



Experimental Aircraft Association

CHAPTER 393

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Concord, California

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**CHAPTER MEETING - WEDNESDAY EVENING, 7:30 P.M.
APRIL 22, 1987**

The program this month will be a talk by Andy Marshall on composite construction. Andy has over thirty years of experience in the business of composites. He will talk about the techniques used and the different applications of various composite materials. He will also tell us what not to use on certain types of construction. Andy has written several books on the subject, and is well worth hearing. Please plan to attend. Bring a chair and a friend who might like to join the chapter.

Did you know a good grade of outboard motor oil is similar to MIL-C-5545 corrosion preventive and is excellent for storing engines?

We had to drop about 20 people off of our mailing list this time for non-payment of dues. Sorry to lose them.

Speaking of people, last month I enclosed a pre-stamped form for all 130 of you to fill in and send back. To date we have only had 31 of them returned. I can't believe that there are 100 of you out there that are that hard up for a free stamp that you have to pull it off and use it rather than send back the form. Please dig it out of your pending file and send it in. We need it to help work out the future direction the chapter is to take.

Welcome to our new members:

Eugene Chow, 289 Glorietta, Orinda, CA 94563.

John Fick, 394 Ilo Lane #402, Danville, CA 94526.

Ken Yoskowitz, Jr., 1980 Oakcrest Dr., Oakland, CA 94602 (RV-4)

Put your thinking caps on and start ruminating about a Chapter Fly-In. Your Board thinks it would be a lot of fun to fly to some place like Columbia, where they have a real nice campground, with showers and facilities right next to the airport. This would make it ideal for those who drive up and want to camp. Also, the town and motels are within reasonable walking distance. The weekend of May 30-31 seems fairly clear. We could do that in place of the Chapter meeting that month. We'll discuss it at the next meeting.

NOTICE: (Idea from Chap 124, with thanks) Chapter 393 and the newsletter editor are not responsible for any modification or maintenance items that appear in the newsletter or other correspondence. It is the responsibility of the reader to obtain approval for such items from appropriate A&P, AI, FAA or other qualified official.

EAA



EAA CHAPTER

NUMBER 393 OF CONCORD, CA ZIP _____

● A LOCAL CHAPTER OF THE EXPERIMENTAL AIRCRAFT ASSOCIATION, INC. ●

GENERAL MEMBERSHIP MEETING March 25, 1987

President Kay Smith called the meeting to order at 7:35, with a welcome to all. Minutes from the previous meeting were approved. Lou Ferrero gave the Treasurer's Report, which was approved.

We received a letter from EAA Headquarters thanking us for the completion of our pledge of \$1500 to the EAA Foundation Building.

A questionnaire mailed with the newsletter has not flooded the mailbox with replies. Please send yours back soon -- it only costs a few minutes of your time.

Kay discussed the possibility that the consultants the County has helping on the Master Plan would want to address our group, but we haven't been approached as yet.

The Alumbaugh's are sorry to report that the Pope Valley Fly-In won't happen this year -- the ranch is officially open for business as a bed and breakfast place. Good luck on the new venture!

Tim Roberts reported on the Sun 'n' Fun Fly-In in Lakeland, Florida -- said it was busy and had great weather. No new designs introduced, but great fly-bys.

Army Days is scheduled for Hamilton Field April 4 & 5, and there will be an Accident Prevention Program at the Sheraton Tuesday, April 7.

Introductions were followed by a coffee break. The program was by Jack Allison of Moller International, describing their work on a vertical take-off and landing aircraft. He discussed how they are developing a homebuilt kit idea, and showed some videos of their flying prototypes.

Respectfully submitted,
Rich Powell, V.P.

EXPERIMENTAL AIRCRAFT ASSOCIATION

CHAPTER 393

1987 CALENDAR

CHAPTER MEETINGS - The 4th Wednesday of every month - 7:30 P.M. at Buchanan Field Terminal Building
EVERYONE IS WELCOME! Bring Chairs!

BOARD MEETINGS - On the dates listed below (usually the 2nd Tuesday each month) - 7:30 P.M. at Navajo Aviation. Chapter members are welcome.

