

CLASSIFIEDS

Starduster

MAGAZINE



Dedicated to the
ACTIVE Homebuilders

JULY 1991

Bill Clouse
Stolp Starduster Corporation
4301 Twining
Flabob Airport
Riverside, California 92509



PREZ'S COMMENTS

Our "May" Open House was a great success! Thanks to all those who flew in and those who contributed to the many tasks necessary to make such an event a success.

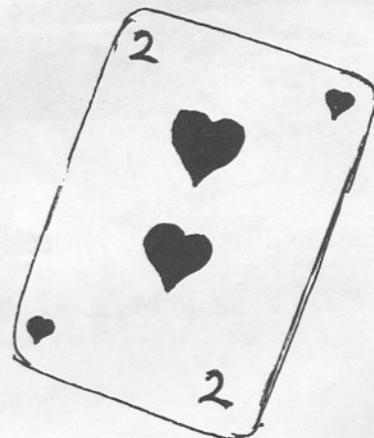
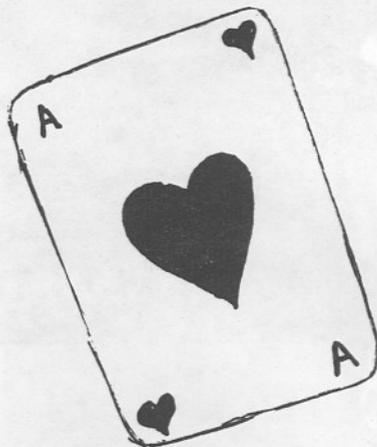
And am most grateful to those who came all the way from Oregon, New Mexico, Arizona, Utah, and Northern California.

Larry Ryberg, Les Homan & Hank Schimel - pleased many with demo rides - even yours truly got to fly Tom Macario's Kinner powered Starduster - very different "sounds", Tom made the flawless landing. Again thanks to all - you know who you are.

Gearing up for Oshkosh again - already eager to meet new builders, new airplanes and of course all the usuals who contribute so much.

"B.C." President

See you there and at the Acee Ducee Tuesday July 30, 1991 at 6:00 p.m. till ?



Acee Ducee
Downtown
Oshkosh
WI

Restaurant and Tavern

JULY 1991

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TABLE OF CONTENTS

PRESIDENTS COMMENTS	1
ODDS & ENDS FROM YOUR EDITOR	3
SERVICE BULLETIN.....	4
AD NOTES, FARS, NPRM AND OTHER INFO	10
NEW PRODUCTS	13
TECH TIPS: MORE ON TAILWHEEL	14
STARDUSTER HISTORY	15
MORE SAD NEWS	19
LETTERS FROM OWNERS AND BUILDERS	20
STARDUSTER OPEN HOUSE '91	31
FLICKERING VERTIGO	36
TECH TIPS:	37
CLASSIFIEDS	39

We would like to thank al of this issues contributors and respond to one and all for some interesting information and photos.

FRONT COVER - Starduster Too N847JI owned and built by Tom Murry 4696 Higgins Way, San Diego, CA 92122. It also won first place at Starduster Open House 1991.

BACK COVER - A cold country Starduster Too by Phil Hax. N13HX is fitted with Skis and canopy for winter operation. Phil lives at 2 Stever Street, Wallingford, CO 06492.

SUBSCRIBE TO THE STARDUSTER MAGAZINE. PUBLISHED FOR PEOPLE BUILDING OUR AIRPLANES. TECHNICAL INFORMATION, NEWS AND PICTURES. PUBLISHED FOUR TIMES A YEAR. SUBSCRIPTION RATE IS \$10.00 PER YEAR \$16.00 PER YEAR FOR OVERSEAS MAILING (EXCLUDING CANADA).

THE EDITOR IS ALWAYS LOOKING FOR TECHNICAL AND EDITORIAL CONTRIBUTIONS TO THIS MAGAZINE, WHICH IS DEDICATED TO THE HOME BUILDER AND SPORT AIRCRAFT ENTHUSIAST. PLEASE INCLUDE YOUR NAME, ADDRESS, TELEPHONE NUMBER AND YOUR "N" NUMBER ALONG WITH ARTICLES SUBMITTED.

Odds & Ends From Your Editor

SAFETY AND JUDGEMENT - After receiving the detailed accident reports from NTSB on the Starduster Too aircraft, 1983 to 1991, several have come to my attention that should be noted. Both were apparently low altitude aerobatics, one shortly after take off and the other showing off at low altitude. Both airplanes quit flying and were unable to recover prior to ground contact, and of course were fatal not only to the pilots but their passengers. One of the pilots was an Airline captain who I talked to several years ago in Oshkosh. He seemed to be competent and knowledgeable, the exact details and circumstances of course will never be known. The sad part is that four lives and two beautiful aircraft are gone, plus the additional grief of all who knew them.

NTSB records show us that 50% of fatal general aviation accidents are caused by pilots exercising poor judgement. The most common is flying in deteriorating weather. This of course is not the case with a biplane. Most pilots of open cockpit biplanes are not real excited about sticking their noses into those dark clouds, as Stardusters are poor instrument platforms. The Starduster along with the Pitts, Eagle, Skybolt, and yes even the RV-4 share the same pilot problems of poor judgement. During low altitude showing off, buzzing, spur of the moment aerobatics, and hard pull ups, makes the urge to show off not worth the possible destruction of the aircraft and injury or death to the pilot.

Landing accidents continue to lead the way in all categories, the causes are still the same. No or little tail wheel time, no check out, cross winds and not being familiar or current with characteristics of the biplanes hi-sink rate, coupled with short narrow runways and obstacles on the approach end of the runway. All of this adds up to an unplanned trip into the weeds.

So everybody lets have some good judgement if you have to show off go to altitude, or put your friends in another airplane and let them watch at 5 or 6 thousand feet so that if you fall out of a maneuver you can laugh about it later instead of going to visit you in the hospital or attending your funeral. Besides I don't have a dark suit. Make no mistake flying has risks and homebuilt aircraft add to the risks, but don't multiply those by poor judgement.

EDITOR - D.C.B.

WATCH THOSE PROPELLERS

Recently there was a serious accident at one of our local airports, a passenger got out of the airplane and walked forward through the idling propeller, resulting in serious injuries. Almost every pilot can tell of some similar gruesome story. Most accident victims are passengers, for most it is their first exposure to the wonders of flight, extreme caution must be taken while loading and unloading passengers, especially children. So remember take extra care of your passengers one of them may be a future pilot or at least an aviation supporter.

Williamsport Plant
Textron Lycoming/Subsidiary of Textron Inc.
652 Oliver Street
Williamsport, PA 17701 U.S.A.

SERVICE BULLETIN

DATE: April 24, 1991
Service Bulletin No. 369I
(Supersedes Service Bulletin No. 369H)
Engineering Aspects are
FAA Approved

SUBJECT: Engine Inspection After Overspeed or Overboost

MODELS AFFECTED: All Textron Lycoming piston engines.

TIME OF COMPLIANCE: As required by the subject bulletin.

PART I - OVERSPEED

As shown in Chart I, every Textron Lycoming piston engine is rated at a specified rpm value above which it may not be operated safely. Operating above the rated engine speed can accelerate wear of stressed parts, possibly resulting in their damage or failure. Momentary overspeed can occur during a landing attempt, when the prop governor lags as the throttle is suddenly opened for a go-around.

For fixed-wing aircraft, momentary overspeed is defined as an increase of no more than 10% of rated engine RPM for a period not exceeding 3 seconds. For rotary-wing aircraft, overspeed is defined as operating at any speed above rated engine RPM for any period of time. **No momentary overspeed is allowed for rotary-wing aircraft.**

CAUTION

ENGINES MAY NOT BE CONTINUOUSLY OPERATED ABOVE SPECIFIED MAXIMUM CONTINUOUS RPM; TO DO SO WILL RESULT IN ABNORMAL WEAR ON BEARINGS, COUNTERWEIGHT ROLLERS AND OTHER ENGINE PARTS, CONCLUDING IN EVENTUAL ENGINE FAILURE.

Because inadvertent overspeed does occur, the information in this Service Bulletin is provided as an inspection procedure for an engine subjected to overspeed. Record any instance of overspeed in the engine log, along with the corrective action taken. Also note that the engine was inspected per this Service Bulletin.

NOTE

A few models have a 5 minute take-off rating in addition to the continuous rating. On these engines, if overspeed does not exceed the take-off rating for longer than five minutes, it may be disregarded. Also, for these engines the take-off rating may be considered to be the maximum rated speed when considering any momentary event of overspeed. Some engines, even though possessing parts of the same structural integrity, have different HP & RPM ratings. In these cases, when computing overspeed, the greater RPM may be used. (Reference Chart I.)

Chart I - Specified Rated Engine RPM

ENGINE MODELS	SPECIFIED ENGINE SPEED		
	Continuous Rated RPM	5 Minute Take-Off Rating	RPM For Computing Overspeed
O-235-C1, -C1B, -C2A, -C2B, -E, -F, -G, -J; -K2A, -L2A, -M, -N, -P	2800		2800
-C1C, -H2C, -L2C, -K2C	2800	2800	2800
O-290-D, -D2	2600	2800	2800
O-320-A, -B, -C, -D, -E, -H; IO-320; LIO-320-B, -C; *AIO-320-A, -B, -C; *AEIO-320-E	2700		2700
O-320-E2A, -E2C, -E2F; *AEIO-320-E2A (rated at 140 hp)	2450		2700
O-340-A, -B	2700		2700
O-360-A, -B, -C (except -C2D), -D, -E, -F, -G; IO/LIO-360, LO-360-E; *AIO-360; VO-360; IVO-360, HO-360-A1A; *AEIO-360	2700		2700
O-360-C2D	2700	2900	2900
HO-360-B; HIO-360-A, -B, -C, -E	2900		2900
HIO-360-D1A	3200		3200
HIO-360-FLAD	3050		3050
TO-360-A, -C, -E, -F; LTO-360-A; TIO-360-A, -C	2575		2575
O-435-A, -C	2550		2550
GO-435-C2	3100	3400	3400
VO-435-A	3200	3400	3400
VO-435-B; TVO-435	3200		3200
GO-480-B	3000	3400	3400
GO-480-C, -D, -F, -G, -H; IGO-480	3100	3400	3400
GSO-480; IGSO-480	3200	3400	3400
O-540-A, -B, -D; IO-540-C, -J	2575		2700
IO-540-A, -B, -E, -G, -P; HIO-540-A; TIO/LTIO-540 (except -S, -V)	2575		2575
O-540-J, -L; IO-540-W	2400		2400
IO-540-AA1A5	2425		2425
O-540-E, -G, -H; IO-540-D, -K, -L, -M, -N, -R, -S, -T, -V; TIO-540-S	2700		2700
TIO-540-V	2600		2600
AEIO-540-D, -L	2700		2700
VO-540-A	3200	3300	3300
VO-540-B; IVO-540; TIVO-540; VO-540-C	3200		3200
IGO-540	3000	3400	3400
IGSO-540	3200	3400	3400
TIO-541-A1A	2575		2575
TIO-541-E	2900		2900
TIGO-541	3200		3200
IO-720 (400 hp)	2650		2650
IO-720-D1BD, -D1CD (375 hp)	2400		2650

* Aerobatic engines that are engaged in flight maneuvers which cause engine overspeed are subject to abnormal wear and possible overstress of rotating parts, which will shorten the service life of the engine. The damage accumulated due to the amount of overspeed, along with the extent of repeated operation at alternating high and low power applications, must be evaluated by the operator to determine the inspection procedures required.

TEXTRON Lycoming

Williamsport Plant

Textron Lycoming/Subsidiary of Textron Inc
652 Oliver Street
Williamsport, PA 17701 U.S.A.

SERVICE BULLETIN

DATE: March 28, 1991

Service Bulletin No. 240L
(Supersedes Service Bulletin No. 240K)
Engineering Aspects are
FAA Approved

SUBJECT: Mandatory Replacement of Parts at Normal Overhaul

MODELS AFFECTED: All Textron Lycoming reciprocating aircraft engines.

TIME OF COMPLIANCE: At overhaul.

