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.

THE EAA/LYCOMING AVIATION SAFETY AWARD

Safety must be foremost in the minds of organizations and commercial interests devoted to aviation. To further this concept EAA and AVCO Lycoming joined hands to sponsor the first annual safety award as a feature of OSHKOSH '84. The grand prize for this inaugural award was a factory new AVCO Lycoming 0-235 engine. It was presented to the entry judged to be best among those entered. The criteria for judging was for a new design, design change, installation improvement or other ideas currently in use that leads to safer flying.

Entries for 1984 and their placement in the contest are:

Richard W. Brown, EAA 23120	Electronic fuel system water detector
Richard Wright Burgett, EAA 198641	ATGX Aircraft Training Vehicle
Tony Bingelis, EAA 2643	FIREWALL FORWARD (Book)
Ron J. Dillard, EAA 161649 & Al Allison, EAA 156600	Helicopter Hovering Simulator
Jack B. Hohner, EAA 170715	Device for preventing accidental stalls
Rolf Brand, EAA 141828	Pilot Enclosure Module
William E. Farrell, EAA 153633	SPOT-A-GRADE fuel filler marker
Gene Beggs, EAA 80005	Spin Recovery Course
Harry Cameron, EAA 33269	Forward latch & emergency exit handle
William A. Druschel, EAA 49969	FUEL CHECK to filter dirt and water
Patrick J. Flynn, EAA 190772	Automatic Magneto Checker
David A. Jefferson, Ph.D., EAA 180276	SURESTEP MEMORY CHECKLIST

Our thanks to each of the contestants, judges and especially to AVCO Lycoming for providing the motivation of the 0-235 engine as the first place prize.

This month's "TECHNICAL TOPICS" introduces the first place winner of this year's contest.

1985 DESIGNEE REVALIDATIONS

Designees must complete their annual revalidation on the form provided in the October issue of the DESIGNEE NEWSLETTER or on the 1985 Status Report submitted by their Chapter.

Designees and Subscribers:

November has brought window scrapers to the front seat of the autos of Wisconsin motorists. Flight after flight of ducks and geese are observed traveling the central flyway as they follow their instincts to enjoy the summer of the southern hemisphere. What I first mistook for playground noises on a foggy morning told me that Mother Nature provided these long necked aeronauts with an I.F.R. rating as they were blessed with the gift of flight. It is the time of the harvest and Thanksgiving. A time for those of us in North America to appreciate the bounty that is ours.

November is also the time for Designees to reaffirm their interest in the Designee Program by revalidating on the form supplied in the October issue of the DESIGNEE NEWSLETTER or their Chapters' 1985 Status Report supplied to the Chapter Presidents in October. If you or your Chapter need another of these forms contact me at EAA Headquarters immediately. Let's start the new year with 100% of our Chapters and Designees revalidating.

The coming of fall draws many to their shops in preparation for a flurry of work on those projects relegated to storage during the sunny days of summer. It is time to set aside thoughts of summer's activities and store its paraphernalia in preparation for a winter of working on your favorite aircraft project. An inventory of your tools and their condition is in order as you gather them from the many hiding places they have found during the summer. Broken or damaged tools should be repaired or replaced, safety devices in place and operable and electrical equipment checked for proper installation and condition. Safety doesn't start at the airport, it begins with safe tools properly used by knowledgeble operators. Inventory your tool operating and safety skills as you clean and put each tool in its proper place.

Your input for the DESIGNEE NEWSLETTER is needed. Please send photos and/or drawings illustrating your brief written explanation of problems, solutions, building tips and tools to exchange with others building or restoring aircraft. This publication offers the opportunity to exchange information with members of THE Sport Aviation Organization . . . EAA.

Our best to you and yours for the Thanksgiving Holiday.

Chuck Larsen, Designee Director

LETTERS 'N SHOP TALK

I.A.C. TECH TIPS MANUAL/ANODIZING CORRECTION

Dear Chuck:

We received the August 1984 issue of the DESIGNEE NEWSLETTER in which all the EAA manuals and publications which might be of interest and help to EAA Designees were listed. Omitted from this list was the IAC Technical Tips Manual. We do feel that EAA Designees should be made aware of the IAC Tech Tips Manual for it contains much information that could be of help in the building and maintenance of aerobatic aircraft. As you know, the IAC Tech Tips Manual contains all the tech-type articles that were published in SPORT AEROBATICS through 1979. IAC is presently working on a Tech Tips II Manual. This Tech Tips II Manual will consist of all the tech articles published in SPORT AEROBATICS from 1980 through 1983. Hopefully, the Tech Tips II Manual will be published in the very near future.

