THE Stardust er

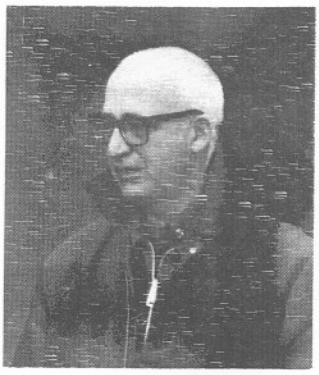
JANUARY 1976

FIRST FLIGHTS p.8
CONTROL ROUTING p.15

MAGAZINE

DEDICATED TO THE ACTIVE HOMEBUILDER

PAGE ONE



In 1776, there was a law in England which put a ceiling on wages. A highly skilled workman could earn anything up to 1/2 penny a day. Of course, at that time a penny was worth considerably more than a dollar is today. And there were subdivisions of the penny, now extinct, with which to make small purchases. And a man could marry, and raise a family on less than 1/2 penny a day.

By the 1890's, income had increased considerably. A worker in southern cotton mills lived and paid his debts on the princely sum of 10 cents a day. In the north, industrial workers might make as much as 25¢ a day.

During the late '30's, I worked for 35¢/hour. In 1942, I made as much as .80/hour as an aircraft draftsman for Glenn L. Martin.

Today, of course, everyone makes much more, in terms of dollars. In terms of purchasing power, however, it isn't that big an increase.

The point is, that, in the long run, prices are continually going up. So are wages. In terms of purchasing power, maybe prices are not rising all that fast. Maybe not at all. If you wait for prices to drop before building your airplane, you may never get it built. Todays prices are the bargains you will look back on tomorrow.

Three years ago, a good friend and customer started building a Starduster Too. He went slow, putting little money into the project. Most of his fairly large bank account went into the stock market. As it turned out, airplane prices have almost continuously risen during the last three years. The stock market dropped. Building your airplane can be an excellent investment, even when viewed from a conservative business view point.

Our pricing policy is designed to help you stretch your dollar. We do not anticipate price increases. Some businesses raise everything a flat percentage at periodic intervals. We raise prices to you when they are raised to us. For instance, on the 1st of March, 1976, Lycoming prices will go up 12%. On that date, our prices to you will go up 12%. We do not have general price increases-only specific increases, as are necessary.

So, if you want to build an airplane, and can afford to do so, now is the time to do it. Any of our airplanes, if properly built, will be worth more than it cost you. Time is fleeting. There is no refund on the 24 hours you must spend everyday. Spend them wisely - build an airplane.

Jim Osborne

January 1976

THE STARDUSTER MAGAZINE - Dedicated to the proposition that the ultimate in sport aircraft was reached with the design & development of the biplane, open cockpit tail dragger-and that everything 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 -- $5.00/year. Published by Stolp Starduster Corporation. 4301 Twining, Riverside, Ca 92509. Telephone (714) 686-7943

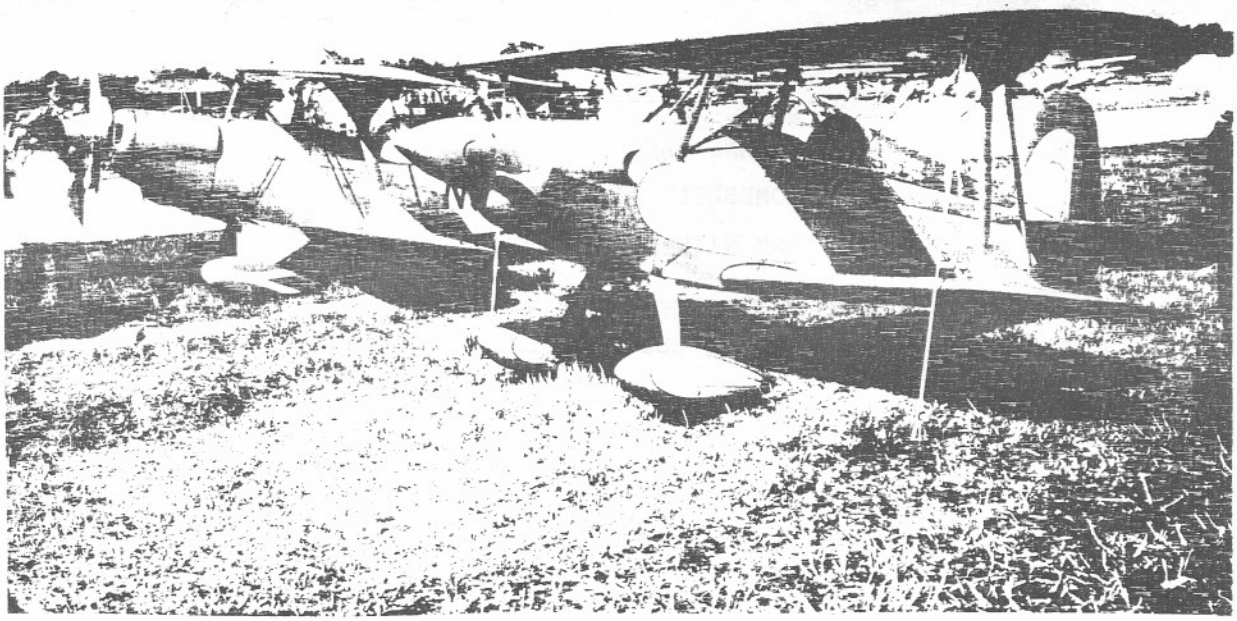
Our cover picture for this issue is a beautiful shot of Mahlon Wards Starduster Too returning from a photo session with our Acroduster 1. Jim Appleby is in the rear seat. Mahlon is the front seat rider. Eric Shilling is driving the Acroduster. -Photo by Bud Davisson.

On our back cover is a picture of Ray Bransons Starduster Too. Ray has made a beautiful machine. To cap his 50 year career in aviation, Ray is seriously considering building another Starduster.

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.



LAKELAND FLORIDA - NEXT TO BRAND X

COAST TO COAST IN A BIPLANE (AND RETURN). BY JIM OSBORNE

Since I have relatives in Florida, the idea of attending the 2nd Annual SUN 'N FUN FLY-IN, in Lakeland, Florida, was very appealing to me. The trip would be made in my Acroduster 1, N181J, and I would give a forum on Biplane design, while I was there.

Before leaving, N181J underwent some modifications. The fixed pitch prop was replaced with a constant speed Hartzell, overhauled by Santa Monica Prop Shop. A smoke system was installed, with the 5 gallon tank forming the bucket seat back. This tank was used on the trip as a 2nd gas tank. And believe me, having that extra 5 gallons of gas aboard was as comforting as the difference between a quart and a fifth, as some old aviator once said. The engine had been recently overhauled by Lynns Aircraft Engines, Long Beach, CA., and only had 10 hours on it. It performed beautifully thruout the trip, and gave absolutely no cause for anxiety. We developed and installed a sliding canopy, to guard against the cold weather then enveloping the south east. And at last, but not least, our good friend & customer, Roger Baumert supplied us with an inflatable air seat cushion. It could be pumped up with one hand, or air could be valved out, with thumb and forefinger. This little item completely eliminated any extremitis soreitis, and, together with the bucket seat back, made the trip as comfortable as if I had been sitting in an airline seat.

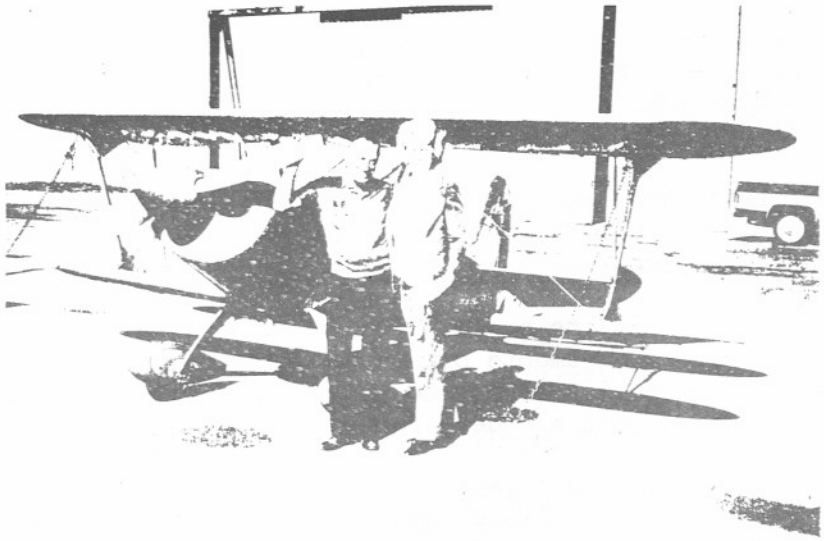
Because of trouble with the prop overspeeding & not holding RPM, start of trip was delayed two days. Santa Monica Prop Shop first thought the trouble was in the governor, so we worked until midnight installing a new governor. No improvement. On

the second day, S.M.P.S. determined that the blades had the wrong counterweights. Factory error. They would be able to fix it on my return from Florida, but not before. RPM could be reduced by reducing power & stalling at the same time. Then, provided that the throttle was not opened quickly, and N181J was not nosed down excessively, could be maintained. It was decided to go, with what we had. We lifted off from Flabob at 11:00 AM on Thursday, 15 January, 1976. Beautiful sunny day. Visibility must have been 200 miles. RPM was reduced to 2100, with 22" M.P. This gave a T.A.S. of 150 M.P.H. at 8500-9500 FT. We skirted the side of Mt. San Jacinto, flew over Palm Springs, and headed down the east side of the Salton Sea. Tuned in the Yuma OMNI range. The needle swung back & forth, would not center. Took a good hard look at map. Decided it was going to be an interesting trip.

The first stop, for gas, was made at Casa Grande, Arizona. Gas is 90¢ per gallon, and credit cards are not accepted. I resolve not to stop there in the future.