APRIL

Board - April 7th

Chapter - April 22nd - Andy Marshall will talk on composite construction.

- April 17-19 - 15th annual Easter Balloon Rally & Gourmet Picnic, Chester, CA. Chris Kalakuka, Balloon Excelsior Inc., 1241 High St., Oakland, CA 94601.
- April 24-25 - Basic and Sportsman Aerobatic Contest. California site to be announced. Mike Winslow 916+894-5858.
- April 24-26 - 2nd annual West Coast Fly-In, Buchanan Airport. Put on by Cessna Pilot's Assn., Box 12948, Wichita, KS 67277.
- April 25-26 - Minter Field Airshow, Shafter Field, Bakersfield. Wing walking, Condor Squadron, warbirds, aerobatics, fly-bys. Gates open 8AM, show 11:30. Phone 805+393-0291.
- April 26-27 - Glider Aerobatics Workshop Seminar, Reno. Soar Minden 702+782-7627, or Steve Powell 901+722-2276.
- May 1-3 - Gold Cup Regional Aerobatic Contest, Taft, CA. John Gilbertson 714+950-4426 (may be 960-4426).
- May 8-11 - Confederate Air Force Air Show, Brown Field, San Diego.
- May 9 - 3rd annual Executive Aviation Fair, sponsored by 99's, Sacramento Executive Field, 9AM - 3PM. Pancakes 9 - noon. Rides, displays, entertainment. Phone Kris James 916+920-0725.
- May 15-17 - Continental Luscombe Fly-In, Columbia Airport.
- May 15-17 - 23rd Hayward to Las Vegas Proficiency Race. 415+581-2345.
- May 16-17 - Planes of Fame Air Show, Chino. Phone 714+597-3722.
- May 17 - Annual Aviation Flea Market, Nut Tree Airport. Aviation related items only. Bill Alber, Box 799, Suisun, 94585.
- May 22-24 - Watsonville Air Show. Phone CofC, 408+724-3849.
- May 22-25 - 1st Annual International's Womens Air Show, Brown Field, San Diego. Shows, racing, US vs. France Aerobatics, airline & military pilots and more. Nancy Callahan, 619+421-1386.
- May 23-24 - Air Expo, Camarillo Airport.
- May 30-31 - Possible Chapter 393 Fly-In somewhere.
- May 30-31 - Air Expo, Stockton Airport.
- June 5-7 - 30th Annual Merced Antique Fly-In. Phone 209+722-3145.
- June 12-14 - 37th Annual Moonlight Fly-In, Porterville. Airshow Sat., moonlight dance, barbecue, displays, craft show. Food & camping available. Harry Dellicker, 209+539-2506.
- June 13 - Blue Angels performing at Mather AFB, Sacramento.
- June 14 - Kings Co. Lemoore Air Show, Lemoore. Blue Angels perform.
- June 18-21 - No. Calif. Aerobatic Championships, Paso Robles, CA. Drew Detsch, 415+826-7187 or 415+648-6900.
- June 20-21 - Truckee-Tahoe Air Show. Bipes, racers, helos, warbirds, aerobatics, stunts, hot air balloons, military aircraft, parachute jumps. Phone 800+822-5959 (free call).