During overhaul of any Textron Lycoming reciprocating engine, it is mandatory that certain parts be replaced, regardless of their apparent condition. The following is a list of parts that must be replaced.

- All flexible hoses
- All engine oil hoses
- All oil seals
- All cylinder base seals
- All gaskets
- All circlips, lockplates, retaining rings and laminated shims
- Piston rings
- Piston pins *
- Piston pin plugs
- Propeller governor oil line elbow **
- Propeller shaft sleeve rings
- Pinion shaft rollers (reduction gear pinion cage)
- Propeller shaft thrust bearings (all geared drive engines)
- Supercharger bearing oil seal (mechanically supercharged series)
- All exhaust valves (replace with current exhaust valves)
- All intake and exhaust valve guides
- All exhaust valve retaining keys
- Rocker arms and fulcrums (O-320-H, O-LO-TO-LTO-360-E Series)
- Hydraulic plungers and sockets
- All bearing inserts (main and connecting rod)
- Cylinder fin stabilizers
- Magneto drive cushions

- Stressed bolts and fastenings as follows:
 - Stationary drive gear bolts (reduction gear)
 - Camshaft gear attaching bolts
 - Connecting rod bolts and nuts
 - Crankshaft flange bolts
- Damaged ignition cables
- Crankshaft sludge tubes
- Counterweight bushings in crankshaft
 - (See latest edition of Service Instruction No. 1142 for instructions)
- Accessory drive coupling springs (supercharged and VO-540 engines)
- AC diaphragm fuel pumps
- Oil pump bodies (two-piece)
- Oil pump gears (Reference latest editions of Service Bulletins 454, 455, and 456)
- All V-band couplings and gaskets

Requirements for replacement of parts for accessories such as magnetos, carburetors, fuel injectors, AN fuel pumps, and turbochargers are described in the applicable manufacturer's manual.

- * Heavy-wall piston pins LW-14077 and LW-14078 may be reused; all others should not be reused. See latest edition of Service Instruction No. 1340 for replacement data.
- ** MS20822-6D aluminum propeller governor oil line elbow must be replaced with MS20822-6 steel elbow at overhaul. It is not necessary to replace a steel elbow. (Reference latest edition of Service Instruction No. 1435 and Service Bulletin No. 488.)

Dimensional inspections should be carried out in accordance with measurements and tolerances as listed in "Table of Limits" for all parts approved for reuse.

NOTE: Revision "L" of this bulletin lists additional parts that must be replaced at time of overhaul.
 16503, 21043 — These numbers for Textron Lycoming reference only.

Williamsport Plant
Textron Lycoming/Subsidiary of Textron inc.
652 Oliver Street
Williamsport, PA 17701 U.S.A.

SERVICE BULLETIN

DATE: March 28, 1991
Service Bulletin No. 498
Engineering Aspects are
FAA Approved

SUBJECT: Reprint of Precision Airmotive Corporation Service Bulletin MSA-2
MODELS AFFECTED: O-235, O-290, O-320 Series Engines.
TIME OF COMPLIANCE: Same as that required for Service Bulletin MSA-2.

Precision Airmotive Corporation Service Bulletin MSA-2 is reprinted in its entirety as follows. Textron Lycoming requires compliance with this publication.

PRECISION
AIRMOTIVE CORPORATION
3220 100TH ST. SW #E
EVERETT, WASHINGTON 98204
FAA-PMA FACILITY #PQ111NM

MANDATORY
Service Bulletin
Fuel Systems

Bulletin No.: MSA-2

Date: 10-15-90
Revised:

SUBJECT: ONE PIECE PRIMARY AND MAIN VENTURI

This bulletin has been issued to clarify time of compliance for replacement of the venturi and to reflect the acquisition of the Facet Aerospace product line (Marvel Schebler Aviation Carburetors) by Precision Airmotive Corporation.

Note: This service bulletin supercedes and replaces Facet Aerospace Service Bulletin #A1-90.

1. PLANNING INFORMATION:

A. EFFECTIVITY:

All MA-3A, MA-3PA, MA-3SPA and MA-4SPA Marvel Schebler and Facet Aerospace Carburetors.

B. REASON:

There have been reported instances of primary venturi failures causing rough engine operation or engine power loss.

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C. DESCRIPTION:

A one piece combination primary and main venturi casting is available to replace the two piece venturi. This bulletin provides instructions for removing the old two piece venturi and replacing it with the new one piece venturi.

D. COMPLIANCE:

Within the next 50 hours of engine operation, at the next carburetor repair or overhaul, or immediately if any of the following are experienced:

1. Rough engine operation or engine power loss.
2. An engine induction fire.

E. APPROVAL:

Technical aspects FAA approved.

F. MANPOWER:

Not affected.

G. MATERIAL AVAILABILITY:

One piece venturies are available from local distributors. To determine the correct one piece venturi part number, refer to the appropriate carburetor parts list in the Aircraft Carburetor & Parts Manual for the main venturi part number. Replace both the primary and main venturi with the new part number indicated below.

<u>OLD MAIN VENTURI</u>	<u>NEW ONE PIECE VENTURI</u>	<u>LIST PRICE</u>
46-462	46-F7	\$74.00
46-486	46-F8	\$74.00
46-498	46-F9	\$74.00
46-A2	46-F10	\$74.00
46-A65	46-F11	\$74.00
46-A70	46-F12	\$74.00

H. TOOLING:

Not affected.

I. REFERENCES:

Aircraft Carburetors & Parts Manual, Form #FSM.

J. WEIGHT AND BALANCE:

Not affected.

K. PUBLICATIONS AFFECTED:

Aircraft Carburetors & Parts Manual, Form #FSM.

2. ACCOMPLISHMENT INSTRUCTIONS:

- A.** Follow the procedures in the Aircraft Carburetor Service Manual to disassemble and inspect the carburetor. Install the new venturi using the M-83 Primary Venturi Assembling Tool. Press into place until the M-83 tool contacts the throttle body surface. Assure the venturi is properly oriented so that the nozzle relief notch will be in alignment with the nozzle, and that the end of the leg supports of the primary section of the venturi are engaged in the grooves in the throttle body.

ACCOMPLISHMENT INSTRUCTIONS (CONT)

- B.** Complete assembly of the carburetor per instruction in the Aircraft Carburetor Service Manual.
- C.** Stamp or etch a small 'V' on the lower portion of the name plate to indicate compliance with this bulletin.



R.P. Jenson
Manager, Product Support

FAR PART 61

Apparently recognizing that several of its original proposals pertaining to biennial flight reviews and spin training were unnecessary and unwarranted, the FAA has made Part 61 changes that will simplify and make less costly pilot certification and training requirements.

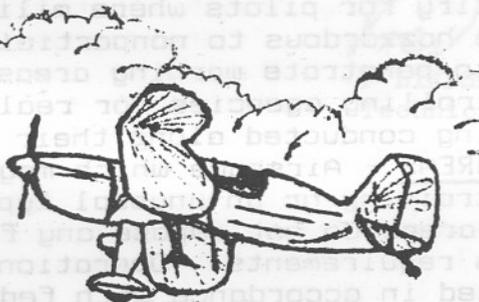
The FAA originally proposed that pilots be required to undergo a biennial flight review (BFR) in each specific category and class of aircraft flown, but it withdrew the proposal based on comments from AOPA, the AOPA Air Safety Foundation and the EAA.

The organizations argued that there was no safety data to justify the proposal. AOPA President Phil Boyer said his organization believes that the category and class of aircraft that BFR should be conducted in should continue to be left to the discretion of the individual and their instructor.

The FAA also ruled that spin training endorsements will be required only for those individuals applying for an initial flight instructor rating and for those flight instructor applicants who failed their first check-ride test. The latter group will be required to demonstrate spins on the re-test. The FAA originally had proposed spin training as a requirement for all student pilots.

The rule makes several other changes to Part 61 regulations, including a one-time flight instructor endorsement that will be required for pilots operating tailwheels. In addition, high-altitude training and an appropriate endorsement will be required for pilots operating in aircraft capable of flying higher than 25,000 feet MSL.

However, in recognition of previous flight experience, the FAA has included a grandfather clause for those pilots who have flown tailwheel aircraft or who have operated aircraft capable of flying above 25,000 feet MSL prior to April 15, 1991. Those pilots will not be required to obtain the endorsement.



SPECIAL USE AIRSPACE

In Big Sky Country, it's easy to get caught in the trap of thinking that we are the only ones in the sky. Unfortunately, that's not the case. The military has a lot of special use airspace in Montana and throughout the country. Unless one likes surprises, it behooves all of us to know what special use airspace (SUA) is and what the differences are between various types of SUA. Any area that the military uses for a variety of reasons can be designated SUA. Some of the various types include :

PROHIBITED AREAS - Designated airspace within which the flight of aircraft is prohibited without special permission of the controlling agency. Prohibited areas are designated for security, or other reasons of national welfare.

RESTRICTED AREAS - Airspace established to denote the existence of unusual, often invisible hazards to aircraft such as a artillery firing, aerial gunnery, or missiles, etc. Penetration of restricted areas may be extremely hazardous to the aircraft and its occupants and is legally prohibited. Authorization to transit restricted areas which are not in use may be obtained from using or controlling agencies.

MILITARY OPERATIONS AREAS (MOA's) - Airspace established outside of Positive Control Area (PCA) to separate/segregate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. Whenever a MOA is active, nonparticipating IFR traffic may be cleared through the area provided ATC will reroute or restrict nonparticipating IFR traffic.

Although MOA's do not restrict VFR rule operations, pilots operating under VFR rules should exercise extreme caution while flying within an active MOA. During initial preflight briefing, pilots should always know the status of MOA's along their planned route of flight. Local flight service stations retain and update schedules, as provided by the appropriate military authority, for MOA's within its flight plan areas. This information is available, but only upon pilot request. Additionally, prior to entering an active MOA, pilots are encouraged to contact the controlling agency for traffic advisories do to the frequently changing status of these areas.

WARNING AREAS - Areas established in international airspace to identify for pilots where military activities occur that can be hazardous to nonparticipating aircraft. Pilots planning to penetrate warning areas should contact the using or controlling agencies for real-time information on activities being conducted along their route of flight.

ALERT AREAS - Airspace which may contain a high volume of pilot training or an unusual type of aerial activity. Alert areas do not impose any flight restrictions or communications requirements. Operations within Alert Areas are conducted in accordance with federal Aviation Regulations without waiver. All pilots flying in an alert area are equally responsible for collision avoidance, and they should be particularly alert when operating within these areas.

CONTROLLED FIRING AREAS - Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft. Limitations are imposed on the use of CFA's to ensure that these areas do not impact civil aviation operations.

MILITARY TRAINING ROUTES (MTR's) - Route established to accommodate low-altitude training operations that must be conducted at speed in excess of 250 knot indicated airspeed, below 10,000 feet MSL (some segments may extend above 10,000 feet MSL due to terrain or other requirements). Only the route centerline is depicted on aeronautical charts. Although normal route width is 5 to 10 miles from centerline, some segments may be as narrow as 2 miles or as wide as 20 or more miles from centerline.

There are two types of MTR's:

IFR MTR's (IR's) - Operations on these routes are conducted in accordance with Instrument Flight Rules regardless of weather conditions.

VFR MTR's (VR's) - Operations on these routes are conducted in accordance with Visual Flight Rules in visual meteorological conditions.

Added vigilance should be exercised when flying near these routes. IFR aircraft will either be afforded standard separation from aircraft on IR routes or re-routed to avoid these routes. VFR pilots should use extra caution when electing to transit active IR and VR routes. The key to current information about MTR routes, as provided by the appropriate military authority (times of use, altitudes and actual width), is the Flight Service Station. Air traffic control facilities and fixed base operators can provide FSS telephone numbers or air-to-ground radio frequencies for use in obtaining MTR information. Information on the status of MTR's is available, but only on pilot request.

What Action Should Be Taken By Civil Pilots... To Avoid Possible Conflicts With Military Activities and To Enhance Safety? - It is extremely important that, during preflight planning, pilots contact the FSS and check the latest issues of aeronautical charts and the AIM to familiarize themselves with military training activities. Special emphasis should be placed in SUA/MTR's along their proposed route of flight. FSS's can provide the frequency of the controlling agency which may be able to issue clearance to transit some restricted areas if conditions permit. Pilots should not hesitate to call a FSS to determine the current status of SUA/MTR's, and should always be alert for other traffic.