The second stop is Deming, New Mexico. The FBO is a woman, Rene Hirth. She flies in the Powder Puff Derby. Very friendly. Has a picture of N181J pasted to her counter. Pleased to see it on her ramp. Directly ahead is the white sands restricted area. Because it is getting fairly late, and because of the excellent service given by Mrs. Hirth, I decide to stop over night in Deming. Spent the night in the "Western" motel, run by Osborne and Dorothy Allen. Free pickup and delivery service between airport and motel. Very friendly people. local gossip was about a hunter, who the week before had been attacked, and badly injured, by a wolf. The hunter had lost his gun in the unexpected attack, and recovered it by the barrel, while the wolf was chewing on his leg. He then beat the wolf off, using his rifle as a club. I thought wolves were extinct in the south west, but Mr. Allen said no, some wolves came up from Mexico on occasion.

Friday morning, 16th of January - Osborne Allen got up early and delivered me to the airport by 7:00 A.M. Rolled N181J out, and tied her down, using the tail tow release hook. A quick start, strap in, release the hook, and take off. Heading south east by map. Steering just south of White Sands restricted area. Weather starts to get colder. As Hobbs, N.M. neared, tried COM radio. Lots of static. Intermittent



VINCE HINDS & TOBY FRANZ - HOBBS NEW MEXICO

voice radio. Tower welcomed me and directed me to gas, & tiedown facilities. Vince Hinds, FBO, showed me the Local Confederate Air Force hangar. Among other planes, it contained a beautiful B-25, complete with guns and markings. It looked ready to set out on a WW II bombing mission. Vince also worked on my radio, and improved its ground operation a little. Refused any payment. Said he was not a radio man. The radio intermittently quit just as I taxied out for takeoff. The tower gave me a friendly wave as I passed them, and a green light. Talk about nice people.

Hobbs, N.M., to Gainesville, Tx. Cruising 11,500 - cold - following major highway - navigating by little towns along highway - four or five in sight at once. Gassed up and bought new sectional at Gainsville.

Gainesville to Camden, Ark. Bitter cold - canopy worth its weight in gold - sky was much hazier, due to increased humidity in air. Therefore, flew much lower, around 5500'. Camden turned out to be a good place for an overnight stop. The Airport Inn was right on the Airport. A very nice motel and restaurant. The FBO hangared my plane for the night, and the line boy came out early the next morning to release N181J from the hangar and help me get started. A $5.00 tip seemed about right for such service.

Camden to Fayette, Ala. Closed canopy for take off from Camden. Instant IFR on take off roll. Frantic wiping of moisture from inside of windshield on climbout. Then air circulating thru cockpit cleared things up. After this incident I was very careful about closing canopy on takeoff under cold, high humidity conditions. Landed at Fayette for gas. Hot start on 1st blade.

Fayette to madison, GA. On leaving Fayette, my intention was to fly nonstop to Columbia, S.C. to visit relatives. However, clouds and fog were in abundance as I neared Augusta, GA. When they appeared to be solid, I executed the classic 180° turn, flew back and landed at Madison, GA. I received a most friendly welcome from airport manager George Robertson, and his friends, Don Cox, and Sydney Holmes. Decided to leave plane at Madison for two nights and go to Columbia by Bus. George made room for N181J in his own personal hangar. Don and Sydney drove me around Madison and to Sydneys home, for a brief visit. Madison is full of beautiful old homes. Sydney, who flies for Delta, had bought and renovated one of the old homes into a thing of beauty.

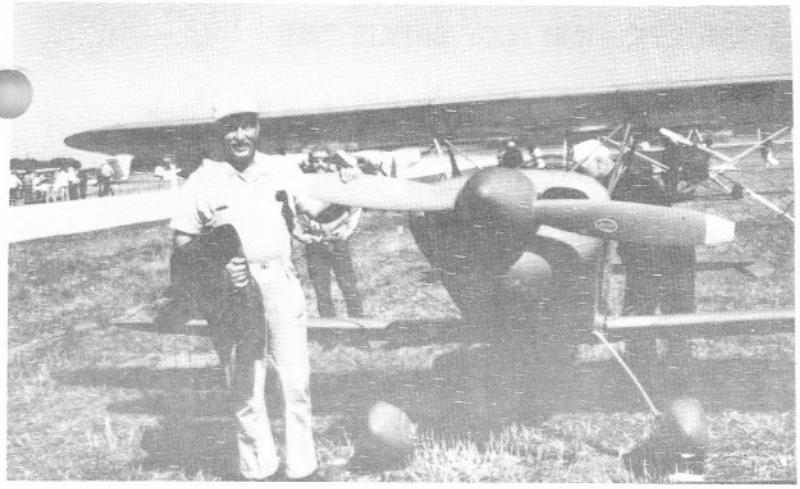
During my visit, it came out that Madison is the town Sherman did not burn in his march thru Georgia. It seems that the mayor of Madison was an old prewar friend of his. For friendships sake, Sherman spared Madison, and left its beautiful homes for us to enjoy today.

On your next flight thru Georgia, treat yourself to a treat. Drop in to see George Robertson (he lives in a trailer on the airport) and the friendly people and beautiful buildings of Madison.

Don and Sydney left me at the bus station. Two days later I returned to pick up 81 Juliet. George helped me smooth out the working of the canopy. For two nights hangar rent, & 1/2 hour mechanics labor, George said he would make no charge. I had to insist before he would accept a modest fee.

I left Madison around noon and landed at Keystone Heights, Florida, 2 1/2 hours later. Keystone is a large ex military base, with an up and coming young couple making it into a very nice FBO. Stayed two nights, and 81 Juliet was snug in the hanger right next to a beautiful S-1c Pitts.

When I left for Lakeland, Mel, the FBO, told me that "Carrot Top" had been thru with her beautiful 100 H.P. Acro Sport. Flying due south for one hour put me over



LAMAR STEEN

DON & GAIL TAYLOR

Lakeland Municipal Airport. I landed and parked closed to Carrot Tops beautiful machine.

The EAA in Lakeland had things well in hand. Two motels had temporary offices on the field, where you could register, and receive your room key. I stayed at the Quality Inn. Free transportation every hour, both ways, and excellent accomodations. The manager was a member of E.A.A.

I gave my Forum at noon, Friday. Discussed the fine points of biplane design. Glad to run into Lamar Steen. Listened to his forum on Saturday. Lamar used Fred Passano's Skybolt to illustrate his lecture. Fred is from Clearwater, Fla. Also enjoyed meeting and talking with many Starduster builders, including Neil Reyngoudt and Al Tomlinson, of West Palm Beach, Fla. Seeing Paul and Audrey Poberezeny was a welcome surprise. Visited with Don and Gail Taylor of Aerobatic & Chandelle Aviation fame. Watched 5 Cubs fly over with over 500 years of combined flying experience in them. My Kansas City friend, Harold Neumann, was among the 10 pilots.

Returned to Keystone Heights late Saturday. Plane right back in hangar next to Pitts. Mel, the FBO, invited me to speak at the monthly meeting of local aviation Club, on Tuesday night. I accepted with pleasure. The aviation enthusiasism and interest in such a small town was amazing. Mel and his wife are truly doing a fine job.

Wednesday morning was cold, clear, & windy. Had a big breakfast. Started North & West. One hour, and 150 miles furthur on, had to land at Quincey, Fla. For comfort, not gas. Will I never learn - when flying x-country, go light on eating and drinking. Especially drinking. Especially coffee.

From Quincey Florida, to Dequincey, LA. Excellent service from FBO Gene Allen. Bought new sectionals. Visited by the Mayor and two town commiteemen. Some one expressed doubts about anyone flying to California in that thing.

From DeQuincey to Conroe County Airport, Texas. Still several hours of daylights, but sun is getting low, and in my eyes. Decide to land and stay the night. On final approach, Learjet pulls out directly in front of me for takeoff, and forces me to go around. Friendly welcome from FBO. He says to leave 81 Juliet on line, and line boys will put it in hangar for night. Spent night at local Holiday Inn, which provided free transportation. On arrival at Airport the next morning, found 1" gash in fabric of lower left wing. My own fault. I should have stayed around until N181J was safely put to bed. I patched the gash with scotch tape, hand propped with the tail tied

down, pulled release cable from inside cockpit, taxied out, & took off. With tow hook and release cable, I am almost as self sufficient and independent as if I had a starter. It is invaluable when you have to start that thing all by yourself.

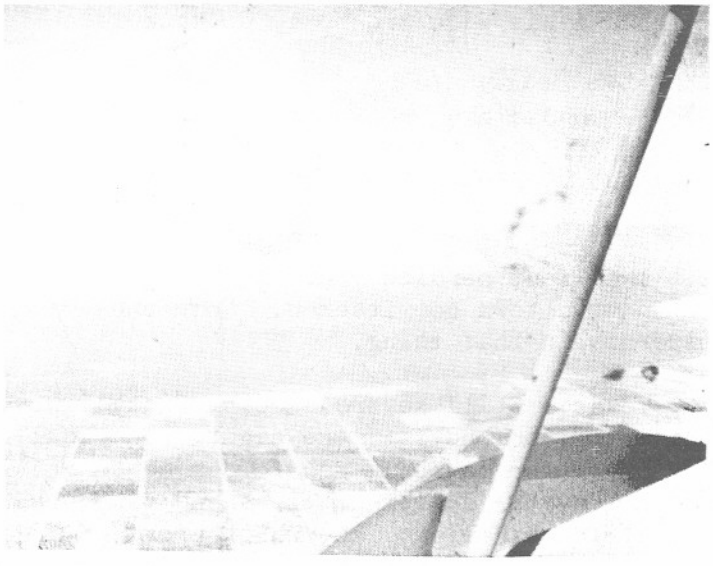
On Friday morning, Jan 29, I left Conroe, and made gas stops at Llano, Tx., and Carlsbad, N.M. At both these places I received a friendly welcome, & excellent service. However, at both these places, I had to tie down the tail and hand prop a hot start myself. Luckily, I had the procedure down cold, and got a hot start on the 1st blade, each time. May I ever be so lucky.