- June 21 - Buchanan Field Open House, Concord. Military and private static displays. Phone Concord CofC, 415+682-1181.
- June 26-27 - (Tentative schedule) CAFE 400 & Triaviathon, Santa Rosa.
- June 27 - Thunderbirds perform at Travis AFB, Fairfield.
- July 11-12 - Santa Paula Airshow.
- July 11-12 - Redding Air Show. Blue Angels will perform.
- July 17-19 - 18th Annual Northwest EAA Fly-In, Arlington, Washington Airport. Forums, workshops, exhibits, Fly-market, aircraft judging & awards. Al Burgemeister, 206+631-9194.
- July 25-26 - NAS Moffett, Moffett Field.
- Jul 31-Aug 7 - OSHKOSH!!! 35th Annual EAA Fly-In. 414+426-4800.
- Aug 14 - 16 - 16th Annual Gathering of Warbirds, Madera. Celebrating 40th anniv. of USAF. Call AF Ass'n., 209+255-5812.
- Aug 22-23 - North Bend Air Show, North Bend, Ore.
- Aug 22-23 - Nat'l Av. Days, Oxnard. Performers, booths. 805+485-8833.
- Sep 4-5 - 3rd Annual End O' Summer Fly-In, Madera. Camping, displays, judging & awards. Leonard Troutman, 209+291-4196.
- Sep 4-7 - Delano Aerobatic Contest, Delano Airport.
- Sep 6 - Petaluma Air Fair.
- Sep 13 - 15th Annual Airport Day & Airshow, Paso Robles Airport.
- Sep 17-20 - 24th Annual Reno Nat'l Champ. Air Races, Stead Airport.
- Oct 10-11 - Fleet Week, San Francisco. Blue Angels will perform.
- Oct 17-18 - NAS Pt. Mugu, Oxnard. Blue Angels will perform.
- Oct 25 - Norton AFB, San Bernardino. Thunderbirds will perform.
- Nov 7 - March AFB, Riverside. Thunderbirds will perform.
- Nov 8 - Edwards AFB. Thunderbirds will perform.

CHAPTER 393 MINI-MART

- For Sale: Glasair kit. \$10,750. Norm Alumbaugh, P.O. Box 200, Pope Valley, CA 94567. 707+965-2709. 4
- For Sale: Glasair RG. Much work done. Price negotiable. Tom Pinckard, 415+933-0280. 4
- For Sale: Rob Cook's VE. 0-235L2C. 500 hours new. Minimum time to finish. Full panel/stereo, 1,000 mile range, 36 gal., electric starter. LE gear, landing light & trim. Day: 800+772-2590, Eve: 415+372-8125. 4
- Hangar Space: Half a 40' T hangar at Livermore Airport for sub-lease for 1 1/2 years at \$80/month. Call Lisle Knight, days: 415+524-8844, eves: 415+799-0600. 1
- Hangar Space: Share a Port-A-Port Exec. III. Ideal for Vari-Eze or small bi-plane. \$150/mo. Pete Wiebens, 415+933-7517. 1
- Service Offer: Precision welding (TIG), aluminum, stainless, 4130. Eric Schuldt, 1820 Baldwin Dr., Concord CA 94519, 415+827-0259 2
- Wanted: Hangar needed at Buchanan for at least a year. Call Ron Robinson, 415+283-7365, or 283-1971. 2

Oil Fouling: Its Causes and Cures

One of the best engine-trouble-shooting tools in any pilot's (or mechanic's) arsenal is the 7/8-inch deep socket—the kind you use to remove spark plugs. Checking the firing ends of a set of plugs immediately after a flight can give an excellent picture of an engine's state of health, especially if the plugs are arranged by cylinder order in a plug tray. Errant cylinders stand out immediately.

But what does it mean when one or more plugs look like they've been dipped in hot tar? It means the plug in question is oil-fouled, of course, but that doesn't really tell you very much about how it got that way.

Oil wetness on the electrodes of top-hole plugs is usually a telltale sign of blowby (from excessive ring wear or barrel wear). In an engine that's burning excessive quantities of oil (a quart an hour or more), this is generally a foolproof way to spot problem jugs.

Oil on bottom-hole plugs is not necessarily a sign of trouble, since gravity puts a considerable amount of oil on bottom plugs in normal operation. Also, piston rings (which rotate in normal operation) will sometimes line up in such a way as to slosh oil onto bottom electrodes. Just the brief taxi-in and shutdown period

is enough to leave unburned oil on many bottom plugs.

What's worrisome is the consistent finding of wet plugs in both locations (top and bottom) in a given cylinder. In a flat engine (horizontal/opposed), this means a jug with blowby and/or compression problems. (Radials are another story: the bottom cylinder is going to be wet almost all the time, and both plugs will show it.)

It's important to remember, however, that plugs not only foul out when they get too oily, but they get oily when they foul out. Suppose you have a plug that's firing weakly for one reason or another (it needs cleaning; somebody dropped it on the ground; the cigaret spring is corroded; moisture is trapped in the "all-weather" connector). You notice that the engine runs rough during the pretakeoff mag check, when the left mag is selected. You taxi back in, and—lo and behold—the top number-three plug is oily.

