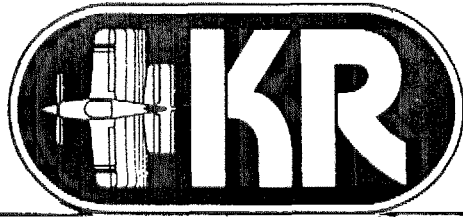


Issue no.86
AUGUST
1982



KR NEWSLETTER

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OSHKOSH '82

Once more Oshkosh is behind us. Once more it was bigger than ever before. Despite somewhat less than ideal weather, hundreds of thousands of people from all over the world were on hand to see and be a part of the largest sport aviation event in the world.

And the KR's were there...more than ever that had attended Oshkosh before and all were flown in. No static displays of unfinished projects were in sight, much to the disappointment of the hundreds of people who wanted to see how a KR was built. Sorry guys, maybe next year.

All in all there were 15 KR's on the flight line at various times though I only counted twelve at any one time. One fellow in a KR-2 was in and cut in one day and I missed him completely. Also there was a KR-1 whose owners name I never learned. Nice aircraft though, and unusual in appearance because of the small racing style bubble canopy. But then all KR's seem to be unusual in one way or another. Dan Diehl flew N4DD to Oshkosh again this year. That's seven straight years in a row. A remarkable record for any homebuilt, and one that won't be matched by other KR's for at least six more years. All the other KR's at Oshkosh had never flown there before. That's right, with the possible exception of the KR-2 that I missed N4DD was the only KR repeat performer.

There were three KR's from California, all KR-2's, and all arriving on different days. Wes Evans flew his award winning turbo KR-2 from Ventura, Lance Neibauer made his first long trip in his KR-2, arriving from Redondo Beach, and Norm Negus was a late arrival in his KR-2 flying in from Yucaipa, Calif. Lots of thanks are due these fellows for making the long flight. Maybe next time they can arrange to all make the trip together. It sure is a good feeling to look out and see another KR on your wing tip.

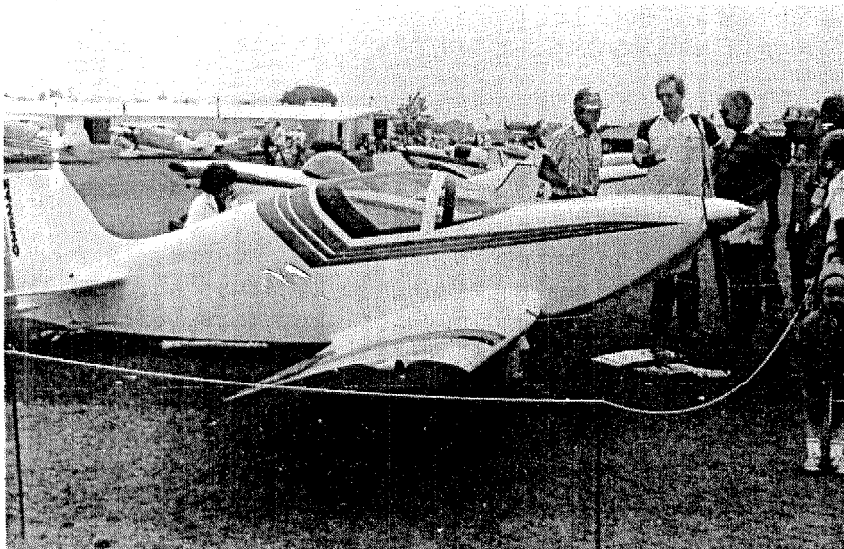
Speaking of wing tips, there were almost as many types of tips as there were KR's. Wes Evans' beautiful KR-2 was sporting a new pair of turned down tips since I had seen it at El Mirage last year. Wes credits the tips and about 3 more feet of wing span for increasing his climb rate by a noticeable margin. Also made the cruise speed a couple of knots faster. Bob Passmore whose KR-2 with the up swept tips featured in a Newsletter earlier this year also has an increase in wing span of almost 2 feet. I don't know if the tips or the increased span contributed to the phenomenal fuel economy Bob was getting on his flight from Tulsa but something was sure working right. Bob flew N81BP up with three other aircraft, a "Spam can" (Oshkosh slang for a factory built aircraft), a Vari-Viggen, and Dan Diehl's N4DD. At their enroute fuel stop, 460 miles and 3 hours along the way all four aircraft topped off their tanks. The Spam can took 49 gals., the Viggen took 29 gals., N4DD 15 gals., and Bob ran his tank over at 7.6 gal...let that soak in a bit...only 7.6 gallons! That's only 2½ gals. per hour at over 150 mph per hour! Bob was surprised even though previous fuel consumption checks indicated an average in the low 3 gph region. The other guys, including Dan, were astounded. For the curious among you, Bob's engine is an 1835 VW using a 32MM Posa that he and Dan built up using Dan's accessory case and my "Sting" exhaust system. It turns a Warnke "almost constant speed" prop.

