

January 1975

PAGE ONE

THE

Starduster

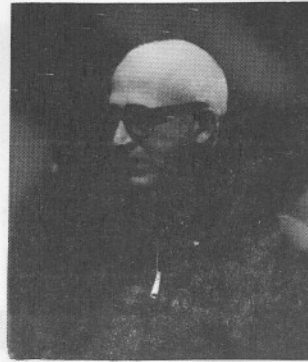
MAGAZINE

JANUARY 1975



see that your confidence is not misplaced.

PAGE ONE



Jim Osborne

Welcome to the first issue of "The STARDUSTER" MAGAZINE. We hope you will enjoy it, and that you will become a steady reader.

It is our intention to put out a quarterly magazine that will serve the interests and needs of people building Starduster Corporation Airplanes. To this end, we need, and ask, your help. We need pictures and stories of you and your airplane, or project. If you have developed a better way of doing something, please share it with us. If you need an answer to a problem, give us a try. First person stories of your building and flying would be welcome. We will feature a "PIREPS PAGE" (PILOT REPORTS PAGE), for letters and pictures of interest.

Speaking of pictures, we hope you notice the gentleman on the cover. It is the famous Lou Stolp, standing by the prototype Starduster Too. The picture was taken at Oshkosh, Wisconsin, and marked the first appearance of the "Too" at our National Fly In. We are happy to report that both the Starduster Too and Lou Stolp are still around Southern California, and both still look good, like the cover picture. Lou is busy developing Redlands airport, and acting as an elder Statesmen to Starduster Corp. The "Too" is now owned by Airline pilot Ralph Rina. It flies out of Long Beach, and makes most of the Fly Ins, including Oshkosh.

On the back cover, the Acroduster One and the Acroduster Too rest on the Frank Christensen ranch in Hollister, California, with some beautiful hills in the background. This beautiful picture, in full color, was taken by the world renowned Bob Herendeen. Bob is an artist with a camera, as well as an airplane.

We wish to thank everyone who made this little publication possible, by subscribing to it before the initial publication. We will do our best to see that your confidence is not misplaced.

THE STARDUSTER MAGAZINE

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The Starduster Magazine is a quarterly publication, published in January, April, July, and October of each year - Subscription rate -----\$5.00/year. Published by Stolp Starduster Corporation. 4301 Twining, Riverside, Ca 92509 Telephone (714)686-7943

There will be an "Open House" FLYIN at FLABOB AIRPORT, on Sunday February 23, 1975.

Our hosts will be the well known EAA Chapter 1.

No awards or prizes will be given. However, refreshments, displays, & camaradarie will be available. Stolp Starduster Corp. will be open for business.

Y'ALL COME, YUH HEAH'.

As mentioned in our December Newsletter, we have instituted the policy of giving 3-5 lbs of short lengths of 4130 tubing free, with each substantial tubing order. All you have to do is ask for it. This tubing is primarily suitable for welding practice, although an occassional short piece may be useful in construction. No size selections will be made.



FIRST PLANS BUILT ACRODUSTER TOO FLIES - by Jim Osborne

On Friday, Jan. 10, 1975, I had the privilege of making the first flight in Acroduster Too number N121RM, at Flabob Airport, Riverside, California.

The takeoff revealed a very responsive and sensitive rudder. It would be easy to overcontrol on takeoffs and landings with this rudder. On climbout an airspeed of 120 mph was indicated. This gave a rate of climb of 1000 FPM. Climb was sustained to 3000 ft. At 3000' power was reduced to 75% and the plane was trimmed for cruise. Level flight cruise speed was 135 MPH indicated. This trues out to about 150 MPH at 7500 feet. This speed was achieved without wheel pants or fairings, with the front cockpit opened, and without the hatch cover over the rear cockpit. A speed increase of 10-12 MPH is expected when these details are attended to.

A series of stalls was initiated at 3000 ft. With power off, stall occurred at an angle of attack estimated to be 3-5° in excess of the flare angle. The break was clean and slightly to the right. No warning buffet or vibration was encountered prior to stall. With cruise power on, the stall angle was so steep that it would be difficult to imagine such a stall accidentally occurring. Immediate forward stick, full throttle, and "walking" the rudder, and it flew right out of the stall.

Steep turns in excess of 60°, and Lazy 8's showed the control response around all axis to be light, responsive, and well balanced.

A dive to 180 mph showed solid, responsive controls, with no trace of shake, flutter, or vibration. A low altitude flyby was then made, for the benefit of picture takers, at a speed of 170 mph. A gradual climb back to 1500' and the landing pattern was initiated. Wide gradual turns under partial power of 15" M.P. were made, and the runway was approached at a speed of 120 MPH. This was bled off to 110 over the fence and flare at 90-95. (By this time I wasn't watching the Air Speed.) She touched down lightly and prematurely, lifted back off, floated another 50-100 ft and was then on in solid 3-pointer. Rollout was uneventful.