NEW AND USEFUL PRODUCTS

U.S. Propeller service of east Haddam Conn. has several new propeller options. One is the new SIC on three blade props for the Mooney line of aircraft, many of us use these engines in our Stardusters and Acrodusters. This propeller is called the Black Mac, unfortunately the price is around \$6000. But for some of you that can afford this, if you have an airplane with a weight and balance problem as well as bad vibrations this could be a godsend. They also have SIC's for several other aircraft. The 210, 182 Piper Arrow and Comanche 180. It might not hurt to give them a call as they might be able to work something out that might be less expensive for homebuilt aircraft.

Another interesting propeller they have been working with is the McCauley fixed pitch propeller, to replace the old Sensenich. The modified McCauley has no rpm restrictions and can be shortened by at least two inches if needed and still remain legal. The Sensenich propeller cannot have any diameter reduction to do so is flirting with disaster. There have been several propeller break ups attributed to diameter reduction so don't do it. I have a Sensenich propeller on my airplane and can attest to the rpm restriction as well as propeller vibrations. Several times while flying with other Stardusters the rpm I need to fly with them is right in the red 2150 to 2350 rpm. Having a propeller without this restriction or vibration would be wonderful. Again they may be interested in doing something a little cheaper for us homebuilders. But the price for the McCauley is cheaper than the Sensenich, approx. \$500 dollars cheaper.

Information for you builders regarding pitch and diameter, my airplane with a 180hp Lycoming is 76" x 56. It was originally 76 x 60. However my airplane would only turn 2600 rpm with the pitch this diameter, I had it repitched to 76 x 56, which allowed it to turn 2700 rpm, I gained in climb but lost a little in cruise. I am not saying this is the ideal pitch and diameter for the Starduster Too. But many 180 hp Starduster Too's are flying with props pitched in this range. A friend's Starduster Too with a 200 hp Lycoming can swing the 76 x 60 but mine with the 180 Lycoming cannot. If a person is able or has access to several propellers of different pitch and diameters, it might do him well to try them all. As different airplanes and different engines can make substantial differences in cruise and rpm numbers.

Perhaps this article will stimulate you owners and builders to do some meaningful testing to cure some performance or vibration problems. Again it is important to have an accurate rpm gauge as well as a manifolds pressure gauge while doing testing otherwise you are just guessing.

The phone number for U.S. Propeller Service is :
1-800-878-6377 or FAX (230)-873-2388.

EDITOR

MORE ON TAIL WHEELS

In the January issue I wrote an article about tail wheels. Several people have called or written expressing concern about their tail wheel problems, and I'm sure if you have looked at very many other tail wheel installations you will see all kinds of installations as far as angles and spring combinations. I still stick with what I originally wrote and believe it to be the best combination.

However there may be some other factors that could contribute to tail wheel problems. One is whether or not the tire is round and in balance. I don't mean perfect but the closer the better. The other is, not only does the tail wheel need to be 90 degrees fore and aft it also needs to be 90 degrees from side to side or straight up and down looking at it from the front. It should not be canted off to either side, many tail wheel spring mountings can cause this to happen at least to some degree. And last as previously mentioned in the earlier article aircraft weights and tail weights can effect tail wheel steering.

My tail wheel weighs 85 lbs in level flight and is around 100 lbs with the tail down, it 3 points well and wheel lands great and I have had very little shimmy or other problems.

One other note, my tail wheel is very tight or stiff in movement of the fork from side to side I think this also helps.

EDITOR

AVIATION FUEL CRISIS THREATENS FUTURE OF GENERAL AVIATION

By the mid 1990's, a lack of aviation fuel could ground a vast majority of general aviation aircraft due to restrictions and prohibition placed on leaded fuel as a result of 1990 amendments to the Clean Air Act. These restrictions could lead to little or no availability of aviation fuel. To find solutions to this urgent problem, AOPA is sponsoring an Aviation Fuel Crisis Conference on March 13 in Washington D.C., at the Loews L'Enfant Plaza Hotel. The conference will bring together representatives of the government, Congress, the aviation community, and the oil industry in an effort to avert this potential death blow to the nation's general aviation community. According to AOPA President Phil Boyer, more than 87 percent of the general aviation fleet - some 194,000 aircraft - are powered by piston engines that burn leaded fuel. Boyer said AOPA is very concerned that the Clean Air Act of 1990, which prohibit the use of leaded fuels in motor vehicles by 1996 as well as the cessation of manufacturing of new leaded burning engines by 1992, will discourage fuel companies or make it economically unreasonable for them to continue to manufacture the leaded fuel required by the general aviation fleet. Boyer also said the requirement for fuel manufacturers to develop or reformulate fuel products for use in those areas of the country with significant pollution problems may further create a conventional fuel shortage for the 194,000 aircraft that require it to fly.

STARDUSTER HISTORY

N94505

The First Starduster Too

Events with homebuilt aircraft during the late 1950's and early 1960's are what came about to make the two place version of the Starduster a reality.

Ideas and interest for a two place, with the same general configuration as the single place had been talked about for several years. Many people were instrumental in putting pressure on Lou Stolp to do the preliminary design sketches that would lead to the first Starduster Too. Up until that time most homebuilts were small single place airplanes, with very few two place designs to pick from. Lou as well as his contributors wanted a larger airplane. More or less a modern day biplane with many of the traditional aspects of open cockpit airplanes. Lou dug into his background of shapes and designs that had influenced him over the years. The elliptical trailing edges of the wings, the comanche nose bowl, the large spinner, the gear fairings, the shape of the tail, the French curve of the head rest, the flat wrap of the windshields and the overall appearance.

Lou has said for many years that the Starduster Too was not designed by him, as all the things he used to make it what it is were there for the taking and all he did was put it in the right proportion and package.

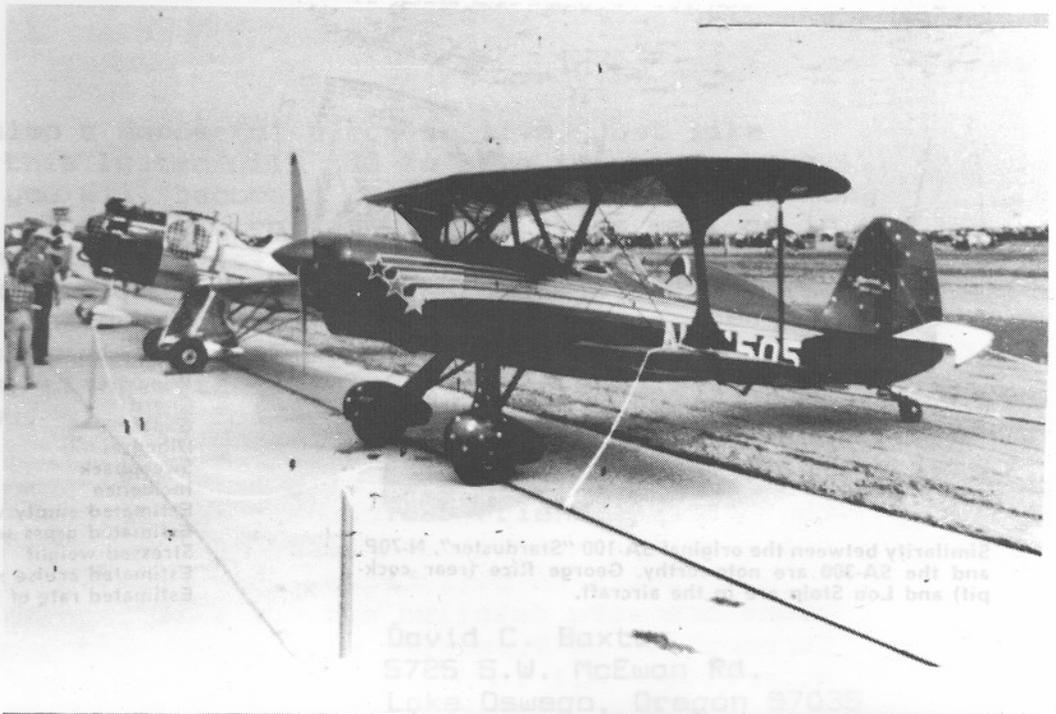
As most of you builders know talking about building an airplane is one thing, but actually building one is quite another, and although Lou had worked around airplanes for many years, as well as designing and building the single place Starduster it was still quite an undertaking to build a two place version.

Most people think that you can just scale it up to accept two people, but when you start you quickly find that one small change can affect many other things. There are two items that have been a problem for quite sometime and by the pictures included with this article you can see that they were a problem then as well as now.

One is weight and balance and as you will notice on the construction picture the cabane struts are straight up, the other thing to notice is the landing gear was mocked up with a Cessna spring steel gear, of course this airplane was never built with it as the traditional Piper type shock cord gear prevailed and that early landing gear problems as well as weight and balance are still a problem to some degree over 25 years later.

As I said earlier many people were forceful in making the airplane happen. Besides Lou Stolp there was George Rice, George built the wings not only for N94505 but also for N1300S the second prototype as well as helping in many other ways. Glen Beets did much of the fabricating and welding and Frank Singer supplied the 180 hp Lycoming engine. Others who were involved were Frank Boyce, Harry Gann, Walt Vorees, Vaughn Price and Yank Levin. Most of the major work was done during the winter of 1962-63 in Corona California. With all of these people working on it part time as well as Lou's obligation to running his business. Work progressed slow but steady. The airplane was flown for the first time during the spring of 1965. The first flight although successful was not very

N94505 On The Ramp at Chino Calif 1965



20 ft.
 7 ft 6 in.
 48 in.
 48 in.
 Upper, none; Lower, 1 deg.
 Upper, 6 deg; Lower, none
 Upper, none; Lower, 1 deg.
 875 lbs.
 1,450 lbs.
 1,800 lbs.
 135 mph
 2,300 fpm

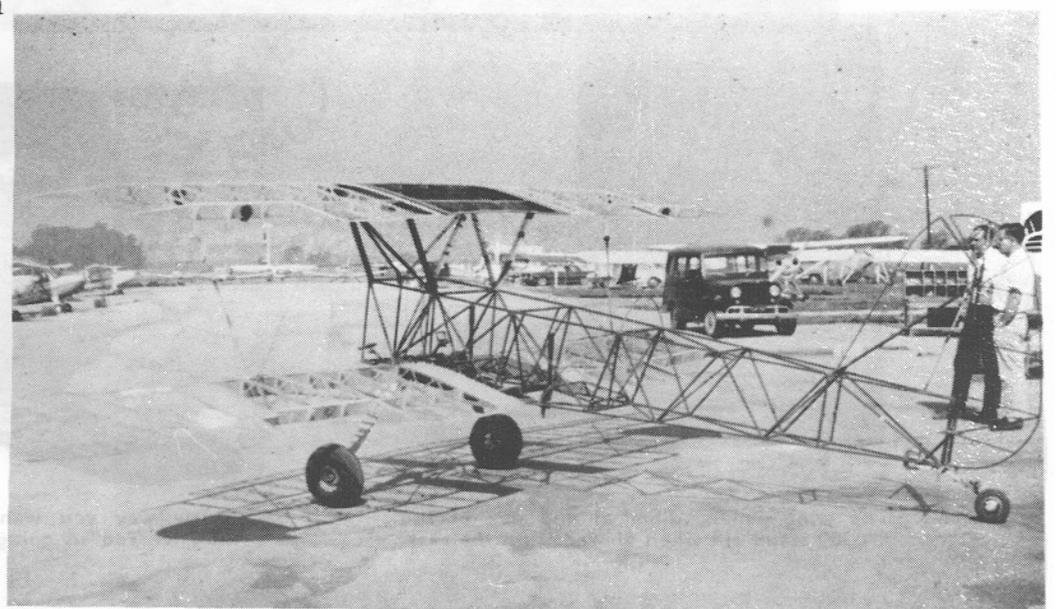
Estimated empty weight
 Estimated gross weight
 Estimated wing loading
 Estimated cruise speed
 Estimated rate of climb

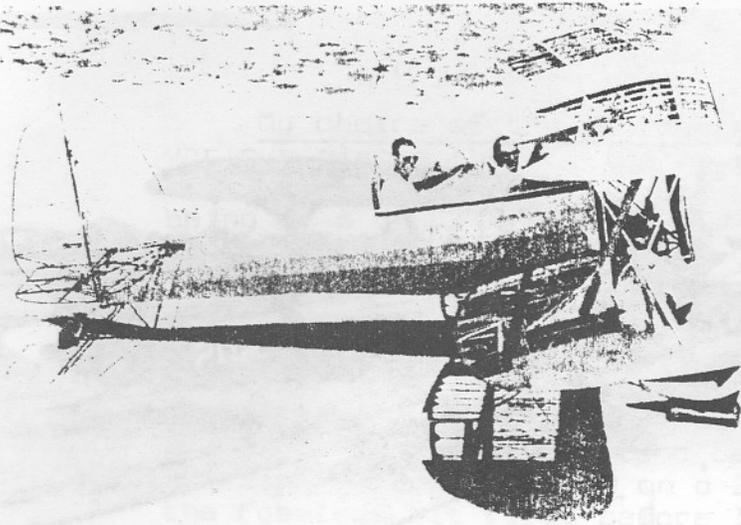
similarity between the original A-100 Starfighter, N-109
 and the SA-300 are not exactly George Rice (rear cockpit
 pit) and Lou Stoltz (the aircraft).

