

1988

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#43 A

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\$5.00

STRAKES & PRC Fuel System If this applications package is worth it, please forward \$5. Otherwise simply return it to David Orr, 11451 Berwick St. Los Angeles, CA 90049

WARNINGS

This is what I have learned from others, I have no expertise in chemistry, construction or formulating plans. Use PRC and these ideas on the basis of your own decision, realizing that there is a disclaimer on file at RAF by PRC based on the fact they cannot be sure that homebuilders will install the stuff right.

Other options: You may simply do it according to plan. Furthermore there are other options available. Ronneberg, who has assisted a number of builders, is convinced a fine weave glass cloth (4oz) layed into the nearly completed strakes eliminates pin holes and gives strength to what is otherwise simply thick epoxy with no added strength. See also all the warnings on the cans which is important enough that it is set out fully below.

Required reading: See the attached articles on Auto Fuel and the Paul Prout article on MOGAS and PRC before reading on. By the way, Paul sells a great fuel guage, soon to be MOGAS compatable. See also the MEK warning I attach for your edification.

Prep work: See the Harris' sheet for prep work. You will want a fan forcing air out. You will probably want the plane up and level for ease of back and even flow in all corners. Be sure to walk around the aircraft after each batch is 3/4 done to check for missed corners, sides or thin spots. Have your blisters and fuselage under the strakes taped and ready for application before you open a can. I found a 2" paint brush and 4" throw away close knapped roller was best. Why not cross out the parts of the strakes that are not fuel tank to avoid wasting the stuff. Don't just wear gloves and mask. Wear goggles and long sleeves-no matter the weather, I'm still scratching the stuff off my upper arm along with armhair now three days later. Put a single width of silver tape over the fuel guages so you don't have to scrape them later.

Tid bits: One builder mentioned that the leading cause of leaks is the leading edge drains. He suggests that placing the leading edge drains can be accomplished by the following method. Many builders have had leaky drains over the years because they don't realize that the drain plugs/valves are pipe threads that actually taper. They cut the threads too deep for the plug/valve. They also use the RAF advised 1/8" metal which is too thin. Use 1/4" alum. for best thread purchase, but first drop the nose of the aircraft to approximate parking position, pour water into the bottom half of tank carefully and place the aluminum "level" with the water. Blow out enough water that the aluminum is the lowest point in the strake in this position and then use a pencil to mark the water's edge in the strake. Leave the drain untapped, replace the water, not with micro, but with bondo which holds onto sanded aluminum well, is fuel resistant and light enough for this purpose. Be sure the hole you drill in the aluminum is the lowest point in the tank so you can obtain all the water when you drain your tank. One builder suggests flush drain valves by Manufacturing Division Inc. Model 5391-187 from Jeff Goldberg (SQ 2) for \$10.60. 805-252-9552.

The strake slopes gently into the fuselage and you may have observed that some builders build little raised "heavy weather" edges (lips) along the fuselage edge to keep items in the baggage areas from falling into the cockpit. Be sure to add this part after placing your tapes from strake to fuselage as the joint is structural and should not be weakend by taking a detour over the lip you place in. Add the lip afterwords.

Before you close your strakes up, you may consider what has been seen in Santa

Monica recently, an 1/8" plexiglass window on the bottom of the baggage area (roughly a parallelogram with enough original strake around it to provide strength. The builder also placed a window adjacent to his front left elbow for the pilot. I have done the former and will use 2 ply uni around the window to replace the strength removed. I have no idea if that is enough.

You may consider adding external fuel gauges before doing all this sealing. It would only add integrity to seal last of all. Paul Prout sells good gauges for over \$100, soon comparable with auto gas too. Clayton Kau suggests the nearest 1" of the aft baggage wall can be replaced with a white fuel resistant layer, a second cut out layer and a final clear layer of plexyglass which makes a cheap version of what Prout is selling. Test the stuff in a can of gas first, material and glue!

