

THE

# Starduster

JULY 1975

MAGAZINE

DEDICATED TO THE ACTIVE HOMEBUILDER



# PAGE ONE

During the weekend of July 4-6, 1975, a reunion of the AMERICAN VOLUNTEER GROUP, the original FLYING TIGERS, was held in Ojai, California. Based on their combat record, these men were the greatest combat pilots the world has ever seen. In seven months of combat, 87 pilots shot down 299 enemy aircraft (confirmed), and destroyed 240 planes on the ground. In addition, unconfirmed kills were in the neighborhood of 400-500 more.

Tiger losses were four pilots lost in combat, 11 more in strafing or bombing raids, and 45 more by accidents, bombing, or capture by enemy ground forces.

The Tiger achieved this astounding record flying obsolescent p-40's against Japanese bombers & Zero fighters. Their record for the first nine days of combat was 75 confirmed kills, against their own loss of two pilots and six airplanes. During this same time period, flying against regular U.S. military pilots, the Japanese shot down about four P-40's and P-39's for every Zero lost. The difference was the tactical training the Tigers received from Col. Claire Chennault, and the Esprit de Corps of the Tigers, all civilian volunteers, who had been released from U.S. Forces so that they could join the A.V.G.

Their 1975 reunion was held at the Ojai Country Club, Ojai, Ca., and lasted from Thursday Noon, July 3rd, to Sunday Noon, July 6th. Featured were cocktail parties, a Western Steak Fry, swimming, golf, reunion movies, and a Saturday night Banquet & dance. It also featured the comradeship and unexcelled friendliness of these finest fighter pilots in the world.

The dance might be considered unusual nowadays, in that all the men wore coats & ties, and the women wore attractive party dresses. There were a number of young people also in attendance (sons & daughters of the Tigers) and it was easy to tell the boys from the girls. The boys were the ones with short hair. The music was outstanding, featuring songs with recognizable tunes, many of which went all the way back to WW 2.

A feature of the banquet was the presentation of the Flying Tiger Pilot Award to Neil Armstrong, first man to walk on the moon. Other prominent guests were Gen. Jimmy Doolittle of the Tokyo Raiders, Dick Merrill, pioneer Eastern Air Lines pilot, who logged 41,700 hours before retiring, his lovely actress wife, Toby Wing, and beautiful Rhonda Fleming, starring her second time as "Miss Flying Tiger".

Passage of time has done what enemy pilots were unable to do, and many Tigers are missing from the ranks. Of those remaining, only about 3 are still flying commercially. These 3 are due for retirement soon. However, many Tigers are still doing private flying. Of these, a most outstanding example is our own Eric Shilling, who is 59 years old, looks 49, and flies our Acroduster 1 like he was 18.

It was a great pleasure and a privilege for me to attend this reunion, and meet many of these outstanding gentlemen in person. May they enjoy many similar reunions in the years to come.

*Jim Osborne*

July 1975

THE STARDUSTER MAGAZINE

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Our cover picture, this month, is a beautiful side shot of Bud Giffens award winning Starduster Too. It was Grand Champion at Oshkosh in 1974. For 1975, Stardusters made it two in a row. Dr. Jim Young's superb and flawless "Big Red" was the Grand Champion.

On our back cover is a shot of the original Acroduster 1, being piloted by Ralph Rina, who currently owns four airplanes, including the original Starduster Too. The picture was made over Riverside, California.

In order to do our bit to fight inflation, we have instituted the following policies.

- 1-We give 3-5# 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 occasional short piece may be useful in construction. No size selections will be made.
- 2-A 10% discount will be given to customers who walk in & select their tubing themselves from our short lengths rack, provided no cutting is done. If cutting is provided, the regular price will prevail.

## FLAT SPINS

BY ERIC SHILLING

I have been an avid aviation fan since I was a young kid. As a matter of fact there were a few Jennys, DH-4's and a couple of others of this vintage around at the time. So it has been quite a while ago, and during this time I have read many magazines and books on aviation. However, articles dealing with Spins rarely if ever mention flat Spins.

A lot of airshow pilots are doing flat spins nowadays and not having any problem recovering from them. It was quite evident that the flat spin was not in all cases due to an extreme aft C.G. location, as had been thought a few years ago. With a background of experimental and production testing, and it being apparent that flat spins could be aerodynamically induced, even with a forward C.G., I knew I could safely find out some of the answers for my self. What actually caused the flat spin to develop, what effect C.G. had on the flat spin, its prevention, and inadvertent entry.

My first encounter with the flat spin was many years ago, at Kelly Field, as a flying cadet. Walter Sparks and I had been sent up for routine aerial combat (dog fighting) in P-12's. The procedure was to fly formation to our assigned altitude and area. Then on signal from the leader, the leader would break 90° left and the wing man 90° right. Fly in opposite directions for about 6 to 7 seconds, do a 180, and firewall the throttle. As our wing tips passed, the dog fight was on. After several tight 360's, I had worked around onto his tail. At this point Walter, trying to shake me from his tail, rolled to the left a little past the inverted position, then pushed into a rather steep inverted climbing turn to his left. At this point the P-12 snapped and went into an inverted spin. Within two turns it flattened out into a flat spin and Walter apparently was unable to recover. I had been following Walter down by doing a rather steep spiraling dive around him. I observed him leaving the cockpit. It looked as though he were caught in the landing wires of the tail.

At this point, because he was getting fairly close to the ground, Walter pulled the ripcord, the chute pulled him free of the tail wires and, surprisingly he landed with only a sprained ankle. The airplane continued spinning until it hit the ground, although on some previous occasions, the P-12 would recover from a flat spin by itself, after the pilot left the airplane. This, of course, had led to the conclusion that with the C.G. moving forward, the airplane would recover from a flat spin. My own thoughts on this were that perhaps the pilot was unintentionally holding the aircraft in a flat spin by his attempts to recover.

Talking to Walter later, he said the ship would not respond to rudder or elevator control, and as altitude diminished, he decided to leave the airplane. As he left, his foot had become entangled in the tail wires, and he had pulled his chute to get free.

Several years later, an almost identical situation occurred. This time we were in P-40's over Toungoo, Burma, the pilot was Frank Shields. In an effort to shake me from his tail, he had gone into an inverted flat spin and was forced to bail out due to low altitude.

