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KR NEWSLETTER

RATES
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I like this time of year! Fly-ins are happening every week-end, Oshkosh is just around the corner, it's just good to be alive.

Speaking of Oshkosh, I sure hope you've made your plans to be there. The annual EAA convention continues to get bigger and better every year and this year promises to follow suit. The KR group has reserved a block of approx. 30 rooms at the University and will undoubtedly be assigned to the same floor. I don't know which building yet but it will probably be Gruenhagen Hall again.

I am looking for a bunch of KR's to be at Oshkosh this year. My correspondence indicates several KR's will be flown in if the weather permits. Summer thorns, ya know. At any rate, there is a great number of KR's being completed. The past few issues of "Sport Aviation" have had pictures of some nice KR's and I expect some of them to be at Oshkosh. See you there.

The folks at Rand/Robinson tell me that they are going to be closed for the first two weeks in August. Oshkosh time, ya know. It's business as usual before and after though so get your orders in. Write or phone: Rand/Robinson Eng., 5842 "K" McFadden Ave., Huntington Beach, CA 92649 (714)898-3811.

KR Club News...Was talking with Tom Criss last week. Tom tells me that the L.A. area KR group held a meeting/fly-in at Corona airport. They had a good turn-out, five flying KR's, two projects and a bunch of people. Tom promised to send me a letter and photos on the gathering so look for it in a coming issue.

* TIPS FROM OTHER BUILDERS *

A FOAM SANDING TUBE....Here's an easy way to conform foam planks to wing and tail ribs. Get yourself a STRAIGHT mailing tube, plastic pipe, or other smooth, round thing about 5 feet long and 2 to 6 inches in diameter. (I used a 2 1/4 inch mailing tube.) Buy 6 feet of coarse black Scotch Safety Walk, 4 inches wide. It has a pressure sensitive adhesive backing and is easy to apply. Spiral-wrap the Safety Walk around the tube, being careful to keep the edges close together but NOT overlapping. The 6 feet of Safety Walk left about 7 inches uncovered at each end of my 5 foot tube. To use the sanding tube, hold it perpendicular across two or more parallel ribs. Roll the top of the tube away from you as you draw it toward you across the foam and ribs. To avoid deforming the ribs, use just enough pressure to cut the foam with each stroke. Work gradually, and eyeball it often. The tube is also useful for shaping fillets....Richard Kunc.

TIPS...(1) When "gluing" foam into place with liquid foam, use the "two brush" method. Dip brush #1 into Part A and paint the spar or rib or whatever. Then dip brush #2 into Part B and paint the attaching edge of the foam block. Now just stick 'em together, rub to mix if possible, and ZIP! Quaker Puffed Glue Joint! The beauty is that you only use the liquid foam you need, and you don't have the stuff expanding all over the place and going to waste before you can use it. (2) Want a good comfortable stick grip? Go to your motorcycle shop and ask for a pair of Granturismo model EX Rally grips. Black, padded, one's about an inch inside, the other's about 3/4" inside....Richard Kunc, 7429 Tufts Court, Orlando, FL 32807.

FLIGHT REPORT

The KR-1s sort of took a back seat when the KR-2s were introduced. Seems everyone likes to have some company when they go flying. There have been over 5000 sets of KR-1 plans sold since its introduction at Oshkosh and several have been built. The fighter plane lines of the KR-1 appeal to the Walter Mitty in all of us. The following report is typical of the enthusiasm generated by flying this little "hot rod".

From Neal Schaefer, 6931 Goldengate Dr., Apt. 603, Cincinnati, OH 45244..."Enclosed are a couple of photos of 12NS, some data follows:

KR-1 N12NS TT 50 hrs.

Features: 1600cc VW with Diehl case
 HAPI intake & super carb
 Koppe exhaust. Electric
 system
 Great American 52 x 42 prop

Signed off for first flight June 14, 1980



Take-off.....Short!!

