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KR-1 KR-2
NEWSLETTER

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Issue #16

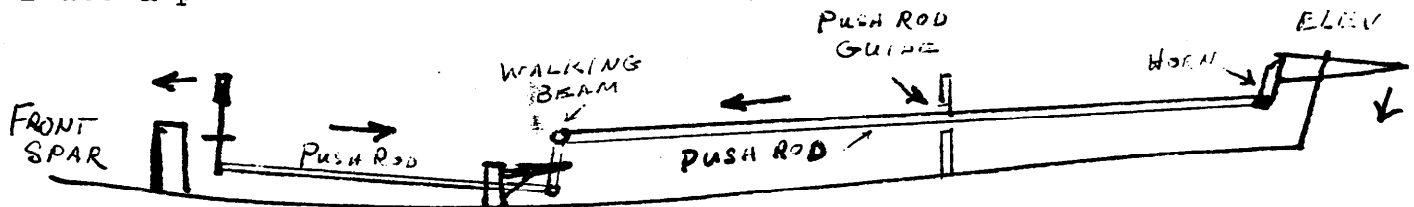
October 1976

A couple of issues back, I ran a drawing of Frank Walker's fixed gear KR-1. Since then I have received numerous letters wanting more details, measurements, etc. Frank has obliged with pictures & information so all interested builders can use it to their best advantage.

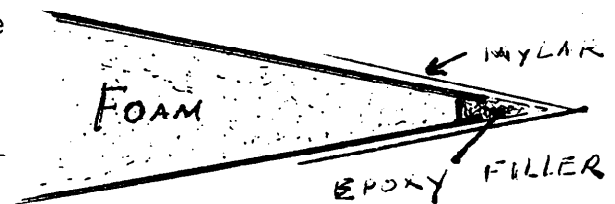
Seems there is always room for improvement even in a good idea. Larry Zepp has sent in modifications to Tom Speakman's speed brake that looks very good. Also, one of our Canadian builders, Bob Briggs, has sent in some interesting new methods in foam/epoxy/dynel construction. The following is from his letter.....

"Ernest, I think I can offer some very useful tips to other KR-2 builders which I'll list below.....