David C. Baxt
 5725 S.W. McEwan Rd.
 Lake Oswego, Oregon 97035



N94505 Under Construction at Corona Calif 1964

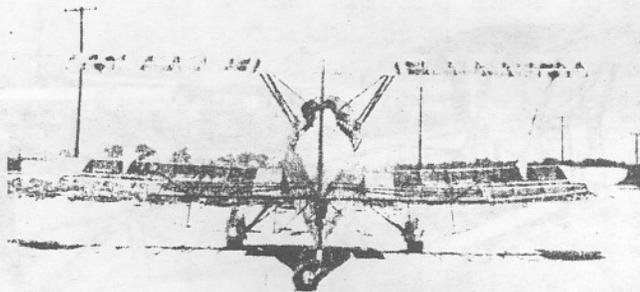
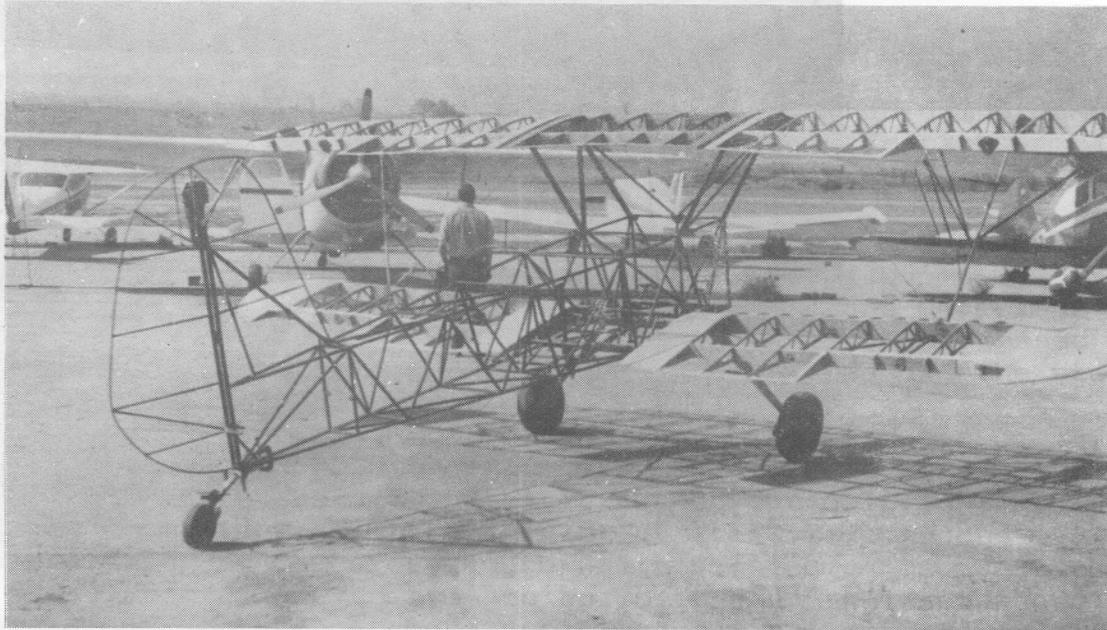




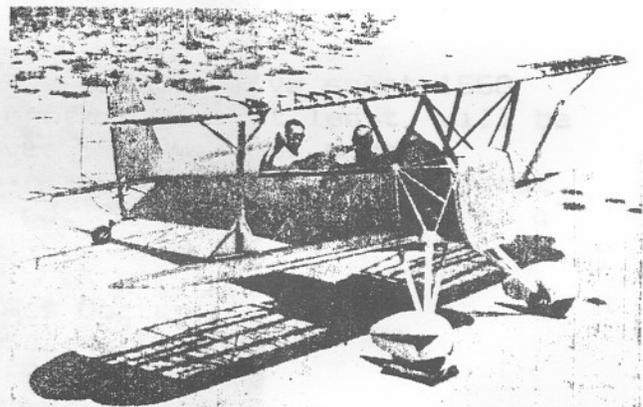
Similarity between the original SA-100 "Starduster", N-70P, and the SA-300 are noteworthy. George Rice (rear cockpit) and Lou Stolp are in the aircraft.

STOLP SA-300 "STARDUSTER" SPECIFICATIONS

Span	24 ft.
Length	20 ft.
Height	7 ft. 6 in.
Wing area	170 sq. ft.
Chord	48 in.
Gap	48 in.
Dihedral	Upper, none; Lower, 1½ deg.
Sweepback	Upper, 6 deg.; Lower, none
Incidence	Upper, none; Lower, 1 deg.
Estimated empty weight	875 lbs.
Estimated gross weight	1,450 lbs.
Stressed weight	1,800 lbs.
Estimated cruise speed	135 mph
Estimated rate of climb	2,200 fpm



The wing panels, dihedral and gap of the SA-300 stand out when viewed from the rear.



Any way you want to look at it, the "Starduster Too" is going to be an attractive airplane.

encouraging in that the airplane barely made it around the patch. Lou was very disappointed and upset. He wanted to cut it up as he had doubts about all the work was for naught. Some very serious calculation errors regarding weight and balance had been made and the airplane had been built with them. George Rice convinced Lou to reconsider and after several days and some refiguring it was decided to move the firewall forward approximately 10" inches. These changes were accomplished during the summer and fall of 1965, and a new test flight was conducted. This one of course was quite successful, as the airplane flew fine.

Many of the people who worked on the plane also flew it during the first few hours of flight. Some air to air shots were taken but very little meaningful flight testing was done. I saw this airplane at Corona as a young student pilot during this time, and was very impressed with its looks.

Not long after this and on January 8, 1966, Frank Singer took the airplane to Hesperia, California. There are several versions as to what happened next. Frank had been showing the airplane to friends, along with doing some serious drinking, apparently they wanted to see what the airplane could do and talked Frank into flying the airplane in a low altitude aerobatic demonstration some of the manuevers were quite violent and the airplane was flown into the ground, the results were predictable the airplane was destroyed, and Frank was fatally injured. This accident was the first with a Starduster Too. The airplane had appoximately 17 hrs TT at the time of the accident.

Later in 1966, after Lou had moved over to Flabob Airport, I remember seeing the remains of N94505 under a tarp in the back of the hangar. Very little of the airplane was salvaged. The "N" number was turned in and reissued to a Cessna 152 that is currently registered to Keith Franz of Highlands, Colorado. It is sad, but that is the history of N94505 the very first Starduster Too ever built.

David C. Baxter
Starduster History



N94505 On the Ramp at chino California 1965

MORE SAD NEWS

Recently at Deerpark Municipal Airport, Washington, near Spokane, six aircraft along with a partially completed Starduster Too were destroyed from a hangar fire. The hangar was owned by Thompson Airmotive. Along with the Starduster there were two 182's, one 337, one 210 and a Supercub.

It is very sad to see this sort of thing happen. Many aircraft like the Starduster Too were not insured and are virtually a total loss. Fire leave nothing useful. I can attest to this as a fire department employee for almost 20 years and being aware of several hangar fires over the last ten years, primarily the one in Northern California Eureka, during the mid 1980's. Lynn Goodwins Starduster Too along with Ted Andersons beautiful Black Eagle were both lost during that fire along with with several other aircraft. This should serve to remind us to be extra careful with flammable liquids, electric appliances and other possible hazzards that could start or add to a fire. Everyone should check their hangars, workshops, and garages to make them as safe from this sort of thing as reasonably possible. A good fire extinguisher with in handy reach is a must.

Does anyone know who owned this Starduster project that burned up during this fire? I don't think that I knew the builder, perhaps one of our readers would know.

Apparently it was owned by four individuals, as Dick Atwood of Spokane Washington called the other night to inform me that he was going to purchase it and was to close the deal the next day. However it burnt up that night it is a pity as he said it was powered by a O540 lycoming and the workmanship was excellent. Dick Atwood is the current owner of N768P, also a very nice Starduster Too.



Now a little about me. I am married and have four children. I am 49 years old and have been flying since 1962. My children are Debbie, David, Robert, and Tricia. I have a business named Heather who is a very old and very experienced mechanic and fix broken fire trucks. My hobbies are flying, building airplanes, welding, and collecting old and new airplanes (that have two wings). Flying is a wonderful hobby.

EG&G engineer takes flight

by Rick Bolton
INEL News staff

When Don Knauts goes out for a spin in his flying machine, he does so with more than a sense of adventure.

Don takes flight with a sense of pride, because the INEL engineer built his open-cockpit flying machine by hand. At 2,000 feet above the hills and fields of eastern Idaho in his blue-gray biplane, he likes to feel the wind in his face.

"A lot of the fun is flying open cockpit," Don said about the two-seat aircraft he built from plans supplied by an airplane designer. "It's noisy and windy and fun." But it's cold in the open air, too. While he's flown the plane as high as 9,000 feet, he prefers to stay closer to the ground where the air is warmer. He normally flies the plane 2,000 feet above ground at 95 mph.

For high altitude, he dons coveralls, a jacket and gloves. He plans to fly the plane only when the weather is at least 50 degrees on the ground. "The fun factor has to outweigh the cold factor," he said.

Don, who works for EG&G Idaho's electric vehicle testing program, has worked at the Idaho National Engineering Laboratory for 23 years. He's been flying private airplanes even longer — 32 years. He's one of about 30 people in eastern Idaho who belong to a chapter of the Experimental Aircraft Association. Many of them are employees of the INEL.

Wanted classic airplane

He didn't dream of building a fancy, aerobatic plane. Don wanted an airplane that had the classic 1930s look.

"I've flown for years and I always wanted to build an airplane — and I always wanted a biplane," he said. So Don set out eight years ago to piece together this wood, metal and fiberglass plane. "I did a lot of scrounging" for parts, he said. He bought salvaged parts from other aircraft — the engine, propeller, wheels, brakes and instruments. Laboring in his garage at home in Idaho Falls on weekends and after work during warm weather, the plane's parts slowly became recognizable.

"It just takes a lot of time," he said. Even though he had training as an aircraft mechanic, building a plane from scratch entails some frustrations if you don't make a part right the first time. "You get in and dig and stay with it. You can't do a project that takes that long unless your family is behind you. I had a lot of support from family and friends." Putting an airplane together by hand means becoming something



Don Knauts sits in the cockpit of his authentic biplane which he built by himself. He put together the classic airplane in his spare time over an 8-year period. (Photo by Ron Paarmann)

of an expert in woodworking, sheet metal, welding, painting, electrical and fabric work. Yet he never had any doubts he'd finish it.

While constructing pieces of his plane at his home on the west side of Idaho Falls, Don got more than a few funny looks from neighbors and passersby. "The neighbors think you're crazy," he said.

This spring, he brought the finished airplane pieces to a rented hangar at the Idaho Falls airport, where he assembled them into the final product.