I started flat spins in the Acroduster I, a beautiful flying ship, which I myself had taken through a complete flight test program. I was therefore completely familiar with the airplane and had enormous respect and admiration for it. I was sure in my mind that there would be no hidden, unpleasant surprises. The plane had been flutter tested to 265 mph. It had done all inside and outside maneuvers, included 5-turn spins, both inside and outside. The C.G. was well forward within the desired envelope.

Proceeding with caution, I started flat spin testing by entering into a conventional spin. For clarity, the spin under discussion will be considered to be an inside spin to the right. Stick full back and to the right, and full right rudder. After the spin was well developed ( 2 full turns ), I applied full left aileron, maintaining stick

back and right rudder. The outside, or left, wing dropped. The spin slowed down. The nose came up, I was now in a full flat spin. Any use of rudder or elevator, which I tried, was useless. It would not recover. The only effective control was aileron to get back into a conventional spin, then recover normally. A word of caution at this point is in order. Because of anxiety to get out of a flat spin, recovery may be attempted too soon. That is, before the flat spin is broken and the airplane is fully back in a regular spin. If recovery is initiated prematurely the airplane will go back into a flat spin, which is the primary danger. As the airplane goes from the flat spin into the conventional spin, its rotational speed increases, which may lead the uninitiated into thinking its getting worse. This ofcourse is not the case. It's a sign that it is coming out. To transition from a flat spin into a normal spin, in the right spin under discussion, hold right rudder, with stick back, and apply full right aileron. The nose will drop, and the rotational speed will increase. When the spin is completely normal, apply normal spin recovery technique.

The recovery I myself prefer is the standard N.A.C.A. recovery, which is as follows:

- 1-Rudder full with the spin, elevator full aft, and ailerons with the spin.
- 2-Forcefully & instantly, slam in full rudder against the spin.
- 3-Wait 1/2 turn.
- 4-Forcefully & instantly, slam full down elevator, ailerons neutral. Naturally, immediate corrections must be made to avoid going over on your back as it recovers.

Power is not normally used during recovery from either the normal spin or the flat spin. Power creates a nose up moment on most airplanes, and, in effect, tends to cancel the nose down moment of the elevators.

Not only can aerobatic airplanes such as Acrodusters, Pitts, and Citabrias flat spin, but, I believe all spinnable airplanes, in both the upright and inverted positions, can be made to flat spin. I think the reason many aircraft have been abandoned while in inverted spins, is due to pilot inexperience and disorientation, rather than a C.G. problem. In other words, I think it quite likely that some airplanes have been put into a flat spin while attempting to recover, instead of going flat on their own.

Disorientation in an inverted spin can be so extreme and confusing that, unbelievable as it may sound, an inexperienced pilot may not know he is inverted.

Due to the fact that rudder and aileron controls are reversed when inverted, a pilot could do one of three things in an attempt to recover from the spin. One, he may kick the wrong rudder, Two he may continue pulling back on the stick, Third use aileron, at the wrong time and in the wrong direction. This last action would be the very thing that puts him into a flat spin. Since I have already described the inside flat spin. I will attempt to describe the procedure for entry and recovery from the flat inverted spin. This can be done from any position, however to make it easier to describe, I will give the entry from the inverted position. After rolling to the inverted position, close the throttle, maintaining altitude until the aircraft stalls. At this point push full forward and stick to the left, while giving full right rudder.

After two turns give full right aileron, keeping full right rudder and full forward stick. In about one turn the airplane will flatten out and, at this point, you will find that you are in a flat spin. Nothing will get it out, except proper procedure.

Before you forgot how you got into this mess in the first place put all controls in the same position you used to get you into the inverted spin. Full right rudder, full left aileron and full forward on the stick. Wait until the conventional spin develops, which will take from one to two turns.

Then use, as I have said before, the NACA spin recovery procedure. Which incidently would have put you back into the conventional spin because it has in it recovery technique which will get out of the flat spin.

1. Rudder full with the spin, elevators full forward, in this case means left aileron (due to reversal of control inverted).
2. Forcefully & instantly, slam in full rudder against the spin.
3. Wait 1/2 turn.
4. Forcefully & instantly, slam full up elevator (inverted).

There are a couple more points of caution, I feel must be covered before this article is completed. I think it very important that the C.G. be within the acceptable limits for the airplane being spun. I myself feel more comfortable with the C.G. forward of the aft limit. Also there are certain abnormalities which can easily be spotted during the test program. These abnormalities, if they exist, should be corrected before attempting any spins. They are:

1. Violent stalls and a tendency to drop a wing rather than pitch down when stalled.
2. Unduly sensitive rudder.
3. Ability of airplane to trim at several speeds with the same trim and stick forces or position.
4. Hold a slip without continuous rudder pressure. Also any tendency for the rudder to go out from under your foot when kicked into a skid.
5. Excessive up elevator travel remaining after full stall has been reached.

At a later date I hope to be able to do further testing of the flat spin. This time with the C.G. at and even beyond the aft limit. I, of course will only attempt such tests with either, dropable ballast or spin chute. I would hate to have to leave any airplane.

I would love to find out if so many of the airplanes had actually been abandoned needlessly.

Would they have recovered if proper technique been used?

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Randy McCoy's Beautiful Acroduster Too - Bishop, California



### THE ACRODUSTER-RUCKER CONTEST CIRCUIT REPORT

Enroute to the fourth aerobatic contest with Stolp Starduster's Acroduster 1, I look down from 41,000 feet out of the window of a United Airlines DC-8, and wonder at the vast discrepancies in my two modes of travel. Worse than jet lag, the gross change from jetliner to open cockpit with airspeed, altimeter and compass is by far more extreme an adjustment. But it is not without its excitement and delight.

Let me elaborate with a rundown of my past 5 weeks schedule...

With the Acroduster stuffed to the gills (I warned Jim about having a lady competition pilot) I departed from Apple Valley on June 4th. With three hours on the aircraft since its rebirth, I decided to fly "IFR" (I follow roads, rivers and rail roads)-also for the fact that there was no radio in it at the time. Destination - Denton, Texas (for those of you who might need to know, that's just north-west of the Dallas-Ft. Worth area.)