In addition to the owners, Mr. & Mrs. Randy McCoy, of Bishop, California, the spectators included Lou Stolp, from Redlands, who was nice enough to drop by for the first flight. His moral support was appreciated.

Since the first flight, 5 hours has been put on the airplane. Further testing has established a maximum climb rate of 1800 feet per minute. This is still in the original configuration, and should improve when fairings and canopy are installed. Improvements are also expected as the engine wears in and loosens up a bit. Best rate of climb speed appears to be 95 MPH. Best angle of climb speed is 85.

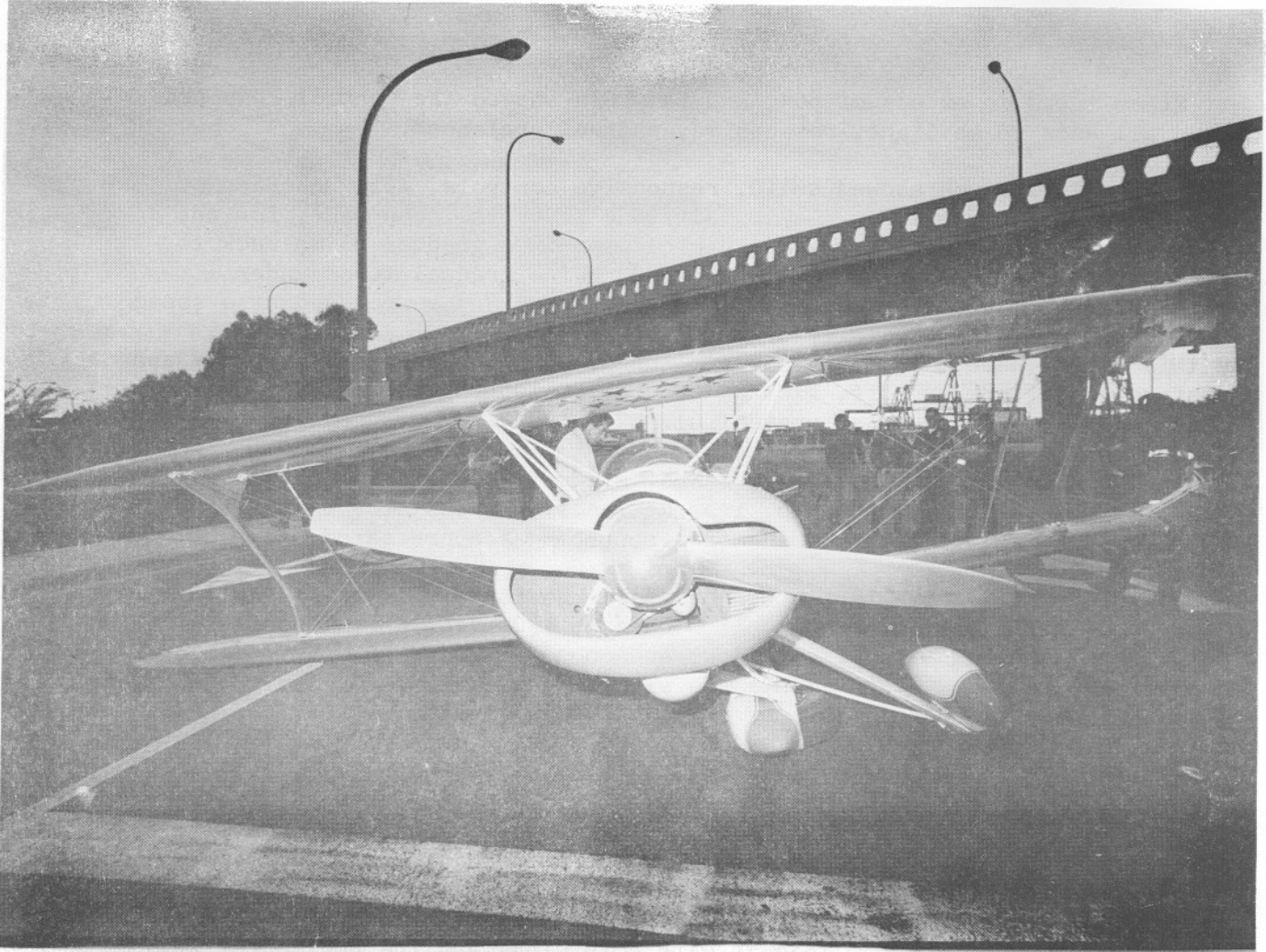
Glenn Beets and the Starduster Mechanics who assembled and aligned this airplane are due to be congratulated. The alignment was perfect. No trim tabs were needed on rudder or ailerons, and no trim adjustment was needed on the horizontal tail. It flew hands off in level flight on the first try. When trimmed for level flight with only the pilot aboard, the trim tab is in the streamline position. This is with both wings and the horizontal tail set at 0° angle of incidence. What this means is that no forward stick will be required in inverted flight, and no trim adjustment is needed. It should be as perfect a plane for inverted flight as it is possible to get.