Climb at 100 MPH/IAS.....900' min.

Cruise at 3500' @ +57°F

3400 RPM 155 IAS = 165 TAS

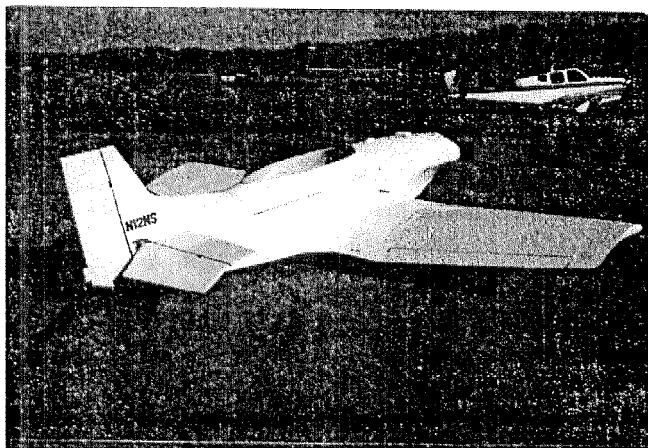
3200 RPM 140 IAS = 149 TAS

3000 RPM 125 IAS = 133 TAS

Cruise at 10,000' +45°F

3000 RPM 120 IAS = 145 TAS

Believe it or not, my cruise fuel runs from 2.5 to 3.0 G.P.H.



Hope these figures will help some of the KR builders using smaller displacement engines. I found after using a standard Posa and a HAPI super carb, I definitely recommend the latter. Sure makes things easier.

Now have 50 hrs on 12NS and to date have found no bad habits. Flies beautiful in all flight realms and is the easiest tail draggers I've ever flown.

In case you're wondering about the lack of color, in 2 years of trying...I still can't come up with a paint scheme I like so..white it stays.

SAFETY NOTE.....from David Hillerman, 12773 North Ave, Ballico, CA 95303. I have a R/R three blade ground adjustable prop that has about 25 hours on it. It has not been in use for some time and was in need of some refinishing work on the blades. As I was taking it apart, I noticed three cracks extending from the center of the hub toward the bolt holes on the inside. I continued the disassembly and found another crack inside the hub around the radius or the blade trough. I have also been working on a KR at the local airport that also has a R/R three blade G/A prop with about the same amount of time on it. When I removed the spinner, it also had the same cracks in the center of the hub and after further disassembly, I found the same type of crack inside. I know that the cracks in the center of the hub has been brought up in a previous Newsletter but I have not seen anything on the other crack and wanted to bring it to the attention of anyone else who owns one of these props. I might be a pretty good idea to take a look at it.

**Editor's note...David makes some good points. The R/R 3 blade prop seems to degenerate rapidly and if you're using one on your KR, take a good long, hard look at it.

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Control stick assembly..as on plans or modified..\$62.00 PP, with microphone switch & pigtail..\$75.00 fitted.

Rudder, elevator, tailwheel horns & hinges..11 pieces plus 10 back up plates. Pilot drilled for mount bolts..\$58.00 PP.

Left & right aileron bellcranks & support brackets, hinge bolt and spool spacers provided..22 pieces assembled..\$67.00 PP.

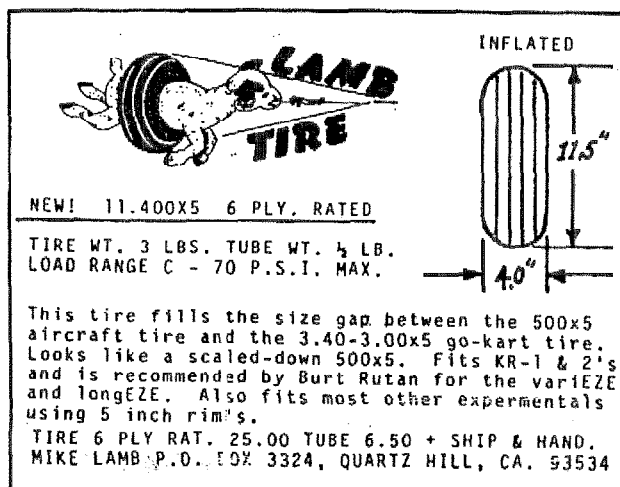
Aileron pulley brackets, left & right, assembled w/pulleys..\$30.00 pair PP.