The plug could be oily because it was firing intermittently; cold plugs tend to oil up, and the finding of a wet number-three top-hole plug (when cylinder compression is known to be good, and the engine is not burning oil) should tip you off to a possible ignition problem. Before

suspecting a cylinder defect, clean the plug and bomb-test it; inspect the terminal well; dress the cigaret spring (with a jeweler's file); and (if possible) check the ignition lead for insulation breakdown.

Among the odd causes for plug oiliness we've seen over the years are:

1. Failure of owners or mechanics to clean the firing cavity of a plug (with a vibrator or a sharp instrument) as well as the electrodes themselves. The firing cavity accumulates hard, BB-like globules of lead, and splotchy lead-carbon deposits, over time. Eventually these deposits can cross the ceramic insulator and bridge the grounded and ungrounded sides of the plug. Since the deposits are only weakly conductive, and may form and break off in operation, the result can be an intermittent plug.

2. Plugged injector nozzles (in fuel-injected aircraft). Poor fuel flow to the cylinder causes low combustion pressure and ineffective ring sealing.

3. A burned terminal spring (or ignition wire terminal pin) at the magneto outlet. (Remove the outlet cover plate screws and visually inspect all terminals for burning/corrosion.)

4. A bad ignition wire.

5. Inactivity. (We once wondered why the odd-numbered cylinders on the left engine and the even-numbered cylinders on the right engine of our Cessna 310 would foul plugs so quickly, until one day we pulled plugs "cold"—without running the engines—and watched oil drain out of the bottom spark plug holes in the above-mentioned cylinders. The 310's engines are canted, and during inactive periods, oil flows to the low point in the lowest cylinders.)

The point is: Don't do a top overhaul simply because a few cylinders' plugs look oily. All of your bottom plugs will oil up if you idle your engine long enough, and top plugs can get oily for reasons other than blowby. Free your mind before you go troubleshooting. You'll come out way ahead.



A misfiring plug can go from like-new (left) to severely oil-fouled (right) in a matter of hours, or even minutes. If both of a cylinder's plugs look badly oil-fouled, suspect jug problems; if only one plug is oily, suspect ignition problems.

CALIFORNIA AVIATION COUNCIL:

Bay Area Stunned By FAA Reversal

FAA officials in Washington, D.C., abruptly reversed Bay Area FAA intentions to work with local pilots on the implementation of the Oakland ARSA, scheduled for April 9.

CAC and some 20 Bay Area pilots associations had already spent considerable time in work sessions and meetings with local FAA officials when the word came down from Washington.

Several communication problem areas were identified and recommendations were made to improve communications between pilot-users and the various ATC facilities in the area.

As CAC President Jay White was preparing a letter outlining the final recommendations for presentation to FAA headquarters, he received an apologetic call from a local FAA official saying he had been informed that the current ARSA plan is the final plan, and

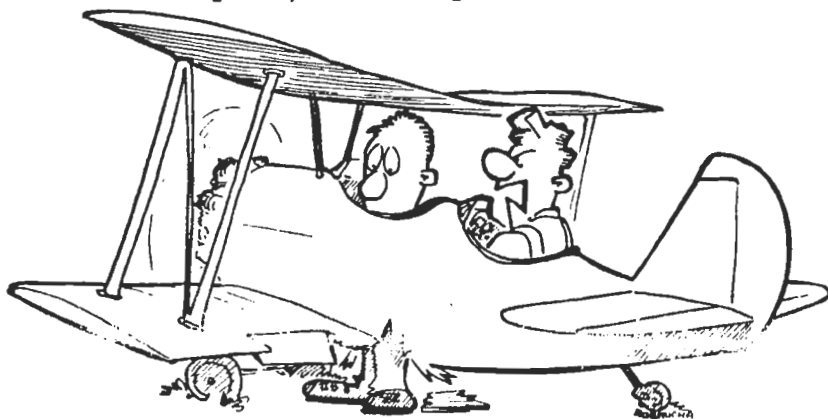
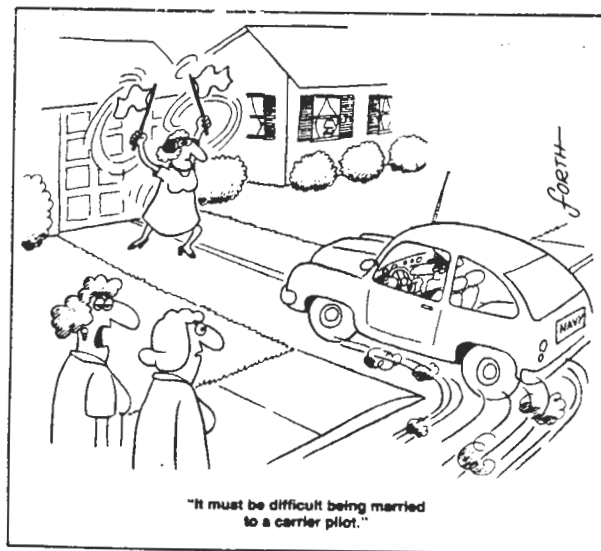
that no user participation would be allowed.