Getting to know my new friend was spiced by the challenge of learning its eccentricities for both cold and hot starts. ( you guessed-no starter and a fuel-injected 180 Lycoming!) By the time this first trip ended, I left a trail of broken men (no comment) from Blythe to El Paso and particularly at Denton. (needless to say, at present time the pilot has worked out the starting techniques.) But there is a very overheated young mechanic in Blythe who simply disappears whenever any small biplane lands.

The Lone Star Aerobatic Centest at Denton went well even with the weather periodically busting through "the box". The Acroduster was a dream on the grass strip. (Its cub - like handling on the ground is a dream anything!) There were 10 in my category (Intermediate) and with only the ferry time + 45 minutes of practice in the aircraft I managed a 5th place and surprised myself. I hadn't yet adjusted to the new visual references (transitioning from a Decathlon to the Acroduster is a lot like putting a J-3 pilot in a F4F-enough said?)

After the contest I trotted back home to get the radio installed (radio and battery pack are both removable for competition) and above all to get a trim tab installed! The Acroduster arrived back at Flabob with no needs for major repairs- but in great need of a bath! Pilot too!

The following weekend was to be a long haul to Atlanta, Georgia - but major thunderstorms and tornado alerts kept me and aircraft in L.A. skies. We used the time to get to know one another better - and by the time I left for Indiana the following weekend, I felt more confident in our chances.

The trip to Kokomo, Indiana was the proof that an aircraft with no starter is really not that much trouble - once the pilot and airplane have reached the necessary understanding.

This trip included a one-day stopover in Kansas City, Kansas to introduce the yellow, orange & red wonder to T.J. Brown. T.J. had flown the prototype last year and wrote the pilot report on the Acroduster which appeared in Sport Aviation. He promptly stuck me in his Pitts S-2 and strapped on the Acroduster for a re-introduction. Not that I have anything derogatory to say about the Pitts S-2 - it's a damn fine acro trainer.- but I had come to be very close to the Acroduster - permanently attached you might say! I landed the Pitts at a nearby grass strip and watched T.J. and friend dance up a storm. I giggled as I watched-remembering my own first flight in the "Acro". Like the Decathlon the S-2 requires short down lines to stay in the confines of the aerobatic box. T.J. flew his sequences and ended up with 1500' to spare!- He has since learned- as I had to!

I left Kansas City at dawn (and left T.J. chomping at the bits!). Arrived in Kokomo after fighting through 1 1/2 to 2 mile in-flight visibility. (You can't get from Kansas City to Kokomo, by the way.) I followed winding railroads and had to bend when they did-even Kokomo looked good when I could finally see it!

The Midwest Aerobatic Regional in Kokomo, Indiana pitted me against 9 men in 9 pitts! (Hefty odds on both counts)-but I and "Acro" were not daunted, and we brought home a 3 foot tall hunk of metal for 2nd place. I noticed more people (Pitts pilots included) asking more questions and making more comments. I knew they were beginning to notice (and perhaps worry a little) when the Acroduster was referred to as the "metal Pitts". We certainly weren't being ignored!

Back to Kansas City to leave the bird with T.J. Hopped a jet and spent 3 days teaching aerobatics back home. The following Thursday found me back at Kansas City. T.J. and I put a new spinner on the "Acro" and jumped in our respective aircraft to battle poor visibility and "thunderstorms" enroute to Council Bluffs, Iowa.

Arriving there mid-afternoon, the pilot having had 2 1/2 hours sleep between LAX and KCI) and aircraft met with minor difficulties. A new prop seal solved the aircraft 1/2 problem, but the little sleep gotten the night before hadn't cured pilot fatigue. I finally got into the "box" for a practice session and flew the sequence to the north as I had been briefed. The next morning brought better weather, high temps and different winds. We were briefed for south entries. But having grown up in California where I am always directionally oriented by mountains,



and with enough fatigue to cage the brain, I proceeded to enter the box to the north. By the time I recognized my error, I had flown my first seven maneuvers the wrong way - I found myself thinking of an article I had recently written for Sport Flying magazine entitled, "Zero that Maneuver"-and believe me, they really do it. I also thought of Jim Lacey who once flew his entire Unlimited Known Sequence backward, and says of all aerobatic competitors, "There are those who have, and those who will!". I was tired enough at myself, but frustrated enough to kick a few rear-ends (mainly my own!). And of course - I had done my best snap roll ever! (that's what they all say!)

With competition as fine as it is today, one cannot go about backwards in the box and stay in the running-so, needless to say-no metal this trip! I did, however, bring home a new name - "wrong way Rucker." (I'm laughing so hard there are tear in my eyes!)

Above all-I had to apologize to the Acroduster (not to mention Osborne) for letting her down when she was performing so well!

But-on to Medina! Never heard of it! (Who has?) With the contest at Council Bluffs finished on Saturday, I had hoped to get the Acroduster to the Cleveland area (where Medina, Ohio looms large(?) on the map) on Sunday - jet home and be able to get back the following weekend without having to worry about getting the airplane to the contest site. But the great weather-maker in the sky is not an aerobatic pilot (he hasn't even soloed!)-so at Davenport, Iowa I called ahead to Don & Gail Taylor who live on a private airport 40 miles east of O'Hare. Weather was definitely marginal-with active thunder cells everywhere. The 40 minute trip turned into a 2 1/2 hour meteorology lesson - and I etched out a path over the ground resembling that of a cross-eyed, slightly inebriated crow! I found Casa de Aero (a private strip owned by three United Airline Captains), landed, taxied up to the Taylor's house, and rolled into the hangar just as a torrential downpour hit. One of the neighbors (a United Captain) was on his way to work and kindly consented to get me to O'Hare in time for my flight home. Nice people! (any question why I'm flying United this trip?)

So here I am over the Colorado after 3 days of teaching in Apple Valley-enroute to Chicago to pick up my warmly nestled friend.