He'll never forget the maiden flight on May 16. The first flight lasted 45 minutes. It was a cold day, but Don flew for a half hour before he realized how cold he was. "That's a once-in-a-lifetime thrill," he said. "I was anxious, happy, apprehensive and scared ... probably like a woman having her first baby."

He's pleased with how smoothly the plane

flies with a control stick. "It's an honest, straightforward airplane — no tricks," Don said.

Landing the plane can be challenging. Rather than a wheel beneath its nose, this plane has its third wheel beneath the rudder. That means the pilot — seated in the second seat — doesn't have the greatest view as he approaches a runway. And once on the ground, the pilot steers with the back wheel rather than with a nose wheel.

But Don wouldn't trade authenticity for convenience.

Experimental aircraft

Since the plane was hand-built, the Federal Aviation Administration will always classify it as experimental. That means he's limited to flying strictly for fun, but the classification has advantages; he can do his own inspection and maintenance work, which can be expensive for private plane owners who are required by regulations to hire FAA-licensed mechanics to perform annual maintenance reviews.

Such a biplane built at a private factory would cost about \$85,000, he said. The plane has a 180-horsepower standard airplane engine, and its two tanks can carry 42 gallons of fuel to give the plane a flying range of up to 600 miles. It weighs 1,200 pounds and can carry up to 600 pounds of weight.

Youngsters want to know how fast the plane goes, and older folks want to know how much it cost to build. "The answers are 'not very' and 'a lot,'" he said. The 20-foot-long plane with a 24-foot wing span has a top speed of 135 mph and cost roughly \$15,000 to build from Stolp Starduster plans. "It's not cheap, and it's not fast and it's not easy, but it's worth it."



The partially completed structure of Don Knauts' biplane sat in his driveway on the west side of Idaho Falls before it was finished. Perseverance paid off for the EG&G engineer, who now flies his experimental aircraft. (Photo by Don Knauts)



Editor's Note: N129DK and N96576 in front of Red Baron Flight Service, Idaho Falls, July 1990 on our trip to Oshkosh. Don and Kathy Knauts were wonderful hosts during last years flight back east and just recently during our trip to Kansas.

DEAR DAVID,

3-11-91

I'm a 8 year old little girl from FOND DU LAC, WI.
I saw your airplane in the Sport Aviation, it's real cool!
I have some questions to ask you. Here they are ;
Why do call your plane the STARDUS ER TOO, What is a bandsaw prop, they both sound interesting!
What are all the funny little numbers like KT 86 and N96576W

First letter

Well let's talk about me, like said I am 8 years old. My name is Anna, my hobbies are ; colling stuff like shells, playing tennis, kicking balls and beating up boys. There are somany things to wonder about you.

If you write back (PLEASE DO) write to
168 St Anna peebles 168 8 ST

THANK YOU FOR YOUR TIME,

Anna Peebles

Dear Dave

4-21-91

Second letter

It was WONDERFUL
to get a letter back from
you!

Your friend, Gary Dee
came over, he seems very
nice! He gave me, along with
a friend, some pictures of his
Lyonsduster Zoo. He said,
I may have a ride in it
I'm very anxious!

I took your letter to
school and they enjoyed
it, and I did too!

Your friend,

Anna Peebles

Anna Peebles
168 8th Street
Fond Du Lac, Wisconsin 54935 3-16-91

Dear Anna,

It is not often I receive such a wonderful letter, and from an 8 year old girl as well, apparently you are quite grown up for your age. Most little girls and even little boys are not very interested in such things as airplanes. I am very flattered that you picked my airplane out of so many beautiful airplanes in Sport Aviation, and that you think its cool, because I think its pretty cool too! It is and has been everything I expected both in looks and flying qualities.

This last year with either my wife or one of my sons as co-pilot, we flew to lots of places like Southern California, also to Salt Lake City Utah, to Arlington Washington and of course to Oshkosh Wisconsin. This summer perhaps I can call or see you during that week. Also there is a good friend of mine that lives right there with you in Fond Du Lac, who also owns a Starduster Too. His name is Gary Due, he lives on 732 Grove Street. His phone # is (414)923-3736. Perhaps you can go see his airplane, although it is not painted like mine.

As for the questions you asked. Why is it called the Starduster Too? Well the person who designed it, Lou Stolp had to have a name for it and he picked Starduster, believe it or not it was named after a newspaper comic strip out of a Los Angeles newspaper in the late 1950's. The Starduster was a vacuum cleaner in the comic strip I do not know the name of the comic strip and Lou Stolp can't remember it either, and as for the TOO, it was his way of showing the difference between the single place (Starduster One) which carries just one person and the two place (Starduster Too) which carries two people. It was the perfect name for such a pretty airplane. My airplane is painted very much like the very first Starduster Too ever made.

I think the next question you asked was about the propellor, it is a 76" x 56" Sensenich, the 76" stands for propellor diameter, the 56" stands for the pitch and is the theoretical distances (a guess) the propellor moves forward through the air per one revolution (one time around), and Sensenich is the name of the company who made it.

The other funny little numbers you asked about are the radio, , and navigation equipment. The VAL 760 com is a two way radio, like walkie talkies used for talking to control towers and other airplanes, and VAL is the name of the company who makes, the 760 is how many channels it has like your T.V. set. The KI 76-A is a transponder, it sends out a signal that shows up very bright on a radar screen, along with how high your airplane is, so that other airplanes will not run into each other. The last question you asked about is N96576, that is my registration number like the license plate number on a car. So that you can tell who it is owned by. The "N" at the start means it is a United States registered aircraft. I hope this answers your questions about my airplane.

Now a little about me. I am married, my wifes name is Donna. I am 49 years old, I have two sons and two daughters. Their names are Debbie, David, Daniel, and Iricia. I also have a Granddaughter named Heather who is 3 years old. I work for the Fire Department, and fix broken fire trucks. My hobbies are flying, building airplanes, welding, and collecting pictures of biplanes (airplanes that have two wings). Flying is a very wonderful thing to wonder

about. Oregon is also a wonderful place to live, just like Wisconsin. I hope this letter will add to your interest about aviation. Perhaps you will become a pilot someday yourself, many girls are you know. They fly airplanes like mine as well as in the airforce and for the airlines.

Today girls can do almost everything that boys can do. So don't let the fact that your a girl stop you from doing anything.

Enclosed are some pictures of my airplane that you can keep as well as some others, along with some information that may be of some interest to you. I look forward to meeting you in the future.

Your Friend,

David C. Baxter
5725 S.W. McEwan Rd.
Lake Oswego, Oregon 97035
(503) 639-8792

P.S. Stop beating up boys, unless they deserve it. Also we stay with friends in Oshkosh, their names are Russ and Carol Frank. Their phone number is (414)235-4382. We should be there from July 26th 1991 to August 1st 1991. Weather permitting - because I fly in an open cockpit airplane. Please call during these dates.

P.D. I have grown longer hair now



Thank You for sending me a letter back! I didnt think you would!



This is a picture of me.

My choice of the Starduster II came after investigating various planes that fitted my requirements: namely two-place within my building skills and would fit inside my shop plus being of a proven "flying now" type. Tandem seating was almost a must. As I dearly love the old biplanes, the Starduster II was the only choice for me.

Three people in my area have Stardusters. Thus I could sit in the seats, play pilot and Dave Baxter let me fly his. I did send for other information packs but the Stolp design always came out ahead with me.

My plans arrived around December 1988 and I started building in January 1989 on a 3x16 work table. By ordering the fuselage kit first before I needed them, I could anticipate some problems before I came to them.

My calls to Bill Clouse were usually helpful. The plans are very detailed and the kits from Starduster Corporation in Riverside were prompt and generous with the materials. All in all, I'm happy with thier service.

The fuselage is traditional steel tubing and although a big work table is needed it can also be used to build the tail group and landing gear.

The wing kit was generous and with the exception of badly damaged trailing edges that came jammed twisted in a straight mailing tube complete, A 4x16 foot table was used for wing construction, then shortened to 4x8 for the remaining work and covering, which is yet to come.

I built these tables of 2x4's and 4x8 sheets of chipboard and held together with screws, nuts and bolts and masson's nails so they could taken apart easily.

The Stits people will send their paint and covering manual if you call and I'm using their products purchased through RAAM Co. in Eugene. I've epoxy-primed all the steel with their little green paint.

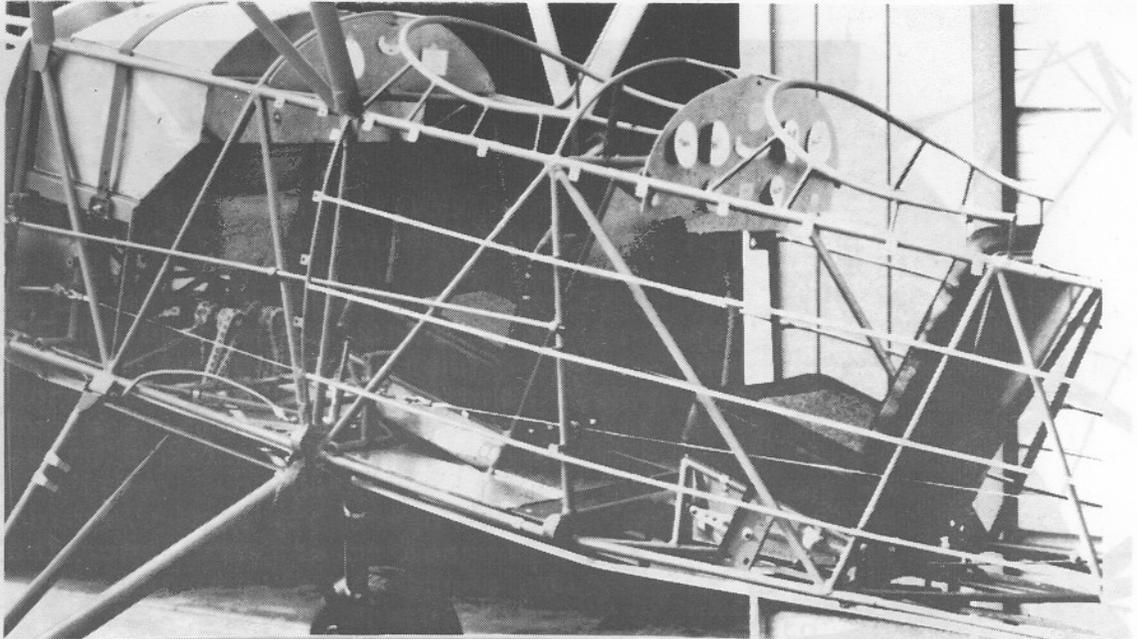
Instead of the usual fiber-glass head-rest and turtle-back. I made a plywood former and used spruce and hemlock stringers and I feel it turned out well.

To start with there is alot of trial filling and re-fitting to do before anything is painted. For about the first year it seemed all you build it and fit it and hang it on a rafter but now that things are going together for keeps, it's very satisfying. The plane is now on its tires and I'm installing a lot of fun stuff : controls, hydraulics, the fire wall, etc.

From January 1989 to December 1990. I've spent 1568 hours on the project and feel another year at least, will be needed at my present rate of over 68 hours per month.