At Wilcox, Az. the gas nozzle was too long and would not fit under the wing and into the tank. Filling was by holding the nozzle over the tank opening, & letting it dribble in. The gas meter hardly moved. The lady FBO was kind enough to let me fill my tank in this fashion, and take pay for an estimated 15 gallons. A local flyer volunteered to twirl the prop. Again, a hot start on the first blade. I must be living right.

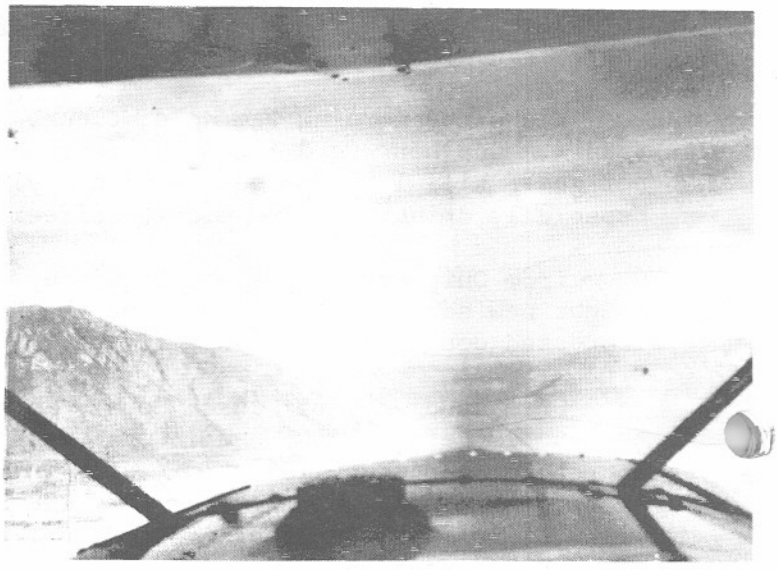
From Wilcox to Gila Bend, Az. 4:00 P.M. arrival. Decide to remain over night. Small airport, but paved. Another lady FBO. Stayed at Travelodge, with free transportation both ways again.

Being so close to home, I slept late, and had a good breakfast. Arrived at the airport around 9:00 A.M. Tie down and hand prop. Off into the clear blue sky. Jinking and dog legging to stay out of restricted areas. It is a shame that so much airspace is prohibited to the civilian flyer. The congressman who will start the ball rolling to "unrestrict" some of this airspace will get my vote.

Over Yuma, Az, I visually pick up the Salton Sea. Put away the map. I know my way home now. From Salton Sea, head straight for Banning Pass, between Mts. San Jacinto and San Gorgonia. Almost home. Start to let down over Banning. Tempted to buzz the field, but decide against it. Made a sedate landing. Home at last.



SALTON SEA



BANNING PASS

TEST FLYING YOUR NEW HOMEBUILT AIRPLANE BY ERIC SHILLING

Testing a new airplane can be a pleasant and rewarding experience, or it can be one of actual terror. It is up to you, the builder and pilot, which way it will turn out.

Naturally, you want to enjoy your first, and subsequent flights. Advance preparation can make them pleasant memories. Start with the knowledge that the construction and design requirements called for in the plans have been met. A review along these lines can be beneficial.

You should be knowledgeable concerning the following:
1-Weight and balance figures
2-Recommended C.G. and C.G. envelope limits.
3-Any modifications. Their effect on flight characteristics.
4-Any difference in engines. Effect on C.G. and performance.
5-Any thing added after weight and balance, such as engine accessories, radios, etc. Their effect on weight and balance.
6-Any modifications that might affect ground handling.
Even when changes are recommended by the designer, I feel it is a good idea to find out, if possible, the reason for such changes. It helps you understand your project that much better.

A nose heavy airplane may not be spinnable. A tail heavy airplane may not be recoverable from spinning. While some mods may have little or no effect, others can drastically affect flight characteristics, or ground handling.

Many designers use different weight and balance datum. Some base their figures on distance from the firewall. Others use wheels, or wing leading edges. Some give a definite C.G. range, in inches. Other use a percentage of wing chord. So get on the same wave length as your designer. Know what he is talking about.

A good inspection program is essential, and is in the E.A.A. builders manual. We are reprinting the 100 hour inspection check list from CAM 18. You can adapt this to your needs. Pay particular attention to safetying of nuts and flying wires with cotter keys. Also check to see that fork ends of flying wires are in past the "weep" hole. Stick a small wire in the weep hole, to check if the wire is in far enough.

As pointed out in my last article, I am strongly opposed to so called, by me, low and slow first flights. Such testing has been recommended by well meaning people, who, I feel, are inexperienced in the test pilot field.

High speed taxiing should be done well below lift off speed. It is accomplished, not to check flight controls, but to test tail wheel steering, tracking, and brake effectiveness. At the completion of taxi tests, check brakes and lines for leaks.

After all preliminery testing and checking has been accomplished, you are ready for your first take off, and can proceed with confidence. Give it the gun, and go. Make a normal takeoff and departure, using a fairly flat climb angle. Take it to altitude, and initiate a series of flight test maneuvers. Check to see that you can hold the wings level in a three point attitude. After stall speed is determined, about 1.6 VSO will give you your max rate of climb. About 1.4 VSO will give you a good glide speed.

During your first flight, monitoring of engine instruments is essential. Unusual readings are a warning to abort the flight and make an immediate safe landing.

You may save an engine this way. As a matter of fact, in flight scanning of instruments is a good habit to get into. And I do not mean staring.

On your first flight, be on the alert for problems. Overheating means you may need additional cooling air, tighter baffling, or a relocated oil cooler. On the larger engines, you may need an additional oil cooler. Your first flight should stay within gliding distance of the airport. On take off, if the runway is short, make a 45° turn to the left, then 45° to the right, climbing over the runway until sufficient altitude is reached.

Start the test program by rolling from bank to bank. This will quickly give you the feel of the controls, and the relationship between rudder and aileron. Start with 180° turns, right and left, and work up to 360° turns. At this point, increase the bank and back pressure until you get a stall. Check to see how violent the stall, and how quickly it flies again when back pressure is released.

Any time you receive unusual control response, break off testing until a valid reason is obtained, and corrective measures taken. If necessary, modify, and/or obtain help from a more experienced pilot.

My reason for first doing stalls in a bank (high speed induced stalls) is that as soon as back pressure is released, the airplane is flying again. If these stalls are normal, stall without power, and simulated landing stalls can be undertaken.

After you have become acquainted with your airplane, done stalls from all attitudes and power settings, come in for a landing. At this point you should know your airplane well enough so that you don't need your airspeed. It is relatively unimportant.

Your first flight should not be over 30 minutes. There are many things to check before the next flight is made. After a thorough check of the engine compartment, controls, flight surfaces, and fuselage, proceed with your test flying. All tempeatures and pressures should be stabilized and normal. Do not be satisfied that they are within limits.

Now, you are ready to obtain performance figures. Before your first flight, the F.A.A. requires that instruments be marked and red lined. In the case of the airspeed indicator, this can only be done after the first flight. The stall speed is the first red line. The green arc goes up to where the yellow arc starts. The intersection of green and yellow arc marks your max. maneuver speed. For 6.G. limit loading, this would be 2.45 times stall speed. In the yellow speed, full control deflection is no longer allowed. The yellow arc continues to the red line, which marks your never exceed speed. Red line speed, VNE, is 10% below tested dive speed.

Save takeoff and landing roll distance, and distance to clear 50' obstacle until last. The better you know your airplane, the more accurate and consistent will be your figures.

An abbreviated test form follows, to help you establish performance figures for your airplane. It can become part of your operations manual. Such a manual will be helpful if you decide to sell your bird. And after such a test program, I guarantee you will be a better pilot.

Appendix D
Examples

Example 1

PERIODIC AND 100-HOUR AIRCRAFT INSPECTION CHECKLIST

1. Aircraft specification and Airworthiness directive conformance. Yes___ No___

2. INSPECTION (INDICATE WHETHER AIRWORTHY OR NOT BY CHECKING (✓) APPROPRIATE BLOCK)

3. Fuselage—Hull Group	Yes	No
a. Fuselage structure		
b. Fabric—skin		
c. External bracing		
d. Control mechanism		
e. Electrical system		
f. Hydraulic system		
g. Fuel system—tanks		
h. Emergency exits		
i. Cargo compartments		
j. Rotor drive shafts		
k. Hull		
l. Envelope		
m. Gas bag		
n. Ballast tanks		

4. Cabin—Cockpit Group	Yes	No
a. Fuel system—tanks		
b. Oil system		
c. Electrical system		
d. Batteries		
e. Hydraulic system		
f. Instruments		
g. Flight—engine controls		
h. Seats—berths		
i. Safety belts		
j. Fire-warning system		
k. Fire-extinguisher system		
l. Heating—ventilating		
m. Windows—windshields		
n. Control car		

5. Engine—Nacelle Group	Yes	No
a. Fuel system		
b. Oil system—tanks		
c. Ignition—electrical system		
d. Exhaust stacks or manifolds		
e. Cooling system		
f. Engine controls		
g. Power plant—general		
h. Superchargers		
i. Heating—ventilating system		
j. Engine mount—attach fittings		
k. Engine accessories		
l. Engine cowling		
m. Main rotor transmission gear box		

6. Landing Gear Group	Yes	No
a. Main landing gear		
b. Tail—nose gear		
c. Latches		
d. Retracting mechanism		
e. Landing gear attach fittings		
f. Electrical system		
g. Hydraulic system		
h. Wheels—brakes		
i. Floats		
j. Struts—attach fittings		
k. Skis—fittings		

7. Wing—Centersection Group	Yes	No
a. Fixed surfaces		
b. Movable surfaces		
c. Fabric—skin		
d. External bracing		
e. Wing attach fittings		
f. Flight-control mechanism		
g. Fuel system—tanks		
h. Electrical system		
i. Hydraulic system		
j. Anti-icing devices		
k. Gust lock mechanism		
l. Main rotor blades		

