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KR-1 KR-2

N E W S L E T T E R

Ernest Koppe

6141 Choctaw Dr.

Westminster, CA 92683

Ph. 714-897-2677

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August 1976

The best laid plans etc., etc....last month's newsletter run into a log jam at the print shop. Seems they were swamped with orders all at once. In any case, the printer still has #13 copy while this issue is being put together. Maybe I should have used a different number.....

As promised in Issue #13, the photos from Ray Ellis are in this issue. Looks like Ray has done excellent work on his KR-1.

Drawings this month are on rudder pedal/dual stick assy and an offset throttle linkage for the very popular Posa injector. Verne Lietz sent the dual control drawing. It is one of a complete set of drawings and instructions Verne will mail for \$1.25. His address is Box 234, Peshastin, WA 98847. The throttle linkage was worked up by Bob Stone. The idea was to put the throttle on the left side of the fuselage so the man in the left seat wasn't reaching across his body or removing his hand from the control stick to use it. Initial run-ups of the engine was made this week and it worked very nicely.

The tests of the three-blade prop has revealed an unsuspected flaw in the combination of materials. One blade of a prop being run under constant load at high rpm failed from internally generated heat. Another test was run with different blades with the same result. This effect has been investigated by the plastics engineers involved since the development of the prop began. They feel different materials will solve the problem. Unfortunately this means another lengthy series of tests and another delay. In the interim, wood blades are being manufactured. These blades will have fiberglass (maybe Kevlar) covered tips and will fit the existing three blade hub. Performance will be equal to the plastic blades. In spite of higher costs, the props will be delivered for \$190.00 as originally announced.

Ken Rand and Stu Robinson with the KR-1 and KR-2 will be at Oshkosh this year. The KR-3 will not be completed in time and will not make its' debut there. I am going to bring my family and will stay at the EAA camp grounds. Looking forward to seeing several friends met thru this newsletter.

Bought me a C.B. radio just for this trip and expect to hear from other builders along the way. Last year I expected to bring my KR-1 to Oshkosh "76", however this newsletter has taken over as #1 project. Maybe next year.....

Hey, East Coast!!!

Ken is planning on a cross-country in your direction this Sept. He will fly from California to Connecticut. Itinerary will be: Goodspeed Airport, East Haddam, Conn. Sept. 12, EAA Chapter 543 Fly-in at Georgetown, S.C. Sept. 17-19, EAA Fly-in at Shenandoah Valley airport, Harrisonburg, VA Sept. 24-26.

Next issue will have a report on any new KR aircraft that shows up at Oshkosh this year plus tips gathered from builders there.

See ya' at Oshkosh!!!

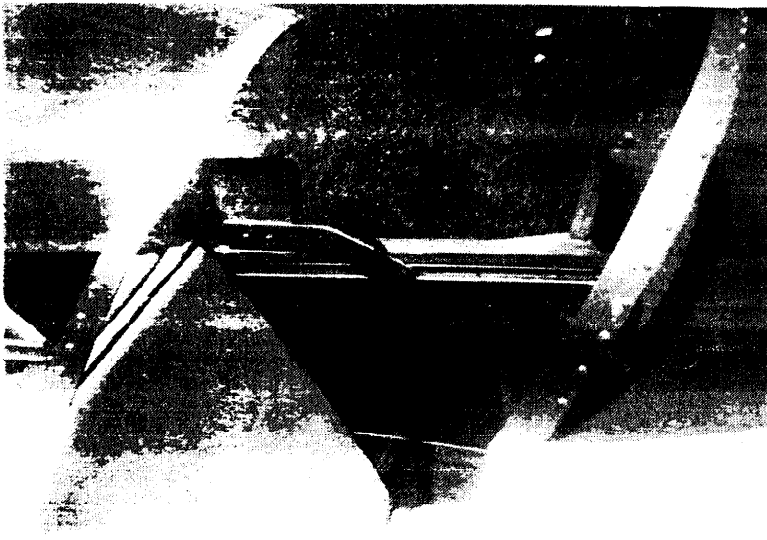


Here are three photos of the sliding canopy on Ray Ellis's KR-1.