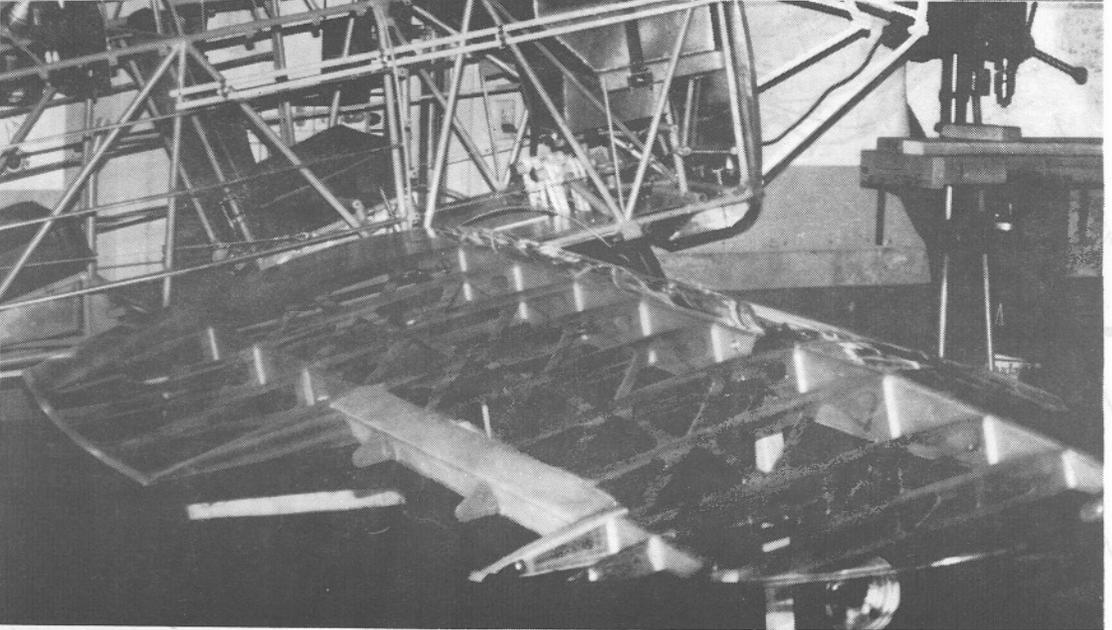
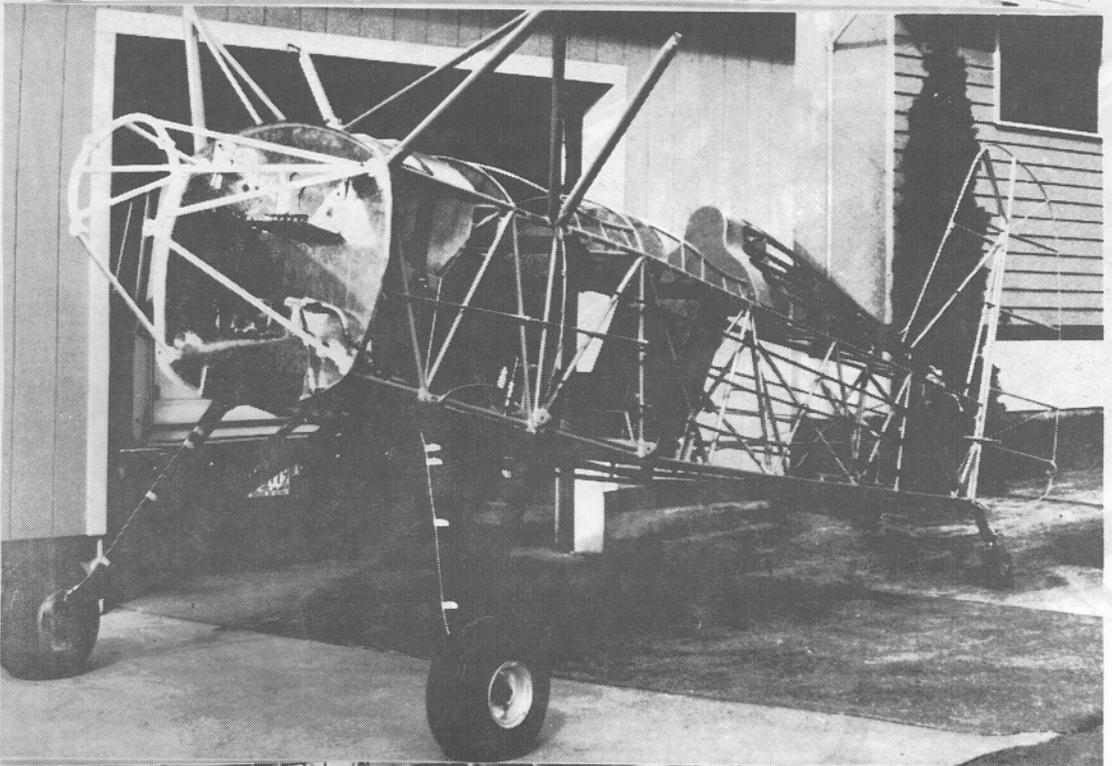
Anyone with questions can call me or drop by but first call - Somedays I'm not home - got to keep current. What a choice build or fly!

Wes Morton
Salem, Oregon
(503) 399-0809



Wes Morton
122 Salem Hts SE
Salem OR 97302

Wes's Starduster Too
Project under const
at Salem Oregon 1991





Spotlight

A do-it-yourself adventure

Bill Lynch spent the first 11 years of his retirement in the garage of his Merriam, Kansas, home. Building a biplane, he told friends, to fly to Alaska. They thought he was nuts. But the former World War II bomber pilot persevered, eschewing quips, kits and shortcuts until he finally wheeled *Foolish Pleasure* onto the tarmac and headed north. Co-pilot was John Alvarez, then 71—the only person, says

Lynch, daffy enough to join him. The goal: to follow the Alaska Highway all the way to Fairbanks. During the 34-day, 8,000-mile trip the pair braved freezing temperatures, fierce windstorms and the curious stares of locals. Were they ever in any real danger? “Only from the time we took off to the time we landed,” says Lynch. Future flight plans for the daring duo: still up in the air.

Shawnee Kansas
April 11, 1991

David,

Thanks for the letter and pictures. I wish my plane was as beautiful as yours. I can really appreciate all the work that went into it.

I'm enclosing a tape and several articles which you might be interested in. The first segment was filmed in Edmonton Canada on our way to Alaska and aired on the evening news. The second segment is the Art Linkletter show, this segment has long pauses between interviews because the copy has advertisements deleted. The tape is not very good because my equipment is poor.

After the trip to Alaska - to reduce noise since my hearing is bad - I installed a cross over exhaust system with heat shrouds and built a new lower cowl to accomodate it. It has increased station rpm about 75 and provided a little heat for the occupants.

I have taken some pictures but they are not developed yet - will send them and description of work later.

Thanks again for the letter and pictures -

Sincerely,

Bill Lynch

Phone # [913] 432-3645



Colin J. Corley
92 South Street
Ryalmere N.S.W. 2116
Australia

17 April '91

Dear David,

How are you? After reading in Jan '91 "Sport Aviation" of your editorship of "Starduster Magazine" I was quite pleased that the mag was making a reappearance as my last copy was Dec '87.

I have enclosed \$US 20.00 to get the ball rolling for subscription and back issues, if any so please bill me accordingly.

I have also enclosed copies of title approval for the Starduster Too which was obtained in 1989.

David, if you have the space, I would like to thank, through the magazine, the Starduster Too owners and builders for their copies of the "Builders Statements" that play a major part in the approval process here.

1.)	Thomas F. Ischida	N369TI	MINN
2.)	Allen E. Anderson	N27AA	IL
3.)	Joe W. Stevens	N50JS	ID
4.)	Dale D. Newman	N2091	NEB
5.)	Arnold J.A. Sitz	N1484	CA
6.)	David L. Darr	N69JG	WIS
7.)	Fred W. Meyers	N1698	CA
8.)	James B. Marble	N5464	CA
9.)	Ed DeLa Rue	N5464	CA

Last but not least Bill Clouse for the "designers Statement". Thanks to them all.

David, I have made a number of design changes to my "Too" which I shall inform you of at a later date.

Regards,
Col

EDITORS NOTE : The above letter and the following page should serve to remind us that although we have many problems with government restrictions I.E., Building and flying our own aircraft they are nothing compared to what builders in other countries have had to endure in order to build, own and fly amateur built aircraft. In Australia it took Colin Corley well over five years to secure this type approval and as you can see no aerobatics are permitted.

EDITOR

AMATEURBUILT AIRCRAFT DIVISION

**SPORT AIRCRAFT
ASSOCIATION OF
AUSTRALIA**



28th August 1989

10 First Avenue
SANDGATE
Q 4017

Mr C J Corley
92 South Street
RYDALMERE, NSW 2116

STOLP STARDUSTER TOO.

Dear Col,

Good news! Herewith enclosed is a photocopy of the Starduster Too type approval, ABAA (Amateur Built Aircraft Approval) No. 83, Issue 1, dated 30-5-89, although I didn't get my copy until three days ago on 25-8-89.

You will see that no aerobatics are permitted. Attention is also drawn to the Special Conditions clause G(2) re supplementary data. In practice this may mean that anything not adequately covered by the existing drawings (e.g. structural attachments for harness or precisely how the tail trim is operated in the cockpit) may require amplifying drawings before final inspection and flying the aircraft. Also note that, at the moment, although a range of engine powers is quoted only one engine is identified --- the Lycoming IO-360 AIA. With other aircraft types which have been approved it has been necessary to negotiate for other engines. On good grounds too. They sometimes entail a different engine mount which is primary structure.

In any case you can rely on our Amateurbuilt Aircraft Division giving you --- and all other SAAA members --- the maximum of assistance should any problems arise.

When you get to the C of A stage there will also be a Flight Manual to prepare, a somewhat tedious 36 page document. Rest assured we can help you there too.

Sincerely

F LINDSLEY
Technical Co-ordinator.

Starduster Open House
May 3, 4. and 5th 1991

Well I can't remember two weeks going by so fast. Our trip from Oregon to Southern California was enjoyable as usual. airplane ran great. We made our stops at Grants Pass to see Bob Caravas and his Starduster Too project, great job of building, and then on to Chico California. For an overnight with Dennis and Pamela Mayhew, proud new owners of N6275, also a Starduster Too. Dennis is in the construction business. But also does some agriculture flying with AG trucks and AG cats. But even better than being the first one in eight years to fly N6275, he has a very beautiful and supportive wife who likes airplanes. She was very instumental in convincing Dennis to buy N6275. They were also wonderful hosts on our return trip after being held up by weather for several days. Also on our return trip prior to landing at Porterville, we flew over several hundred acres of orange tress that were in blossom. The wonderful smell was incredible even at 6500 feet.

Then from Chico it was on to San Carlos, Red Wood City, to spend several days with my daughter Debbie. Thursday evening saw us at Les Homan's Livermore California for overnight. Leaving Friday morning with Mike Matti, Les and myself, oldest son Dave as my co-pilot, and yougest son Dan was les's co-pilot. Our first stop Tracy California to meet with Dennis and Pamela Mayhew, from ther a flight of four to Porterville. fuel, food, and restrooms. Then we were off to Flabob via Bakersfield, Tahatchapi over high desert, Plamdale, Lancaster, Auga Laduce, Hesperia, Cajon Pass, over rialto, under Norton AFB and Ontario International Airport ARSA's and into Flabob, good winds less than two hours per leg. I can not remember over the past five years when the weather and visibility were so good in the Riverside and San Bernadino area, it was perfect throughout the weekend.

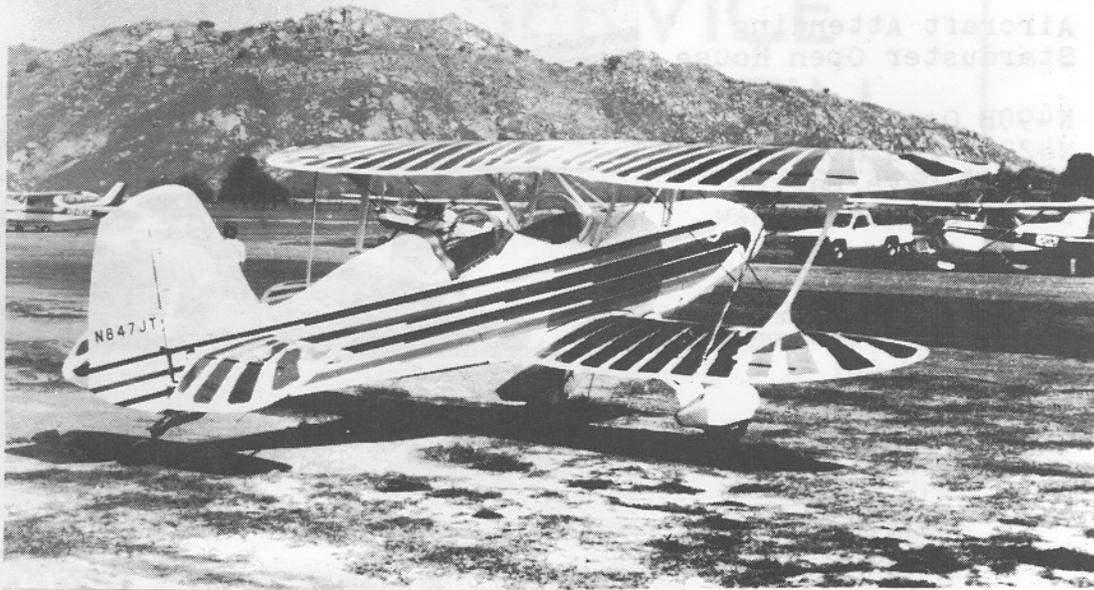
It was really great to meet old and new friends especially Tom Macario from Tucson Arizona with his antique Starduster Too N14MM. One of the best counterfeit antique building jobs I've ever seen. Flabob has changed little since I left over 20 years ago. I keep thinking everyone I knew then would be dead or gone but they're not, they're just older. Many early arrivals just like us showed up on Friday.

