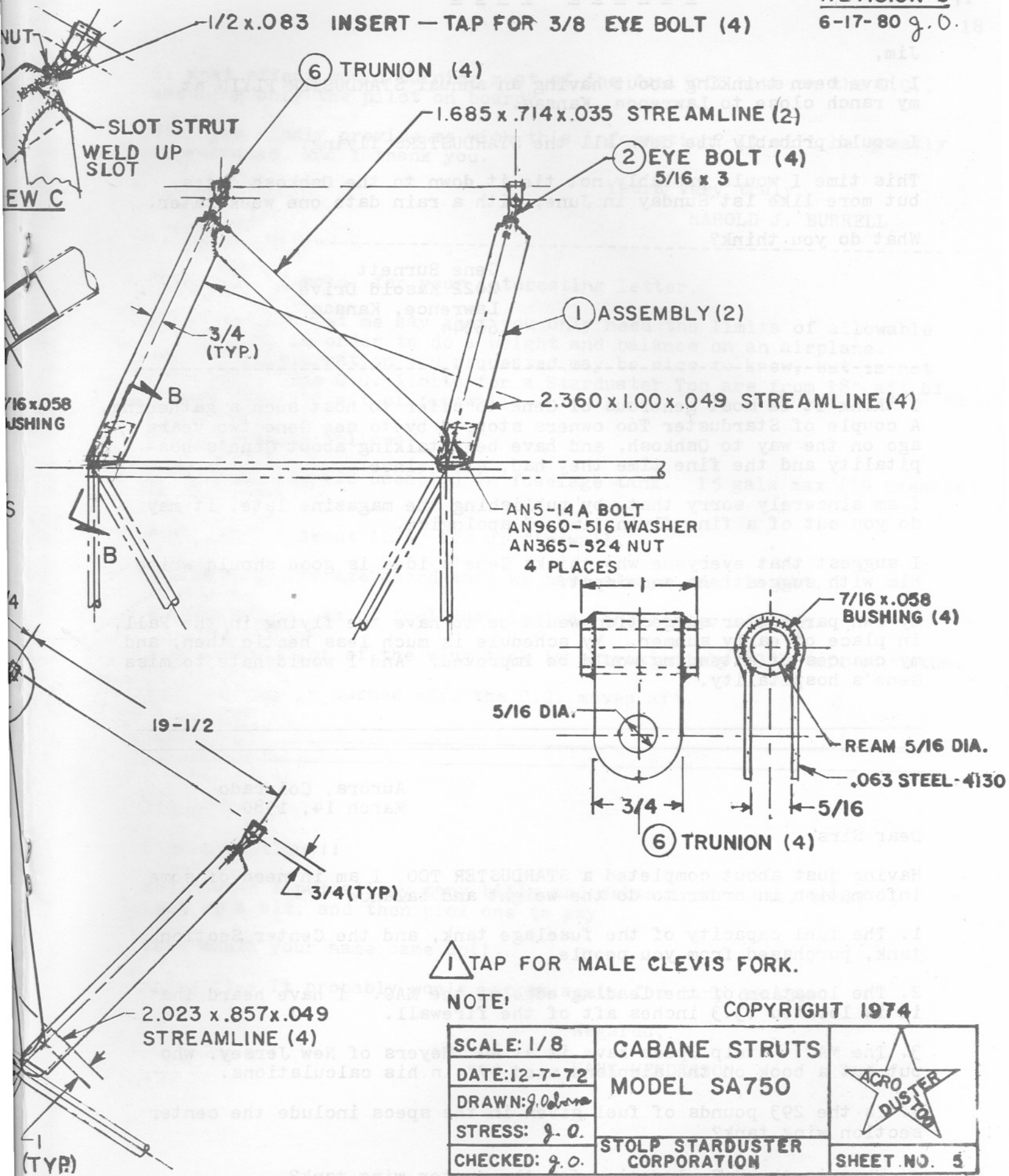


VIEW A-A
(FLAT PATTERN)



DETAIL- X-BRACE


SLOT BRACE-WELD UP SLOT-BOTH SIDES



△ TAP FOR MALE CLEVIS FORK.

NOTE:

COPYRIGHT 1974

SCALE: 1/8	CABANE STRUTS MODEL SA750	
DATE: 12-7-72		
DRAWN: g.o.	STOLP STARDUSTER CORPORATION	SHEET NO. 5
STRESS: g.o.		
CHECKED: g.o.		

Jim,

I have been thinking about having an annual STARDUSTER FLYIN at my ranch close to Lawrence, Kansas.

I could probably tie down all the STARDUSTERS flying.

This time I would probably not tie it down to the Oshkosh dates, but more like 1st Sunday in June, with a rain date one week later.

What do you think?

Gene Burnett
2022 Kasold Drive
Lawrence, Kansas
66044

I think it is most generous of Gene to offer to host such a gathering. A couple of Starduster Too owners stopped by to see Gene two years ago on the way to Oshkosh, and have been talking about Gene's hospitality and the fine time they had, ever since.