The East Coast was represented too. Brian Benjamin flew all the way from North Carolina in his turbo KR-2. Brian has been a regular contributor to the Newsletter "Tips for Builders" section and it was good to see him and his aircraft at Oshkosh together. Mark Kaufman and his KR-2 spent a large part of the fly-in down by the aircraft camping area. A KR draws a crowd wherever it may be and Mark's KR-2 is no exception. I found it and Mark by going to see what the people were all looking at.

There was also a KR-1½ at Oshkosh this year. Actually it was built from KR-2 plans but narrower to make a sleek looking single place. N82JS was built by Jim Shrum as his own personal fun machine and it is not a new offering from R/R. It is a beautiful aircraft and I'll bet you'll be seeing more KR-1½s in the near future.

Wayne Peterson and Bernie Huseh brought their KR-2s to Oshkosh for the first time. Remember Wayne's flight report about 6 months ago when he test flew both his and Bernie's KR-2 on the same day? Bernie has since used his KR toward building time and experience for his private ticket and he and Wayne fly together regularly in the Minnesota skies.

There were some really sharp KR's this year and the judges for the Ken Rand Memorial Award did not have an easy choice. There were at least a half dozen KR's that could be considered as finalists. N511JS...a KR-2 with an eye grabbing metallic paint job, N514AJ...a clean, sharp, well built KR-2 by Don Moore, N42CW...A KR-2 that has received



an award from every fly-in it has been shown, N382L...you read about this KR-2 in the July KR Newsletter. It's hard to believe a KR this sharp was built in only a year. Beautiful job Lance. N82JS...the KR-2 after a crash diet. Seriously Jim Shrum has an outstanding aircraft with his KR-1½, N42630...August "Sport Aviation" has a full color spread on this sleek KR-2. Brian Henneman has built a KR that looks as though its cruising at 160 while its still sitting on the ground. The judges must have thought so too because Brian is this year's recipient of the Ken Rand Memorial Award and his KR was also awarded the trophy for outstanding VW engine installation

Sponsored by H.A.P.I. This aircraft shows what a dedication to craftsmanship can achieve. There will be other awards in this KR-2's future, just watch!

Three or four years ago, at Oshkosh a KR-1 was trailered in for display. It was back this year and flying. N80190 was the effort of Harry Chamberlain over a span of 10 years, 1972-1982. Welcome back Harry, you came in style!

Well, there they are, the KR's as I saw them. I didn't get to look as much as I would have liked because of a new business endeavor with Dan Diehl. If you were at Oshkosh you probably got down to the Ultralights and saw our "hydrolight" we call XTC (pronounced ecstasy). Showing our amphibious ultralight demanded the majority of my time at Oshkosh. See ya there next year.

ACCIDENT REPORT

Tom Smith is a designee for EAA Chapter 240 in Wilmington, Delaware. He sent the following report.

"We have 7 KR's in this area, 3 finished, the rest building. One crashed on the third flight. The "O" ring on the mixture sheared and part of it went into the orifice killing the engine. Pilot tried to re-start in the air but the post on the starter was burned off inside the starter shell. As he was gliding in a twin engine aircraft buzzed under him and the resultant vortices caused a loss of control and a crash. The twin continued on.

The KR pilot is asking Revmaster to take some responsibility after the FAA investigated and gave him a deposition as to the cause of the engine failure. When one of these starters gives trouble, it should be checked."