However Saturday was as usual the best turn out. Just Starduster people coming and going, no organized events but plenty of flying and many passengers taking their first ride in an open cockpit biplane. Many pictures and videos - my good friends Don & Peggy McGugin sent me a copy of the video they took during the Starduster Open House 1991. Some of the more interesting airplanes in attendance besides Tom Macario's, were John Travis N53I 220 cont radial powered Starduster Too along with Al Hoopers N26AH Ranger Powered Rangeduster. But the traditional Stardusters were out in force. Although I was some what dissappointed in that with such great weather I had expected many more airplanes. But then they will be sorry they missed one of the best Starduster Open Houses yet.

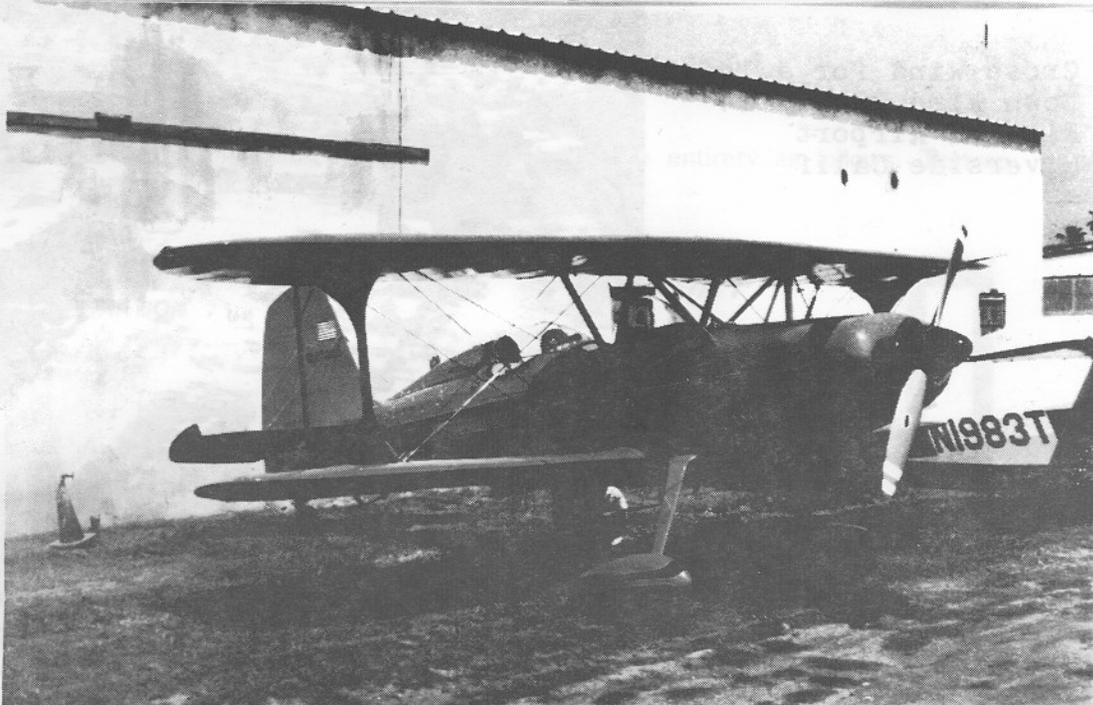
The awards were a little different this year, in that the Starduster Corporation sponsored classes in Antique, Classic, Homebuilt, and of course Stardusters, and again for these classes the turn out was low. I suspect mostly

MAY 1991

Searduster Open House
First Place N847JT
Tom Murry San Diego CA



2ND Place N8331A
John Renquist
Temecula CA



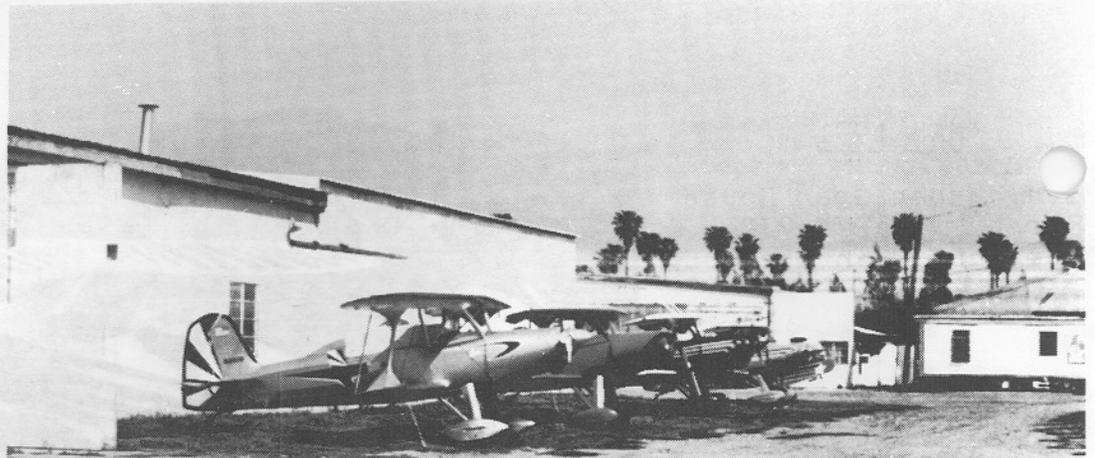
3RD Place N34LG
Glen Olsen
Salt Lake City UT



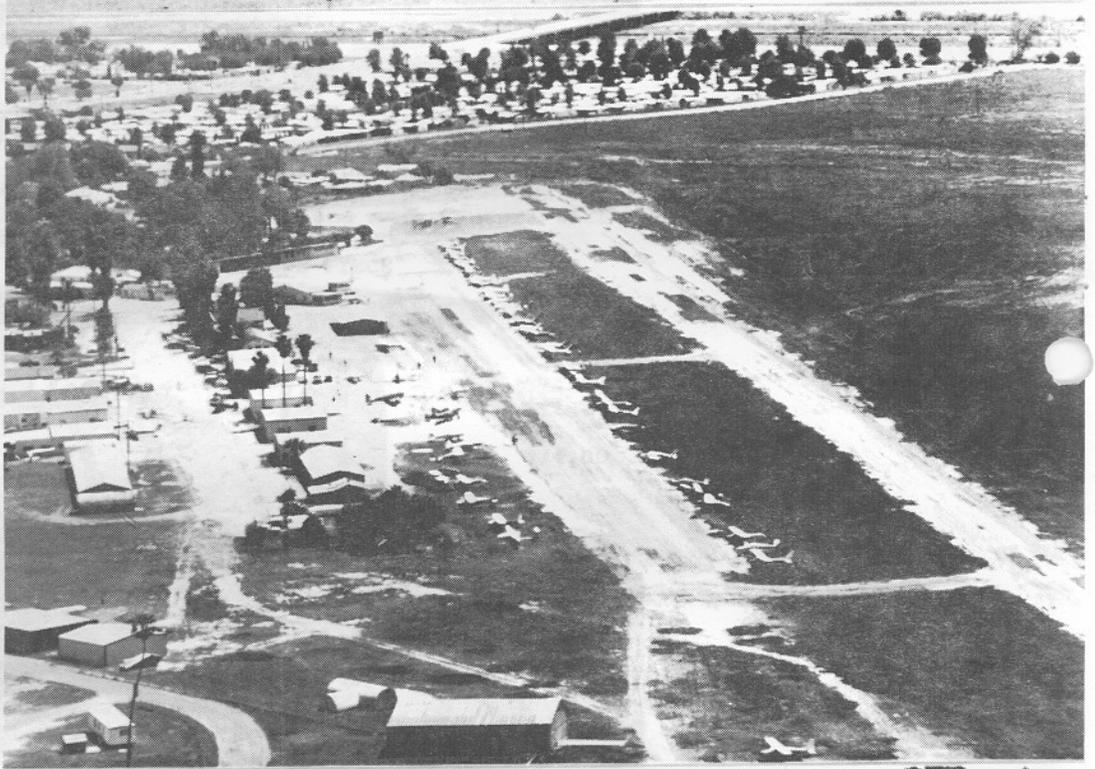
May 1991

Aircraft Attending
Starduster Open House

N490B Oscar Bayer
N4226Y Les Homan
N96576 Dave Baxter
N6275 Dennis Mayhew



Cross Wind for a left
Down Wind Runway 24
Fla-Bob Airport
Riverside Calif



N53T John Travis
N5317Q Bob Phillips
N14MM Tom Macario
N14AD AcroDuster One



May 1991

Aircraft Attending
Carduster Open House

N411TM Roy Olsen
N8331A John Renquist
N24LP W R Payne
N8232R Robin Harrison



N4226Y Les Homan
N530LR Larry Rydberg
N411TM Roy Olsen
N8331A John Renquist



N14MM Tom Macario
N96576 Dave Baxter

Editor



because the event was not well publicized.

The judges decided that Starduster aircraft would be judged on what a traditional Starduster should look like, and with that in mind it wasn't hard to award 1st Place to Tom Murry N847JI, Tom's airplane sported a full eagle paint scheme, with beautiful wood instrument panels and clean chrome, detailed engine compartment. It was said that it only took nine months to build, but that he had lots of help. Its a good thing Frank Christen has mellowed some over the years as ten years ago Oshkosh 79', Dick Gonzales landed his airplane there and was given a hard time by Frank, as well as threatend with a lawsuit, and Dicks airplane only had the airplane painted on the side. Tom along with having a beautiful airplane also has a lovely wife Sharon.

Second place went to John Renquist for his beautiful Starduster Too N8331A yellow with red trim spring gear, and he arrived with a Wittman Tailwind flying formation.

Third Place was taken by Glen Olsen for his beautiful Acroduster N34LG. Glen flew his airplane all the way from Salt Lake City Utah to attend the Starduster Open House and has just recently added a full bubble canopy.

First place in the HomeBuilt category awards went to Tom Macario for his antique Homebuilt Starduster Too with Kinner power and Great lakes type landing gear. differest tail shape it is truly a beautiful airplane. The only thing recognizable is the wing, this airplane has fooled many so called experts in the antique field, truly a beautiful effort.

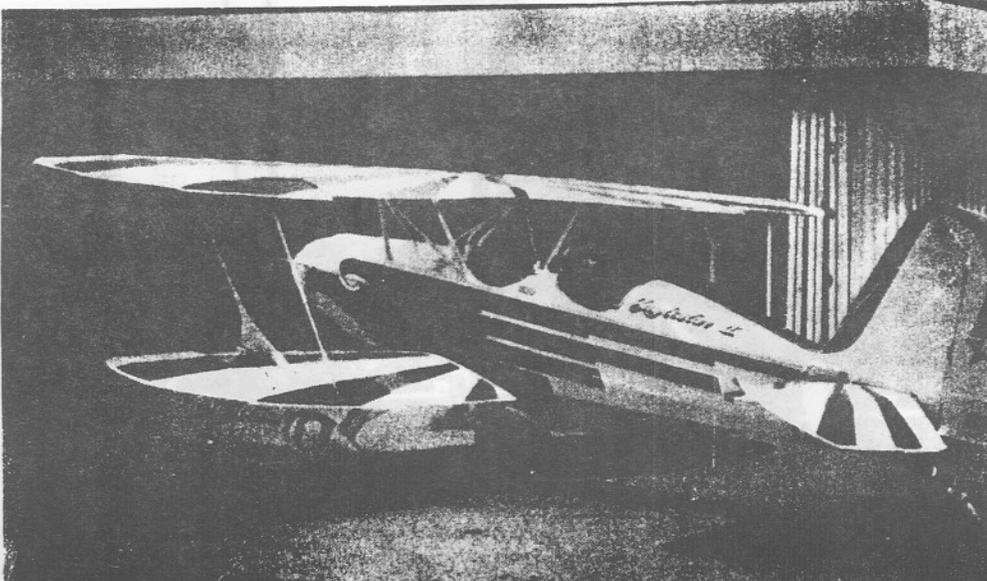
Congratulations to all the winners for a job more than well done.

