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KR-1 KR-2

NEWSLETTER

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Issue #5

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Well, it looks like I left a couple of items off of the "Info Requested" list, namely fuel tanks and wing tanks.

Since I haven't made my own wing tanks yet, I went to the guys at Rand-Robinson to see what they could come up with. One thing...they are all fired up over is an electric fuel transfer pump just being tested on the KR-1 & 2 with very good success. The pump is actually a windshield washer pump made by Anco. (stock #2312) cost is approx. \$7.00 at most auto parts stores. A few minor modifications are necessary...mostly for sealing against leaks.

For you builders without an electric system, try one of Fred Kellars' ideas. Fred uses a fuel pump from a Kohler gasoline engine mounted on the back side of his instrument panel with the arm thru the panel to be hand operated, not fancy but very dependable.

A few builders plan on using an electric fuel pump from Chevy Vega. I haven't heard yet what kind of results they are getting but it should work O.K.

Another item is auto engine conversion...a lot of builders are looking for information on converting VW and other engines to aircraft use.

BUY-SELL-TRADE

Full scale prints for GA(W)-1 airfoil...48" & 36"...\$3.00 per set. ED FRAZIER 503 N. Central Ave. Brownsville, TX 78520

VW engines...need rebuilding...one 1500cc @ \$150.00..two 1300cc @ \$100.00 each ROY DUNN 1009 S. Kansas Liberal, KS 67901

FOR SALE...Revmaster 2100D engine, 14 hrs TT, 1½" prop extension, top mounted carb...\$1,350.00 RICH FRIEDMAN 2922 Bonn Wichita, KS 67217 or PH. 316-942-8729

FOR SALE...Lowest price anywhere..canopies..KR-1 \$56.00 KR-2 \$67.00 Epoxy resin \$17.50 gal. Kit Aircraft slip indicators \$18.00 Order from THE AIRPLANE FACTORY 7111 Brandt Vista Ave. Dayton, OH 45424

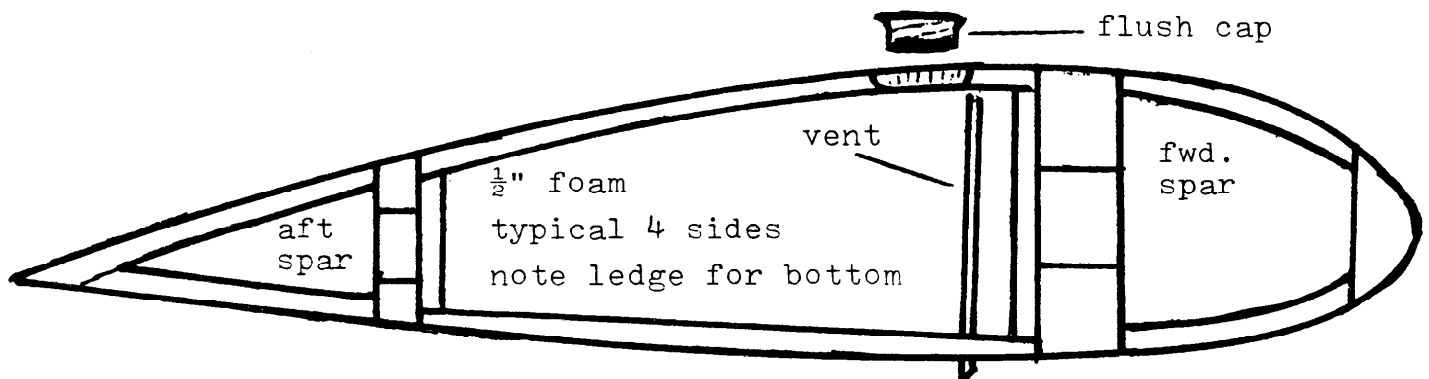
EXPEDITE BUILDING...Plans for constructing a foam shaper for \$5.00 One step shaping of wings, horizontal and vertical tail surfaces. No sanding of foam required. Send \$1.25 to L. PRINCE 4460 Dayton Rd. Lot 26 Springfield, OH 45502

BITS & PIECES.....the plane everyone is looking at in the uncaptioned photo on page 44 of Oct. Sport Aviation is George Andrews' sharp KR-1.....Rand-Robinson is going to open a new 'skunk works' soon. First assignment is to be the KR-3 Amphibian, Hopefully in time for Oshkosh.....apologies tendered to all who tried to call and didn't get through. My correct phone number is 714-897-2677....Ken reports several people interested in flying to Oshkosh '76 as a group..going to firm up planned route shortly....Sept. issue of Sport Aviation should be required reading for all builders, a very informative issue.