8. Empennage Group	Yes	No
a. Fixed surfaces		
b. Movable surfaces		
c. Fabric—skin		
d. External bracing		
e. Attach fittings		
f. Flight-control mechanism		
g. Electrical system		
h. Hydraulic system		
i. Anti-icing devices		
j. Gust lock mechanism		
k. Tail rotor blades		

9. Propeller Group	Yes	No
a. Propeller blades		
b. Propeller hub(s)		
c. Control mechanism		
d. Attachment		
e. Accessories		
f. Anti-icing devices		

10. Radio Group (Installation)	Yes	No
a. Receiver		
b. Transmitter		
c. Antennas—insulators		
d. Bonding—shielding		
e. ADF receiver—loops		
f. Dynamotor		
g. Auxiliary power unit		
h. Electronic devices		

11. Miscellaneous Group	Yes	No
a. Position-light flasher mechanism		
b. First-aid—emergency equipment		
c. Industrial and advertising installations		
d. Pyrotechnics installation		
e. Water-injection systems		
f. Oil-dilution system		

12. Operational check - preflight satisfactory Yes___ No___

TEST RECORD

Aircraft Type_____ N. Number_____

Cockpit Check - Blind folded

Take Off

Gross Wt. _____T.O. Ground Roll_____
Outside Air Temp._____ To Clear 50ft OBJ._____
Runway Elevation_____
Density Altitude_____
Wind _____
Full Throttle Static_____

Climb
Best Angle (1.2 VSO)_____
Best Rate (1.6 VSO)_____

MSL to 1000ft. RPM
Time
R/C
OAT
OIL P.
OIL T.
CHT
1000ft - 2000ft

Climb
2000ft - 3000ft to what ever altitude desired
next
Cruise

Normal	Best Range	Best Endurance
Sealevel: OAT_____		
IAS	IAS	IAS
TAS	TAS	TAS
OIL T.	OIL T.	OIL T.
OIL P.	OIL P.	OIL P.
C.H.T.	C.H.T.	C.H.T.
Fuel Cons.	Fuel Cons.	Fuel Cons.
Oil Cons.	Oil Cons.	Oil Cons.
1000ft.		
2000ft.		
etc.		

(if more than one tank)
Actual usable fuel (Eng. Starvation)_____

Stalls

1st indication of loss of lift (Stall Break)

Gross Wt._____

Power off, Straight MPH_____ Alt. Loss_____

" " 30° Bank MPH_____ Alt. Loss_____

Full Throttle, Straight MPH_____ " " _____

" " 30° Bank MPH_____ " " _____

Spins

One Turn Altitude Loss _____

Two Turn " " _____

Three Turn " " _____

Immediate Recovery after

entry Altitude Loss _____

Glide - Power Off

Gross Wt._____

Glide 180° Turn Alt. Loss_____

" 360° Turn " " _____

MIN Rate of Descent _____

Indicated A/S _____

Landing

Gross Wt._____ Cross Wind Component_____

OAT_____ Normal Ldg Roll_____ft.

Runway Elevation_____ Short Field Ldg Roll_____

Density Alt._____ Max Braking_____ft.

Wind_____

MANX KELLY & JIM OSBORNE WITH ACRODUSTER

BRITISH CHAMP TO PERFORM WITH ACRODUSTER

Manx Kelly, British aerobatic champion in 1972, and owner of the Rothman Aerobatic Team, known thruout the world for spectacular flying, has contracted to fly our Acroduster 1 during the 1976 Air Show season. Manx also organized and led the Carling aerobatic team, in Canada, for two years. Manx led these teams at many of the worlds greatest international airshows, such as Paris, France; Farnborough, England; and the Canadian National Exhibition, Toronto, Canada.

In 1975, after five years as a team leader, Manx handed over this role to one of his pilots, and decided to develop the most sensational solo act in the world. In Europe, during 1975, he flew a solo act in the Pitts S-2A that often stole the show from the worlds great military jet teams.

At the present time, Manx is in the Arab countries, flying about 30 demonstrations in 90 days. He is due back at Stolp Starduster Corporation around the 15th of March. His first scheduled demonstration is set for April 3rd and 4th at Falcon Field, Phoenix, Arizona, where he will perform at the Desert Pilots Sportsmen Association Benefit Show, for the American Aerobatic Team. This show will help raise the $100,000 necessary to send our American aerobatic team to Russia.

Prior to contracting to fly airshows in the Acroduster, Manx carefully evaluated the machine at our Riverside plant. After 8 hours of flight testing, he decided it was one of the best aerobatic machines available, either factory built, or home built. He wanted a smoke systems and a constant speed prop installed before April. These changes have been made. The six gallon smoke tank is bucket contoured and acts as a seat back. It also can be used as a second gas tank, for cross country flying.

We here at "Starduster", are looking forward to Mr. Kellys return. We anticipate a successful season for him in our Acroduster. If he performs in your vicinity, you might find it enjoyable to watch his act. If you want an airplane like he flies, please give us a call, or drop us a line. We will be glad to take care of your needs.

"STARDUSTER" OPEN HOUSE

On Sunday, March 28, 1976, you are invited to our 1st Starduster open house party. No sales will be made. Just friendship, convivialty, food, soft drinks, music (from the 30's and 40's), and perhaps some movies and slides.

Our genial General Manager, Eric Shilling, has made noises like he will be showing some 16mm. film. I understand it is about his Flying Tiger days, in WW 2. And we will have a slide projector available for the showing of interesting slides. If you have some you want to show, bring them along.

Fly you Stardusters in, or drive your car. Remember the date. Sunday, 28 March, 1976. Try to arrive between 10:00 A.M. and Noon.

Airplanes on display will be yours(?), my Acroduster, and Glenn Beets beautiful machine. So that we may have some idea of how maney planes and people to expect, please let us know if you plan to attend, how maney will be in your party, and will you be flying or driving.

If you would like to fly in, and are a stranger to Flabob, you might have difficulty spotting the airport. The easiest way to locate the runway is to pickup the white sands of the dry riverbed north of Riverside. Follow the Riverbed south until Mt. Rubidoux, with a cross on top, shows up in your windshield. Look directly across the dry riverbed from Mt. Rubidoux, and there is Flabob. Fly a tight pattern, at an altitude of 1500'. Fly downwind (normally east) until you almost hit the mountain. Then turn base, and then a short final.

If you, our friends, enjoy this first little social occasion, perhaps we can repeat it at intervals. We are looking forward to seeing you.

THE PROPER ROUTES TO FOLLOW

One of the problem areas in finishing up a homebuilt airplane is in the routing of engine controls and instrument lines. The main problem is the big fuselage gas tank. The sump of the tank seems to be directly in the way of every reasonable routing of throttle and mixture control cables, and the tachometer drive shaft. Other controls and instrument cables do not seem to be as hard to route. But these three all have big minimum bend radius requirements, and all three run to the approximate center of the engine.

The tach drive shaft problem is on the instrument panel end. Normally there is not much space forward of the instrument panel. One solution is to use a right angle tach drive. The drawbacks are 1) cost 2) weight 3) the right angle drive is noisy, and at taxiing speeds it will make you think there might be something wrong with your airplane. The best solution is to mount your tach drive on the extreme R.H. side of your instrument panel. The drive shaft can then come down the right hand side of the fuselage, and feed straight in to the tach. Quieter, cheaper, and lighter.

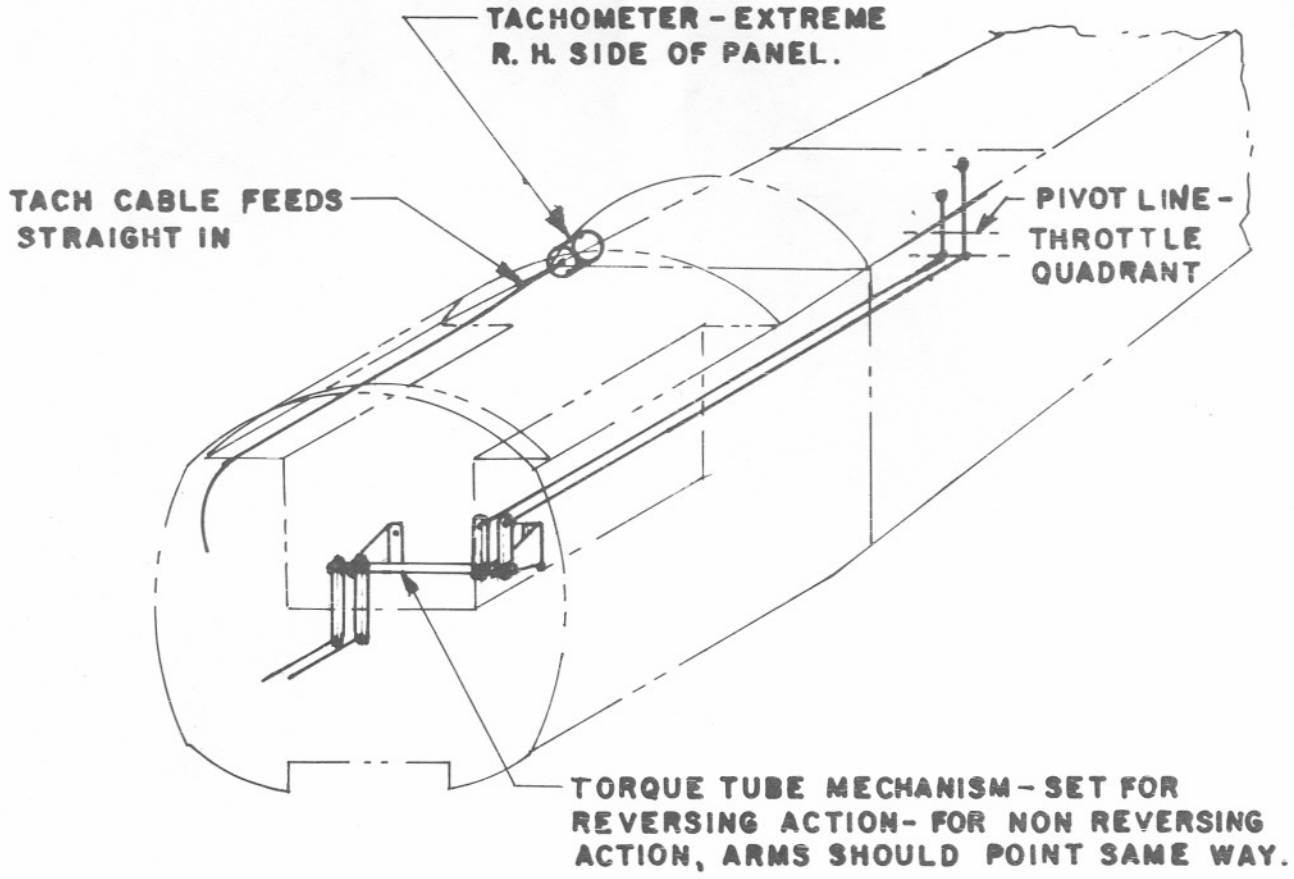
The best solution to the problems with the throttle and mixture control cables are a little more complicated. The throttle has a hard end, about 6" long on both ends. It must feed straight in to the throttle or fuel injector. Tight turns are prohibited. In addition, you may be faced with the problem of reversing direction of movement. If you are using a throttle quadrant, you will be faced with a reversal problem. Also you may have a problem of proportional movement. Full travel at the cockpit end may or may not give the proper amount of movement at the engine end.