In the September 1984 issue of the DESIGNEE NEWSLETTER there was a "Shop Talk" article entitled "Aluminum Anodizing at Home" (reprinted from the EAA Chapter 527 Newsletter). This article suggests sulfuric acid H_2SO_4 as a suitable electrolyte. Sulfuric acid is used for most commercial/industrial anodizing processes but for anodizing aluminum aircraft components the electrolyte used is chromic acid. Chromic acid is used for two reasons: (1) if after anodizing there is any entrapment of the electrolyte, chromic acid is noncorrosive, and (2) using chromic acid provides for a non-destructive inspection technique for checking for cracks.

Fred L. Cailey, Chairman
IAC Technical Safey Committee

COMPOSITE BUILDERS HINT

from the Minnesota Composite Builder, the Newsletter of EAA Chapter 587

Dave Peterson, EAA 121591 came up with the following to help builders with their wing layups: When doing layups which involve trailing edges, they don't always come out right. Sometimes they are too thick, as in Figure A, and the excess foam has to be sanded away. Other times they are too thin, as in Figure B, and micro has to be added either before or after the layup.

An alternative method is to use a template which leaves the foam shaped as shown in Figure C. Note that the bottom is perfectly flat. The bottom layup is then done and allowed to cure. Next, the foam "tail" is removed and about ½" of the foam is removed down to the glass, using a Dremel tool as shown in Figure D.

Next, the top layup is done providing about ½" of glass to glass, as shown in Figure E. Be sure to paint pure epoxy on the ½" exposed glass before laying on the glass. At knife trim stage, fill the notch with dry micro as shown. Thanks, Dave!

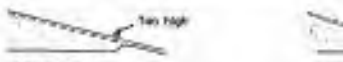


Figure A

Figure B

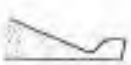


Figure C

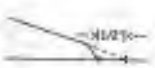


Figure D

Figure E

FAA SERVICE DIFFICULTY REPORTING

FAA is seeking public comments and suggestions on how to improve its "Service Difficulty Reporting" (SDR) program. "The SDR program is that by which the FAA gathers reports of malfunctions, defects, and other service difficulties which occur on aircraft in service, from civil aircraft operators, manufacturers, repair facilities, maintenance airmen, FAA inspectors and other persons. The currently stated objectives of the program are:

To achieve prompt and appropriate correction of conditions adversely affecting continued airworthiness of aeronautical projects, through the collection of Service Difficulty and Malfunction or Defect Reports; their consolidation and collation in a common data bank; analysis of that data; and the rapid dissemination of trends, problems, and alert information to the appropriate segments of the aviation community and the FAA."

"The FAA is working to make this program as useful and responsive as possible to both FAA and industry needs. Accordingly, FAA has plans to update service difficulty report collection, processing, and dissemination procedures. Before proceeding further, however, the FAA seeks public comments and suggestions on how to improve the program. Public comments are particularly sought on the SDR program objectives as quoted above. The FAA seeks the greatest possible public participation, and will, therefore, accept comments for 8 months from the date of publication of this notice. (Monday, July 16, 1984)."

FABRIC HOLE CUTTER

Dear Chuck:

During my contacts with other homebuilders, it has come to my attention that many people, when opening the holes in drain grommets, are using an electric soldering iron for this purpose.

The hot iron will melt a hole in Ceconite leaving an upturned ridge or dam around the hole on the inside. This is defeating the purpose of the grommet, since it is difficult for water to drain because of the inside dam.

I use an X-Acto tool available at most hobby shops for this purpose. The cutting tool itself is a 5/32" punch #131. This tool has a beveled cutting edge and will fit a #3005 handle.

This cutter, when inserted in the grommet and given a twist, will leave a nice clean drain hole for water to escape and also removes the plug from the hole.

I think it is a simple and easy way to do a better job.

Virgil E. Brady, EAA 20502
Akron, Ohio

MARVEL SCHEBLER CARBURETOR FLOATS

From J. Mark Smokovitz, EAA 64773 of Taylor, Michigan

Facet Aerospace Products Co., who have acquired Marvel Schebler carburetors, have issued a Service Bulletin advising that **all** Marvel Schebler carbs marked with an "MS" on the lower portion of the nameplate and those carrying the Facet Aerospace Products nameplate be converted to metal floats. They recommend the change be accomplished at the next component overhaul, 100 hour inspection or immediately if carb flooding, rough engine operation at low throttle settings or inconsistent engine shut down is experienced. The advised metal float kits are available through local distributors.