I am sincerely sorry that, by publishing the magazine late, it may do you out of a fine flyin time. I apologise.

I suggest that everyone who thinks Gene's idea is good should write him with suggestions and input.

My own particular suggestion would be to have the flying in the Fall, in place of early summer. My schedule is much less hectic then, and my chances of attending would be improved. And I would hate to miss Gene's hospitality.

Aurora, Colorado
March 14, 1980

Dear Sirs,

Having just about completed a STARDUSTER TOO, I am in need of some information in order to do the weight and balance.

1. The fuel capacity of the fuselage tank, and the Center Section tank, purchased from you people.
2. The location of the leading edge of the MAC. I have heard that it is located 13.3 inches aft of the firewall.
3. The MAC. Stolp Specs have it at 44" Meyers of New Jersey, who put out a book on the airplane used 47" in his calculations.
4. Is the 293 pounds of fuel given in the specs include the center section wing tank?
5. What is the C.G. location for the center wing tank?

6. What effect would burning most of the fuel off have on the C.G., assuming only the pilot on board?

Will you kindly provide me with this information? It will be greatly appreciated, and I thank you.

Yours very truly,

HAROLD J. BURRELL

Thank you, Harold, for your interesting letter.

First of all, let me say that you only need the limits of allowable C.G. travel in order to do a weight and balance on an airplane. The other information you requested may be nice to know, but is not necessary. The C.G. limits for a Starduster Too are from 18" aft of firewall to 27" aft of firewall.

Answers are as follows:

1. 30 gals max (28 useable) in fuselage tank. 15 gals max (14 useable) in wing tank.
2. I make it about 11.4" aft of firewall.
3. The mean average chord that we have always used is 44".
4. The 293 pounds of fuel does include the center section.
5. C.G. location of the wing tank is approximately 19.5" aft of datum.
6. When fuel is burned off, the C.G. moves aft.

Jim,

Congratulations!!

Each month I put all my many bills and debts into a hat, shake them up a bit, and then pick one to pay.

This month your name came up!!

Enjoy it-- It probably won't happen again for many decades.