Construction: Form the entire foam portion of the fuselage above the top longeron and fair it to the bubble. Cover the foam with wax paper or poly sheet and lay up the skirt using three layers outside and one inside. The dynel should overlap the bubble  $3/4$ ".

Stop the skirt at the point where the canopy and windscreen will part. Allow a 2" overlap over the rear deck.

After cure, cut the bubble and epoxy the windscreen in place.



The metal dividers are made from aluminum extrusions used between marlite or formica wall panels. They are "H" sections turned bottom up. Trim one or more of the edges to make them nest together and to accept a rubber air seal. They are formed with a rubber mallet and a soft block of wood.

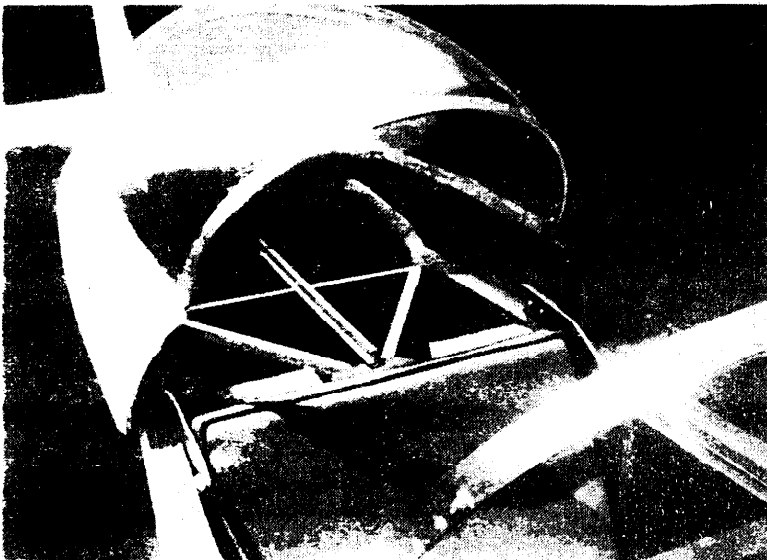
The tracks are single drawer tracks and are purchased from local hardware stores. The arms are made from .125 alum., the rollers come with the drawer tracks.

The rear track is raised slightly to prevent the skirt from rubbing during opening and closing.

The shelf in the rear half of the bubble is  $1/2$ " foam sandwiched between  $3/32$ " plywood and serves as a place to mount the rear track roller.

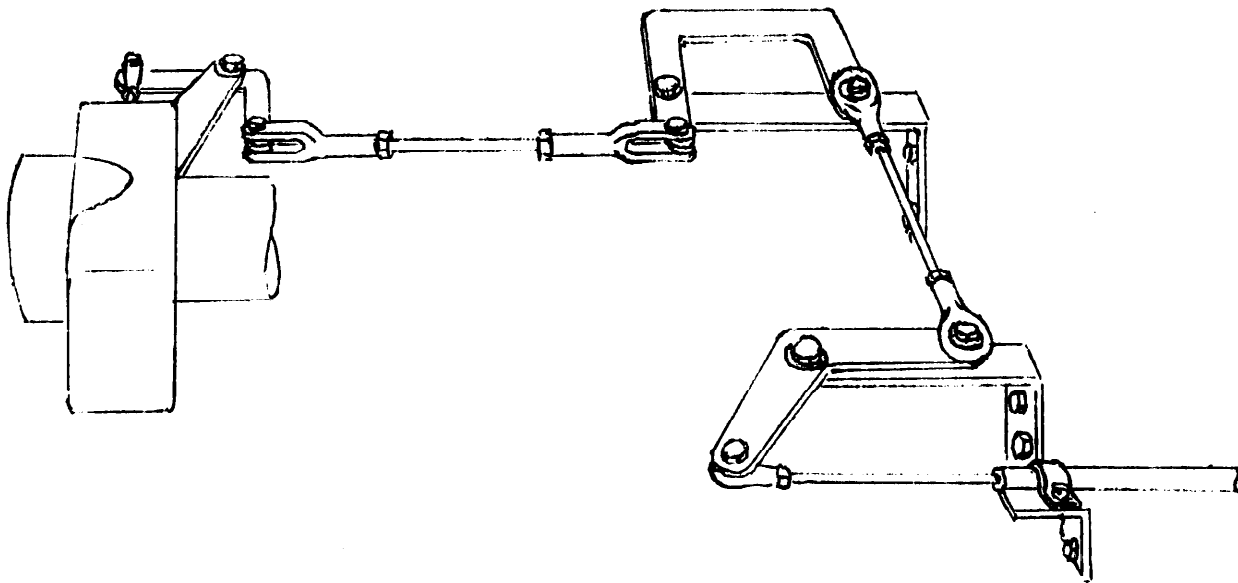
This arrangement leaves all 3 tracks inside the canopy, out of sight and out of the weather.