Propellor hub bolt, 20 MM any length..\$12.00 PP.

Make check payable to:
MINIATURE METRICS
7801 14th STREET
WESTMINSTER, CA 92683
(714)894-4875

FOR SALE...KR-1 project by professional cabinetmaker. Fuselage woodwork complete, spars ready to close...\$500.00, plans & Newsletters. Bill Langdon, Rt.1 Box 1588, Science Hill, KY 42553.

FOR SALE...KR-2 plans, some Newsletters, full size side view drawing of fuselage to be used on worktable when building fuselage, all 32 spar attach fittings precision prepared from 4130 steel in aircraft machine shop and zinc chromated. Save yourself much work and time. All for \$150.00. 609-235-3931 after 5 pm EST.



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TIRE WT. 3 LBS. TUBE WT. 1/2 LB.
LOAD RANGE C - 70 P.S.I. MAX.

INFLATED
11.5"
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 rims.

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

CARVE YOUR KR PROPELLER...Ridiculously easy, flight tested, computer generated blade angles, pitches, speed chart. Complete instructions...\$6.95 USA..Garth Hess, 881 Emory, Upland, CA 91786.

FOR SALE...New "O" time professionally built 1835 cc turbo charged Aero-conversion VW engine complete with accessory case, prop hub, super carb and H/V H/P Scavenge oil pump....\$2700.00. Will send details on request. Harry Hermann, 37247 51st St. East, Palmdale, CA 93550 (805) 947-0550 no collect calls.

FOR SALE...Revmaster 2100D turbo with all extras, even digital Revmaster tach. All are new with "O" time.

Narco Escort 110 radio, new in factory carton.

2 inch gauges, M/P, T&B, EGT, O/P, & O/T. Two each amp. meters, fuel meter, suction gauge, cyl. H/T, Mag. tach, air speed (220), rate of climb, altimeter, compass.

2 R/R 2 blade prop (ground adj.) with hub & polished spinner.

All items are new..\$6500.00 firm as package deal. Freight charges C.O.D. (505)294-6100 8:30 to 5 Mon.-Fri. Ask for Gordon. No collect please.

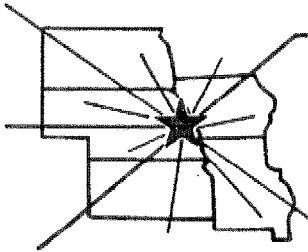
* BUY SELL TRADE* (cont.)

WANTED...KR-2 flying or nearly completed. Have cash and am ready to deal. C.J. Wolf, 9704 116th St. SW, Tacoma, WA 98498 (206) 584-8500.

FOR SALE...NavCom Narco MK10 360, VOA4, cables, power audio and manual..\$250.00. Gera Warstler, 311 Oak, Georgetown, IL 61846 phone 217-662-8509.

WANTED...Radio and prop for VW 2100 turbo. Michael Goodman, 7995 Xavier St., Westminster, CO 80030.

FOR SALE...KR-2 project 20% complete, fuselage almost on gear, tri-cycle mod (Bill DeFreze system). Back Newsletters to date. Could be returned to tail dragger w/very little modification...\$500.00. John Dameron, 2321 N. Main, Royal Oak, MI 48073 3130585-3850



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AIRCRAFT SUPPLY CO.