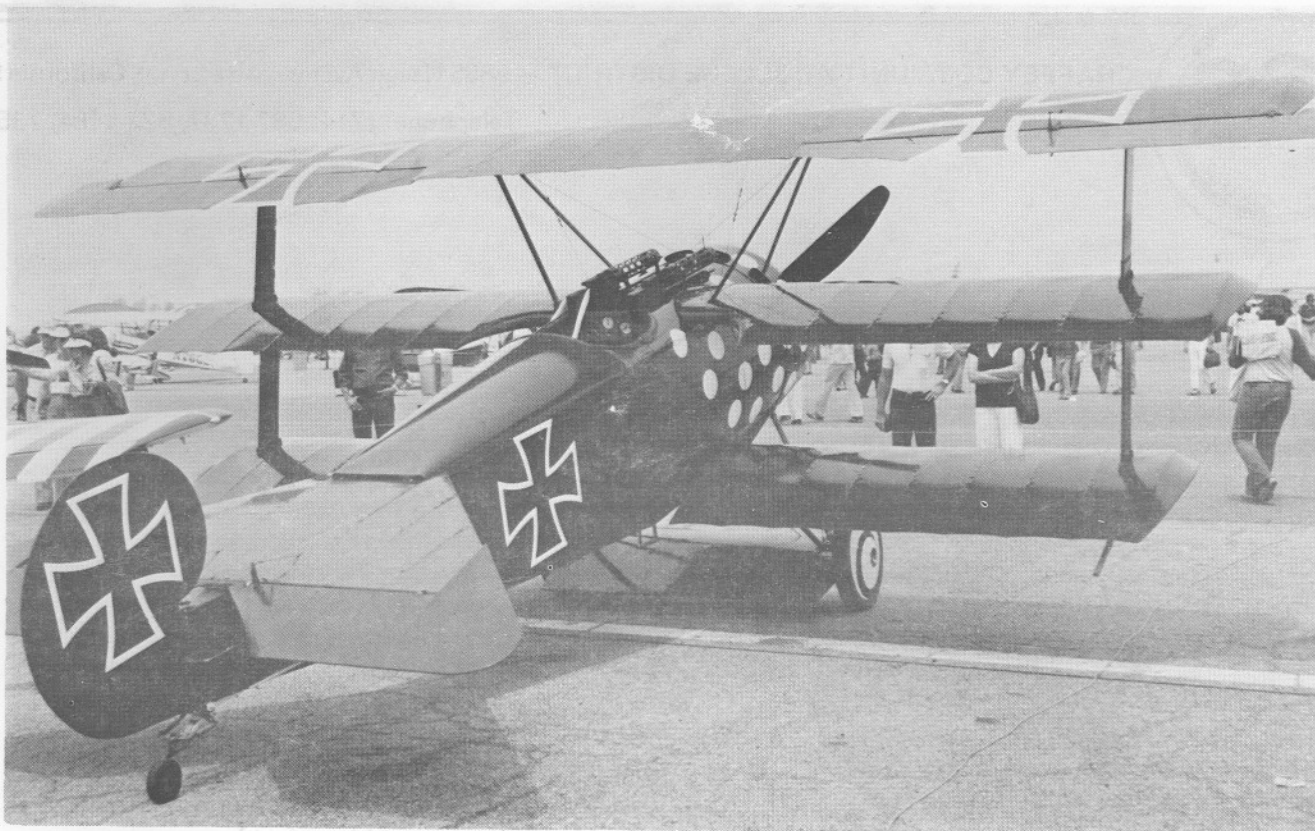
Regards,

HANK HENDERSON



SCENE AT THE BIG CHINO FLYIN-- ABOVE IS LINEUP OF WW1 AIRCRAFT PRIOR TO BIG DOGFIGHT .(MY FIRST AIRSHOW PERFORMANCE. MORE FUN THAN WATCHING.) BELOW IS BILL MEYER AND HIS TROPHY WINNING JUNG- MEISTER. CONGRATULATIONS, BILL FOR BEST BIPLANE AWARD.





ABOVE IS THE NEW TRIPLANE BUILT AND OWNED BY CHUCK WENTWORTH. FEATURES CONTINENTAL 220 POWER. WHEN NOT WORKING ON AIRPLANES, CHUCK WORKS AS AN AEROBATIC INSTRUCTOR FOR ART SCHOLL. BELOW IS THE GRAND CHAMPION HOMEBUILT AT CHINO, CALIFORNIA. UNUSUAL APPEARANCE AND METICULOUS WORKMANSHIP ADD UP TO A TROPHY WINNER.





CHAFFEY COMMUNITY COLLEGE DISTRICT – 5885 Haven Avenue, Alta Loma, California 91701

Telephone: (714) 987-1737, 822-4484, 735-0242

May 9, 1980

Mr. Jim Osborne
Stolp-Starduster Corp.
Flabob Airport
Rubidoux, CA 92509

Dear Sir:

The Business Office, along with the Superintendent, wishes to recognize your gift of 500 pounds of 4130 chromolly steel tubing to our Aeronautics Department for which you have established an estimated value of \$250.

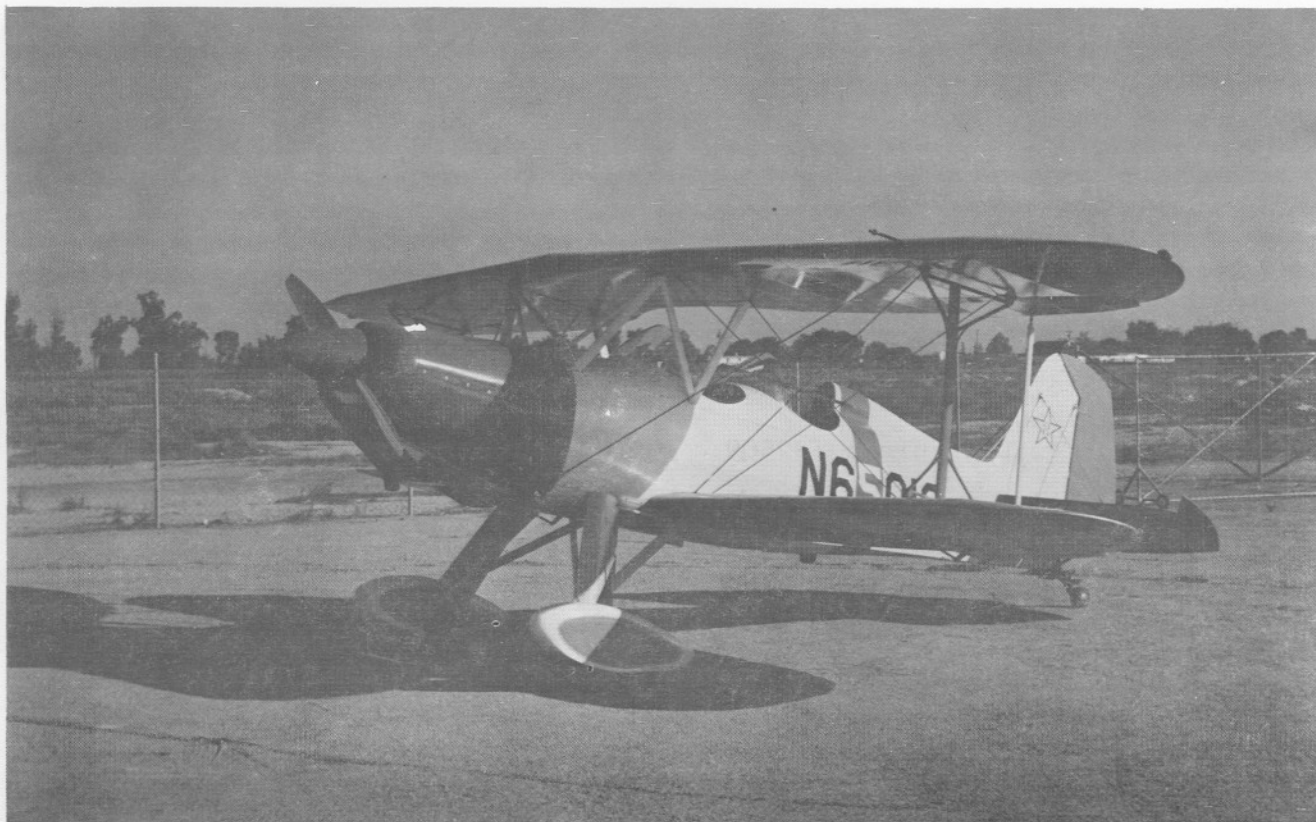
Your contribution will be of real support to the instructional program of Chaffey College.