White called the action "puzzling," particularly because H.C. McClure, FAA Director of the Western-Pacific Region, testified before a state Assembly panel that user participation would be utilized in establishing new ARSAs.

White said local users want to form a safety partnership with the FAA to achieve a higher level of safety in the Bay Area.

In providing technical expertise and user participation the safety committee sought to achieve the FAA's goal of a higher level of safety with a minimum of cost and inconvenience to users, White said.

In his letter to Donald Engen, FAA Administrator, White asked for a clarification of the FAA's position on user participation.



"the secret art of scratch removal in plastic windshields"

BY MATTHEW THURBER

Last month, if you were around, you'll remember that I put a nice, deep, three-inch long scratch in your windshield. Before you call the local constable, read on, and if you aren't completely satisfied, I'll come and remove your scratch for you.

Plastic is an excellent material for use in aircraft. It is easily molded into any desired shape, it doesn't present any hazard when it breaks (usually into large, dull edged pieces), doesn't fatigue crack from vibration, and is easy to maintain and repair. The only real disadvantage compared to glass is that plastic has a very "soft" surface hardness, and that means that your windshield isn't very safe from diamond ring wielders.

If you were smart, you would have made sure that I wasn't inside your plane when I scratched the windshield, because the inside of a windshield is a heck of a place to spend a few hours rubbing scratches.

Wherever your scratch is, get some masking tape and mask off the area surrounding the scratch, leaving about 3 inches either side of the scratch and 2 inches at each end. Make sure the area that isn't going to be worked on isn't exposed or you'll end up with a lot more work than you bargained for.

Now keep in mind that once you start this operation, the spot you masked off won't be clear for a few hours of rubbing. So don't spend an hour to begin with and plan on doing some flying later on. This is hard work and will take some persistence on your part.

The first ingredient you'll need will be sandpaper. That's right, I said sandpaper. Start with #220, wet-or-dry,

then #400 crocus cloth, which I'll tell you about later.

Wrap the #220 paper around a small block of wood, whatever feels comfortable to you. If you don't use a sanding block (the wood) your windshield will end up with a groove in the shape of your fingers. If you happen to have square fingers, then you're all set.

Place a bucketful of luke warm water next to your work. Wet the sandpaper (you don't have to remove it from the block), and start sanding out that scratch.

Use up and down and side to side movements, not circular ones, because scritchies (these are small scratches that are visible only when flying into the sun), are generally invisible when straight. Circular scratches are hard to get rid of and can easily be seen when flying into the sun.

The first step of sanding is intended to remove the scratch. Granted you will be scratching the rest of the work area at the same time, but that's the way it goes, so don't complain.

When sanding the scratch, don't go all the way to the edge of the masking tape. If you have to expand your work area to do so, then expand it. If you go to the edge of the tape with the sandpaper, you'll just have to remove the line that forms when you take off the masking tape.

You will notice the scratch disappearing right before your very eyes. First it will become a thin line, then a bunch of small, widely spaced dashes. The hard part comes when the dashes start disappearing. You will think that the scratch is gone, but looking closely will reveal that a little more sanding will be necessary.