FUSELAGE STRINGERS

Dear Chuck:

During the construction of my airplane, I decided I wanted aluminum stringers instead of wood. I thought about using aluminum "Hat Section" stringers.

Then one day while shopping at my local department store, I spotted some aluminum outside corners. These are used when installing ⅛" paneling on the walls of a home. They are made of .040 anodized aluminum. The more I looked, the more I decided that this was what I wanted.

In attaching them to the fuselage, it is much easier than welding tabs to the tubing as in the use of wood stringers.

Here, one only needs to drill four small holes. Two on each side of the stringer where it touches the upright tubing. Then these are safety wired to the tubing. The results are very pleasing.

In addition, they are stronger and cheaper than the "Hat Section" type.

The fabric only touches the ¼" surface at the top of the stringer.

I would advise any homebuilder to consider this material for aluminum stringers.

Virgil E. Brady, EAA 20502
Akron, Ohio

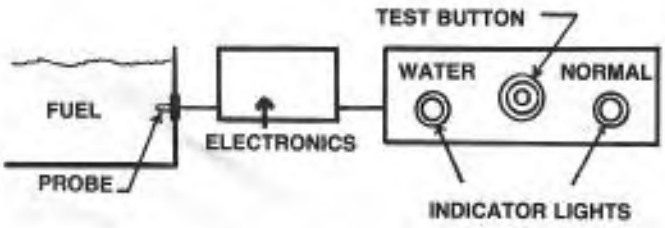
TECHNICAL TOPICS

From Richard W. Brown, EAA 23120,
4826 Enchanted Lane, Mound, MN 55364

1984 EAA/LYCOMING OUTSTANDING SAFETY ACHIEVEMENT AWARD WINNER AN ELECTRONIC FUEL SYSTEM WATER DETECTOR

Richard is an electronic engineer who has applied the knowledge and skills of his vocation to make his hobby safer for himself and fellow aviation enthusiasts. He flies a VJ-22 (Volmer Sportsman) in which he found a very rusty carburetor bowl during an engine overhaul. This rust was formed as a result of water accumulating over a long period of time. Since such a condition is undetectable under normal conditions he set out to develop a sensor system to indicate the presence of water in fuel before problems occur.

Richard explained in a telephone interview the device works by measuring the impedance (A/C resistance) difference between a submerged probe and ground through pure fuel, water or water contaminated fuel. Water has a lower impedance than fuel so when a significant drop is sensed the unit is "triggered" indicating water contamination. He said pure water won't indicate with the device but water as a fuel contaminant almost surely will contain enough impurities to be measured by the device.



The device consists of a probe in the fuel tank; an electronics package containing a 2KC oscillator, impedance measuring and triggering equipment and indicator lights on the instrument panel. The application of this concept is being patented while Richard further develops the concept in preparation for marketing the device in the future.

Here we can see the "water in fuel" indicator in the panel of the Piper Cherokee being used as an auto fuel test aircraft by the EAA Aviation Foundation.

REMOVING STAPLES FROM WOOD STRUCTURES

From Frederick Wegner, EAA, 121506, Designee 1262, of Des Moines, Iowa, Chapter 135

The removal of staples used when gluing wood members can prove difficult. Many times the wood is damaged as builders dig and twist tools in the effort to remove them.

This problem can be easily resolved by laying a strip of plastic banding material for straight lines of staples or strong twine or cord where staples are "scattered" over an area. After the adhesive has dried or cured staple removal is accomplished, or at least started, by pulling up on the band or line. Those not removed completely will be very easy to grasp with a tool without making contact with the wood.

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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Sheridan, New York
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*McHolland XPA-11

R. Walker #61
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*Cubby
*Durand

Albert M. Zinn #126
Oklahoma City, Oklahoma
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*Sonerai IIL

Leon York #146
San Angelo, Texas
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*Original Design

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*Long EZ

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*KR-2

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*KR-2

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*Sea Hawk
*Dragon-Fly

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*Cassutt
*Barracuda

M. R. Mettlen, Jr. #667
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*FW 190 Replica

Howard Wells #678
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*Thorp T-18
*Q-2
*Rotorcraft-Scorpian 133

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*BD-4
*Dyke Delta
*Flybaby

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*Sidewinder

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*Q-2
*Long EZ

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*Moneral

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*Pollivagen

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*Rutan Long EZ

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*Acey-Ducey
*Osprey II

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*Long EZ

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*Sorrell SNS-9 Hiperlight

Donald E. Aydlett #1340
Portsmouth, Virginia
(804) 488-8942
*Q 200

John B. Schively #1359
James W. McGinness #1364
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*Pretzeled Camper

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