Sincerely,

R. E. Totten
Assistant Superintendent
Business Services

RET/sp

cc: C. Stark



THE ABOVE BEAUTIFUL STARDUSTER TOO WAS BUILT IN 1971 BY MONTE BUSH, DICK JANEWAY, AND JOHN HEMINGWAY . IT FLEW OUT OF BAKERSFIELD CALIFORNIA-PRESENT WHEREABOUTS UNKNOWN. 150 H.P. LYC. FIXED PITCH



PICTURE OF NEW ACRODUSTER TOO ALSO FEATURED ON OUR FRONT COVER. BUILT BY TOM AND RICHARD GREENE, OF HEMET, CALIFORNIA. 250 H.P C/S PROP. THIS IS TOM'S SECOND AIRPLANE. HE ALSO OWNS A BIG ENGINED STARDUSTER TOO. SENT US A NEWSPAPER SECTION, FEATURING HIS AIRPLANE ON THE FRONT PAGE. A BEAUTIFUL MACHINE.

Box 1991
 Silver City, N.M. 88061
 April 20, 1980

Stolp Starduster Corp.
 4301 Twining
 Riverside, California 92509

Dear Sir

I hope that you are ready for one of those fantastic, all-events-fall-into-place stories, because I've got one for you!

Yesterday, I flew over to one of our neighboring airports, to take in a fly-in and airshow: the Confederate Air Force (N.M. wing) was there, plus a bunch of homebuilts.

Now, I'm a low-time student pilot, with quite a bit of Wright in me, so I've already bought plans for an 85% replica WW I fighter; the wood for the fuselage is sitting in my living room, waiting to be cut and glued.

Here's my story: a friend of mine, who is the FBO at another of our neighboring airports, had brought over his Skybolt, and I pestered him until he took me for my first ride in an open-cockpit, aerobatic biplane. Snap rolls, loops, the whole works.

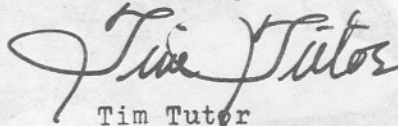
Then, tonight, I read a review on, and bought, The Starduster, by Norm Weis.

Needless to say, I'll never be satisfied with the old 152/172 that I've been using... The response, the view, the exhilaration of that Skybolt tends to spoil a fellow.

I am enclosing a \$3.00 check for your brochure on the Acroduster Too, and, with it, the desire that a good business relationship will hopefully be established, and another aero-bipe in the air in the not-too-distant future.

Thank you.

Sincerely



Tim Tutor

FIGURE OF NEW ACRODUSTER TOO ALSO FEATURED ON OUR FRONT COVER.
 BUILT BY TOM AND RICHARD GREENE, OF HEMET, CALIFORNIA. 250 H.P.
 C/S PROP. THIS IS TOM'S SECOND AIRPLANE. HE ALSO OWNS A BIG
 ENGINED STARDUSTER TOO.



A BEAUTIFUL STARDUSTER TOO THAT WAS SEEN ON THE FLIGHT LINE AT FLABOB AIRPORT ONE DAY. IT WAS FLOWN IN BY TOM ABERLE. OWNER IS NOT KNOWN AT THIS TIME. FEATURES BEAUTIFUL SHEET METAL WORK.



NICE LOOKING STARDUSTER TOO BUILT BY LAWRENCE DREYER, OF FORT PIERCE, FLORIDA. LAWRENCE SENT US A NEWSPAPER SECTION, FEATURING HIS AIRPLANE ON THE FRONT PAGE. A BEAUTIFUL MACHINE.

307 East Woodland
Lake Bluff, Illinois
60044

Dear Jim,

Just a short note with my \$6.00 subscription renewal check to praise the inclusion of component building tips in the "STAR-DUSTER" newsletter. The instructions published to date are concise, yet sufficiently detailed to allow complete understanding of procedures outlined.

The step-by-step methods used to discuss construction stages may seem rudimentary to some, but I feel are beneficial to the novice builder.

Keep up the excellent work.

Yours very truly,

RICHARD JERCH.