The owners of this beautiful new airplane, Mr. & Mrs. Randy McCoy, of Bishop, California, did the basic framework construction. Alignment, covering, engine installation, and painting was done in our Starduster shop, with Randy working with our mechanics, under the direction of Foreman Glenn Beets.

The FAA Inspector was Mr. Bob Detwiller, from the Long Beach GADO office. We wish to thank him for his pleasant & friendly cooperation during the required inspections. We are lucky indeed to have a man of his calibre available to our local homebuilders.

Randy and his lovely young wife, Debbie, will be removing their airplane, as soon as the finishing details are attended to, and the time is flown off. They will keep it at the Bishop, California, airport. Randy is at present a 300 hour Cessna pilot. He has several hours of dual instruction in a 2-place Pitts, but wants a few more hours of dual before he solos his new bird. This is a wise decision, and foreshadows many years of accident free flying.

For the benefit of you Oshkosh fans, Randy has promised that he will have the plane at Oshkosh. We all hope to see you there.



HOW TO MAKE A FORCED LANDING - While flying over the harbor, offshore from Long Beach, California, in Starduster Too N2MW, Mahlon Ward experienced a sudden and complete engine failure. He immediately turned towards shore and started making a series of correct decisions. His first decision was to resist the temptation to try to stretch his glide, and to maintain his airspeed at 75 MPH. After several futile attempts to start the engine, this airspeed brought him in over the beach about one block away from the Queen Mary, and at an altitude of approximately 150 feet.

Mahlon then picked out the most traffic free of several streets within his gliding range and headed for it. Decision number two. There were wires directly ahead, crossing the street. Mahlons decision was to go under the wires. He dived steeply and leveled out under the wires, about two feet above the ground, and going about one hundred miles an hour.

The street made a sharp 70° turn to the left. Being below the housetops, Mahlon made his third critical decision, he made a sharp, almost vertical bank, just a few feet off the ground, and followed the road around the turn.

By this time, his excess speed was dissipated, and immediately after making the turn he made a normal Landing. During the rollout, the last hazard appeared directly ahead. The road disappeared under a Freeway under pass. Electing to continue straight ahead, Mahlon entered the underpass. In the gloom under the Freeway, the left wing tips encountered a light post. The Starduster spun around and the right

gear collapsed. Damage was confined to left wing tips, & right gear.

The airplane is being repaired, and will soon be in the air again.

We feel that this happy ending is the most remarkable result of a series of decisions quickly and correctly made and acted upon, and that the pilot, Mahlon Ward, deserves recognition for his cool head and exceptional piloting ability.

To recapitulate: (1) No time was wasted in trying to start the engine. He immediately turned towards shore, and then made several attempts to start the engine.

(2) The temptation to try to stretch the glide was resisted. The speed that would give him the best angle of glide was maintained.

(3) The most deserted street, free of traffic, was picked.

(4) When wires loomed ahead, the decision was made to go under them, not over them.

(5) Great presence of mind and superb piloting skill was exhibited in making a 70° turn, just off the ground, and with a dead engine.

(6) The decision to go under the underpass appears to have been the correct one. Alternative was a high speed ground loop. This would probably have caused more damage than was done by the lamp post.

After the accident the underpass was blocked off by police, who wanted to remove the airplane with a tow truck. Mahlon argued successfully against this, & was allowed time to dismantle the plane and remove it without inflicting further damage.

We commend Mahlon Ward, and pass along his experience for your consideration.

His beautiful Starduster Too is the one which appears in Starduster Magazine advertising. We are looking forward to its flying again in the near future.