Keep the sandpaper wet. This

is to clean the sandpaper and prevent the plastic from getting deeply scratched by the sandpaper. Should the sandpaper get clogged with plastic, just put a new piece on the block.

Once the scratch is gone (look closely), you can switch to the #400 sandpaper. The rest of the job is just removing the damage you did when you used the #220 paper to start with.

Keeping the #400 wet, with side by side, and up and down motions, sand the work area until the sandpaper is worn smooth or the plastic becomes no clearer. That means that it's time to use some softer paper.

The next paper is called crocus cloth, and no, it isn't made of dead flowers. It looks like red sandpaper, and is made of powdered pumice (lava) which is also what jewelers rouge is made of. Crocus cloth is simply a rough form of jewelers rouge.

Again, using side by side and up and down motions, rub away at that masked off area. This is the last step as far as sandpaper goes. Once you start with the crocus cloth, don't switch from an old piece to a new piece, because the new piece will just put a new set of scratches in the plastic.

Use the crocus cloth until it feels like a limp rag, then dry the masked off piece of windshield and check it carefully for scratches. Use soft toilet paper to dry the plastic. It has to be dry to check for scratches, because water fills in small scratches, making them invisible.

If there are still some minute scratches in the plastic, leave them alone and proceed to the toothpaste step, the last one. (Finally!) But should there still be some substantial scratches, then have at it with your limp piece of crocus cloth. If that is unusable, then make a new piece limp by wetting it and rubbing it on a piece of wood until it reaches the desired consistency.

If you're ready for the toothpaste step, then take a trip to the local drugstore and buy a tube of toothpaste. Make sure it is the abrasive kind, like Ultrabright or Crest.

Now squeeze a little toothpaste onto your work area, and wet your hands. They should be squeaky clean, you don't want to rub dirt into the plastic.

Work the toothpaste into the plastic by rubbing with your bare fingers. Don't use any cloth or towel for this step. When the toothpaste is gone, put some more on, and mix a little more water with it. Keep using the toothpaste to polish the plastic until you can't see any but the tiniest scritchies on the surface of the plastic. If you're dumb like me, you might still be surprised to find that traces of the original scratch still exist. That is what happened the first time I

did it. There is nothing you can do in this case, except break out the sandpaper and get to work.

It took a lot of work, elbow grease and toothpaste, but now you've got the best looking windshield on the field. (And you're going to make darn sure that nobody gets near it, right?)

But suppose it gets dirty? What's the best way to clean it?

Good question. First let me say that nothing cleans a windshield better than plain old soap and water. Do not use a "red rag" from the shop to wipe it. I've seen red rags come back from the cleaners with metal shavings and pieces of safety wire embedded in the threads.

Wet your windshield first then wet your soft (I mean soft) paper towel or cloth with soap and water. Now you can scrub away at the bugs and/or bird poop to your heart's content.

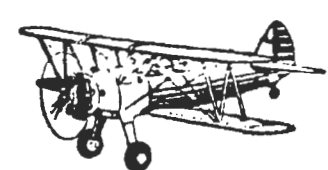
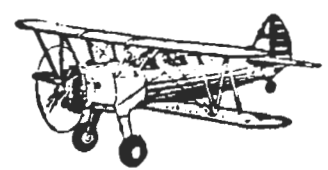
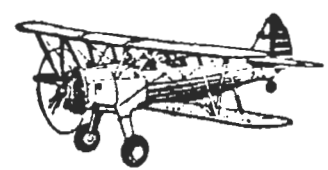
Once the plastic is clean it is a good idea to polish it. The best polish I have found so far is Bill Meguar's "Mirror Glaze." It's made especially for plastic and can be found in any motorcycle store or FBO.

With another dry, soft towel, rub some Mirror Glaze on the windshield, the same way you'd wax your car. Let it dry while you're getting the other windows, then come back and polish it off with another clean, dry towel.

You now have a sparkling clean windshield. Ready for a new load of bugs, plus some well placed fingerprints courtesy of your next load of passengers.

All kidding aside, if more people kept their windshields clean all the time, we would see far fewer midair collisions. Plus many more happy airplanes.

THIS ARTICLE WAS PROVIDED BY PHILIP LAM FROM AIR PROGRESS MAGAZINE.



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