Approximately 20 Starduster Too's attended along with 1 Acroduster One, and 1 Acroduster Too, a Starlet, several Skybolts, and Pitts, an Eagle, a Smith Miniplane, and of course a T-6. Many other aircraft attended. Along with a Mooney that landed gear up!! Boy does that make an awfull noise.

Over 300 people were treated to a wonderful Texas Style Chicken Barbque by Hank Schimel and his crew Saturday night, and no one went hungry. Well over 2000 people attended the 3 day event, pretty good for not being a formal show.

SEE YOU AT OSHKOSH!

EDITOR



Dick Gonzales
N2361 Eaglestar
January 1980
King of Prussia PA

FLICKERING VERTIGO

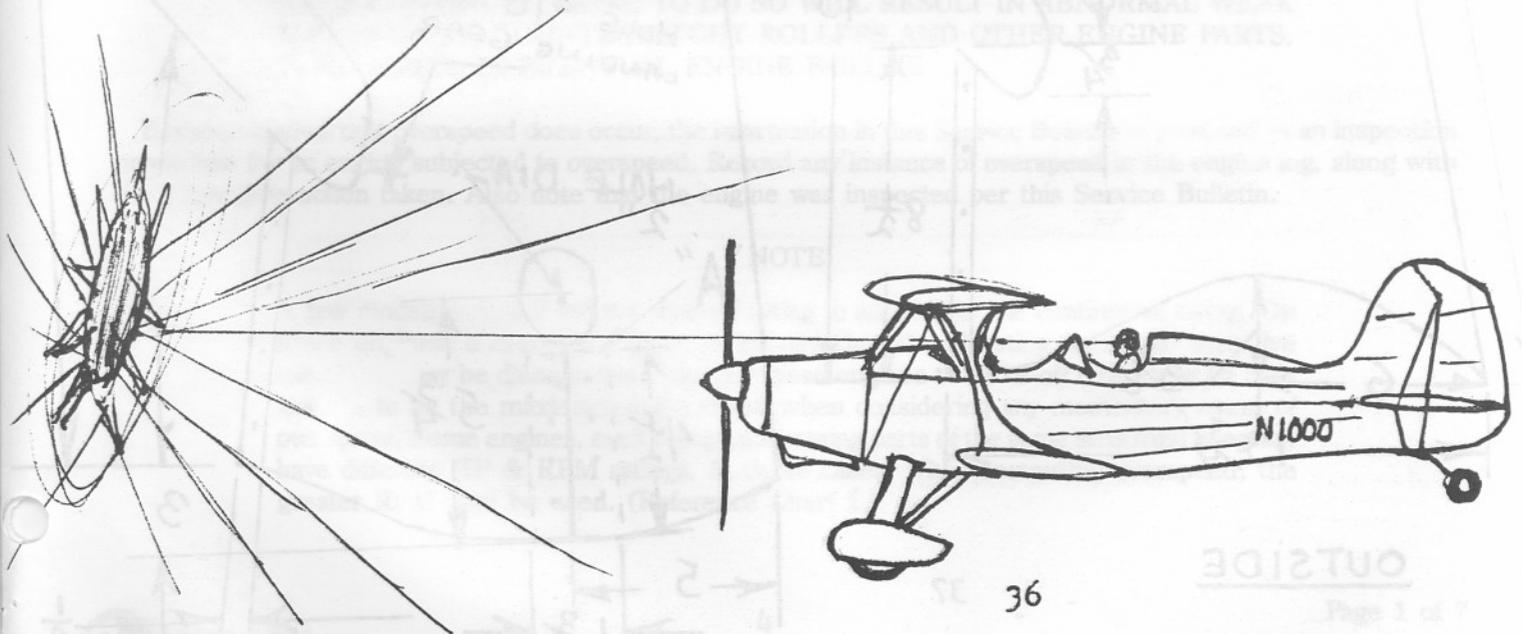
A good friend of mine recently sent me a copy of a publication written by the FAA on accident prevention. Over a year ago he totaled his Starduster Too under the circumstances described in the following article. He is not making excuses for his accident but wants all pilots to be aware of the existance of this phenomenon.

We all know that landing or taking off into the sun when low on the horizon can add difficulty or danger to the flight. But what is not commonly known is that low rpm, primarily between 400 and 600 rpm, 500 being the worst, you can set up the conditions for flickering vertigo as the propellor blades pass through the sun. At these frequencys it has the ability to be hypnotic, it can destroy your motor functions as well as have the same effects normally associated with vertigo. Some people are not affected by this phenomemon. But others, especially those who have histories of epilepsy in their family background appear to be much more susceptible to this condition. The sad and very dangerous part is that it only takes several seconds for total incapacitation to occur and closing your eyes apparently dosen't help. The best advise is to shade your eyes make a shallow turn and climb away.

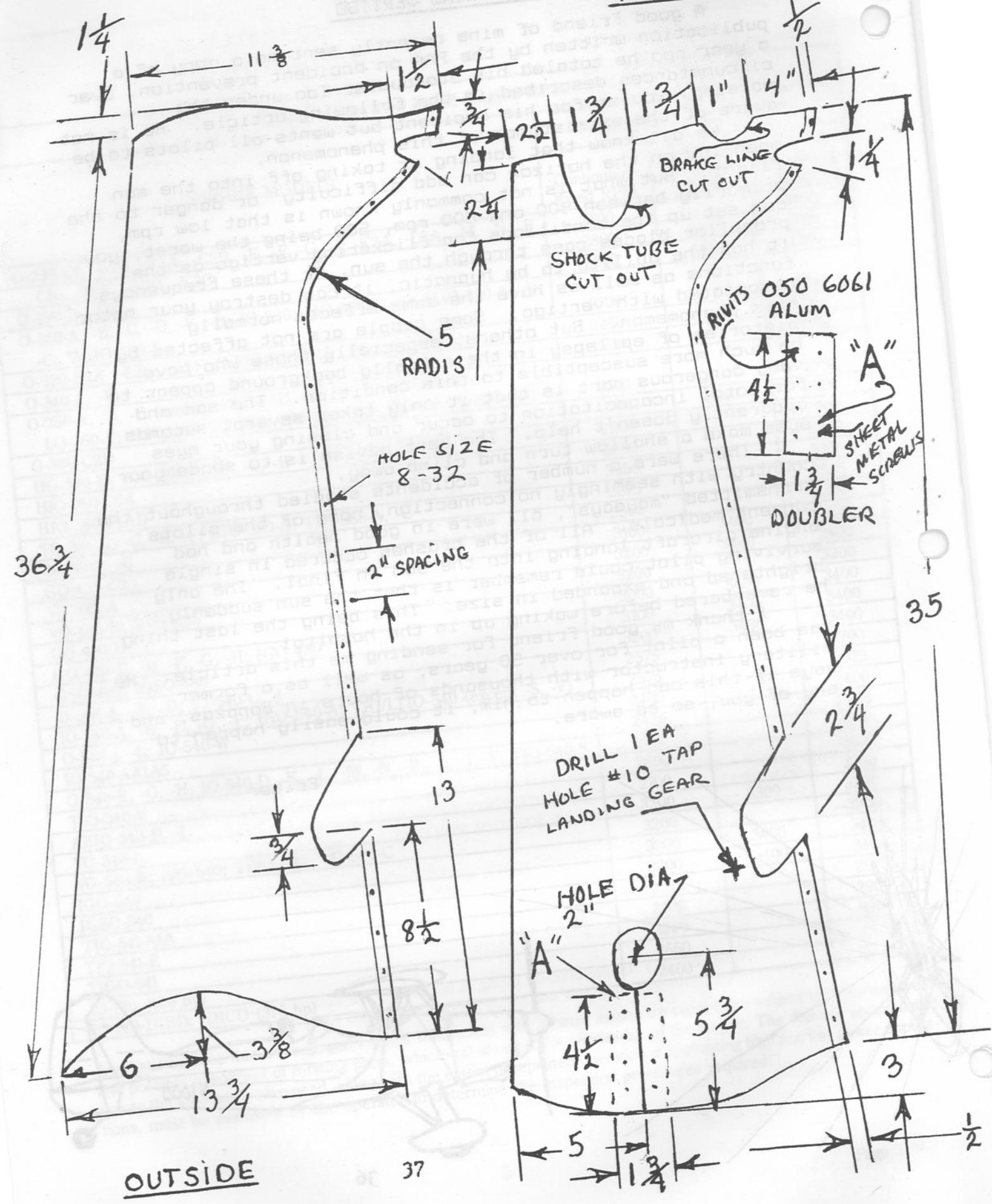
There were a number of accidents studied throughout the country with seemingly no connection, none of the pilots transmitted "maydays", all were in good health and had current medicals. All of the crashes occured in single engine aircraft landing into the sun on final. The only surviving pilot could remember is that the sun suddenly brightened and expanded in size. This being the last thing he remembered before waking up in the hospital.

I thank my good friend for sending me this article. He has been a pilot for over 50 years, as well as a former military instructor with thousands of hours in Bonazas, and says if this can happen to him, it could easily happen to any of you, so be aware.

Editor



INSIDE



OUTSIDE

TRADITIONAL STARDUSTER GEAR FAIRINGS

Most people building Stardusters believe that making aluminum gear fairings is very difficult. The truth is they are not hard to make at all! This article along with the accompanying page consisting of dimensions and sketches should provide the builder with enough information to successfully fabricate and install aluminum gear fairings.

After all they are part of the look and character of the Starduster or Acroduster Too.

Tin snips, Dutchmans measuring tape edge roller, masking tape, drill and #40 clecos are the only tools required for the job.

Material : 2024 T3 or 6061-T6, 020, 025 or 032 any of these can be used for the gear fairings as well as for patterns.

I prefer to make two patterns one for the inside and one for the outside, using these dimensions for rough fit, adding masking tape where cut outs are trimmed to much.

The front of each pattern can be taped or clecoed together to make it one piece.

After trimming and fitting is accomplished to desired satisfaction, a piece of good aluminum, large enough (approximately 30" x 40") is bent on a sheet metal brake using the center 15" and is bent to approximately a 45 degree angle.

After this is accomplished both patterns are laid inside and marked with a marking pen. The gear fairing is then trimmed, edges filed and sanded. The holes at the trailing edge are layed out and drilled using a 2" spacing for an 8-32 screw. The trailing edge is also rolled or bent outboard on the outside and inboard on the inside slightly so that when the trailing edge are mated they will be flush. A few clamps can be installed lining up the trailing edges so that drilling and clecoing can follow. Also on the inside at the bottom a 2" dia hole will have to be cut out for shock cord to landing gear brace it will also have to be cut from the bottom of the inside fairing up to the hole. A doubler 4 1/2 x 1 3/4 of 050 6061 gets rivited, the other get pilot holes for small sheet metal screws.

The gear fairings after being finished in one piece are installed from the front. The split at the lower inside gear fairing to the 2" diameter hole must have the doubler pulled to the outside temporarily while the fairing is installed. Once on the airplane it can be sprung back on the inside so that sheet metal screws can be installed.

There is one other hole that needs to be drilled and taped a 10-32 on the inside of the gear fairing. This is drilled into the landing gear it will generally stay put without this screw, but the one 10-32 screw will hold it in the same place all the time and keep it from working on the landing gear.

These dimensions are what I did for my Starduster, yours depending on angle, old or new style gear, plus brake location and wheel fairings could alter the listed measurements to some degree but the dimensions shown should be close for most Starduster Too with the late style gear.

EDITOR

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