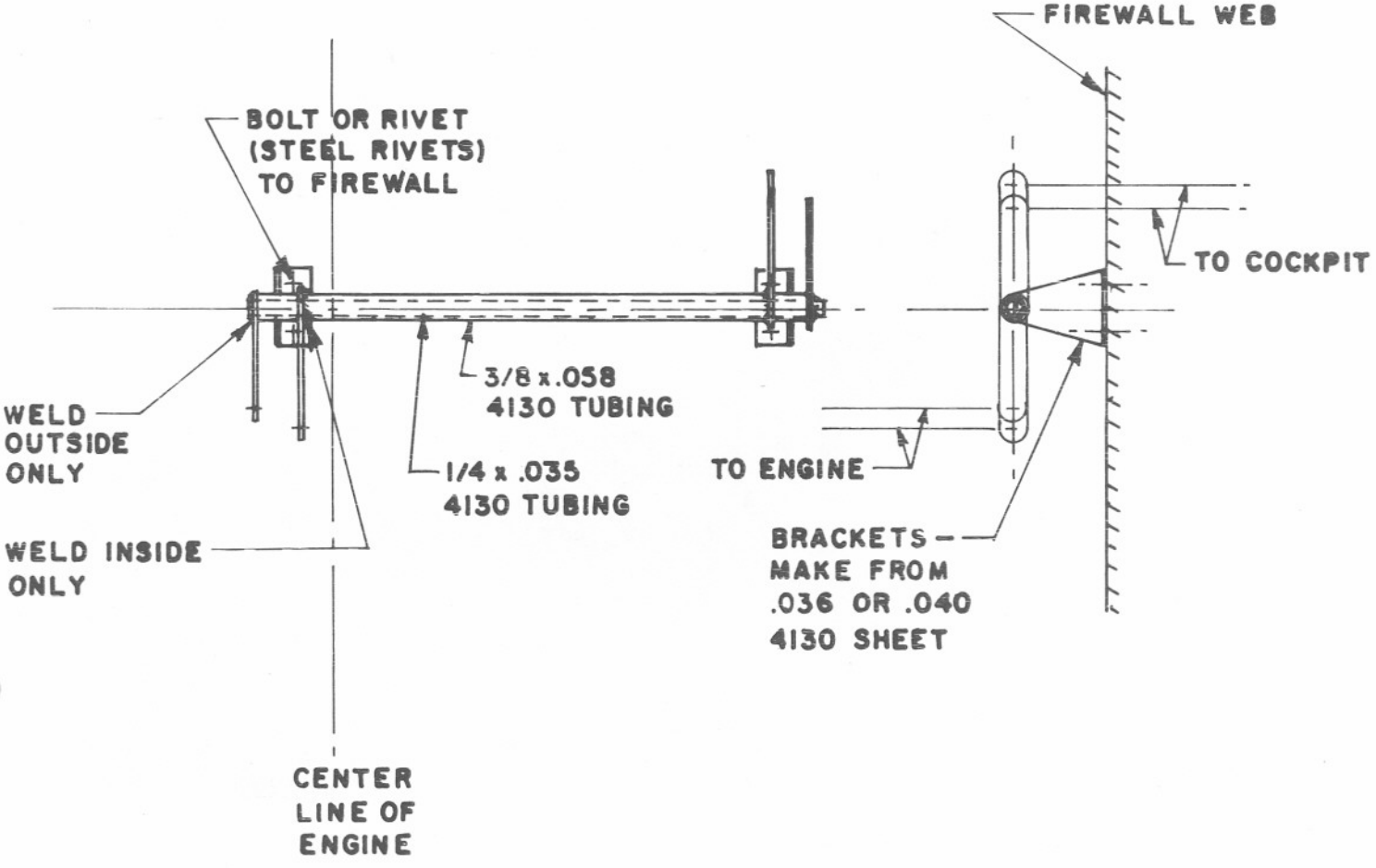
The solution which we feel is best, is to feed the cockpit cables into a torque tube mechanism on the left side of the firewall. This mechanism extends to the approximate center of the firewall. Take off points can be directly behind the engine throttle and mixture controls. By varying length and location of torque tube levers you can get any percent of proportional movement you desire. You can also reverse direction of movement or not, as suits your needs.

By studying the sketches, you should be able to design and build your own mechanism to suit your own needs.

CRACKED TUBING

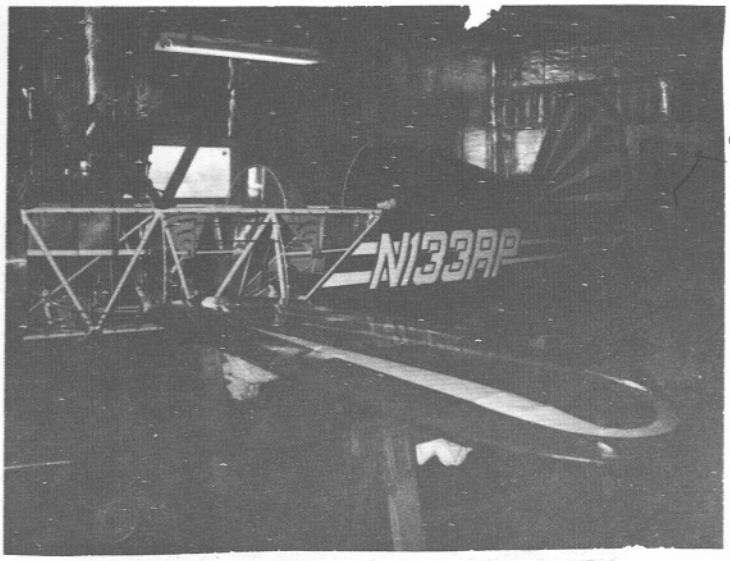
Recently a customer returned a piece of 1.349 x .049 S.L. Tubing, which had cracks along the trailing edge. We immediately replaced it. We urge you to carefully inspect all S.L. tubing in your possession for such cracks. A long straight line is not a crack. That is a die scratch. Cracks are intermittent, very crooked, and irregular. We will gladly replace any tubing found to be defective. Please inspect before using.

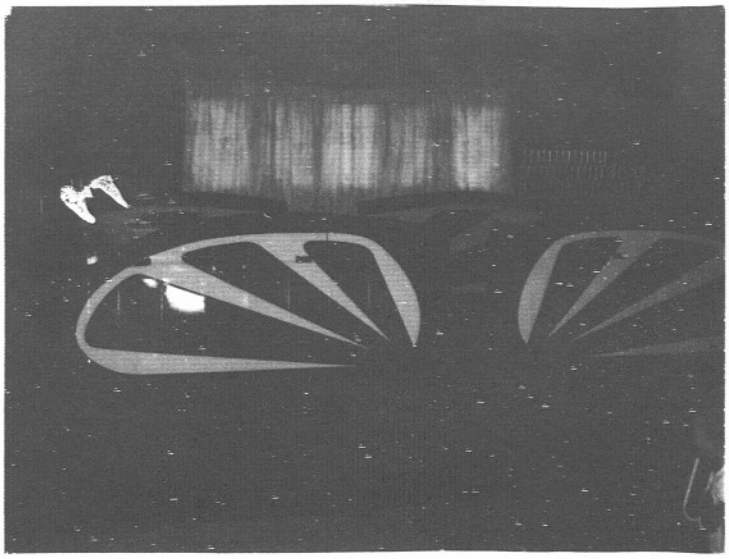

TACHOMETER - EXTREME R. H. SIDE OF PANEL.
TACH CABLE FEEDS STRAIGHT IN
PIVOT LINE - THROTTLE QUADRANT
TORQUE TUBE MECHANISM - SET FOR REVERSING ACTION - FOR NON REVERSING ACTION, ARMS SHOULD POINT SAME WAY.


FIREWALL WEB
BOLT OR RIVET (STEEL RIVETS) TO FIREWALL
TO COCKPIT
3/8 x .058 4130 TUBING
WELD OUTSIDE ONLY
1/4 x .035 4130 TUBING
TO ENGINE
WELD INSIDE ONLY
BRACKETS - MAKE FROM .036 OR .040 4130 SHEET
CENTER LINE OF ENGINE

DAVE MEAD AND STARDUSTER TOO #1488. PLANNED TO FLY IN SPRING OF 1976

JIM HAYES AND N3314 - 65 HOURS - NO BAD HABITS





Ron Powers

beautiful

Acroduster Too.

