DESIGNEE NEWSLETTER

THE PUBLICATION OF THE EAA DESIGNEE PROGRAM

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The DESIGNEE NEWSLETTER is a forum for the exchange of information and ideas of interest to aircraft and ultralight builders, restorers, and flyers. The sources of the materials published are EAA Designees, readers, Chapter newsletters, and other publications. Readers are encouraged to submit manuscripts, drawings, and black/white photos for consideration. Every effort is made to select accurate materials of interest to a majority of readers. Opinions expressed and responsibility for accuracy rests entirely with the contributor. All materials submitted become the property of EAA — no remuneration will be made. Materials should be sent to Chuck Larsen, EAA Designee Director.

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Volume 14, Number 2 **February, 1983**

MALFUNCTION OR DEFECT REPORTS

Designees, builders, restorers and operators of experimental, classic and antique aircraft are used to submit FAA Form 8010-4 (5-81) Malfunction or Defect Reports which are available from the Designee office at EAA Headquarters or your nearest FAA facility.

"The Federal Aviation Administration requests the cooperation of all operators, mechanics, repair stations, and investigators in reporting on this form service difficulties experienced with airframes, powerplants, propellers, and appliances. These reports provide the FAA with a continuous service record of mechanical difficulties encountered in aircraft operations.

In submitting this report, you are performing a service and contributing to the correction of a condition or situation which might otherwise prove costly to some other operator, or cause a serious accident. Please furnish all available items of information. Attachments, such as photographs, sketches, and parts, when forwarded under separate cover, should bear identifying information. When all information is not available, complete as many items as possible.

Your assistance and courtesy in submitting this information is greatly appreciated by the FAA. It is impractical, due to the large number of these reports received and by reason of our limited staff, for the FAA to make individual acknowledgment of receipt of these forms. Data received on the M or D reports will be published on a monthly basis in Advisory Circular, AC-43-16 and distributed free of charge to certificated repair stations and mechanics holding an inspection authorization, and certain other segments of the aviation industry."

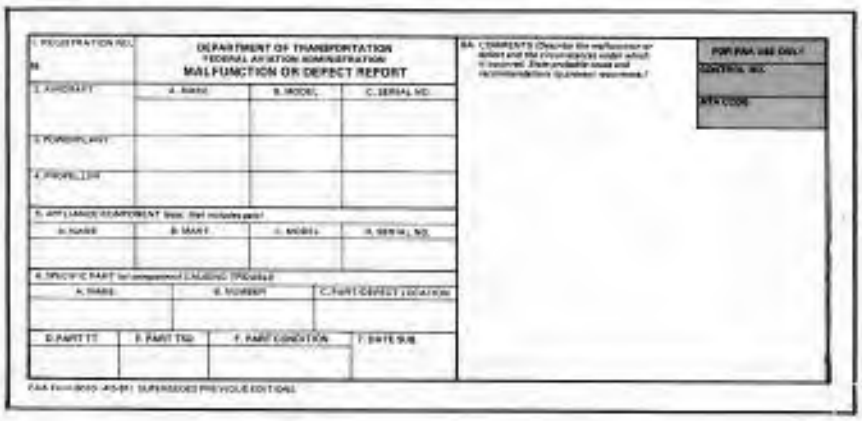
Designees & Subscribers,

Old man winter tightens his grip on EAAers in the Northern Hemisphere driving them indoors until the spring thaw. Shops hum with activity to prepare for the flying activities of the coming seasons.

The problems encountered, their solutions, shop tools and techniques you observe and use as aircraft are built and restored are the basis for the DESIGNEE NEWSLETTER. Please take some time away from your projects and Designee Visits to share your knowledge by writing an article for this, your publication. Articles from a brief comment to as long as 3 double-spaced, typewritten pages will be considered for publication. Finished drawings (not sketches) and clear black and white photos illustrating your materials add a great deal to most articles.

Please send articles for the DESIGNEE NEWSLETTER to my attention at EAA Headquarters.

Thanks,
Chuck Larsen, Editor



DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
MALFUNCTION OR DEFECT REPORT

Do not use this reproduction of this form. Secure the full size form from your nearest FAA office or the Designee office at EAA Headquarters.

LETTERS 'N SHOP TALK

FLYING SAFETY COMMENTS

From FLYPAPER, Sun 'N Fun Chapter 454's Newsletter

I want it clearly understood that I am not implying that I am a great aviator and I certainly don't have the huge amount of hours that many pilots do. I have, however, had the opportunity to fly with many of them and in the process learned a few tricks that may add to your longevity if you put them into practice. I'll probably bore some of you high timers but if just one pilot averts an accident because someone took the time to pass it on, it was worth it.

Recently there have been several accidents in aircraft that would not have occured if the pilot had known of or had remembered to apply some of the rules or guidelines printed here. Try to remember if any of them could apply to a situation that you have found yourself in.