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Ordering PRC The distributor of PRC is Wilco associates (213-538-4510). To order call and ask for Anna. Ask for the PRC 2912 kit. She will supply 6 cans which include part A & B PR 1560-MC green primer (1 pt), A & B in white PR-2912 and A & B in black PR-2912. (Paul Prout and RAF didn't feel they could distribute PRC tank lining material when PRC placed a disclaimer on its use in homebuilt aircraft. Why PRC would then go ahead and provide it at all is a mystery to us girls). For a no-dialogue videotape on PRC's first trial installation on the Harris plane, contact David Orr 213-488-7173. 949-248-5725

To use epoxy and PRC?: I am asked frequently (or is it told) whether the plans-specified heavy epoxy lay up should precede the PRC. PRC says no. Melville says no. It probably weighs the same and does not need to be redundant. If the PRC failed and you needed the epoxy, where do you think the PRC material would go? Into your carb! You would have to strip the whole tank if you survived the forced landing. So if you are of a mind that this tank liner, based on 30 years of aviation fuel tank technology, may need some backup, why not just forget the extra expense and weight of PRC, unless you are sure you are going to use MOGAS. With RAF concerned that the apparently uncontrolled levels of Toluene in MOGAS resulting in a leaching of Epoxy from strakes with the resultant need of replacement of that vital part of the aircraft, PRC material would be a neat solution.

SKIN, LUNGS, & EYES Please read the attached on the dangers of MEK. Wear Goggles! You should wear long sleeves, this stuff sticks to the hair on your arms like your worst vision of a band-aid. This stuff smells so bad you should have 3 friends do the work for you. If you can't, mix up batches instead of the whole. Then save some for the sump blisters you are bound to forget. Wear a charcoal air filter-I went un-gassed while the rest of the hole-in-the wall threatened ejection and banishment.

PRIMER The Primer is a shelf item that PRC recommends. It is green and very thin. It will be even thinner if you don't open the green one, stir the muck off the bottom, close it up and really shake it the second time. It hardly seems like it will cover. And the final result is a little opaque even when you let it dry for 48 hours as PRC orally instructed.

For you who fly with glasses, I set out here what can be found on the primer label: Small Primer Can:

COATING CORROSIVE PREVENTATIVE FOR AIRCRAFT INTEGRAL
FUEL TANKS. MIL-C-27725B TYPE II CLASS B

This product consists of a Part A & a Part B
Only Parts A & B from containers with the same
C numbers should be mixed together.

P.O. NO.:26029
C-5083861 MFD. 8/85

PRC APPLICATION The 2912 is best installed after 48 hours after the primer. You need to breath anyway! The only reason you have black and white is to provide a contrast to show up areas you missed with the first layer. Because the green contrasts more with the Black, and White covers black with difficulty, I applied Black first. I figured the joints were most important, followed by sides including all notches in baffles, then bottoms and last the inside baffle surfaces. The 1 qt actually gave me enough for one full cover of all surfaces (except taped areas for flox when gluing top on.) and a second in the same color except for parts of the interior baffling. I also applied the stuff in batches because I want left overs and had no helpers willing to gas themselves. PRC advocated waiting 2 hours before applying the other color over the first. White over Black really looks basically grey at first. In fact at every stage you will wonder whether this thin coat is really going on thick enough. Of note, I don't believe that an average soul will need extra material. But if you have left overs (Unmixed), please forward it to me so I can supply the poor fool who forgot to finish his blisters and is purist enough not to just epoxy them.

Again, for those with eye problems: The PR-2912 White or Black cans have the following instructions:

Smaller Can:

C-06841

Mfd: 8/85

Directions for Use:

Stir Part A and Part B to uniformity before use. Mix in the ratio of 100 parts B to 90 parts A by weight; or 100 to 100 by volume.