Ron says it is about ready to fly.

Only needs Engine controls

installed and the cowling painted.

First flight should be

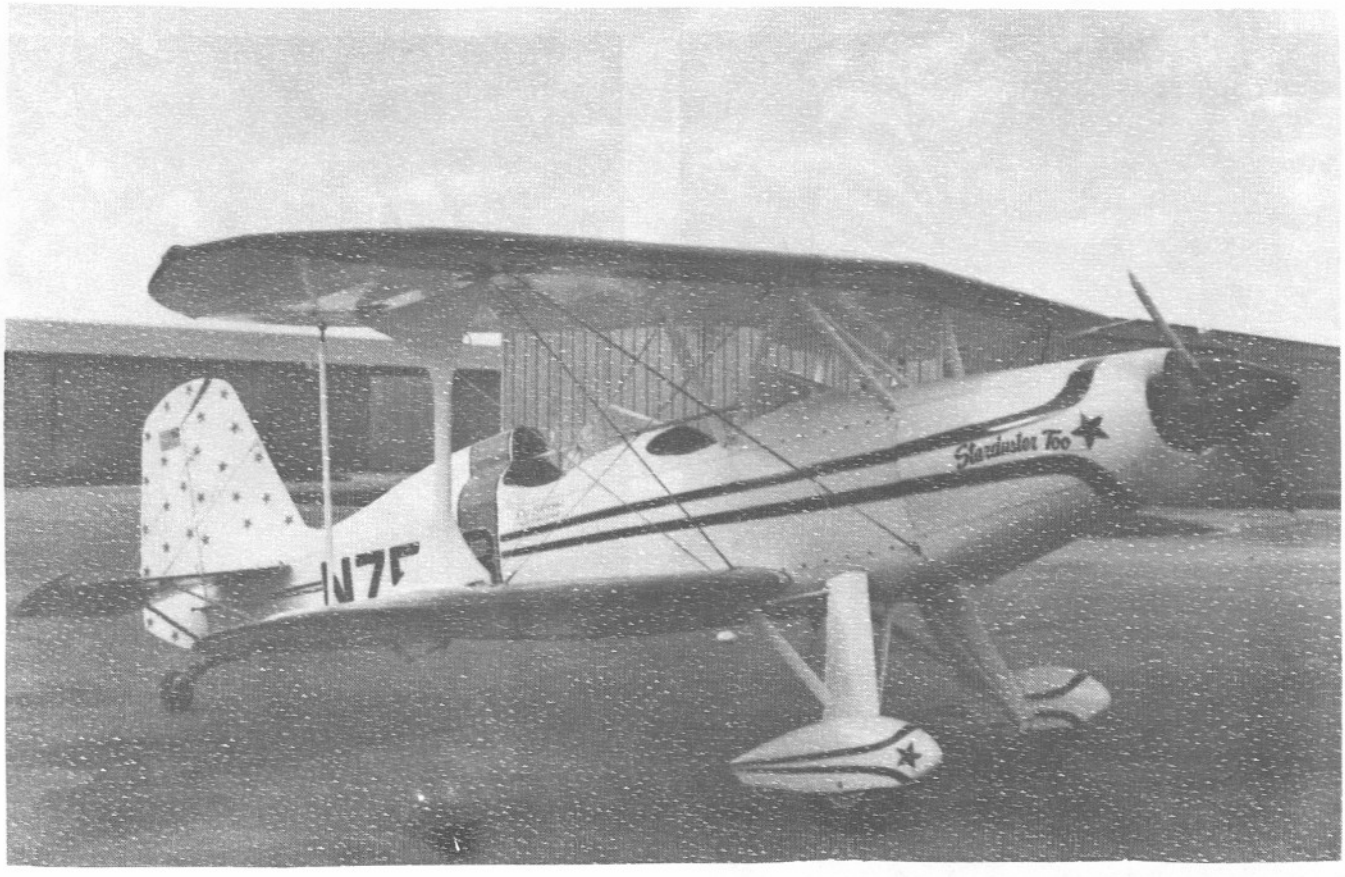
early this spring.

Hi Jim,

I enjoy your magazine, it's very enjoyable. Would like to see you do a workup on proper weighing procedure & weight & balance computations. Especially on the "Too".

Happy New Year,

Pete Anthony
10948 Wonderland Trail
Dallas, Tex. 75229



Dear Jim,

I am sending you a black & white photo suitable for reproduction. My bird now has 23 hrs on it, and everything is working fine. No complaints & I am very critical on airplanes.

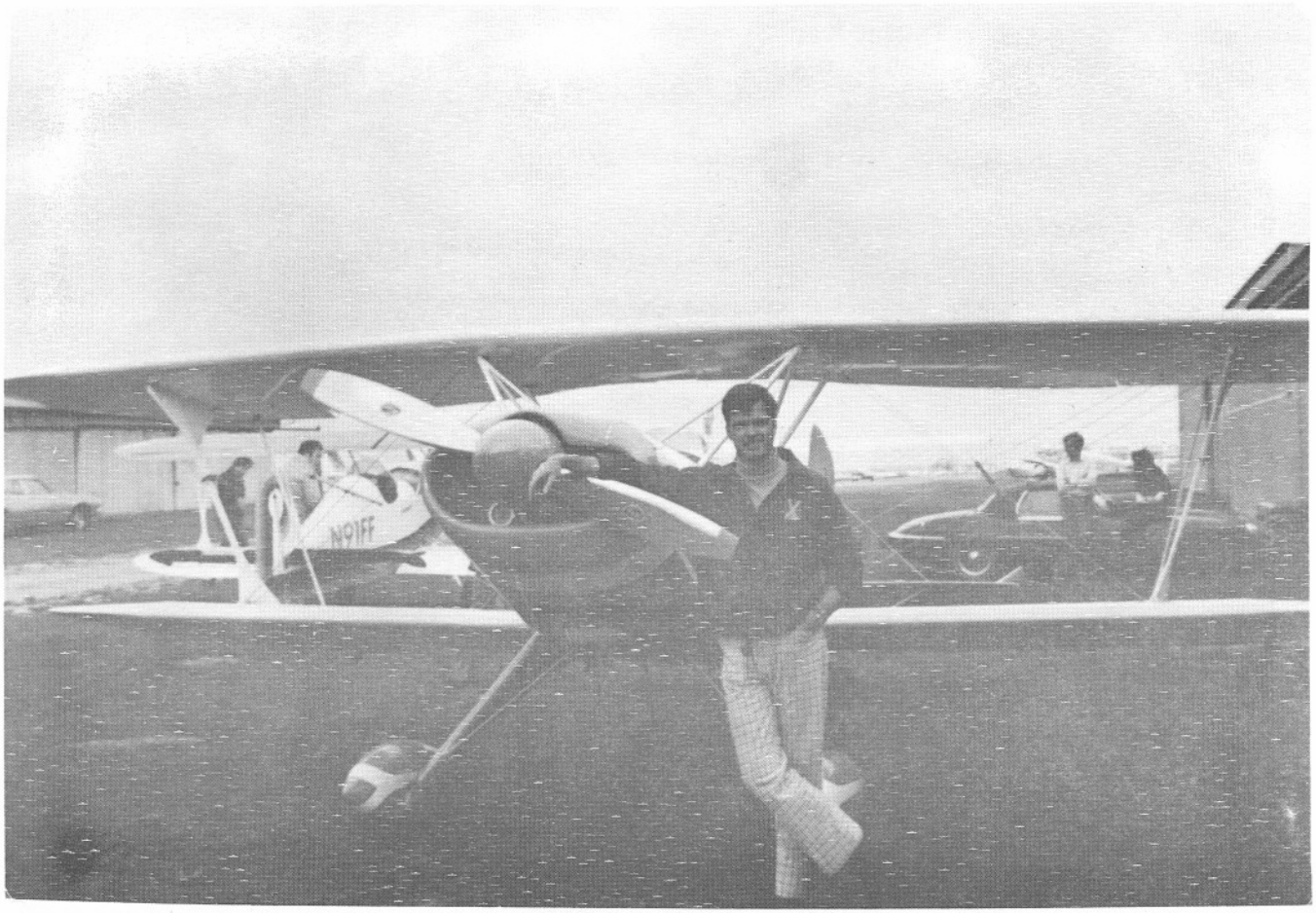
Of course there is always room for improvements, which will be worked out in the future, & one of those are to we in the cooler climates would be a good canopy over both cockpits, & I am working on that now. Our winter flying here in MO. gets a little chilly from now on. I have made a painting of my Starduster Too, & sending it to my son Capt. Grant Branson, Air Force, Andrew A.F. Base, Wash. D.C. Last week KY3-TV Springfield MO took mini cam movies of it on ground & in flight. They were on 6:00 P.M. & 10:00 P.M. news. Looked very good. I have just finished the last

I have just finished the last issue of Starduster Magazine. I wish to say that there is a lot of worthwhile & interesting information in it. First Flight by Eric Shilling. I am certainly in agreement with his advise & comments. Having started my flying & aviation career in 1926. Where to become a good pilot you had to train & adapt your inherent sense of sight sound & feel, to flight.

Having spent several thousand hours teaching the handling of aircraft on land-water, & in the air, I hope to see more of your articles on flying Eric. This June 1976 will give me 50 yrs. in this business. The building & flying of my N75RB Starduster Too is one of my most gratifying experiences. So to all Jim & the gang at Starduster, I wish the best of success.

Merry Xmas & A Happy New Year To All

Ray Branson
Box 3432
Kimberling City, MO 65686



MAJ. JOHN MORRISSEY AND FRIEND - KANSAS CITY, MO.