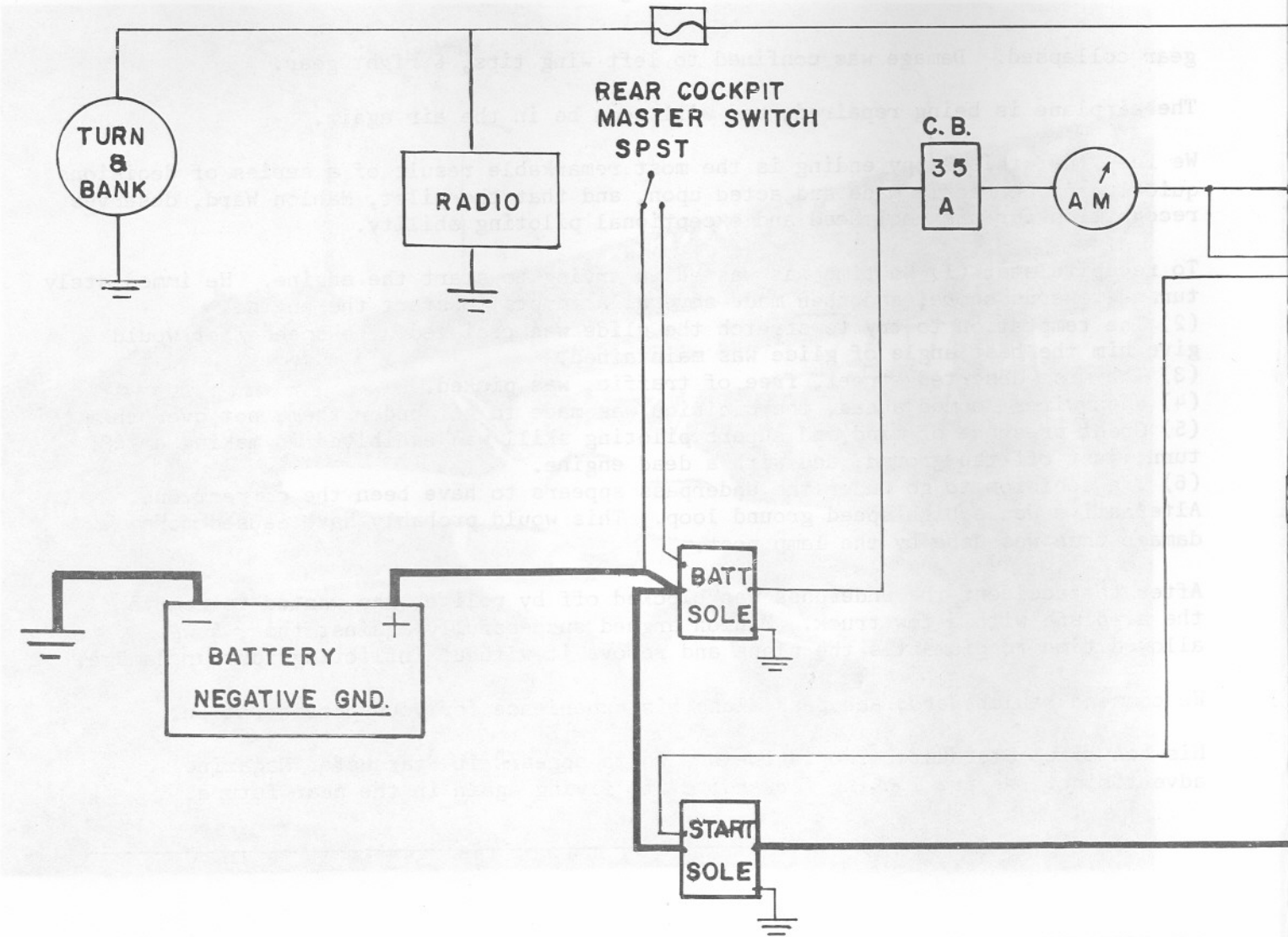
10% DISCOUNT on tubing - Walkin customers who make their own selections of tubing, from our short lengths bins, and whose tubing does not require cutting, will receive 10% off our low catalog prices. If you live within driving distance it may pay you to visit us. Drive out, and walk in.

CONSTRUCTION TIP - We have found it much easier & quicker to pop rivet fabric to metal ribs, in place of rib stitching. This can only be done on sheet metal ribs, and is thus limited to the tail members of some Starduster Corp. airplanes. There is a special large head pop rivet, made just for this purpose, available from Starduster Corp. This rivet does not require a washer. It is identified as AAL-42 in our catalog, and costs \$5.25 per hundred, or .07 each.