We will leave tomorrow morning and, weather permitting, make it to Medina with one fuel stop. (about a four hour trip) As I sit here, I find the anticipation growing again. Each contest is a fantastic learning experience and a tremendous thrill! The sport itself is character-building as well. - Where else can you take home a trophy & praise one weekend and fly backwards to a glorious last place the next!? But beyond the pilot's trials and tribulations, the test of this beautiful little aircraft is the real thrill! Every flight in the Acroduster adds to the complexity of my love affair with it. Its phenomenal roll rate and climb rate, its exceptional visibility, and its unbelievably simple ground handling make it one of the first real competitors to the Pitts. Its metal fuselage is strong and light, allowing more wing area for the weight (comparable to, if not lighter than most factory Pitts S-1's). Its sound is uniquely not the sound of any other competition plane-so, if you want to get the attention of the judges.... It is aerodynamically cleaner than the Pitts, it's prettier (my opinion-but take a look at those wings plan view!) But above all-it's the first Unlimited category machine that you can build for under \$10,000 (really!) and doesn't give you white knuckles and white hair every landing! When I first came to Stolp Starduster as it's competition pilot, I knew only that there was such a thing as the Acroduster 1. Being addicted to a sport I can in no way afford- I took Jim Osborne's offer to fly his Acroduster in competition just so I could stay in the sport I love. But I am now a fervent believer in the competitiveness of this pretty little bird. I can represent this product honestly and enthusiastically-and besides-I'm having fun!

Fond du Lac, Wisconsin, is the site of the International Aerobatic Club National Championships - scheduled for July 28, 29, 30, 31. The Acroduster and I will be battling against superb competition in the advanced category for the first time. Expect another report at that time!

Editors Note: At Medina Ohio, Cindy and "ACRO" got another trophy for second place. At Fon du lac, Cindy was unable to practice for two weeks before the contest, due to a head cold. Nevertheless, she placed 6th out of 41, competing against the best pilots in the world. T.J. Brown, flying also in Intermediate, placed 10th out of 41, although he had been in third place after the known sequence, but before the free style.



GLEN BEETS AND HIS VW CONVERSION

## GLENN BEETS - GENERAL FOREMAN

by Jim Osborne

A prime factor in the success of "STARDUSTER" is the quiet, reserved gentleman who runs our shop and shipping department. Blessed with more talents than any one man ought to have, Glenn is a 15000 hour pilot with WW I P-51 time in the Pacific, a master mechanic who can fix anything on any airplane, and a talented designer, with the Glenn Beets Special flying around and attesting to his abilities. In addition he is a competent executive, and in the words of one customer, "One damned fine human being", who commands the respect of all who know him.

Glenn started this life as a native Californian, in Bellflower, and, except for war service, has been here ever since. As a youngster, in the 20's & 30's, like every good homebuilder, he dreamed of being a pilot. To nurture that dream along, he built model airplanes, both display, & gas free flight.

In 1934, convinced that time was passing him by, Glenn taught himself to fly in a car towed, Zollgin primary glider. This at the ripe old age of 15. Two years later, his glider had been worn out (busted up). so he checked out in a J-2 Cub. He then got his private in 39, and his commercial in 1940.

In 1940, with war clouds brewing, Glenn worked for Lockheed a year as a final assembly inspector. He then went to Wickenburg, AZ, and became a Flight instructor and tow pilot for Clayborn Flight Academy. In 42 he graduated from the USAF Flight Instructor School at Randolph Field, and then proceeded to train fighter pilots at Chino California. He instructed in PT13's, PT17's, and BT13's.

From Chino he finaged his way into the Ferry Command, with a commission, and then sweet talked his way into combat. He flew during the Okinawa campaign, and finished the war with over 10,000 hours, and the rank of Major.

Starting in 46, Glenn worked two years as an FBO at Norco, California. He then returned to Lockheed as a final assy inspector, and in two years had worked his way up to Plant Supervisor on the night shift.

Glenn left Lockheed in 56 to go into the specialty garage and race car business. In 1963 and 64 he started doing some work for Lou Stolp, and soon he was with "Starduster" on a full time basis, where he remains today.

Glenns off duty interests include opera and classical music. He studied voice in 1938-40, at the Eya Braun Studio in Hollywood. He showed considerable promise, and it is likely that opera's loss was aviations gain.

Fishing for Bass and Catfish on the Colorado River is now one of Glenns prime interests. He makes frequent trip there, and always comes back tanned and refreshed.

Starting in 1969, Glenn commenced the design and construction of what became the Glenn Beets Special. We think it is the most beautiful of VW powered homebuilts. It is certainly one of the best performing, with a geared 1600 cc VW engine, climb rate is 1200 l/min, with a cruising speed of 120 M.P.H. This is a full size practical airplane, with good handling characteristics, and plenty of ground clearance.

Plans, parts, and materials for the Glenn Beets Special are available from Stolp Starduster Corporation. Glenn plans to stay with "STARDUSTER" for the rest of his working career, and we are glad that he will continue to be an asset to our business and our customers for many years to come.