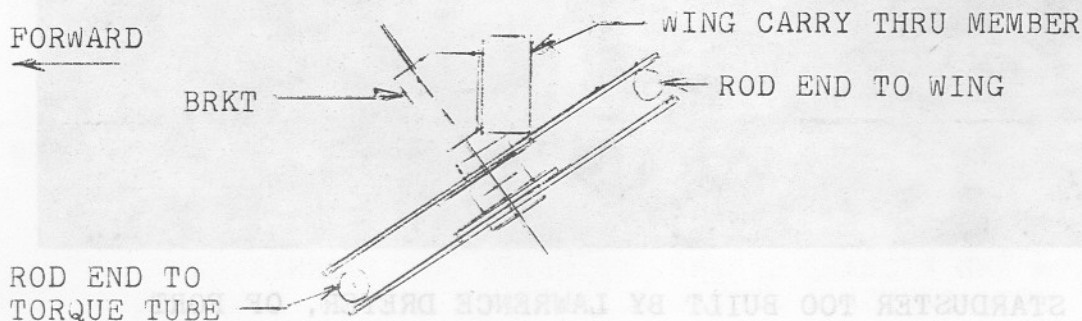
Dear Jim,

Enclosed is my check to bring my account up to date. Hope you haven't forgotten me on my flying wire order.

I'm installing/manufacturing the sheet metal on the fuselage at the present time. But- so far I have avoided the bottom of the gear area. Might I make a suggestion for the next issue of STAR-DUSTER MAGAZINE? In effect, a few sketches or ideas for the short metal panel, or panels below the shock cord to horizontal diagonal areas of the landing gear.

I believe that the aileron bell crank in the ACRODUSTER TOO needs more of a fix than the one in your magazine. I mentioned this in a letter sometime back. If you can decipher my sketch, I think the angle shown is too great, and somehow should be lessened, or eliminated altogether.

Below is a sketch of what I am contemplating doing on my own aircraft. Would appreciate any thoughts on this. In other words, this would put the torque tube to bellcrack pushrod on a near horizontal plane when neutral.



In a lighter vein, two other builders (T-18 and KR-2), have been idly discussing what to do with the BD-5. So here it is, for your bull sessions at FLABOB.

Why not use the BD-5 as the central part of a scaled down P-38 replica? Maybe even a two seat tandem version.

I thought somebody in your area might be tempted to try this, as a really horrendous homebuilt project.

Sincerely,

RAY CULLEN

I think Ray qualifies for the title of "INNOVATIVE BUILDER OF THE MONTH".

As you say, Ray, on the Acroduster Too, the angle from the center control torque tube to the reversing bars is fairly steep. It could certainly be reduced as per your ingenious sketch.

The drawbacks, as I see it are as follows:

1. More complicated to build.
2. It is likely that the rod end to torque tube end might protrude thru the fuselage mold line. This is not certain. It might be alright with a moderate slant.
3. Rod End to wing would rise and fall as it is cycled. This would require more clearance in wing.

As to your idea for making P-38 replicas out of BD-5's, I pass it along to all our readers. Who can tell what may come of it.



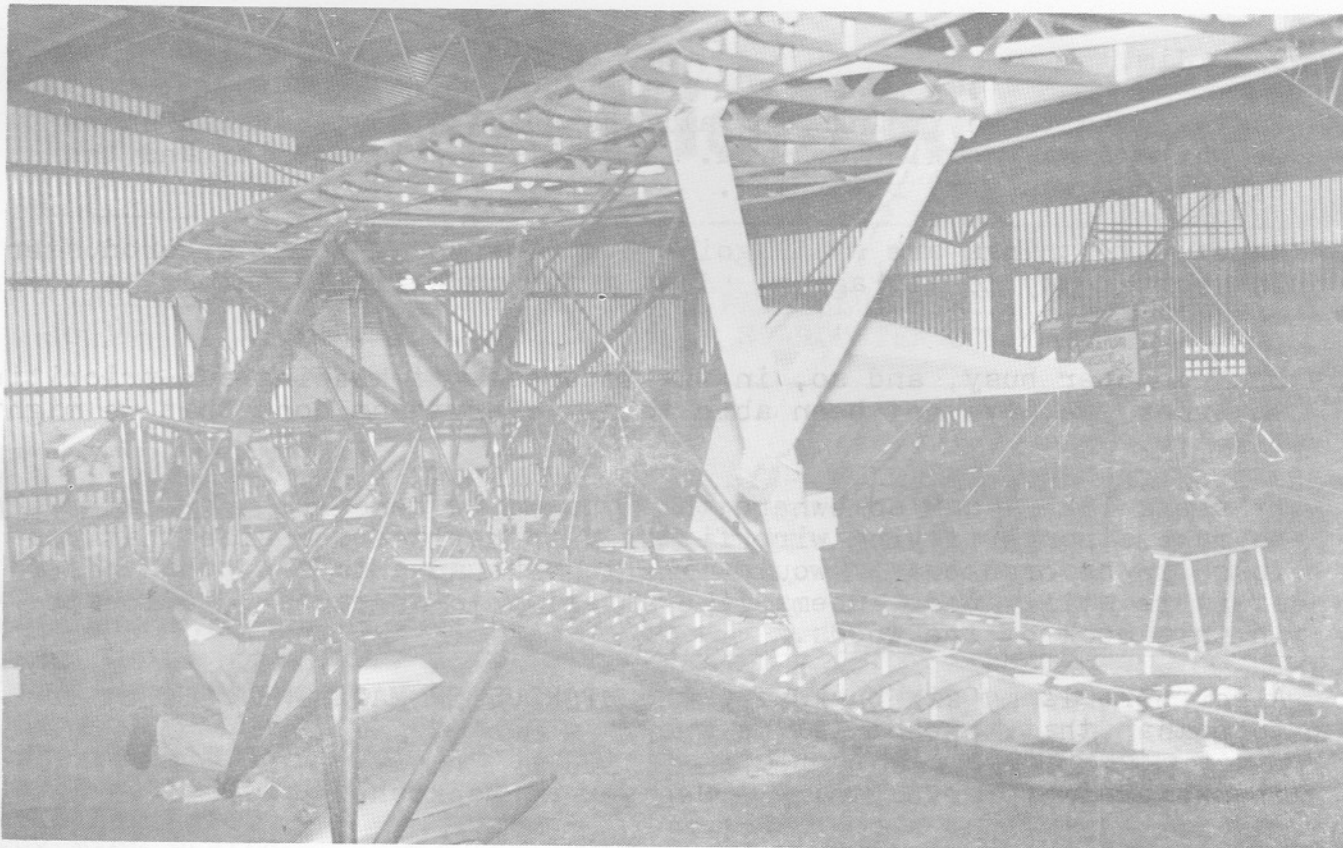
THE ONE AND ONLY
TRIMOTOR STINSON
STILL AIRWORTHY
AND FLYING.