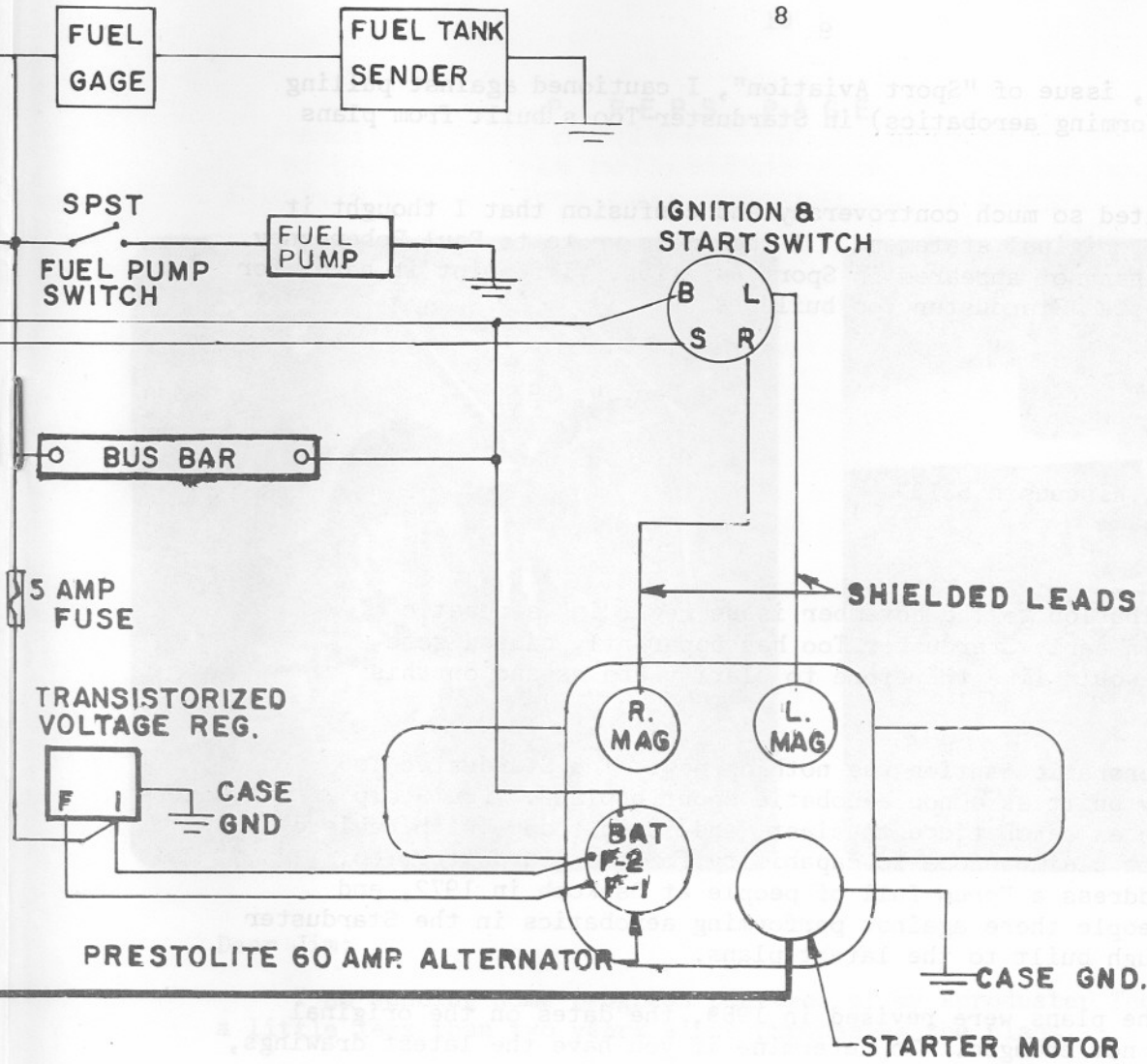
To use this rivet, install the Dacron covering and shrink with a hot iron. Then stick 3/8" Nylon reinforcing tape on the fabric, directly over the metal rib flanges. Drill 1/8" Dia. holls at 2"-3" spacing. Install and pull pop rivets. Cover with dacron tape.

Pilot holes for installation of this rivet are called out on tail structure plans for the Acroduster Too, and V-Star.

7 10AMP C.B.



5. SECONDARY WIRING SIZE 16.
 4. MAINLINE WIRING SIZE 10 OR 12.
 3. CABLE IN STARTER CIRCUIT MUST BE SIZE 0 OR LARGER.
 2. GROUND STRAP REQUIRED ACROSS DYNAFOCAL MOUNT RUN
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- NOTES:



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DATE: 1-30-75		
DRAWN: J. Osborne	FOR SA750 N121RM	
STRESS: N/A	STOLP STARDUSTER CORPORATION	
CHECKED: JB		

R.
UBBERS.

In the November, 1974, issue of "Sport Aviation", I cautioned against pulling high "G" loads, (performing aerobatics) in Starduster Too's built from plans bought prior to 1970.

This statement generated so much controversy and confusion that I thought it best to expand on the original statement. I therefore wrote to Paul Poberezny. To date, this letter has not appeared in Sport Aviation. I reprint it here, for the benefit of interested Starduster Too builders.

Dec. 4, 1974

Paul Poberezny
P. O. Box 229
Hales Corners, Wisconsin 53130

Dear Paul,

My contribution to the November issue regarding aerobatic restrictions in early Starduster Too has apparently caused some confusion. I would like therefore to clarify and expand on this statement.

1-This aerobatic caution was nothing new. The Starduster Too was originally built as a non aerobatic sport biplane. Lou Stolp has never been an aerobatic enthusiast, and, even today, with revised plans, will not claim aerobatic capability for the Starduster Too. I heard him address a Forum full of people at Oshkosh in 1972, and caution the people there against performing aerobatics in the Starduster Too, even though built to the latest plans.

2-When the plans were revised in 1969, the dates on the original drawings were not changed. To determine if you have the latest drawings, check the front page and the horizontal tail drawing. The front page should contain a summary of a stress analysis by William West, which gives 6 "G" limit loads for the Starduster Too. The tail drawing will show a three point suspension, two bolts in front, & one in the rear. Also four wires on top, and four struts below.