402-496-0366 BOYSTOWN, NE 68010

P.O. BOX 9

QUESTIONS & ANSWERS

- Q. What would be a good all around prop for a 550 lb. KR-2 with a 2100?
- A. Most of the KR's now flying are using a 52 x 47 or 52 x 48 from Great American Co. (available from R/R) or from Bernhard Warnke, Box 50762, Tucson, AZ 85705. However, don't order a prop from anybody without first getting their recommendation for your particular application.
- Q. What angle of incidence should the horizontal stab. be fixed at if my wing spars rest on the longerons?
- A. The horiz. stab. should be installed level with the top longerons. This will result in approx. a 4° difference in relation to the center section wing.
- Q. Has anyone certificated the KR-1 or -2 for aerobatic maneuvers?
- A. No, not to my knowledge. The KR's, due to their small empennage, are not recommended for aerobatics.
- Q. Has anyone tried stretching the basic KR-2 design to create a 3 or 4 place aircraft.
- A. There are always rumors of this sort and someone may have begun doing this type of modification but none has ever flown.
- Q. Three or four years back I read in the Newsletter to put the smaller hinge half on the stationary stabilizer spars. How can this be done if the bellcranks are made out of the smaller extrusions as per plans?
- A. It is easy to just reverse the hinges on the ends of the vertical and horizontal stabs., but the bellcrank hinge material has to be replaced with the wider material. You can buy this from R/R or Minature Metrics or there is possibly a supplier near you.
- Q. Why aren't there more KR-1 articles in the Newsletter?
- A. I'm pretty well limited to what I'm sent as far as articles on KR-1s go. There is a short flight report in this issue on N12NS, a KR-1 built and flown by Neal Schafer. He must have been anticipating your question.
- Q. I'm building up a 2180cc turbo similar to Dan Diehls. I have the book from HAPI "How To Build A Reliable VW Aero Engine". Are there any suggested changes in engine assembly when turbo charged?
- A. Rex Taylor's book covers assembly of the VW engine very well. The turbo version does require a few modification though and these are covered in five consecutive issues of the KR Newsletter numbers 57 thru 61.

Dear Ernest,

Over the past year or so of working on my KR-2 several ideas and ways of doing things have occurred to me that might be of interest to other builders. Hope they may help convert some work hours into flying hours.

My garage floor is about as unlevel as they come. To help in levelling some components for aligning tail surfaces and wings I have found a plastic tube water level to be just great. I used about 30 feet of 1/8" ID aquarium clear vinyl tube. If you partially fill the tube so the water level is a few inches lower than each tube end, you have a great flexible level with accuracies of better than 1/16". One caution - be sure the ID is at least 1/8" or viscous damping of the water may require you to wait several seconds to obtain a true reading.

Cutting foam on my table saw created a real potential hazard. The foam is too soft to guide the saw blade, and kickbacks happened all too often for my liking. I replaced both the rip fence and miter fence with a wooden strip which fits the miter fence groove in my saw table. I drove brads thru the back side of the strip so they project about 1/2" above the saw table. Now I line the foam up with the intended cut then press it onto the brads and use the wooden strip siding in the groove to guide the foam into the blade. Most of the kickbacks have stopped, but I still find sawing the foam this way is very tricky. Be careful with the fingers.

The business of cutting foam planking to fit areas like the fuel tank top and the rear deck seemed to take forever, and I had trouble getting a good fit. I located some canned polyurethane foam used as weather stripping, and found that if you leave a groove perhaps 1/4" wide between the foam and planks you can fill the gap very nicely with the "foam-in-place" material. Use the hardening foam not "flexible", and the sanding properties are almost exactly the same as the basic foam planks. A side benefit is that the foamed-in-place material is an excellent adhesive and forms good joints with wood, foam, metal, fingers, pants and shoes.