1. Always treat a propeller like the switch is on and never hand prop a plane without a competent person at the controls.
2. Don't trust a fuel gauge. Measure the fuel. Look for fuel stains under the A/C if fueled earlier. Make sure the caps are tight. An open tank will siphon dry in minutes.
3. Always switch fuel tanks on a dual system during taxi or before takeoff to make sure the selector works and both tanks are uncontaminated.
4. Except in an emergency, never switch fuel tanks unless you have at least a survivable emergency landing site in view.
5. Don't be afraid to do a magneto check in flight. If you happened to have a magneto strip a gear in flight you probably will not be able to maintain altitude unless you isolate the problem.
6. If you are at altitude and suspect carburator icing, pull on full heat but don't push the mixture to full rich. The heat causes the mixture to full rich. The heat causes the mixture to go richer and you very well may flood the engine with a resultant engine stoppage.
7. Never do a runup pointed at anything that you would not like to destroy in case the brakes fail.
8. Taxi slow around congested areas for the same reason and try not to taxi up to anything with the prop pointing at it.
9. The time to check your brakes is downwind, especially when attempting a short field landing in a X-wind in a conventional gear (tailwheel) aircraft.
10. Never get caught on top, that is unless you have the training and equipment to handle it.
11. Don't be tempted to fly off of your sectional.
12. If you have to think about it too long, don't!

Flying is a little like playing poker but you can stack the deck.

SNOW SHOWERS AND WHITE OUTS

From a "Minnesota Department of Transportation Technical Bulletin"

Snow showers are quite prevalent in the northern tier of states. When flying into a snow shower, a pilot should be prepared to go on instruments since visual references may be quickly lost.

White outs have claimed very competent pilots as their victims. It is a condition in which there are no contrasting ground features in the pilot's visibility range.

White out conditions call for an immediate shift to instrument flight. As a pilot, you should be prepared to do this both from the standpoint of training and aircraft equipment.

Remember — When approaching questionable weather conditions which may be beyond your capabilities, it may be wise to turn away . . . For he who turns away may live to fly another day.

CROSSWIND LANDINGS ON WET OR SLIPPERY RUNWAYS

From a "Minnesota Department of Transportation Technical Bulletin"

The best advice is to avoid them, if at all possible.

Crosswinds acting against the upwind fuselage surfaces and vertical tail create a side force which tends to push the aircraft downwind, and it tends to weathercock the nose into the wind. The only counteracting force available is the friction of the tires on the pavement — and there may not be any if it is wet and/or slippery!

On take-off you can feel the aircraft yaw into the wind as the tires lose sideways friction and the take-off may be continued without damaging the tires. Landings are trickier, and your approach should allow you to land on the upwind side of the runway. This makes the full runways width available for any sliding during the transition speed period.

Before landing on a wet or slippery runway, you should consider:

- What is the condition of my tires?
- What is my tire pressure, and where does that put my dynamic hydroplaning speed?
- What are the runway conditions? (length, width, surface texture, depth of standing water, icy, etc.)
- How late can I take a go-around?

IT IS THE SEASON FOR CARBURETOR ICE

From a "Minnesota Department of Transportation Technical Bulletin"

INDICATIONS OF CARBURETOR ICE ARE:

- Decreased Engine RPM (with fixed pitch propeller).
- Decreased Manifold Pressure (with constant speed propeller).

WHEN IS CARBURETOR ICING MOST LIKELY TO OCCUR?

1. At low power settings on extended descents. (The kicker is that you may not detect it until you APPLY ADDITIONAL POWER. It is a good practice to clear the engine periodically during extended lower power descents.
2. During humid conditions at outside air temperatures below 15 degrees Celsius.
3. Icing can occur without visible moisture with high humidity when temperatures are as high as 87 degrees Farenheidt (30 degrees Celsius).

WHAT TO DO:

Apply carburetor heat. This will allow the warmth of the exhaust system to heat incoming carburetor air.

WHAT TO LOOK FOR AFTER APPLYING CARBURETOR HEAT:

- If there is ice in the carburetor, the power reduction will remain constant.
- If there is no ice in the carburetor, the power reduction will remain constant.
- If there is no ice in the carburetor, there will be a small reduction in power followed by an increase in power after 10 to 20 minutes.
- If a sufficient amount of ice has accumulated, the engine will run rough until ice has cleared.

DON'T:

Use carburetor heat while taxiing. Air from the carburetor heat system is unfiltered, this can cause dirt to get into the cylinders and cause excessive wear on piston rings and cylinder walls.

DO:

Use carburetor heat whenever loss of RPM or engine power is noticed during a flight.

REFER TO YOUR OWNERS MANUAL FOR SPECIFICS ON YOUR AIRCRAFT.