3-The weak point in the original Starduster was in the tail structure. The revised drawings show a completely redesigned tail with larger and stronger structural members as well as additional brace points. Aerobatics with the original tail are likely to deform the structure, sometimes enough to make the airplane very difficult to control.

4-It is my personal and professional opinion that aerobatics in the Starduster Too are safe, so long as 6g limit load restriction is observed, at a gross weight not exceeding 1704 lbs. If aerobatics at a higher gross weight are to be performed, then a new limit load must be calculated, as follows:

$$\frac{1704}{\text{GROSS WT}} \times 6 = \text{New Limit Load.}$$

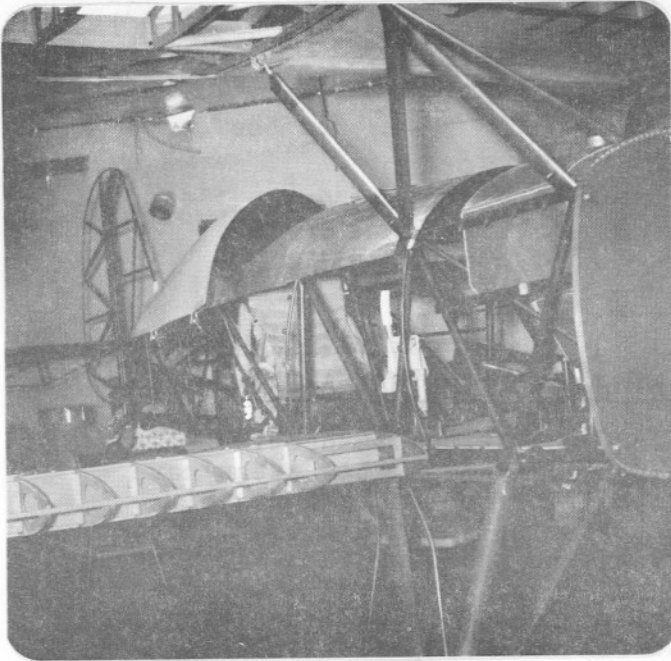
I hope the above information will be useful and agreeable to any Starduster Too owners who may be concerned about the original Statement.

Sincerely

Jim Osborne

President
Stolp Starduster Corp.

PIREPS PAGE



Dear Jim:

I am sending some progress pictures of my Acroduster Too. These represent a little less than two years since purchasing the plans.

I don't remember if I subscribed to Starduster Magazine, if not please enter my name on the list.

Thanks for the nice Christmas Card.

Very Truly Yours;

Ron Powers
2313 Highland View Ave.
Burnsville, Minn. 55337

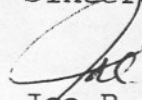
Dear Jim,

Not knowing if you get copies of EAA Designee Newsletter, I am sending you a copy which has an item on Pages 2 & 3 which could apply to the Starduster II which you might be interested for your Newsletter Magazine.

This item would apply to those Starduster Too who have a fuel tank in the Top Wing Center Section. This article is talking about a Maintenance note for the Beech Staggerwing D-17 but it could apply on other types. I had never even thought about this problem until reading the article. The plans do not say anything about it.

Also on Page 9 is an article concerning Flying Wire Tensions to use with Tensiometers -- this information was furnished by Pitts engineer. Would these tensions also apply on ~~your~~ aircraft or would it be some different.

Sincerely yours,



Joe B. Jordan
4006 Tulane Drive
Amarillo, Texas 79109

MAINTENANCE NOTES

BEECH STAGGERWING MODEL D-17 AIRCRAFT--WING FUEL TANK BAY AREAS

For aircraft operated over a 2-year period, our annual inspections have revealed that the rear spar forward facings in the tank bay areas have lost their protective coatings. Also, the 3/16" bottom tank bay plywood covers have deteriorated along the spar glue joint. Deeper investigations revealed that the corner blocking and trailing edge ribs have all loosened in their mounting and have dried out. You folks who own the Model 17 that has a metal tank cover are in a fortunate position, inasmuch as you can remove the cover and run this inspection.

What we are concerned with is the fact that all of this sub-structure has a direct load supporting factor to the rear spar, and once it has loosened and dried out, the total load could possibly be transmitted to the rear spar-to-fuselage attach point. The end result of this could possibly be a split rear spar, which could go undetected until airframe overhaul time, or until a total failure occurs. We have already run into this. The first thought was that the aircraft was continually operated in a dry and arid region, but upon disassembly of the components, we found it was caused by raw fuel lying in and along the rear portion of the tank bay.

The inspection we perform is to remove the tank cover and then lift out the fuel cell. The original 3/16" lower plywood tank bay bottom had 1/4" drain holes drilled in it just forward of the rear spar front facing. Design thought was to keep the area aerated. We have found (1) the holes totally covered over and (2) they were totally missing, possibly forgotten at some repair period. Raw fuel lying in this or any area will have a definite effect on any finish applied as protective coating.