RESTORED BY STAR-
DUSTER BUILDER
GENE COPPOCK OF
CYRYSTAL LAKE,
ILLINOIS.

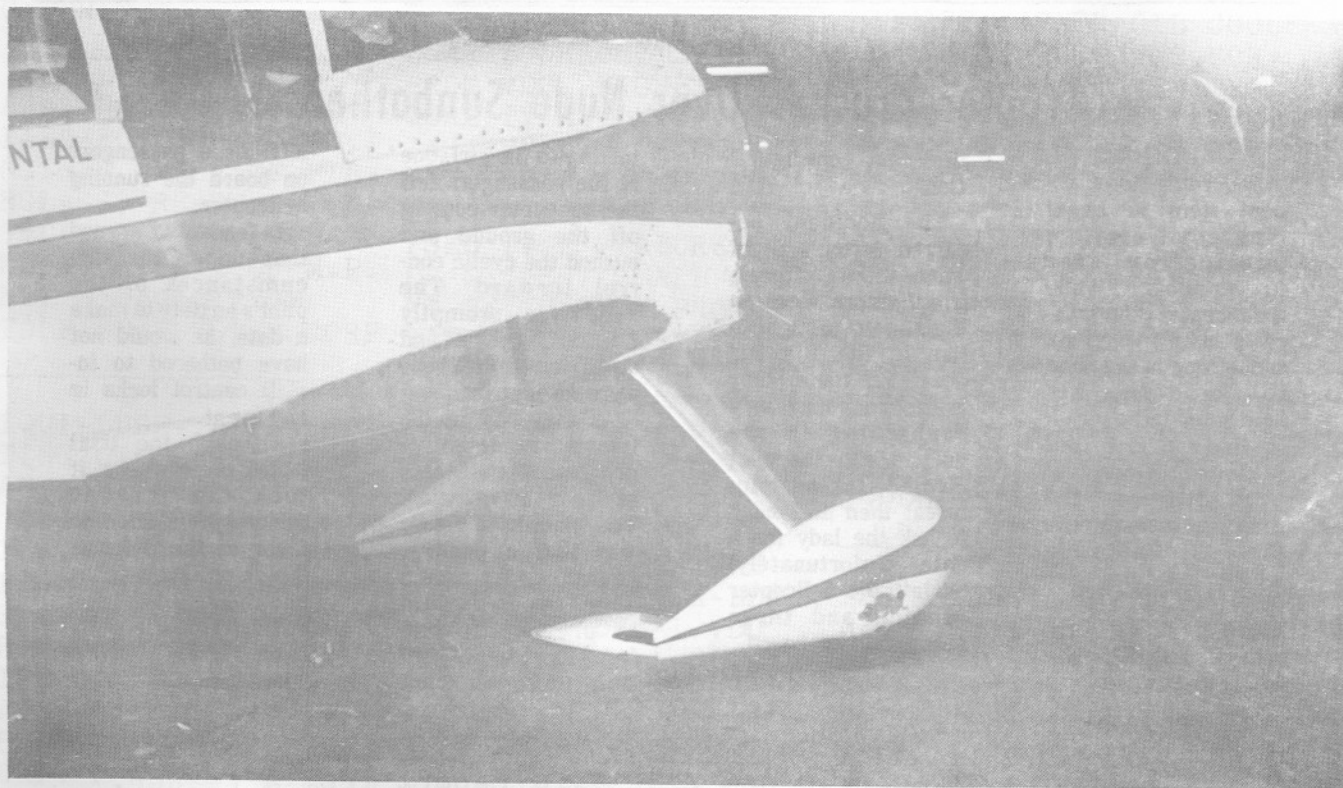


ABOVE IS STARDUSTER TOO SEEN LAST FALL AT RAMONA FLYIN.
 BELOW IS DER JAGER SEEN AT THE RECENT CHINO FLYIN. BOTH ARE GOOD
 LOOKING AIRPLANES.