IMPORTANT NOTICE!! It has been pointed out some builders are using foam on top of their spars. The structural integrity of the wing requires that the dynel/epoxy skin contacts the spars directly.

SO YOU WANT WING TANKS.....if you have already completed your wings there's no problem....if you haven't finished them you can save a step by leaving the space between two inboard foam ribs open on the bottom of the outer wing panel.

1. Remove square section of foam/dynel skin on underside of outer wing panel between forward and aft spar and first two foam ribs.
2. Coat all four sides of opening with epoxy and line with  $\frac{1}{2}$ " foam. Foam liner should form ledge for tank bottom later. Use plenty of epoxy, especially in corners.
3. Cut hole for filler cap at highest possible location and epoxy cap in place. A flush cap can easily be made from a quart size plastic bottle.
4. Epoxy 2" wide strips of dynel in all corners and around filler cap on inside of tank and allow to cure.
5. Cut a piece of 1" foam for tank bottom. Cover one side with two layers of dynel/epoxy.
6. Line inside of tank with two layers of dynel/epoxy. Make sure there are no air bubbles or pockets. Allow to cure.
7. Use  $\frac{1}{4}$ " aluminum tubing for fuel line and install inside tank so pick-up will be at lowest point in tank and exit line will be readily accessible for hook-up when wings are attached.
8. Trim tank bottom to fit and epoxy in place..make sure there are no gaps where leaks can occur. Use plenty of epoxy and weight around edges to assure proper sealing. Allow to cure.
9. Sand and shape bottom of tank to airfoil contour.
10. Drill  $\frac{1}{4}$ " hole and epoxy vent in place. Vent should extend thru bottom of tank to  $\frac{1}{4}$ " from highest point inside of tank...near center as possible to  $\frac{3}{4}$ " outside bottom of tank.
11. Apply one layer dynel/epoxy to outside tank bottom...overlay four inches. Allow to cure and then fair in with rest of wing. File or bend a slight angle on forward side of vent tube to provide positive pressure to tank when flying.
12. Your wing tank is now ready to check for leaks. There shouldn't be any leaks but if you find a minor one a neoprene slushing compound would take care of it.



You're going to need a flush cap....a simple inexpensive one can be made from a plastic refrigerator bottle. The bottle is cut off  $\frac{1}{2}$ " below the cap, then the small section of bottle with cap in place is turned upside down and filled with epoxy. After epoxy has cured, remove cap. Cut a circle the same size as the cap in the top of your wing at the uppermost point (about 2" from the outer rib). Use a rasp or very coarse sandpaper to rough up the outside of the cap. This will allow a better bond when the cap is epoxied in place, upside down, in the hole you cut in the wing. Bottom of cap should be at least  $\frac{1}{8}$ " below top of wing. The cap now becomes the filler neck by cutting a hole thru to tank...the small bottle neck is filed to contour and is now the cap. Cut a slot in this cap for easy removal.

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## QUESTIONS & ANSWERS

- Q. The aileron actuating rod, how is it made?
- A. The rod is  $\frac{1}{4}$ " steel threaded at each end for standard rod ends. Length of the rod is governed by distance between aileron control horn and bellcrank.
- Q. Are there any improvements in fixed pitch props? Surely Hegy, Smith and the rest of the wood carvers won't sit back and let Warnke's ground adjustable win all the marble.
- A. If improvements have been made, I haven't heard about them. I did hear someone was working on using synthetics for props.
- Q. Has anyone worked out a system for putting landing lights on the gear legs?
- A. Not that I know of, but it should be fairly simple to do. Just install and wire up....then fair in with foam/dynel/epoxy.
- Q. How did Rand arrive at the llg limit for the KR-1?
- A. Thru stress analysis of airframe components....the wings were sand bagged to 9g with no problems.

Several drawings and letters have been coming in and I intend to get as many as possible in Issue #6. Also due to space requirements, I am considering leaving out the names and addresses of new subscribers and use the space for tips, drawings, etc. I'll leave it up to you, so lets hear some pro & con.

A lot of letters have mentioned KR builders should form a club and arrange fly-ins, etc. I intend to look into the possibilities.

E.K.

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*class #5*