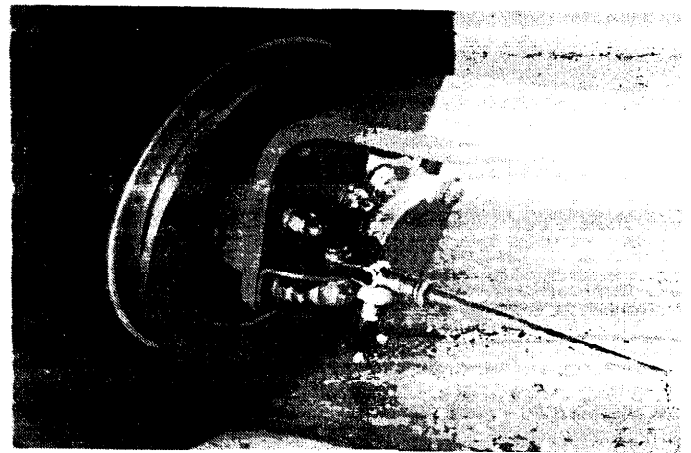
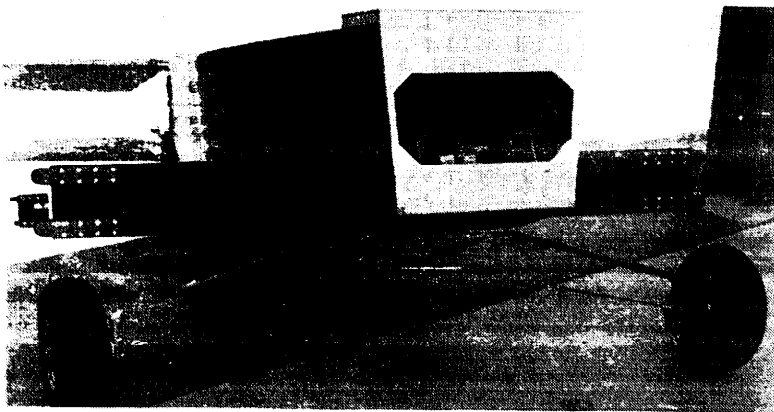
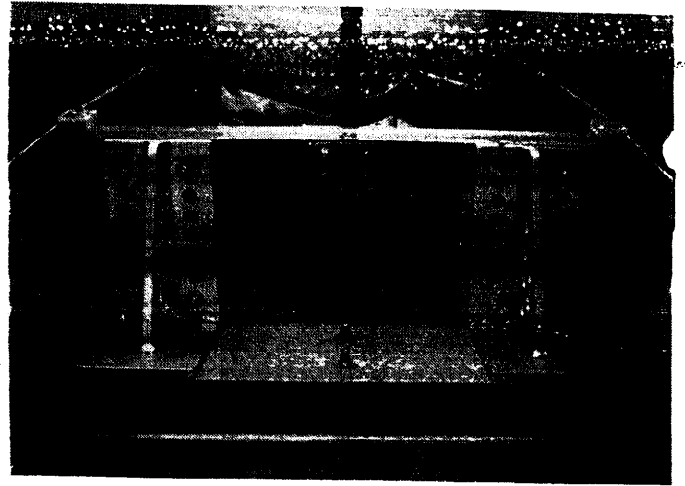
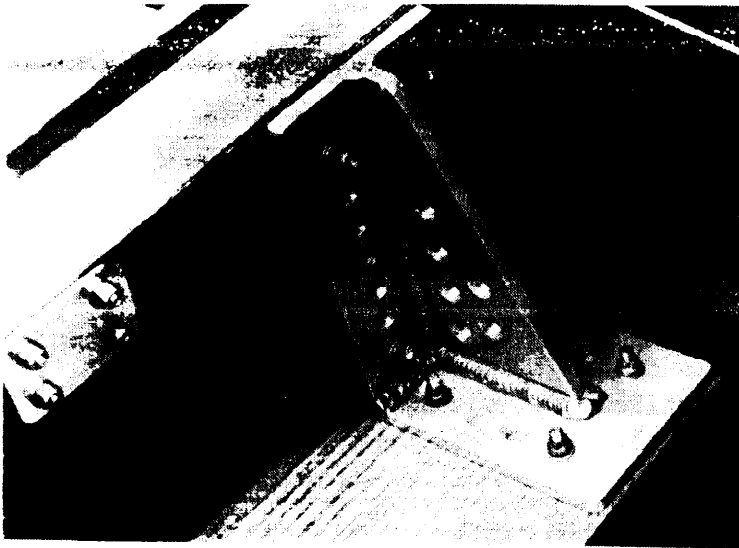
1. Forget about wax paper, it's obsolete! Mylar 4 mil is in! It works terrific & the finish is like glass.
2. Sanding is out! Scraping is the thing! A good quality hardened steel paint scraper of the curved blade variety is the best preferably 1 3/4" wide.
3. A hot melt glue gun is terrific for sticking foam together; cost approx. \$15.00.
4. Wing tanks in center section can work fine & hold 4 imperial gals. ea. Also adds good bracing to wing, lots of support for wing walking.
5. I use a push rod for elevator control; works fine.



6. Trailing edges...bring dynel up close to edge but don't overlap or wrap around. After curing, trim back with wood plate approx. 1/8" (see drawing). Fill with glass fortified epoxy (quite thick) after filing out about 1/8" of the foam. Then take a piece of Mylar 4 mil polyester sheet, cut about 2" width & fold it down the center to a sharp edge & it will remain bent, fit it over trailing edge & tape in place until cured, then remove & voila! a lovely trailing edge."



On the back page of this issue are a couple of hints on the use of liquid foam. If you haven't tried this method of foam construction yet, you're in for a pleasant surprise when you do! It makes a sometimes tedious job very easy. There is, however, a note of caution.....it has been reported that some builders found the liquid urethane foam expands when heated, long after the initial set up. Apparently heating retriggers the reaction. This was brought out at the plastics forum at Oshkosh & reported by Larry Zepp. I applied heat (from a hair dryer) to some work in which I had used liquid foam, with no noticeable results. If you do get a delayed expansion with the liquid foam you use, it shouldn't prove to be a problem. Just heat it, let it cool, then sand as usual.