ABOVE IS STARDUSTER TOO PROJECT OF JAN SUNDBERG, OF NORKOPING, SWEDEN.



ABOVE IS AN RV-3 WITH THE FUSELAGE MODIFIED AND A STARDUSTER ALUMINUM GEAR INSTALLED. THIS GEAR WAS ESPECIALLY DESIGNED FOR THE RV-3, AND WE ARE LOOKING FORWARD TO A REPORT FROM THE OWNER.

Dear Jim,

Just a note to say thanks for all the hospitality that was shown me while I was working for you. I really appreciate it, and the experience was very rewarding.

Hopefully, things are still going O.K. for you. Harry's Acroduster is about ready to fly again. Just a few more little things to work out.

We are super busy, and so, in the interests of keeping our priorities in order, we have not been able to get everything done that we might like to.

It seems like I saw somewhere that you would send some new material to make stronger flying wire fittings to replace the size that you found to be cracked. I would like to take advantage of that offer if it is still good. Seems like amterial is sorta hard to locate in this neck of the woods.

Also, here is my six bucks for the STARDUSTER MAGAZINE. If it is more than that. please let me know.

Thanks again for everything. See you at Oshkosh.

ED BOWES
LINCOLN, NEBRASKA

'Copter Crashes Over Nude Sunbather

Big Sur, Ca.

According to a recent item in Legal Eagles News, a publication for lawyer-pilots, "While a helicopter pilot landed to ask a young lady sunbathing in the nude for a date, his helicopter fell over on its side and beat itself to death."

Owners sued the manufacturers, the State of California whose non-pilot fire fighters were on board, and the firm which rebuilt the helicopter into a

different configuration.

The accident occurred during a flight where three California fire fighters were on their way to fight a fire in the Big Sur area. En route, they spotted a young lady sunbathing in the nude. First, the pilot circled taking pictures; then he landed to ask the lady for a date. Unfortunately, he left the helicopter running and three passengers on board.

While the pilot was

talking to the girl, one of the passengers felt the helicopter coming off the ground and pushed the cyclic control forward. The helicopter promptly fell on its side and destroyed itself. There were no injuries.

As they say in the television detective programs, the facts are not in question. The plaintiff's theory was that a positive control lock should have been in the bird to prevent anyone from moving the controls while the pilot

left three passengers on board the running helicopter.

Defendants argued that under the circumstances of the pilot's anxiety to make a date, he would not have bothered to install control locks in any event.

Although the trial lasted three weeks, it took the jury 40 minutes to decide in favor of the defense. We do not know if the pilot managed to get a date with the sunbather or not. — NPA Pilot Report

While the above article is not exactly a report from a reader, we do feel that it may be interesting to our customers. It happened last summer in, where else, California.

Classified Ads

ADVERTISING CLOSING DATE:-JANUARY 1, APRIL 1, JULY 1, OCTOBER 1.
CLASSIFIED ADVERTISING RATE: \$4.00 PER COLUMN INCH- MINIMUM CAHRGE,
\$4.00. MAKE CHECKS PAYABLE TO STOLP STARDUSTER CORPORATION.

FOR SALE

FOR SALE: ACRODUSTER TOO. EARLY MODEL--- SIMILAR TO MORGAN SCHRACK'S AIRPLANE. ONLY 48 HOURS TOTAL TIME, AF & ENGINE. LOADED WITH INSTRUMENTS AND RADIO. VERY NICE FLYING MACHINE-- CONTACT JIM OSBORNE AT STOLP STARDUSTER CORP., AND BE SURPRISED AT THE LOW PRICE.

NASA INLET DUCTS. SIZED FOR 360-540 C.I. ENGINES. MADE OF FIBERGLASS, READY TO INSTALL. GIVES UP TO ONE MORE INCH OF M.P. ONLY \$50.00, FROM STOLP STARDUSTER CORP.