## HOW TO INSTALL WINDSHIELDS

READ ONCE COMPLETELY BEFORE STARTING

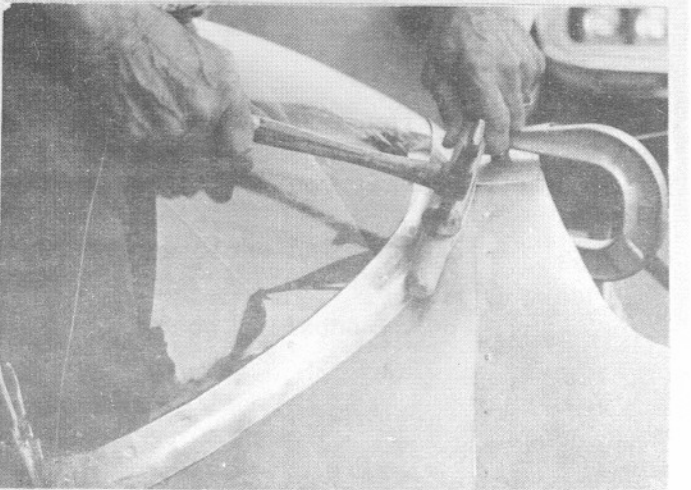
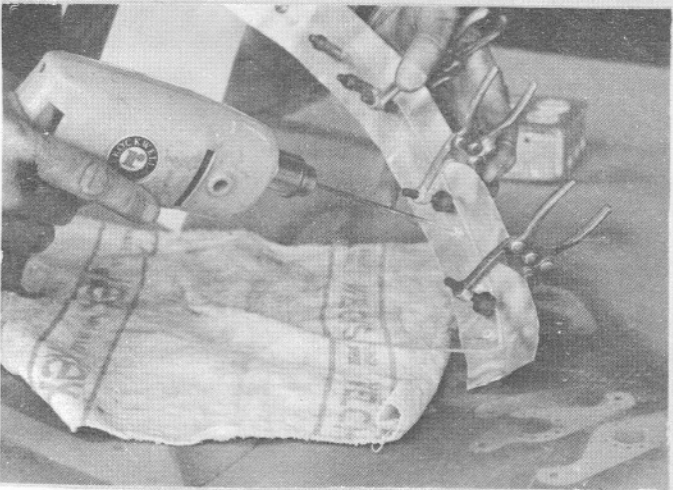
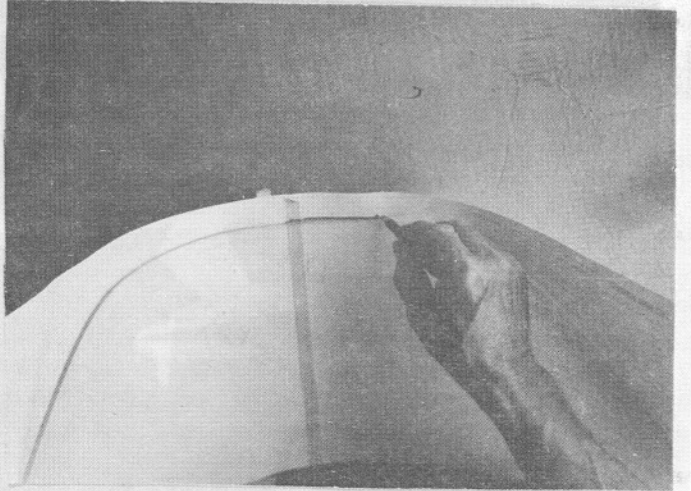
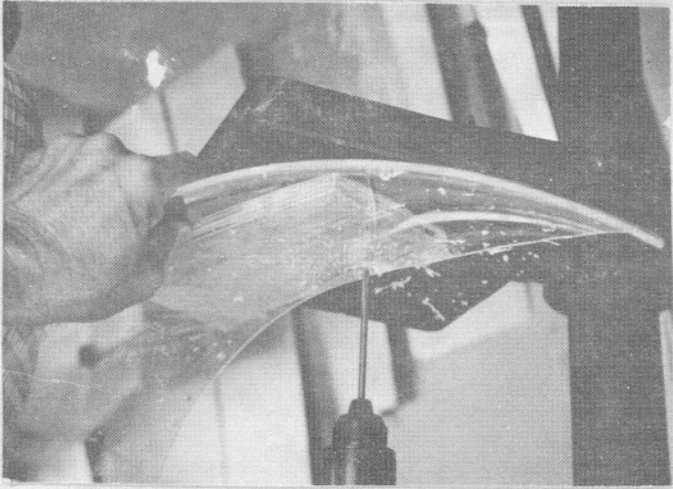
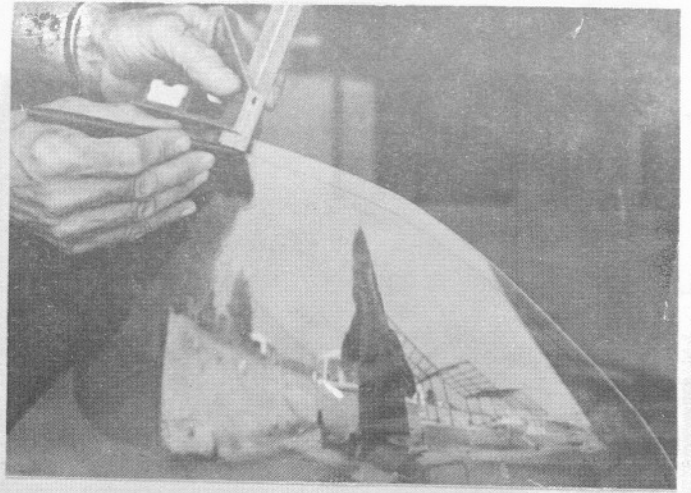
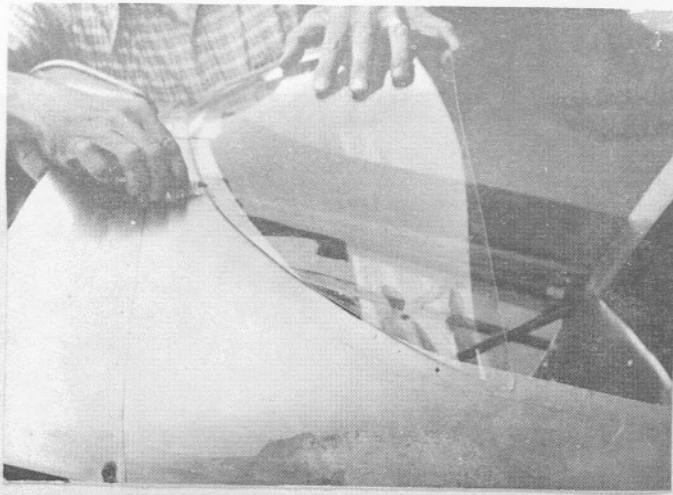
By Lou Stolp

One of the most frustrating jobs for many builders is fitting the windshield and especially the band around the lower attachment to the cowl. Lets approach the problem step by step. Like many problems, there may be better ways to do the job, but this one works very well.

The first thing to do is fit the windshield to the cowl. It is advisable to have a smaller cockpit hole in the cowl than you intend to end up with so as to give support when fitting the windshield and forming the band. The same basic windshield will fit many airplanes so they must be individually fit. First remove the protective coating, then hold the shield in approximately the position you want it and eyeball where to cut the majority of the trim. Next mark reference marks on the cowl to position the windshield to the cowl. Measure from rear cockpit bulkhead forward and the same distance up from the longerons. Mark the final windshield trim with a felt tipped pen. This is done by placing a small spacer under the pen and holding it flat against the cowling. After final windshield trimming, all edges must be smoothed by sanding or similar method. Next mark a line 1/2" up from the bottom of the windshield so it parallels the longer edge. Divide this line starting 1/2" from the tail of the windshield into approximately 2" divisions. Using a high speed (fast turning) drill motor, drill some #10 or 3/16" test holes in a piece of scrap plex to make sure it does not crack the plexiglas. Do not drill pilot holes as they can cause the larger drill to grab when it goes through. When you are satisfied you are drilling a smooth hole in the scrap, drill the holes in the windshield. After drilling all the holes, slightly chamfer the edges of all holes. When this is done you are well on the way to becoming a hero.