QUESTIONS & ANSWERS

- Q. I'm installing the vertical spar in my KR-2 and in checking the 7° angle I find it doesn't co-incide with the measurements for either length of the spar (40") or the distance from the end of the fuselage (4"). Which is correct?
- A. The length of the vertical spar is correct. The 7° angle may be adjusted as necessary to get the correct sweepback measurement (4").
- Q. Is it true that the pre-molded fiberglass cowling as sold by Rand/Robinson will not house a 2100cc VW engine?
- A. The new R/R cowlings require only slight modification to house any of the popular VW conversions. Lance Neibaur's KR-2 (as pictured in Newsletter #85) has a Rev-master 2100 and uses a R/R cowling.
- Q. Can any strength be gained by adding another web over the first on the center wing spars?
- A. Certainly, but there are hundreds of KR's with only one web thickness. It seems to be very adequate.
- Q. Is Safe T Pox 2410 Resin and Apco 2183 hardener suitable for construction of the KR's?
- A. I'm sure it would work very well for the fiberglass wing and control surface covering if it is the only type epoxy used. Some epoxies will not bond to another type epoxy.
- Q. What is the material used for the aileron balance weight brackets and how are they attached to the aileron spars?
- A. It is 1/8" 2024 aluminum or .090 4130 steel. They are attached in the same manner as the aileron control horn.
- Q. Is it necessary to move the engine forward to offset a C.G. change with wing tanks?
- A. No, the wing tanks are close enough to the C.G. so that there is no problem.
- Q. The 1/4" plywood shelf for the forward bulkhead (Ref. KR-2 drwg #3) is not provided by R/R. Is this aircraft quality plywood?
- A. I use marine grade 5 ply birch for this shelf as well as the firewall itself.
- Q. Does our common goal of a 450 lb. KR-2 include any avionics?
- A. Nope, the 450 lb. KR-2 is as basic and unmodified as possible. Knowing KR builders as I do there is a very little chance a 450 lb. KR-2 will ever be built.
- Q. Do you recommend the R/R stock landing gear assembly? I've heard of a more easily and dependable operating landing gear but don't know who to contact.
- A. The Rand designed landing gear is about as simple and uncomplicated as possible. Unfortunately it is not foolproof and is subject to problems. The first problem can probably be laid to somewhat ambiguous instructions (or lack of) in the plans book but if the builder will make sure everything is in alignment and working properly before drilling holes in any of the pieces he will end up with a serviceable landing gear. The next problem is also due to plans and has led to the various types of safety latches that have appeared in the Newsletter over the years. I refer to the notch in the down latch bar that holds the L/G in the down position. The plans show this notch as a nicely squared off 90° cut. This will not stay latched over the "I" channel when the aircraft is taxied over anything but the smoothest surface, even when the coil spring is added "as per plans". The answer to this problem is simple and would have saved many props over the years. The notch now shown as thus:



should be shown as this:

There are KR's flying that use only this simple fix and have never had the landing gear retract unexpectedly. There are other positive latch systems. Some have appeared in the KR Newsletter, most notably is the "Charlie Wells" type system as used by Wes Evans in his KR-2. Another good system is Rex Taylor's modification as used by Brian Henneman in his KR-2. (Plans are available from HAPI for \$4.00) Both of these systems are positive latching but are going to require some additional time to build and install. The next problem rests squarely on the shoulders

Questions & Answers cont.

of the builder...overweight aircraft. The KR landing gear was never designed for the weights some of the flying KR's routinely operate at. If you have beefed up your airframe here and there, added some features here and there, some instruments etc., etc., you will also have to modify or strengthen the landing gear. All this of course, adds pounds and pounds of weight and performance of your aircraft suffers accordingly. Always take a good hard look at anything you want to modify from the original plans.

- Q. Are there any temperature parameters I need to know when using R/R epoxy?
A. Ideal conditions for using the R/R epoxy are temps in the 70° to 80° range and humidity below 50%. I try to lay up all my woodwork under these conditions. The foam/glass work is not so critical and I usually mix whatever the current temperatures will let me comfortably use, small amounts (8 oz. or so) in 90° to 100° temps and larger amounts (1 qt. or more) in 50° to 60° temps. All depending on the quantity needed for the job at hand.
- Q. If the aft fuselage ply covered with fiberglass cloth?
A. No part of the fuselage is covered with cloth per plans other than areas where wing fillets or pre-molded parts are joined to the fuselage. Several builders have covered the entire fuselage with cloth as a protection from the elements, oils, etc.