LIQUI-LUBE- A PENETRATING OIL SPRAY LUBRICANT WHICH TURNS INTO A LIGHT GREASE 15 MINUTES AFTER IT IS APPLIED. THE CURED GREASE IS WATER PROOF, AND IT PREVENTS RUST. REAL NICE FOR HAR-TO-LUBRICATE AREAS. AVAILABLE FROM STOLP STARDUSTER CORP. FOR ONLY \$10.95

STARDUSTER SMOKE SYSTEM-REDESIGNED AND IMPROVED. NEW, LIGHT WEIGHT, 12 VOLT PUMP. Only \$215.00 COMPLETE

SMALL, GEL CEL BATTERY FOR POWERING RADIOS & SMOKE PUMPS. 6AMP HOUR 4.6 POUNDS-5-1/2" x 3-7/8" x 2-3/4". FITS INTO SMALL CORNERS. RECHARGE WITH AUTO TYPE HOME CHARGER. 49.95 FROM STARDUSTER

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BUILD AND FLY THE WORLD'S EASIEST-TO-BUILD, AND HOTTEST PERFORMING AEROBATIC BIPLANE--- THE ACRODUSTER ONE

BROCHURE---\$5.00
COMPLETE KIT-----\$7800.00

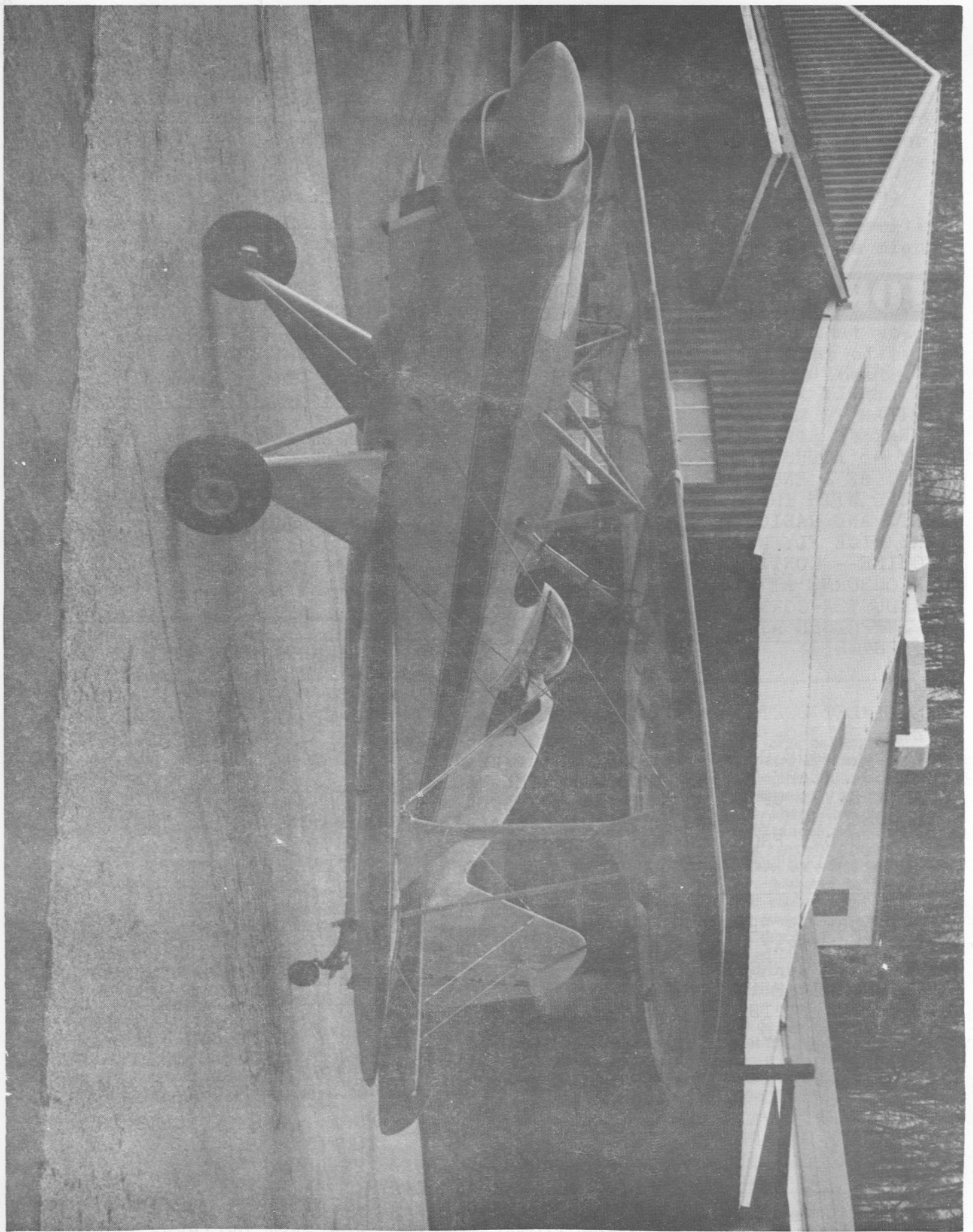
STEWART WARNER OIL COOLERS CERTIFIED--USE TWO FOR 200H.P. ENGINES IN TWO PLACE BIPLANES. BUY AT OUR LOW DISCOUNT PRICE OF ONLY \$125.00 EACH.

NEW WINGS--FOR STARDUSTER TOO'S. 23012 AIRFOIL----- BETTER PERFORMANCE INVERTED. FASTER AND LIGHTER AILERONS. AVAILABLE READY BUILT ONLY-- FROM STOLP STARDUSTER CORP. \$4900 READY TO COVER.

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