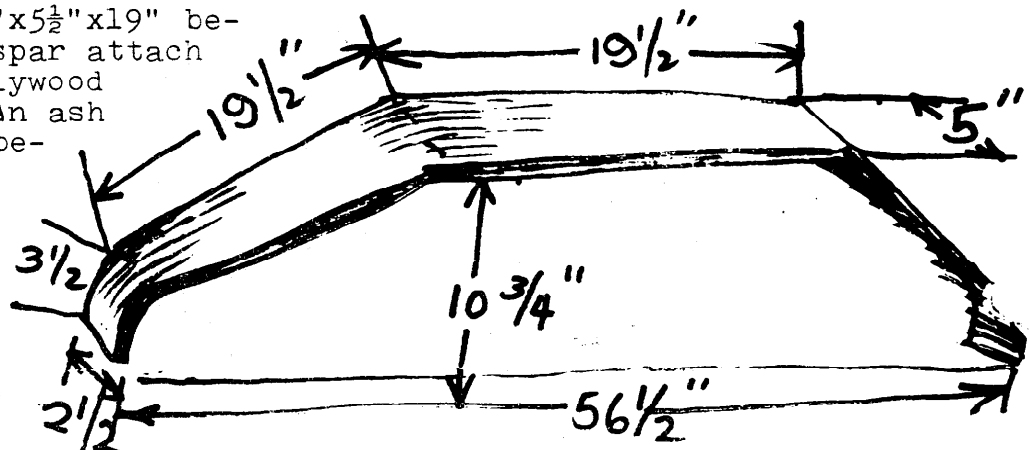
Ken Rand's wheels are $10\frac{1}{2}$ " diameter. I installed Cleveland 500-5 wheels & brakes which are $13\frac{1}{2}$ " diameter. The larger wheels will allow landings & take-offs on other than hard surfaced runways.

The landing gear is made from $\frac{3}{8}$ " 6061-T6 aluminum & is braced by two $\frac{1}{4}$ " 4130 steel rods. The rod/gear attach brackets are made from .090 4130 steel.

The purpose of the $\frac{1}{4}$ " steel rods is to prevent gear flexing as there are only a few inches clearance between the top of the wheels & the bottom of the wing.

The landing gear/spar attach brackets are made from three peices of $\frac{3}{8}$ " 6061-T6 aluminum heliarced together.

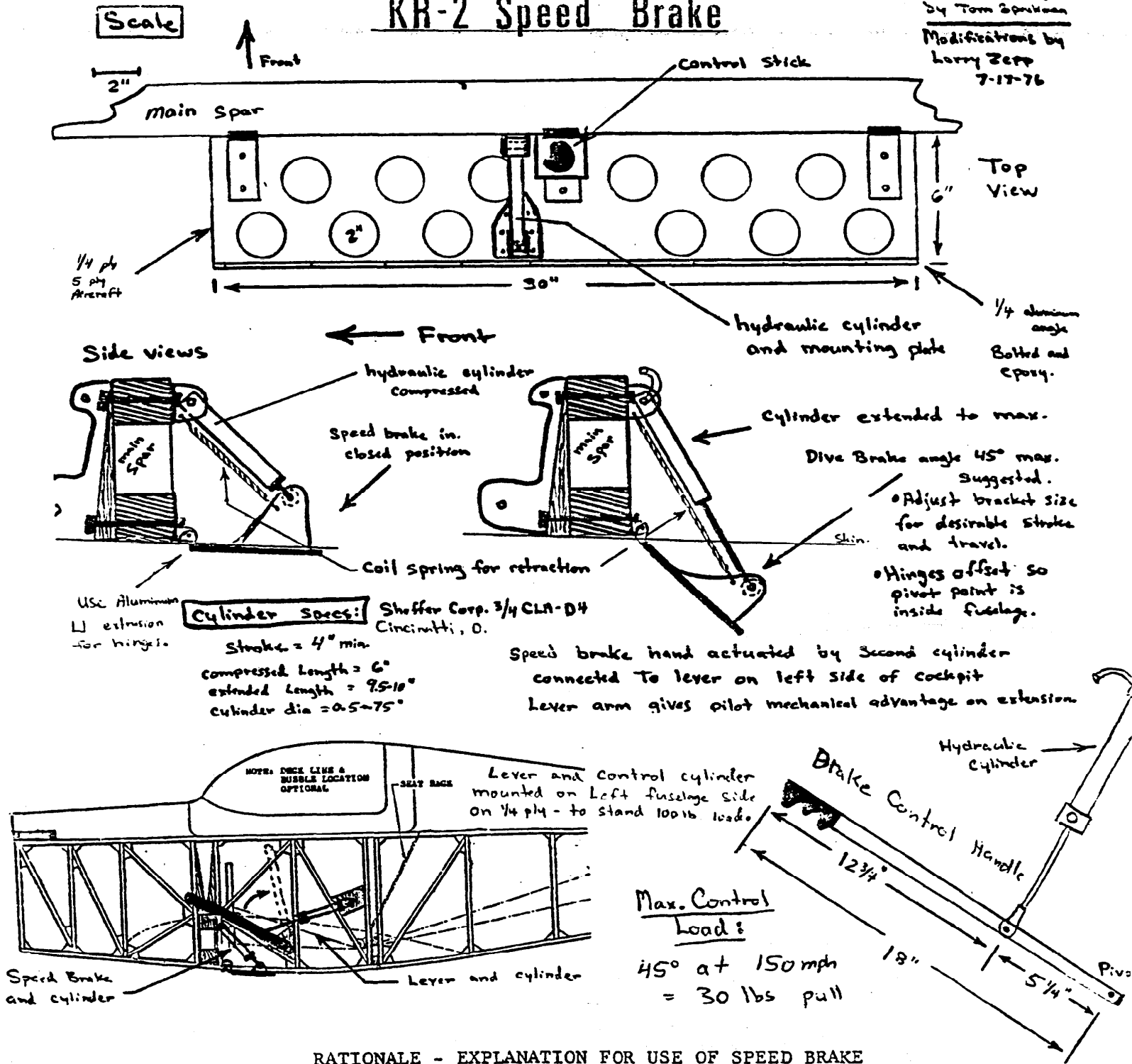
There is an oak plank $1 \times 5\frac{1}{2} \times 19$ " between the landing gear/spar attach brackets & the bottom plywood skin of the fuselage. An ash wedge will be required between the spar & the bracket to obtain the correct seating angle between the bracket & the oak plank.