Sirs:

Enclosed please find the $8.50 that is on my account, have also included my $5.00 for another membership to your Newsletter. Have found this to be an excellent source of any information that one needs. I hope that you will continue this. It lets one know where Stardusters are being built. My machine is reaching the fit together stage prior to the covering and I still require a few bits and pieces. My only regret is that you people are not a little closer to us. There are about 50 to 60 homebuilts being built in this area and getting parts is a long hard job. Maybe you should open a Branch, say around teh Buffalo, N.Y. area. I'm sure a lot of our chaps would use your services.

On the next page, you will find a list of some items that I require. As I do not know the price of some of the items, I am adding extra money, if this isn't sufficient, I trust that you will ship and advise and I shall send any balance required.

Thanking you, I remain

Sincerely,

Leonard P. Prowse
19 Lynnwood Dr., Apt 309
Brantford, Ontario, Canada

Dear Jim,

Enclosed find please
1. My renewal to the Starduster Magazine
2. An order for a new style tail spring
3. A cheque for my account and the above
4. A photo of Starduster Too Ser 1430 C-GORY as it appeared in October 75 before modification of the landing gear.

The aircraft weighs 1077 lbs empty equipped with I0320, Christen oil & harness, full electrical, radio and ELT.

What with our postal strike and R.E.A.'s bankruptcy the landing gear kit did not arrive until Dec. 20/75.

A close friend of mine intends to visit your air field later this month or early Feb. He'll be flying in, in a rather distinctively painted T34A C-FZAT, keep a look out for him.

Yours sincerely for now

Jack Bycraft
RR #3 Denfield
Ontario Canada

Dear Jim,

I am enclosing $6.00 to cover the subscription renewal and a print of the new landing gear drawings. I am actively building a "Too" and the new drawing is timely for me as I am ready to start work on the gear.

I find your magazine very helpful and interesting. I would hate to be without it.

My wings, upper center-section, tail group are complete. The fuselage is tacked together. I find the Starduster Too is not, in my opinion, difficult to build. It has gone very smoothly so far.

Are you still making gas tanks? If so, can you make the one in the upper center section shorter than the print version for me?

I like the photos of other Stardusters.

Keep up the good work.

Alvin D. Wyland
404 N . Base
Morrison Il 61270

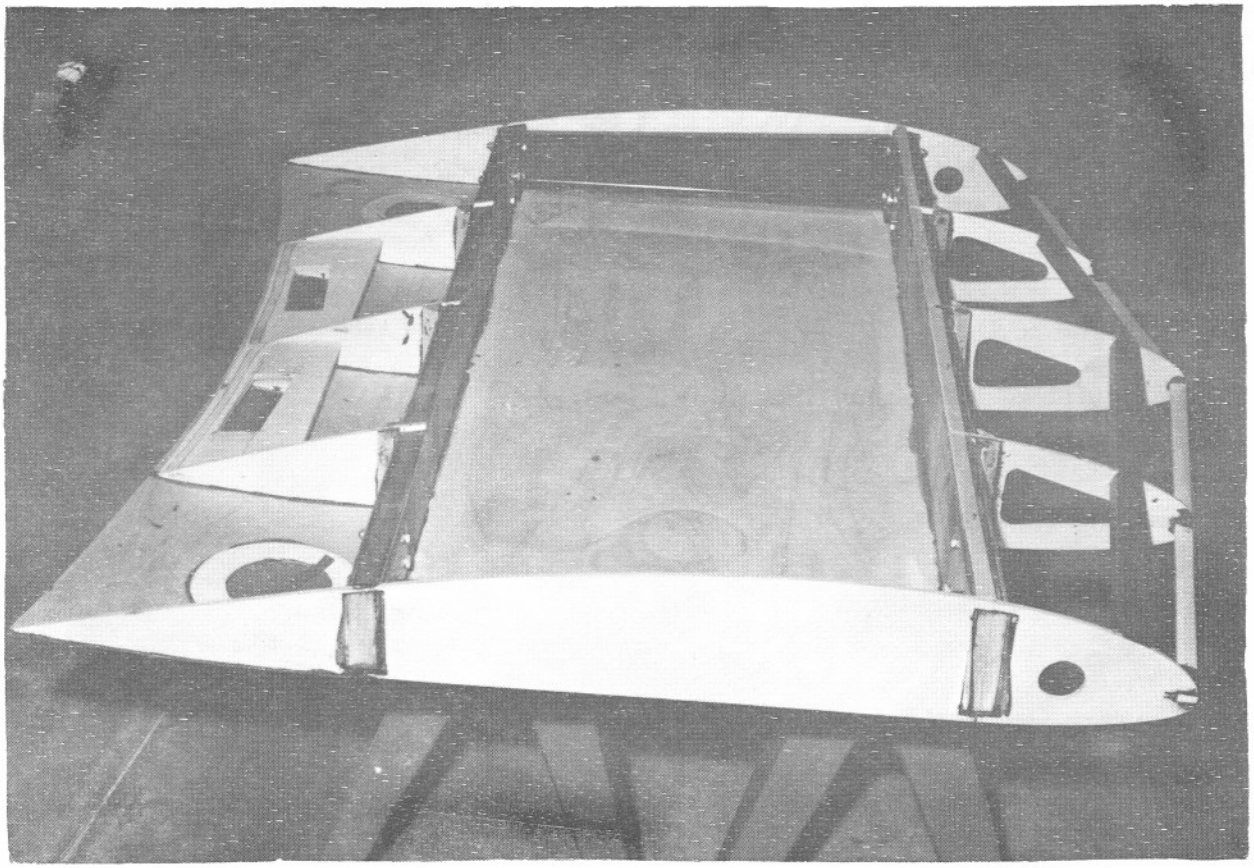
Dear Jim, Eric, Glenn & All,

Along with my bill, am sending you a picture of my "Too". I flew it first time on 10-3-75, and have about 25 hrs on it now. Flies great except for minor rigging changes, and a broken tack cable which I replaced, and added a right angle drive adapter. I have electrical system, lights etc, but no radio as yet. No instruments in front. It has eggshell white seats, headrest and cockpit trim to go with the rest of the color scheme. Since I fly in the desert, it's painted insignia white and Phoenix tan, Stits process all the way.

Respectfully,

Richard R.(Dusty) Rhoads
P. O. Box 725
Joshua Tree, Ca 92252

P.S. I call it, "Dusty's Duster"



Dear Jim,

Many thanks for the second set of plans which arrived O.K. As you can see by the enclosed picture work is proceeding. The center section is all but complete. I have decided to make the fuel tank myself and have the metal in hand. I have been constructing the ribs also and now have 12 finished. I hope to start assembling the first wing about Xmas time.

Would you please enrol me for your 'Starduster' magazine.

Kind regard,

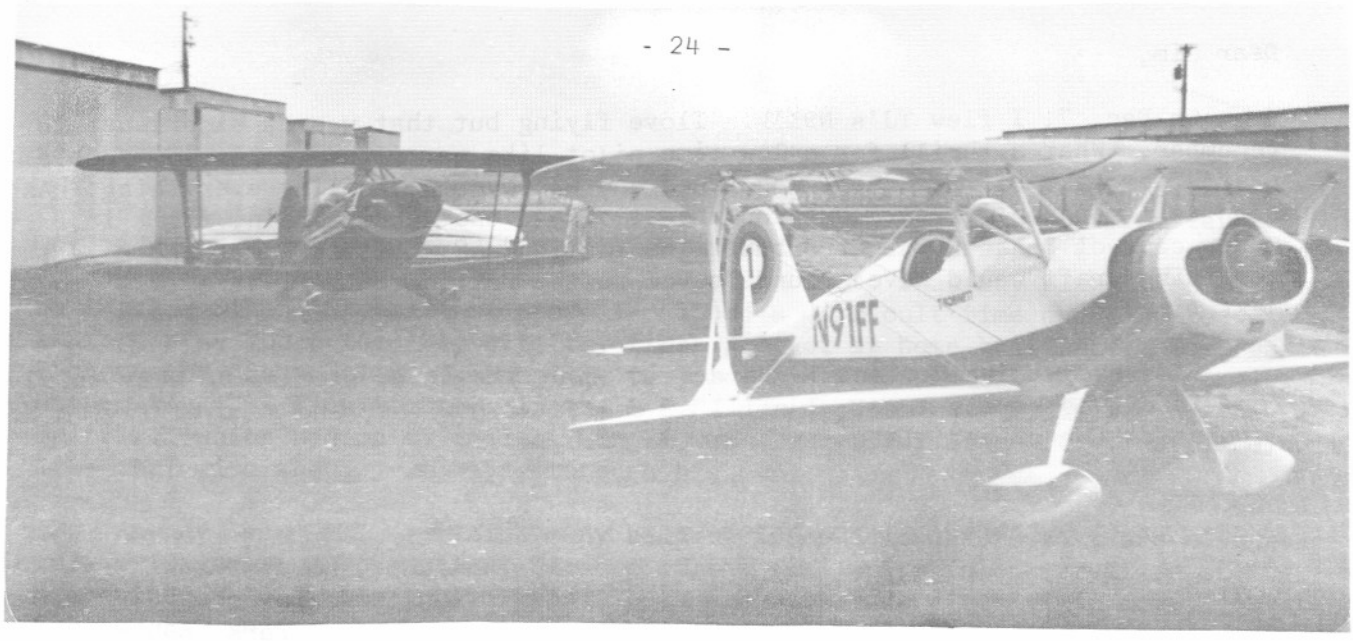
Bill Baker
5 Erskine Ave
Cheltenham, 3192
Victoria Australia

P.S. You might notice I have modified the trailing edge to include 2 inspection holes & 2 hand grips.

Coming on strong - Starduster Too with Lyc 180
Expected to be flying by end of next summer.
Thanks for service

Bob Boston

P.S. If you haven't got $5.00 from me yet for your mag-put me on the list and bill me. By the way Osborne - that little thing you wrote on first flight was most practical thing I've read yet on how to do it. Got any more like that?