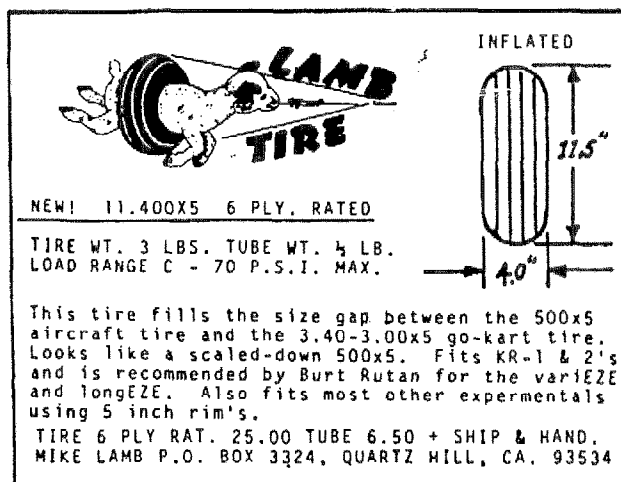
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FOR SALE...Rand/Robinson KR-1 canopy. Never used, still in protective plastic. \$65.00 plus shipping. Bill Tidmore, 1309 Briar Hollow Trail, Huntsville, AL 35802.

TRADE??..Have a Eiseman mag for my C75-12 engine (doesn't fit). I want to trade or? for a bendix, slick, etc. Ted Medin (714)748-0049 (no collect).

FOR SALE...KR-2 80% done, 2100 D Rev-master turbo charged engine and Maloof prop..\$4600.00. Jack Schultz, Box 406, Mesa AZ 85201 phone (602) 834-0702 after 6:30 no collect.



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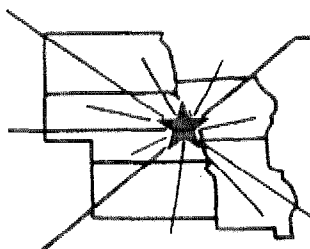
4.0"

This tire fills the size gap between the 500x5 aircraft tire and the 3.40-3.00x5 go-kart tire. Looks like a scaled-down 500x5. Fits KR-1 & 2's and is recommended by Burt Rutan for the variEZE and longEZE. Also fits most other experimentals using 5 inch rim's.

TIRE 6 PLY RAT. 25.00 TUBE 6.50 + SHIP & HAND.
MIKE LAMB P.O. BOX 3324, QUARTZ HILL, CA. 93534

FOR SALE OR TRADE...New R/R landing gear assembly - main gear and tail wheel, never used, \$100.00. Also new R/R plywood kit, 3½ sheets, \$150.00, plus fuselage sides already complete, \$50.00. Excellent workmanship. Glenn Brooks, Rt. @, Hazelton, ID 83335 (208)829-5174.

WANTED...KR-2 project. Prefer in and around the Texas (Houston) area but would consider information on projects in other areas. Contact Lance E. Herrington, 1203 Pinecroft, Sugarland, TX 77478 (713)494-6763 evenings.



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FLIGHT REPORT

I'm sending you the standard photo of this guy's version of a KR-1. I never saw one until I built this one so it wasn't influenced by anything other than the KR Newsletter and original plans. However, I saw pictures of "super tips" in "Trade-A-Plane" and made some using the outboard rib profile as a center guide. I built them together on the profile and cut them apart when epoxied in order to keep them equal. I don't know whether they do any good or know the efficiency over a standard tip. I do know that they were on before the new tips came out in the Newsletter. Obvious now, is the fact that they are too close to the runway for a wing down, cross wind landing. Also my flaps are only 1" above the runway for full flap landing. Anyway, my story is the standard one of a high speed taxi check down the runway turning into a flight because once the tail is up and you can see where the rest of the world is you don't want to quit there. However, the engine liked to cough at full throttle so I decided to keep it at 2800 RPM where it was smooth, and I made a closed traffic pattern and landed. Held 80 KTS throughout and searched for that big runway (8000' x 300') as I retarded the throttle over the over run. Landing was standard taildragger and I even drug the tail first! So after taxiing back in with a smile all over my face I felt all the work was worth it. Decided to leave it tied down at the airport and fly for real the next day. Discovered the R/R tailwheel bearing had all but failed after 1.5 hrs. of taxi and one take-off and landing. The next day I richened the Posa mixture one turn and pumped some more grease in the tailwheel and pressed out, anxious to fly more and higher. On the runway I "poured the coal to it" and began to drift right. Tried to be easy on the tailwheel by relaxing backstick and just using rudder but was still drifting right so tried to just get aileron by pulling it off. Hairy take-off by definition! Stall recovery at 10' in the air 30° to runway heading with engine not giving its all is something I don't enjoy doing everyday. Keep that tailwheel planted until you get some speed for the rudder to be effective! So I had to relearn some taildragger techniques. Anyway had a nice one hour flight with one stall series and it flew like any other airplane. One low pass down the runway followed by standard landing with 15° flaps. Must replace tailwheel before it falls off and do something with that Posa!
Noel Dunlap, 100 Dower Draw, Kila MT 59920