- a. At your earliest convenience, lift off the tank bay cover. Remove the fuel cell from the wing and inspect the bottom of the tank bay, giving particular attention to the trailing area of the bay. Re-seal the tank bay area, if the protective coating shows signs of deterioration, with aluminized varnish. We here make up our own sealer by using aluminum powder and a good grade of spar varnish. The cost to you would most likely be \$1.75 per pound for the powder and \$6.00 per gallon for the varnish. This can be purchased at your local aircraft supplier.

Make sure your tank bays have their drain holes; if not, then install them. Use a .250 drill bit. Factory print shows five holes; they are located just forward of the front face of the rear spar, approximately 1/2" from each rib.

- b. If the tank leaks, have it repaired.

Use NEW RUBBER TANK PLUMBING CONNECTORS, H-6000 fuel and oil hose. Don't save a fifty-cent piece; all this will do is cause you grief at a later date.

- c. Complete your tank installation and replace the cover. Make sure you seal the opening around the tank filler neck and tank cover; this will eliminate the over-servicing of the fuel to run back into the tank bay. Seal the leading edge of your tank bay cover to the wing leading edge with 2" surface tape and refinish in the normal manner. This will help keep the water out when you wash your aircraft, and you would be surprised at how it helps while flying through the rain.

FLYING WIRE TENSIONS

Ever wondered how tight flying, landing, and tail wires should be on a small biplane? Now that a couple of biplanes are back in production, namely the Pitts S-1S and S-2, Headquarters gave the factory a call for their guidance.

Pitts Aviation engineer, Gene Dearing, gave us the following tension values, using a tensiometer:

Drag and Anti-Drag in the Wings:

200 lbs. minimum to 350 lbs. maximum

Flying and Landing Wires:

600 lbs. minimum to 750 lbs. maximum

Empennage Wires:

250 lbs. minimum to 325 lbs. maximum

Tensiometers are commercially available from companies such as Aircraft Components, Benton Harbor, Michigan and Wag-Aero, Lyons, Wisconsin but are rather expensive and it would probably be worthwhile for Chapters rather than individuals to purchase these tools.

Dear Joe,

Thank you for your letter and the technical information you enclosed.

As to flying and landing wire tightness, basicly I feel that the tightness of the wires should be sufficient to prevent the wires from vibrating. Any excess tension just puts an unnecessary compression load on the spars. We have never measured the tension with a tensionometer, but by tightening just enough to avoid vibration (trial & error) we have never had any problem.

Jim Osborne

1975 AVIATION INDUSTRY CONVENTIONS SCHEDULE

NAME OF ORGANIZATION	CONVENTION LOCATION (Hotel/City)	CONVENTION DATES
Helicopter Association of America (HAA)	Disneyland Hotel Convention Center Anaheim, California	January 19 - 22
National Air Transportation Conferences (NATC)	Atlanta International Hotel Atlanta, Georgia	February 9 - 12
National Congress on Aerospace Education National Aerospace Education Association (NAEA)	Fontainebleu Hotel New Orleans, Louisiana	April 3 - 5
Society of Automotive Engineers (SAE) National Business Aircraft Engineering Meeting	Century II Wichita, Kansas	April 8 - 10
National Intercollegiate Flying Association Air Meet & Conference (NIFA)	New Mexico State Airport Santa Fe, New Mexico	April 24 - 26
Aircraft Electronics Association	Hilton Palacio Del Rio San Antonio, Texas	May 13 - 15
National Maintenance & Operations Meeting The Reading Show	Reading Municipal Airport Reading, Pennsylvania	June 10 - 13
Aviation Distributors & Manufacturers Association (ADMA)	Chateau Champlain Montreal, Quebec, Canada	June 16 - 18
Flying Dentists Association (FDA)	Hilton Inn San Diego, California	June 28 - July 3
Powder Puff Derby All Women Transcontinental Air Race	Riverside, California to Boyer Mt., Michigan	July 4 - 9
International Flying Farmers (IFF)	Purdue University Lafayette, Indiana	July 27 - Aug. 1
Experimental Aircraft Association Fly-In (EAA)	Wittman Field Oshkosh, Wisconsin	July 29 - Aug. 4
Flying Physicians Association (FPA)	Playboy Club Lake Geneva, Wisconsin	September 7 - 12
Aircraft Owners & Pilots Association (AOPA)	Town & Country Hotel San Diego, California	October 7 - 12
National Business Aircraft Association (NBAA)	Marriott Hotel New Orleans, Louisiana	October 29 - 31
Aviation Distributors & Manufacturers Association (ADMA)	Camelback Scottsdale, Arizona	November 17 - 20
National Agricultural Aviation Association (NAAA)	Las Vegas Hilton Las Vegas, Nevada	December 7 - 11