Ed. Note: Ray said he had reprints of these photos made & has a few left. His cost was 25¢ ea. & he will mail them for same. There are four photos. Write to: Ray Ellis 2416 East Douglas, Des Moines, IA 50317

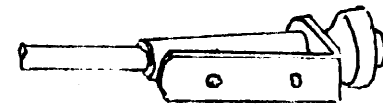


KR-2 THROTTLE LINKAGE  
by Bob Stone

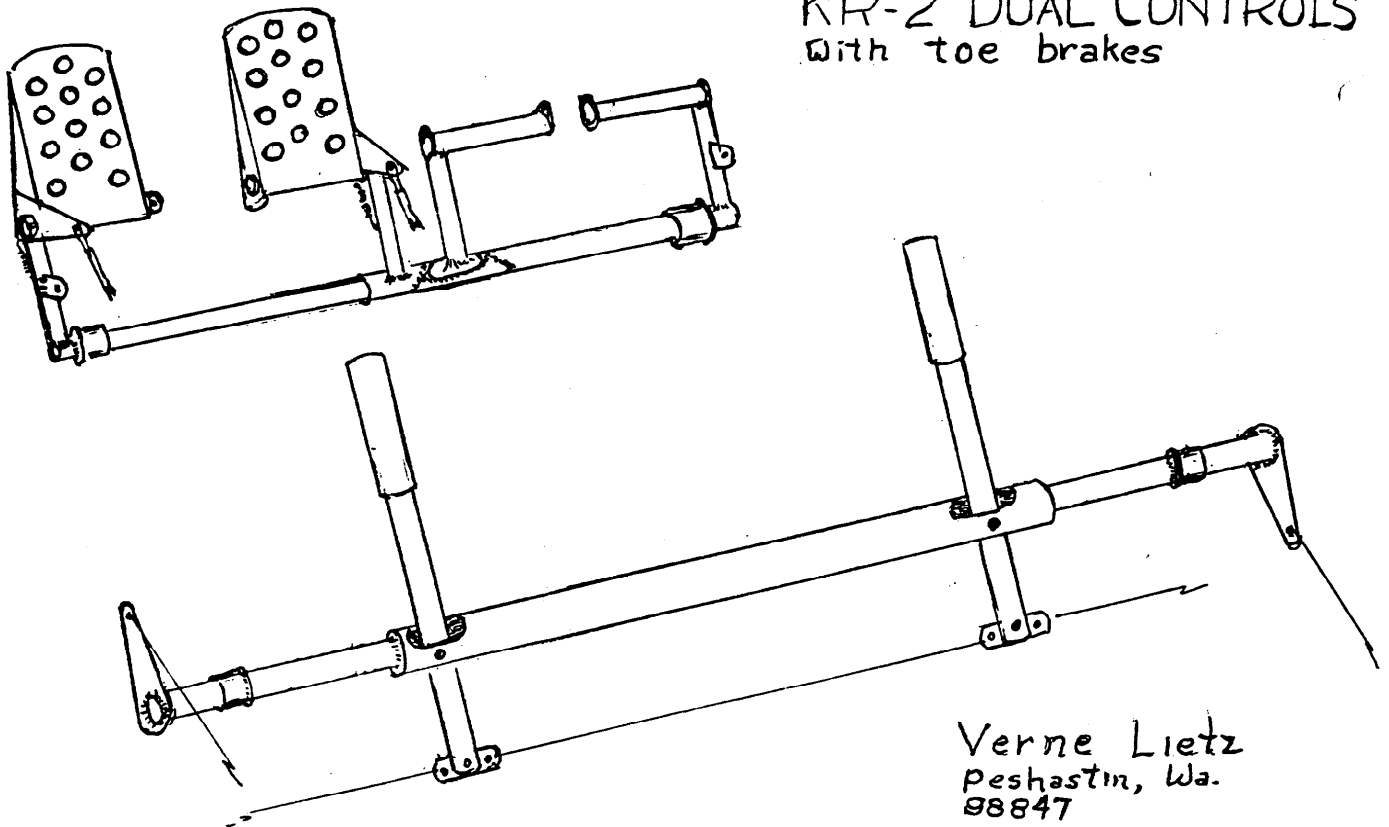
Since Ernest (Butch) Koppe and I are personal friends and partners on a KR-2 project, he asked me to furnish some information on the throttle assy that I designed and installed on our aircraft. (See drawing) The hardware is 3/16 bolts with washers and castellated nuts with cotter pins. Since this is in a very important part of the control system, positive locking type hardware must be used. The bellcranks are made of (20-24 T-6) 1/8" aluminum. The push rod is aluminum with 1/4" x 3/16" self aligning rod end bearings. Care must be taken to insure that all holes drilled in the bellcranks are the same distance apart, otherwise the geometric ratio will not be the same between the throttle control in the cockpit and the connecting point on the injector. The odd shape of the inboard bellcrank is so that it will fit and work around the engine mount. The advantage to this type installation is no cable bends at all. Mechanical leverage is shifted from firewall side to firewall center, through this linkage in a smooth manner. We could not mount the throttle in the instrument panel because it would have been awkward to reach with the left hand and also the gas tank was in the way thus the necessity for a throttle linkage system.