T.J. BROWN AND 4TH ACRODUSTER I TO FLY

Dear Jim,

We enjoyed your visit and were very disappointed we didn't get our colorfu Acroduster in the air before your departure. Jim Perkins and Morris Douley worked till 6 P.M. Sunday and finally got it "fixed", but it was dark by then. We all went out to dinner to celebrate and Tues. T.J. flew it for an hr. He really likes it and just has a few minor adjustments to make make . He flew it again Saturday and we've had no good flying weather since. Channel 5 TV came out and filmed & did an interview which was aired on Sat. night news. They videotaped it and it turned out to be about a 3 min. presentation. You would have liked it.

T.J. will no doubt be calling you soon about those adjustments on the plane. It really looks pretty in the air.

Fondly

Pat Brown
9212 Wedd
Shawnee Mission, Kansas
66212

Dear Jim,

I finally got to fly the Acroduster that T.J. built. And I guess you know I'm really sold on that bird. It has so much more performance than my two place Pitts and yet is much easier to get into & out of the air, I couldn't believe it.

I predict that as more of the "Dusters" are completed and get into competition that you will be very busy selling Acrodusters.

Thats one keen airplane!

Sincerely

Bill Haynie
RR #3, Box 401
Butler, MO 64730

Dear Jim,

On Dec. 7, I flew TJ's N91FF. Ilove flying but that was an experience to remember. What a thrill for a low time pilot like me. I had a little trouble just after take off because I was tense and was overcontrolling everything. As soon as I relaxed my death grip on the stick and unstuck my brain, I got it under control & had no more trouble. The landing was a little hard, and a less forgiving craft would have ground looped on the roll out. I'll have less trouble next time.

Jim, everything you and TJ have said about the Acroduster being easy to fly (and land) was surely true. I still am amazed at how easy and good it flys. No acrobatics for me yet -later but not too much later.

Best regards,

Bob Schmidt
9115 Westbrooke Drive
Overland Park Kansas 66214

Jim,

Here are some pictures of my Starduster N2TH. First flew Nov. 11. I now have 8 hours on it.

Eng. Lyc 0540 B4B5 - 235 HP
Prop. Hartzel c/s E.W. 1286

This is from your plans 301. Took 6 years to build. Have not added up the bills yet for total price.

Sincerely,

Ted Holland
2889 Hampton Rd, South
Columbus. Ohio 43227

Dear Sirs,

Enclosed is check for $5.00 for renewal of subscription to "Starduster" magazine. I greatly enjoyed the first 4 issues of your magazine & in each one discovered valuable information which I was unable to find any place else! I am building a Steen 'Skybolt' at present. I had a difficult time deciding between a Starduster Too & the 'Skybo,t' (my first project at home-building). The reason I chose the 'Skybolt' may seem silly to some, but I do not like an elliptical shaped wing! I flew fighters in the R.A.F. during World War II, including the Spitfire, which had an elliptical wing & was a beautiful aircraft. I still didn't like that wing shape. Oh well, to each his own.

Anyway, your mag. contains many helpful information hints that are also helpful in 'Skybolt' construction, because of the similarity in construction of the Starduster. From what i have heard, both are very fine aircraft to fly.

I especially enjoyed Eric Shillings article in the Oct. 75 issue, on First Flight. I agree 100% with him on his ideas pertaining to a series of lift offs & low flights down the runway. I flew many single engine aircraft while in the R.A.F., and with no dual controls, nothing but Pilots notes, the first lift off was always a thrill. If I had done as Rule 7, I'd have ended my career the first time I took off in a Spitfire V! My first flight in my 'Skybolt' will be off and into the Blue!

Anyway, I am looking forward to your 1976 issues & please let me know when your catalog is out. Would like a copy.

Thanks again & best wishes for a good new year!

Ralph Schenck M.D.
402 W. 7th St.
Portland, IN 47371

Dear Jim & Hanako,

Thank you very much for the nice Xmas card. Thats a fine picture of a beautiful bird. We wish you continued success with it in 1976. We were delinquent in getting our cards out this year, since our home was burglarized shortly before Xmas. They cleaned out most of our good jewelry, silver, cameras, etc.

I also want to thank you for the trophy that Pzazz received at Oshkosh this year. We had a wonderful time, & will always remember. Thanks again.

Dr. & Mrs. Thomas
1943 Park View Terrace
La Jolla, Ca 92037

Experimental Aircraft Assn.

P. O. Box 229
Hales Corners, Wisconsin 53130

January 8, 1976

Mr. James L. Osborne
P. O. Box 275
Blue Jay, CA 92317

Dear Jim:

This will acknowledge receipt of your recent payment to the Century Club.

With this payment you become a Life Member of EAA. Your Life Membership credentials will be mailed under separate cover.

I would like to take this opportunity to thank you for your continued support of EAA and the sport/general aviation movement.

I look forward to seeing you again this year.

Sincerely,

Paul H. Poberezny
President, EAA

1924 North 6th Street
Springfield, Illinois 62702
November 14, 1975

Dear Jim, Hanako, and Eric:

Here's what I owe you - I think it was a bonehead deal to have those wires all shipped to California from Wisconsin and then transship them back to Illinois - cost us both money, didn't it?

I saw you, Jim, at Fond Du Lac and Oshkosh, but you were always so dern busy I didn't feel I needed to bug you. You did'nt bring Hanako - again. Who was that platinum blonde big-busted broad, anyway? Your Acroduster was real impressive, too.

Tried the wires on as soon as I got the whole set and, wonder of wonders, everything came out easily within limits. Am sending some pictures for your amazement. Please note, friends, that only one of the landing wires goes to the rear cabane (60 inches plus or minus) whcih flies in the face of your drawings (wrongo!) and, I guess, is contrary to your later advice as well - you seem to favor using the rear cabane anchor for both of them, a la Acroduster. That brace is almost exactly in the vertical plane of the lower spar, and I guess I'd just like to see a little more drag-resisting capability, as well as to tie directly into the roll wire plane with at least one of them. You may read about it if the wangs falls off.

I'm covering to beat the band now (Ceconite), but it goes slow, especially in Illinois' November climate. Have all the control surfaces through silver, and got the I-struts covered yesterday. I can't think of many more good excuses not to get going on the wings.

Fred Blom stopped overnight on his way back to Maryland - said he spent a little time at Flabob. He was hot to trot for a Marquardt earlier, but something he saw out there turned him off, and I think he'll go ahead with the V-star.

Well, keep an eye out for N2LW at Oshkosh next year - I'm hoping to make it, but it is going to be close. Don't stand a chance of getting in the air before June 1. Meantime, take care of yourselves.

Best regards,

Larry

L. J. Welshaar

Editors Note: Some people never know when to keep their cotton picking mouth shut.

October 21, 1975

Stolp Starduster Corp.

Gentlemen,

Could I please have a copy of Eric Shillings article on Flat Spins. I have seen a copy of it and would like to have one of my own to study. Have just finished building a Steen Skybolt (with Windshields and some other parts from you folks) and want to know all I can about some of the pitfalls of aerobatic flying.

Thanks for your help.

Sincerely,

Johnny Williams

December 15, 1975

Stolp Starduster Corp.
4301 Twining
Riverside, Calif. 92509

Attn: Jim Osborne

Dear Jim,

This is just a short note to thank you for coming all of the way down to Costa Mesa last Tuesday to speak to my class on Homebuilt Aircraft Construction. The bi-plane design insight which you gave was appreciated by all -- myself, the members of the class, and by Orange Coast College. You really have a wealth of information on biplanes, and we sure appreciated picking your brain a bit. We're very lucky to have here in Southern Calif. so many men who are like yourself, the Cadre of the sport aviation movement, and who are so willing to share their knowledge and experience. I wish you all the best for your new Acroduster designs. They're GOOD, and sport aviation is bound to hear about them a lot more. I'll drop in and see you the next time I touch down at Flabob.

Sincerely,

Don Tridham

Classified Ads

ADVERTISING CLOSING DATE: JANUARY 1, APRIL 1, JULY 1, OCTOBER 1.
CLASSIFIED ADVERTISING RATE: $3.00 PER COLUMN INCH-MINIMUM CHARGE $3.00
MAKE CHECKS PAYABLE TO STOLP STARDUSTER CORP. THANK YOU.

FOR SALE

Build & Fly The Worlds easiest to build & best performing biplane -
THE ACRODUSTER ONE
BROCHURE $5.00
COMPLETE KIT $5500.00

FOR LIGHT WEIGHT, LIFE-TIME, STAINLESS STEEL EXHAUST SETS - CONTACT STOLP STARDUSTER CORP.

0-180 MPH
AIR SPEED INDICATERS
NEW PRODUCTION
$55.00
STOLP STARDUSTER CORP

Tell your friends - New Fiberglass Turtl back for Volksplane From "Starduster" Only $39.95

"STARDUSTER" Decals
for
Starduster Too
Acroduster Too
Y-Star
Starlet
from
"Starduster"
only $1.00 each

Get a New
Stewart Warner
Oil Cooler,
8604E,
for only $95.00
from
"Starduster"

Straight & Bubble Windshields - Fit STARDUSTERS, PITTS, SKYBOLTS, etc.
$19.50 & $25.00
Stolp Starduster Corp.

SA300 I Struts Fairing. Stamped Aluminum. $195.00 Set of 4, Finished & Trimmed. $135.00 Set of 4, you Finish & Trim.
Stolp Starduster Corp.

The following "Starduster Too" wing components are available from: Lee Dennis, 2034 W. 235 St. Torrance, Ca 90501 (213) 530-1687 mornings
-Spars and Ribs for all panels, except lower right; plated, drilled, ready to assemble
-$130.00
-Spars and Ribs for all panels, including fittings, truss tubing for lower right panel, brackets, aileron hinges (Ball Bearing), tip bows, glue, strech formed trailing edges, nails nails, assembly jigs, & extra plywood. Lower right panel is 80% done. -$310.00, less than my cost for materials. These are being sold to finance, in part, another project. Parts are well made & assembled with care.

N75RB
Gladiator Too