Now all we have left is to install the attach band. Make the band from .040 Aluminum, "0" condition, but lets make a pattern first. Poster cardboard is good to make the pattern but Bond paper works very well. Hold the pattern material against the outside of the windshield and draw a line around the lower edge. On the pattern, draw parallel lines 1" from this line, both sides. This is your pattern. Now cut this from the .040 soft aluminum. Using skin clamps, secure this aluminum to the lower edge of the windshild making sure to center the band. Drill #30 holes with the #10 holes in the glass. The windshield has larger holes so there will be no bind on the glass causing it to crack. Start from the center when drilling the band and cleco each hole if you have them available, if not use bolts & nuts. Do not over tighten. After the band is drilled it may be removed and dimple countersunk if you want to use flush rivets. Check fit and smoothness, then install a piece of plastic electrical tape to the band where it will come in contact with the windshield. Next using 1/8" soft countersunk rivets, again starting at the center, remove the clecos one at a time and using a large O.D. washer against the plexiglas rivet the band to the windshield. Now you are almost a hero. All you have to do is bend up the flange.

Clamp a short length of approximately 1" Diameter hardwood Dowel in the vise. Hold the windshield upside down and index the flange over the Dowel approximately on the center line of the flange. With a rubber hammer, gently form the flange to approximately the proper angle. It takes very little forming. Now a second person is handy. Hold the windshield on the cowl and using a short length of 1" hardwood Dowel and a hammer complete the forming. It is a help to buck up under the cowl while forming the flange. Drill attach holes as necessary and again facing the mating side with electric plastic tape the shield is ready to install. Make final cockpit trim and install the windshield. You are now eligible for a hero badge. How about that.



PIREPS PAGE



26671 Matias Dr  
Mission Viejo Cal

July 13, 75

Dear Jim:

Just a short note to thank you for your personal attention to my needs last week, thank you also for the catalogue which I have been reading with interest.

As far as I can determine from my drawings the ailerons you showed me appear to be the same as for the Mustang II. Kindly drop me a line and let me know what you are asking for them and we can go on from there.

Please find enclosed the picture I promised you.

Sincerely

Bill Duncan

Stolp Starduster Corp. - 14 -  
4301 Twining  
Fla  
Hi

Bob Candy  
4704 E. 135th St  
Grandview, MO 64030

Mr. Osborne:

T.L. Brown brought this funny little airplane out to IAC Chapter 15's practice strip this evening. Do you know anyone that would like to buy some Pitts parts?

Bob Candy

P.S. Enclosed is \$5.00 for information packet on your Acroduster 1.

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Thought you'd like to know we took first for bi planes at Watsonville with our Starduster Too, N19PS.

Shirley Switzer

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ALL OF OUR CUSTOMERS DO NOT BUILD STARDUSTERS - Above is a beautiful Steen Skybolt, built largely with materials purchased from Stolp Starduster Corp. The proud owner & builder is Lawrence Wohlers, 1974 Calle Mecedura, Tucson, Arizona 85705



June 22

Dear Eric,

I received the axle nuts in the mail recently and just wanted to thank you for the time and effort you went through to get them to me. I hope Jim realizes how lucky he is to have people like you working for him.

I leave for the Academy in a few days and would appreciate if you let Jim and the others know that it has been a pleasure doing business with the Stolp Starduster Corp.

Enclosed is the most recent picture of my bird, but it now has fabric on it. My father will finish it while I am away, and you may see it before I do!

Best Wishes

Gary Shunk



Stolp Starduster Corp.  
4301 Twining  
Flabob Airport  
Riverside, Calif.

- 16 -

Refer: Mistake on 180 Lyc. Engine mount

Dear Sir:

I am assuming by this time that you have no intention of correcting the mistake that your shop is responsible for.

I have contacted your company twice in person, and this is a 45 mile drive each way, and three times by telephone, and each time you maintain that the mistake is not yours. I am not concerned that you made the mount from a drawing that had an error on it, but I am concerned that I purchased the mount from you and therefore, you are responsible to correct the mistake. I did contact Mr. Bushby, the designer of the Mustang II, and he says that he has never talked to anyone from your company and that he has never given to you any drawings for any engine mounts. As a matter of fact, he said that you had not even bothered to contact him, as I had asked you to do.

I purchased the 180 Lyc motor mount for the Mustang II, all in good faith, and even paid for it with a Cashiers check, and then waited almost five weeks to get the mount. As you know, the unit is two inches longer from the firewall than is shown on the Mustang II drawing for the 150 H.P. mount. This additional length and the extra weight have caused a great problem with the weight and balance of the airplane, and also there is no production engine cowling made that will fit.

I have contacted everyone who makes cowling for the Mustang II, and none are long enough. I have also contacted some experienced people in the Experimental Aviation Assoc. for their suggestions, and all have the same answer, "Make the Stolp Co. fix its mistake".

I have already paid a shop to install the mount and the engine. In fact it was one of the mech. install the engine who noticed that the mount was too long. As I said before, I told you people and each time I was in so many words, "told to get lost".

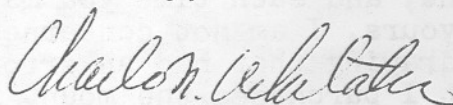
I am therefore going to suggest two alternatives for you-

1- I want someone from your company to come to my shop and remove the engine and the mount, shorten said mount 2", and reinstall both the engine and the mount. I think that this is the only fair thing for you to do. I would expect this work to be done by not later than August 18, 1975.

2- If by that time the work is not as I suggested, I will take legal action against you and ask not only for the return of my money, but damages and costs. I will also send a letter to Mr. Poberezny of the Experimental Aviation Assoc. I will also ask that this letter be published in "Sports Aviation" magazine for all to read.

Your company has in the past had a good reputation: so please comply with my suggestion.

Sincerely,



Charles N. Whitaker

**STOLP STARDUSTER CORPORATION** / 4301 Twining, Flabob Airport, Riverside, California 92509 / (714) 686-7943

Aug. 14, 1975

Charles N. Whitaker  
3413 Twilight Drive  
Fullerton, CA 92632

Ref: Your letter of August 12, 1975

Dear Sir,

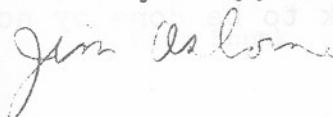
We have checked our engine mount jig against the drawings we received from Bushby. Our jig is correct.