WARNING: HARMFUL LIQUID AND VAPOR. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. Contains an asocyanate prepolymer. Do not breathe vapor. Use with adequate ventilation. Do not get in eyes, on skin or clothing. Wear rubber gloves and goggles. Keep container dry and closed.

IN CASE OF CONTACT: For eye contact, immediately flush with plenty of water for at least 15 minutes and obtain medical attention. For skin, promptly wipe off excess, and then scrub with scouring soap and water. Remove and wash contaminated clothing before reuse.

PRC

PR-2912 WHITE (OR BLACK)

PART B

#32 KIT

NET COMBINED CONTENTS; 1 U.S. QUART

It has the same published disclaimers etc.

The largest can adds:

See Part B for Mixing Instructions.

WARNING; CAUSES IRRITATION. MAY CAUSE SKIN SENSITIZATION

Avoid prolonged or repeated contact with skin.

Wash thoroughly before eating or smoking.

Avoid exposure to vapor.

Wear rubber gloves or use protective hand cream.

IN CASE OF CONTACT: Wash thoroughly with waterless

Note: Do not open or mix until ready
to use. Keep Container Tightly
Closed when not in use.

SEE PART B FOR MIXING INSTRUCTIONS.

FOR INDUSTRIAL USE. KEEP OUT OF THE REACH OF CHILDREN
Recommendations for the use of this product are based on tests
we believe to be reliable. Manufacturer and seller are not
responsible for results where the product is used under
conditions beyond our control. Under no circumstances will
Product Research & Chemical Corporation be liable for damages
to anyone in excess of the purchase price of the product.

PRODUCTS RESEARCH & CHEMICAL CORPORATION

5430 San Fernando Rd., Glendale, Calif. 91203

- 410 Jersey Ave., Gloucester City, New Jersey 08030

Made in USA

SHELF LIFE: 1 YEAR AT TEMP. BELOW 80°F.
WHEN STORED IN ORIG. UNOPENED CONTAINERS

WARNING!

Flammable Harmful Liquid and Vapor

May Cause Allergic Skin or Respiratory Reaction

Contains volatile solvents. Contains an isocyanate compound.

Do not breathe vapor or spray mist. Fresh air applied standard painter's
hood or full face respirator must be worn by all personnel entering areas
where the material is being applied or has been applied until all vapors
have been exhausted. Use with adequate ventilation. Do not get in eyes,
on skin or clothing. Wear rubber gloves and goggles. Keep containers dry
and closed. In Case of Contact: Immediately flush skin or eyes with plenty
of water for at least 15 minutes; for eyes, get medical attention. Remove
and wash contaminated clothing before reuse.

WF1560MCXXB0012

PRC

PR-1560-MC

Part B

12 FL.OZ.UNIT

NET COMBINED CONTENTS: 12 FL.OZ.

The larger primer can states in addition to the above warnings:

DIRECTIONS FOR USE:

"MECHANICALLY PAINT SHAKE THE
PART B CONTAINERS PRIOR TO USE. THEN
MIX THE ENTIRE CONTENTS OF THE PART A
CONTAINER WITH THE ENTIRE CONTENTS OF
THE PART B CONTAINERS, OR MIX IN THE
RATIO OF 1 PART A TO 2 PARTS (ed: This is different than 2912 ratio).
PART B BY VOLUME."

PR-1560-MC

PART B

12 FL.OZ.UNIT

NET COMBINED CONTENTS: 12 FL.OZ.

cleaner or soap and water.

FLOX Take off your tapes when dry and carefully pull off the cover to your fuel guages.

AFTER To test fuel pressure on the tanks, install all gas lines and fuel selector valve and set it to left or right. Tie two or four vent lines together using an Flare fittings and pressurize tanks from fuel feed line on firewall with bicycle air pump having an altimeter in the line. take the altitude down 1500'. I am amused that 3 people have found their much sought leak in the altimeter itself. Take a hint if the pressure drops at the same speed on both tanks. Also, the leak, if you use a sniffer, may be several feet out in related structure.