TIPS FROM OTHER BUILDERS

From Glenn Brooks, Rt.2, Hazelton, ID 83335..."Nowhere in the plans does it say the staples have to be removed. When stapling, lay heavy carpenter's string down the middle of your stapling line and staple over it. When the glue dries, pull the string and staples fly right out. Caution! wear goggles or protective glasses as some of the staples really fly."

OSHKOSH '83

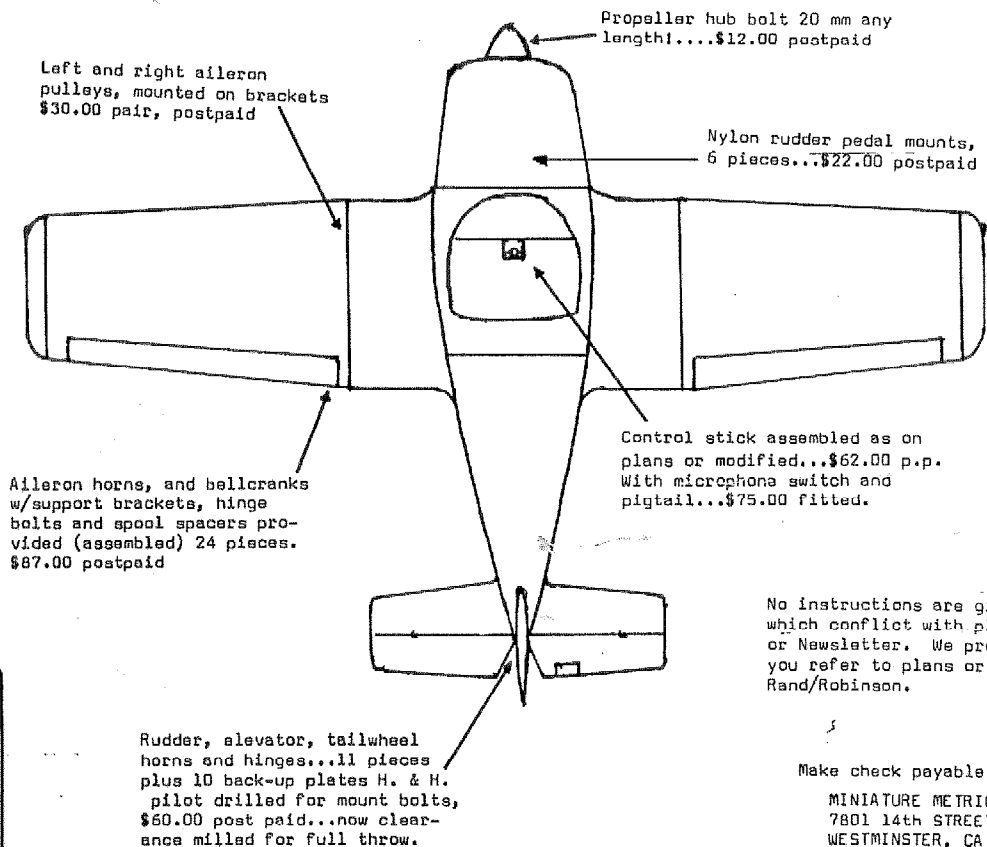
The KR group at Oshkosh spread thru two floors this year. Get your reservations in now for next year. Steve Bennett's wife, Linda, is co-ordinating the reservations for '83. Send her your name, address, arrival and departure dates and a check for \$15.00 for each room you want (each room has two single beds). Make check payable to University of Wisconsin Oshkosh. Linda will need the deposits by Oct. 15. Mail to: Linda Bennett, 2606 No. 125th Cir., Omaha, NE 68164.

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