We have made mounts from this jig for a number of customers. No one, except you, has complained about the mount being too long. We therefore feel, if you have a problem, it is not of our doing. Perhaps you have an offbeat engine model which has an extended prop shaft.

I will save you the trouble of writing to Mr. Poberezny. Our correspondence will be published in the Starduster magazine. Mr. Poberezny will receive a copy.

You are, of course, free to take any legal action that you wish.

Yours very truly,





Dear Sir,

Enclosed is a check for what I owe you. At this time I do not know what the balance is, so I am enclosing a check for \$70.00 & if the Starduster paper is still available please send me a subscription. If this is not enough bill me for the balance.

We now have a Starduster Too flying. Serial #1150. It took 5 years in building & it flew perfectly on the first flight with no adjustments at all. I would like to do a story & some pictures in your paper. I am enclosing some pictures.

Thank you.

Rayvon Young  
141 Quensbury Rd  
Winston, Salem N.C.  
27103



Jim Haydens Starduster Too. From Houston, Texas. According to Jim, the following statistic apply. Empty wt-1385#. Climb-2000 FPM. Ceiling 20,500 +. Cruise 145-150 at 23" & 2300. Take off run - 150'. Handles fantastic (like 500 H.P. Cub.) Finish is Dope.



Recently finished Starduster Too of Kenneth G. Macdonald, 634 Martin Way, Van Couver, Washington.



The above picture shows Stan Derrick flying over the San Jauquin Valley in his beautiful Starlet. It is powered by a Franklin Sport 4, of 130 H. P. Stans address is 2536 West Willow Street, Stockton, Ca. His Starlet is just about the prettiest we have yet seen.

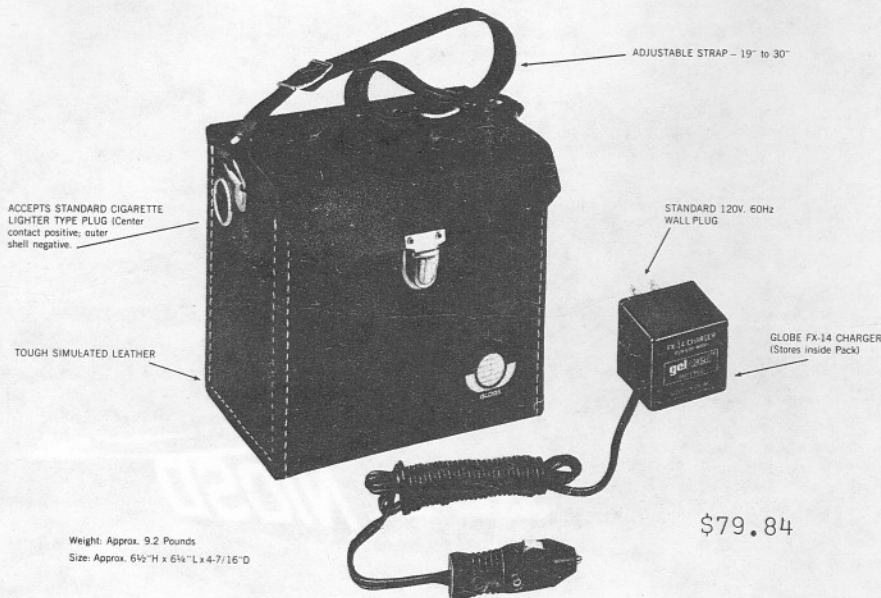
**NEW RUDDER AND BRAKE PEDALS---** We are proud to offer to our customers a new, light weight aluminum combination rudder and brake pedal. These pedals come completely finished and assembled and ready for use. They even have the clip for attaching the rudder cable installed, and are painted black. These assemblies may be used on any of our airplanes in place of the pedal assemblies shown on the plans. We recommend them. Price is a low \$25.00.

**P-51 LANDING GEARS---** If any of your friends are building the S.A.L. 2/3 scale P-51, please tell them we are in a position to furnish them landing gears. These gears are complete, per the plans, and are available for \$950.00.

FOR RADIO POWER IN AIRCRAFT  
WITHOUT ELECTRICAL SYSTEM

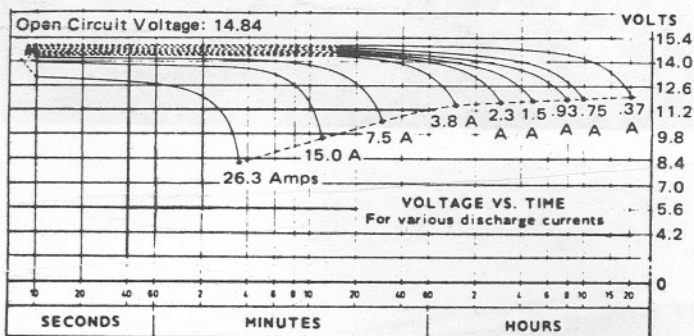
# gel/cell®

RECHARGEABLE 14 VOLT  
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GLOBE PART NO. GC 1400



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Size: Approx. 6 1/2" H x 6 1/4" L x 4-7/16" D

### DISCHARGE CURVES



### FEATURES

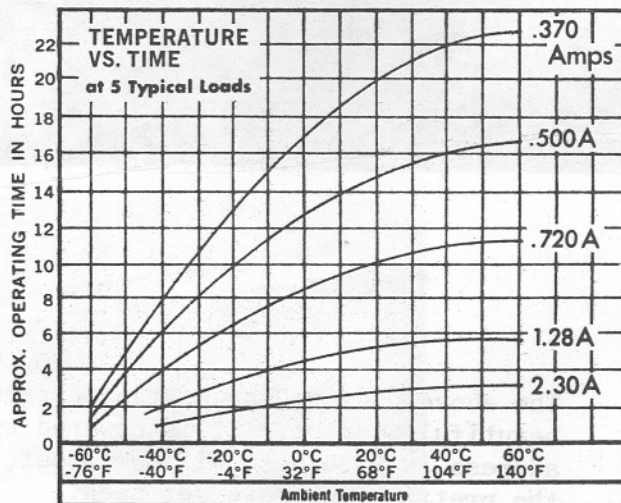
Provides maximum portable and standby power for your automotive, marine and aircraft accessories—this rechargeable Globe Power Pack is powerful and compact. It's maintenance free — no worry about adding water or checking electrolyte level. Pack has a wide operating temperature range of  $-76^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$  and may be recharged from  $-4^{\circ}\text{F}$  to  $+122^{\circ}\text{F}$ . Over-discharge doesn't hurt. May be used and recharged in any position. This GC 1400 Power Pack is ideal for portable equipment.