DRAWING  
by  
BUZZ ERMEY



## KR-2 DUAL CONTROLS With toe brakes



Verne Lietz  
Peshastin, Wa.  
98847

### TIPS FROM OTHER BUILDERS

I have two gallons of epoxy (from Wicks) which is now a year old. Cross linking has already begun making it unsuitable for use. I understand all resins do this over a period of time. Perhaps a word of warning to other builders about buying epoxy too soon before its' use. Might save some bucks.....Greg Van Erem.

Tips on foam construction from first had experience. (1) A hot melt glue gun is terrific for sticking foam together. Cost approx. \$15.00 anywhere. (2) Forget wax paper, Mylar 4 mil. is better. Leaves a finish like glass. (3) Sanding is out! Scraping is the thing! A good quality hardened steel paint scraper of the curved blade variety is best, preferably 1 3/4" wide.....Bob Briggs Ontario, Canada

Dick Johnson of San Antonio, Texas reports he built a control stick per B.J. Lempa's drawing in Issue #11. He ran into a problem with the elevator cables in that they would lock in full up or down position. Problem was determined to be caused by pivot point of the stick cable attach points not being in line.

All plans and drawings I have seen show the use of a standard pulley bolt to hold the prop hub. The bolt used with VW air conditioning is 3/8" longer, giving more thread contact with the crankshaft. Much safer I think.....Frank Walker