TECHNICAL TOPICS

ONE DESIGNEE'S OBSERVATIONS

From Thomas J. Ryan, EAA 47426, Designee 1238, 916 N. Kemper Street, Alexandria, CA 22304

How do you tell a guy his pride and joy isn't everything he thinks it is? Most of the time, you don't. And, unfortunately, sometimes you should and you still don't tell him. I'm not thinking about times when safety of flight is involved. Rather, I'm thinking of times when the work was good enough but it could have been done better by the same person if a little more time and care had been taken. When working on my own homebuilt, I ran across this same situation many times and after long delays waiting for parts or material found myself moving ahead because my partner and I had to "hurry up and get this thing flying". Now, I'm well aware that most of us are not experts on everything so we tend to do some things better than others. In my case, I favor the metal work and welding and as a Designee, am more critical in my observations of these areas. Our Chapter is fortunate in having a couple of other Designees. Fred Wimberly, a Vari-Eze owner/builder covers composites and Jim Propps, a Fly Baby and Wittman Tailwind builder covers wood structures. Each of us has occasion to offer words of wisdom as we see it and at this time I will pass on some of mine about welding. I was welding fuselage frames, landing gears, engine mounts, fuel tanks, exhaust systems and the like when oxyacetylene welding was all that was available. That technique has changed very little over the years but the use of it has been surpassed by better ways of doing some of the work that used to be done that way. Heli-arc or Gas Tungsten Arc Welding (GTAW) as it is more correctly called, is certainly easier and better for many applications but the average homebuilder is not apt to have such a welder and would find it expensive, to have the work done. So, I'd like to concentrate on my observations about the use of the old standby oxyacetylene.

First, I don't deny "that it's easy" as you have frequently read in various articles about doing your own welding on the fuselage frame. However, I'd like to change that statement to "It's easy for some".

As a welding instructor, I have run across a few students who really don't like to weld and are actually afraid of it but feel they have to do it. Some of them never get good enough to weld their aircraft parts but they do it anyway later with no one looking over the shoulder and it's generally pretty bad and often times safety of flight is involved. In those cases, there is no question about your decision if you have a chance to see the work.

In other cases, and in some instances where A&P's have done the work or passed judgment, the work is marginal and frequently incomplete particularly in clusters and other hard-to-reach places. Believe it or not, I have looked at work that had so much primer dumped on it you couldn't tell if parts were welded or not while the proud builder stood by and said "How do you like it?" Well, as you can imagine, here is where diplomacy enters into the picture if you have to tell him "Strip it so I can see it". Fortunately, this doesn't happen often but what does happen is that the builder thinks that because he's running great beads on practice tubes and plate on the welding table he can do the same thing from various positions on the fuselage frame even with a roll-over fixture. The fixture helps but you really have to let your conscience be your guide in those multi-cluster tube places where tacking was easy but the complete welding required a variety of heat and greater skill. I've seen so much welding rod melted and piled into these places with no penetration you'd think the guy was trying to solder rather than weld it. So, a word of caution — if you think you can do it, go ahead until you feel like it's getting out of hand and STOP right there. You haven't done irrepairable damage at this point and to continue invites temptation to fill holes and cover up as best you can. If you don't stop you are heading for a mess that any self-respecting welder would be reluctant to patch up. The best thing you can do is get away from the frame and practice on typical weldments and, in any event, get a hold of someone who can do the job and have him give you some help. There are plenty of builders who were good welders by the time their project was finished and it can be done with a little help from your friends. All welders are not necessarily good aircraft welders. Plenty of guys are good on pipes and railroad tracks but you wouldn't want them welding your engine mount and vice versa. So, hang in there, proceed with caution, and try to recognize that you can't weld everything with one small aircraft torch or one small tip. Also, welding 3/16" 4130 plate to a .049" wall tube may take two torches and a little know-how on the part of your helper. A final note — like the TV ads, "Only your hairdresser knows for sure" about the gal who dyes her hair — Only the welder knows for sure that he has done a good job and sometimes he's reluctant to admit it when he hasn't. So, the more you know about it the better off you are going to be because there will always be some welding involved no matter what you are going to build.

COLOR MARKING CODE FOR MANUFACTURING DATE OF ELASTIC CORD AND RINGS

From Richard Benedict, Designer #

SPEC. MIL — 5651B — Cord: Elastic Exerciser and shock absorber for Aeronautical use, Dec. 1961.

Type 1 — Straight cord with double braided cover (shock absorbing) Sizes 1/4", 3/8", 5/8", 3/4"

Type 2 — Endless ring (Bungee) with double braided cover (shock absorbing). Sizes, 1/4", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16"

This system repeats itself every five years. Cords on the market at present (1982) should be three reds manufactured in the first quarter of 1982; however they could also be five years old having been manufactured in the first quarter of 1977. Be careful that you are not getting five year old shock cords. THIS IS IMPORTANT.

Year Mfg'd.	No. Of Marker Threads	Color Of Marker Threads
1981	2	Green
1982	2	Red
1983	2	Blue
1984	2	Yellow
1985	2	Black

Quarter Marking	
JAN-FEB-MAR	1 Red
APR-MAY-JUN	1 Blue
JUL-AUG-SEP	1 Green
OCT-NOV-DEC	1 Yellow

DESIGNEE VISITS

One of the important services provided by our DESIGNEES is visiting aircraft building/restoration projects to discuss and offer suggestions about them. The DESIGNEES in the following listing are to be commended for their efforts in helping to make sport aviation a safer activity by providing this service. Comments for publication are selected for the purpose of providing guidance or assistance to builders and the DESIGNEES visiting them. DESIGNEES are requested to note problems or procedures observed in their project visits in the comment's section of the Designee Visit Report.

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