Classified Ads

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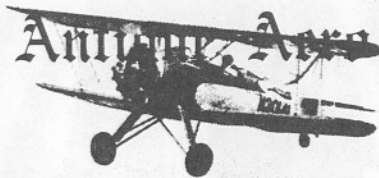
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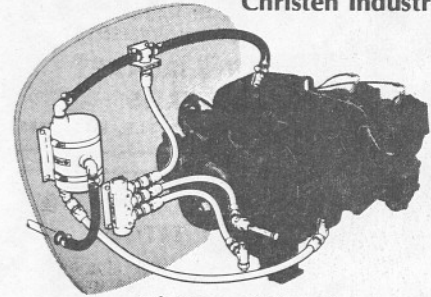
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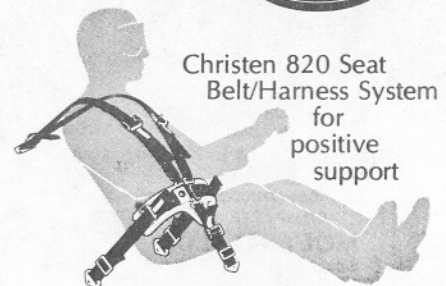
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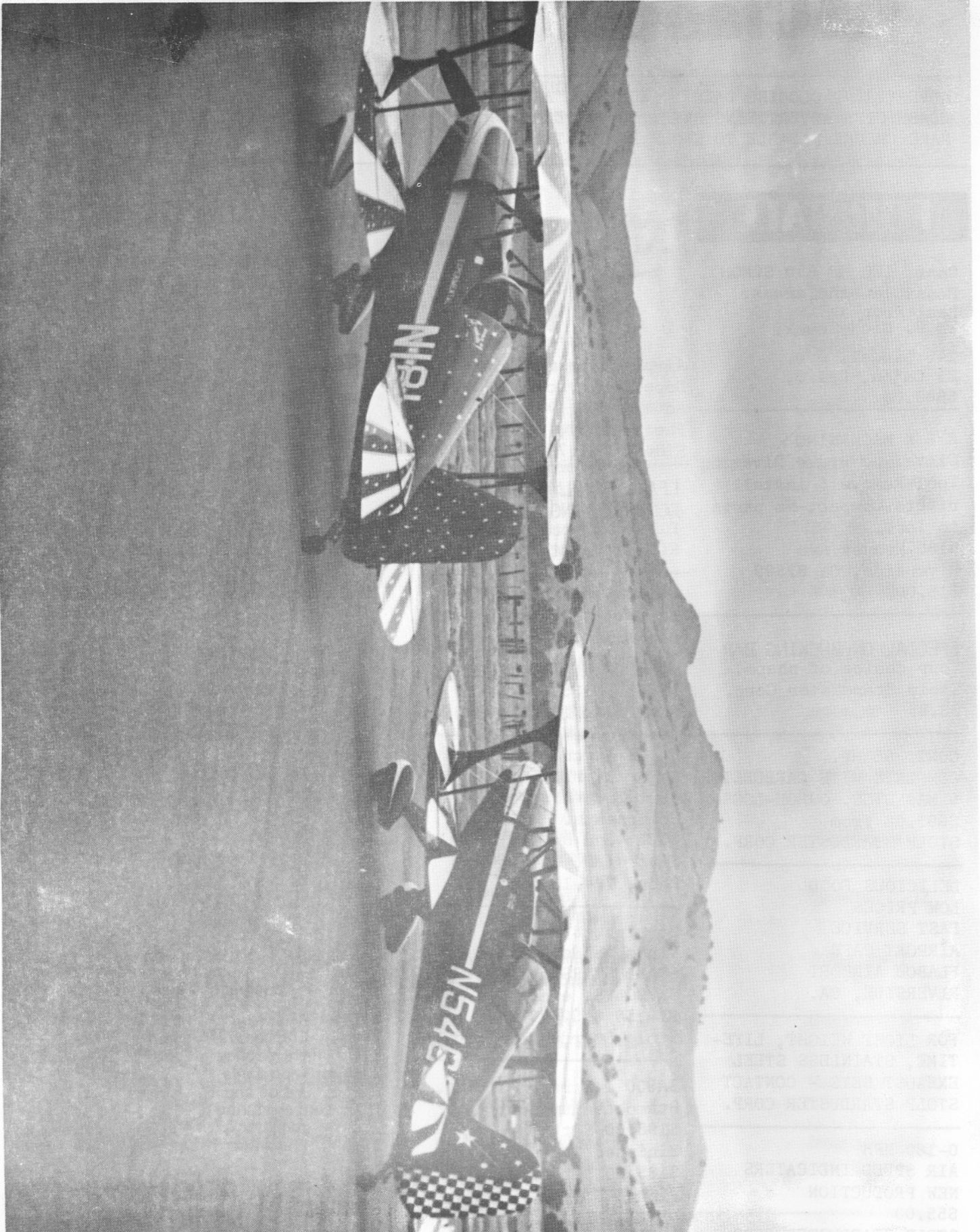
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