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Enjoy the safety of standby power and freedom of portable operation with a long operating time at peak power output.

Use it to power . . .

- Communications Equipment
- Portable T.V. Sets
- Depth and Fish Finders
- Portable Radios
- Navigation Instruments
- Spot Lights
- Tape Recorders
- Test Instruments
- Boat Running Lights



### OPERATING INSTRUCTIONS

- To operate, insert plug from your portable equipment into power pack receptacle.
- The GC 1400 pack comes complete with Globe FX14 charger. To recharge, simply insert cigarette lighter type plug from charger into power pack receptacle. Plug charger into a 120V 60Hz wall outlet. 16 to 24 hours is usually sufficient to fully recharge the pack. Do not leave the pack "on charge" continuously.

### FOR MAXIMUM LIFE

- Fully recharge before putting into storage.
- Boost charge every six months during storage.
- Avoid hot storage areas, keep in cool place.
- With just minimal care, your GC 1400 pack will provide you with long trouble-free service and hundreds of charge-discharge cycles.

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CLASSIFIED ADVERTISING RATE: \$3.00 PER COLUMN INCH-MINIMUM CHARGE \$3.00  
MAKE CHECKS PAYABLE TO STOLP STARDUSTER CORP. THANK YOU.

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performing biplane -  
**THE ACRODUSTER ONE**

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Stolp Starduster Corp.  
Flabob Airport  
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"Cherry" Pop Rivets,  
Steel & Aluminum.  
Universal Head,  
Flush Head and  
Large Head.  
Available from  
"Starduster"

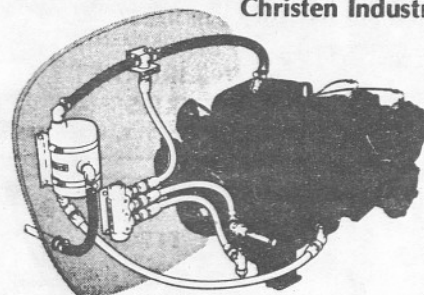
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TTAF, 15 SMOH(chrome)  
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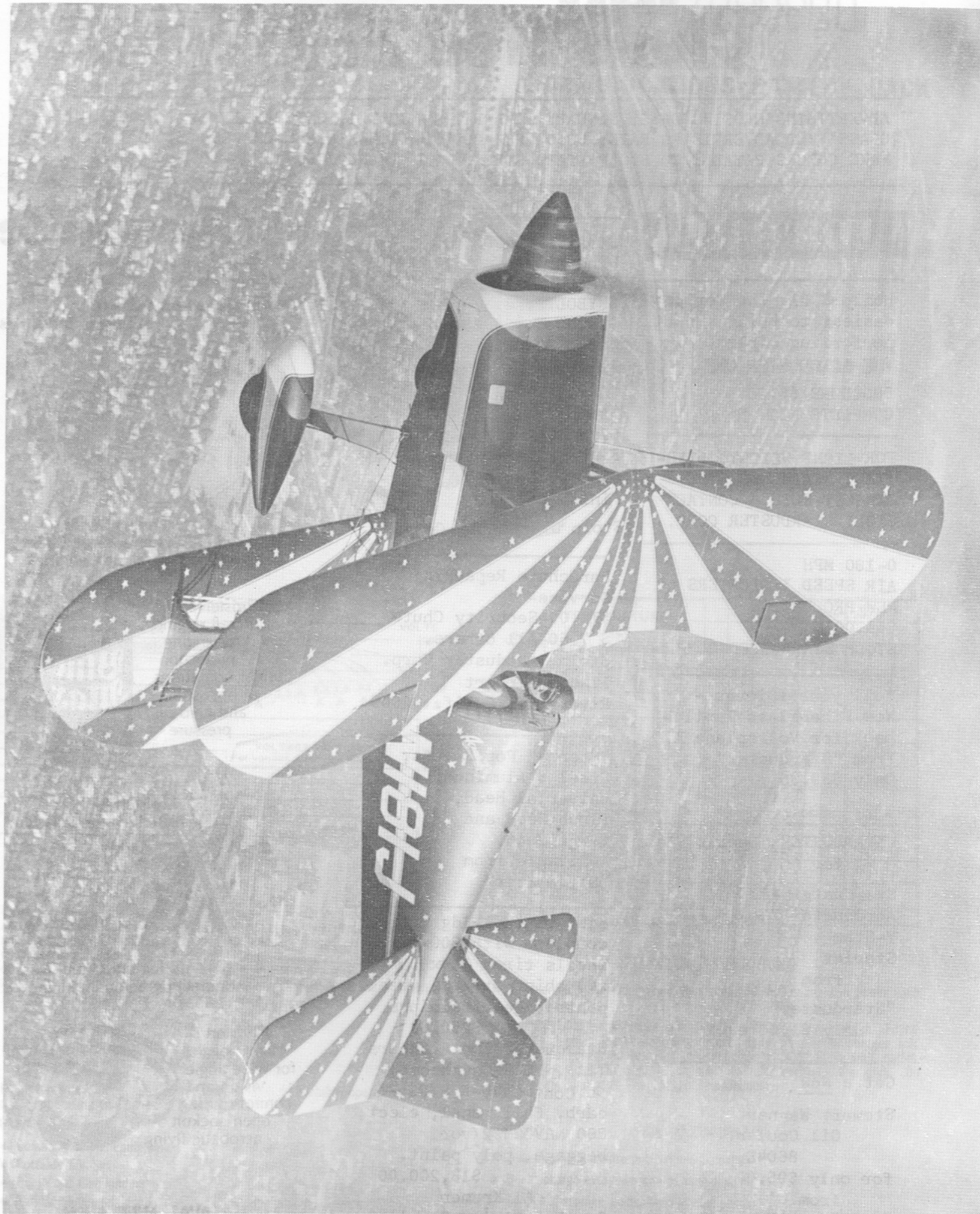
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