KR-2 Speed Brake

Original Design
By Tom Spruwan

Modifications by
Larry Jeff
7-17-76



RATIONALE - EXPLANATION FOR USE OF SPEED BRAKE

- (1) I believe a speed brake is a modification that makes the KR a more versatile airplane and allows the pilot to easily vary the speed and glide angle.
- (2) To me, ease of control operation and placement is very important. I feel you should pull back to activate the speed brake and that this handle should be right next to the throttle.

From Bill DeFreze of Dublin, CA....."As Fred Richen said, I found the liquid poly foam the greatest--it not only sticks to foam but everything else it comes in contact with...wood, metal, skin, shoes, clothes, hair, etc. I have found nothing cuts it except sandpaper! My bride thought I was nuts one evening when I came in from my garage with a piece of sandpaper sanding my hands, shoes, clothes, etc. I think I have found a very successful method of applying poly foam. For what it worth, here it is.....

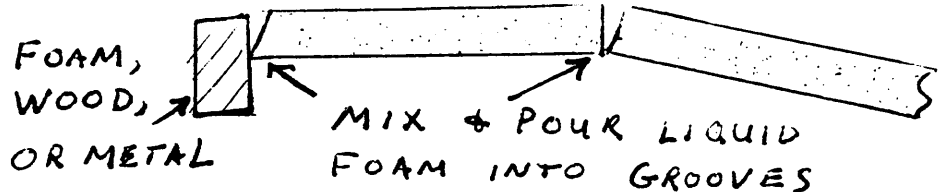
Fit foam panels as close as possible. Remove & bevel top side:

Mix & pour foam in groove.

For those of you who are not familiar with poly foam, Fred neglected to tell us the main characteristic of the beast. He said to work quickly. I

mixed some in 1/2 cup, started painting with my 10¢ acid brush etc., etc., I went back to the cup for my third brush full and this stuff was attacking me and the KR-2 and the garage and everything in sight!

On top side of fuselage there is no need to bevel, as Fred says. The poly foam is as strong as, if not stronger. One point to remember is to make sure foam has set before shaping as outside air temp does affect it. If you want to extend its "cup" life, put the mix in the refrigerator for about 20 min. before you mix. It won't be much longer but you will notice a difference and with this stuff, you need all the help you can get."



FOR SALE...Westach electric oil pressure & oil temperature gauge with senders--like new...\$35.00 Contact Frank Walker at 10522 Santa Gertrudes #35 Whittier, CA 90603

Rand/Robinson reports that their 3-blade prop is performing up to expectations. Sales are increasing daily as word of the low cost, wood blade prop is getting around. Next issue will have an article on how to adjust the prop to match your engine.

Ken Rand has just returned from his trip to the East coast (via commercial lines as he is still recuperating) and maybe he has picked up a few things to pass along.

See you next month,

Ernest Koppe

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