You will also find a couple of photos of the seat belt/shoulder harness arrangement. The cable attach points on the back of the seat are attached to the fuselage tailwheel block, and in the event of emergency, transfer a part of the passenger load from the harness reel and shoulder points to that strong point. If my calculations are right, I should have a 30 "g" forward crash protection cockpit. Incidentally, the belt reel and metal to metal seat belt latches come from a 1972 VW. The belts themselves were replaced with new webbing. Our local FAA inspector was pleased with the installation, and his only question was whether I had checked the reel ratchets for wear.

The newsletter is great, and right now the instruction hints are the #1 interest articles. I am hoping that this summer the flight tests will become #1.

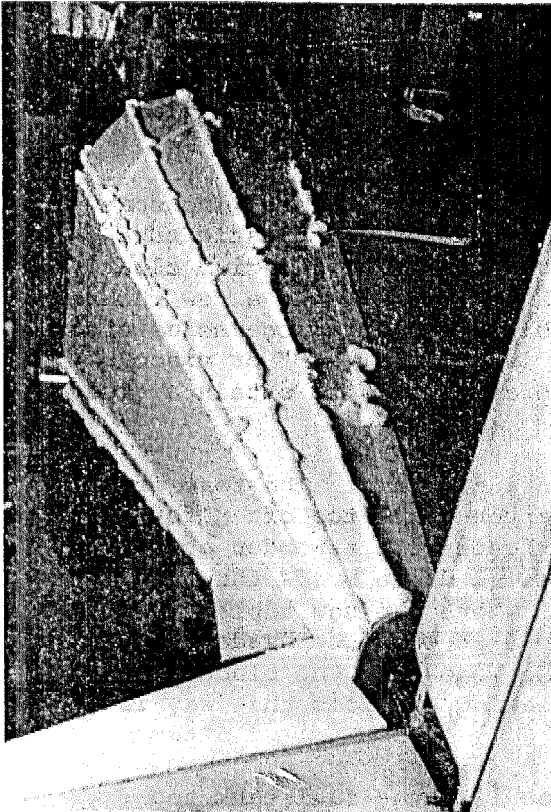
*Al's photos
are on the
back. EK*

Sincerely,

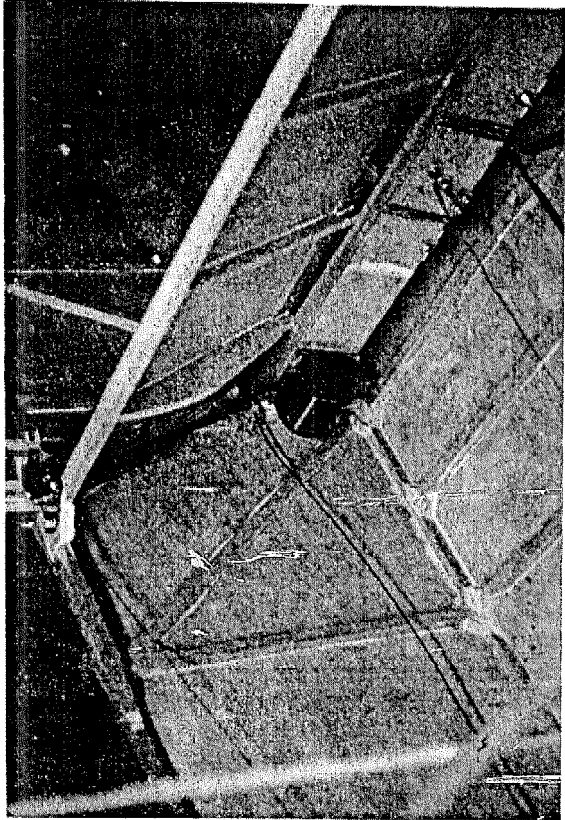
Al Todd

M. Al Todd
22 Pheasant Drive
Asheville, N. C. 28803

5.



Polyurethane foamed in place



Volkswagen shoulder harness/lap belt take-up reel attachment to rear spar. Top cable is to shoulder harness attach point, middle cable is to rudder, & bottom cable is to seat belt attach point at spar.

ERNEST E. KOPPE
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