



Issue No. 53 November 1979

NEWSLETTER

RATES
1 Year \$9.00
O/Seas Airmail \$15.00
Back Issues 75 each

** A monthly publication for communication between KR builders and pilots world wide.**
Edited & published by Ernest Koppe, 6141 Choctaw Dr., Westminster, CA 92683 714-897-2677

November already!! Winter is here in many parts of the U.S. and the fly-in season is coming to a close. There are still a few get-togethers scheduled around the country though so make it to one if you can. I was fortunate to get to a couple of good ones in the last few weeks and gained a little knowledge at each one.

TULLAHOMA "79" First annual happening of this event and it showed. Many unforeseen problems made themselves apparent, due largely to rainy weather and muddy fields. It rained buckets and buckets the night prior to the fly-in and the resulting soft and muddy fields made parking aircraft, cars and campers a real problem. Luckily, Tullahoma has numerous runways and taxiways, these were used for parking show and transportation aircraft alike. There were four KR's at Tullahoma, however I talked to several builders that had planned to fly their KR's in but had to give up because of the weather. The KR's that did make it were:

Ron Sorrell KR-2. A super slick aircraft, Ron has one of the smoothest finishes on his KR I've seen. You can see your reflection in the wings.

John Shippey KR-1. A red, white and blue fun airplane. Powered by a 1200 VW makes for some inexpensive flying.

Steve Bennett KR-1. Now here is a KR-1 that is really getting around! Steve is from Iowa and seems to make all the fly-ins.

Dan Diehl KR-2. Dan's KR was the third KR-2 to fly (Ken Rand's prototype and Wick's KR-2 were one and two). He has accumulated well over 500 hrs in N4DD, highest total I know of to date.

Tullahoma "79" will have to be considered a success in spite of the weather related problems. There was good participation by all of the sport aviation community and the effort put forward by dedicated E.A.A. volunteers point toward a great 2nd annual happening. Don't miss it.

RAMONA "79" Sponsored by E.A.A. Chapter 14 and the San Diego chapter of the Antique Airplane Association, this is a local fly-in here in So. Cal. and is one of the last fly-ins of the year. As such, it is usually well attended and this year it was bigger than ever. Seven KR's were present, six flew in and one static display:

Butch Grafton KR-1. Butch goes everywhere in this fine looking KR. He's at most of the So. Cal. and Arizona fly-ins.

Murray Rouse KR-2. I saw this KR-2 at Ramona for the first time two years ago. Since then Murray has put the KR to regular use and it still looks as good now as it did then.

Fred Whitcomb KR-2. Still the lightest KR-2 around! 410 lbs. empty, that is lighter than some KR-1s. Fred is using the "opera windows" now available from R/R.

Will Power KR-2. Just finished flying off the restrictions. A super clean KR-2 with a turbo Revmaster 2100 and Maloof c/s prop.

Robert Osborn KR-2. Completed two years ago and flown regularly. New paint job since I had seen it last, complete with R.A.F. markings.

Harold Middleton KR-1. Brought lots of good comments from all viewers.

George Peters KR-2. A 25% complete static display. George's project drew as much interest as a completed KR. Everyone wanted to see an example of what's under the foam. He talked himself almost to the point of laryngitis answering all the questions.

Now, to discuss a couple of things I learned at these fly-ins. Most of the initial problems in flying a KR-1 or -2 seems to stem from the fact that it is very sensitive to small elevator inputs, resulting in a possibly serious over control situation. This can be a minor thing at cruising altitudes but a definite problem on take-off. While talking this over with Dan Diehl, Brad Hummel, and other KR pilots, this solution was suggested.....

(Cont.)

When your KR has been completed and is ready for taxi tests you can start getting the feel of the elevator before the first lift-off. Try this...find an area on the airport (or at home if you have understanding neighbors) where you can run the engine up safely. Chock the main gear firmly to prevent the aircraft from rolling. Tether the tail wheel with a length of rope or chain that will allow the tail to raise until you have about 3 inches of clearance between the prop and the ground. When you're satisfied everything is secure, start the engine. Be sure the stick is tied back if you are hand propping alone. Sit in the aircraft and do a couple of engine run-ups. If you are satisfied the engine is running properly and the oil pressure and temperature are normal, run the engine up to about 75% power. Now, slowly move the control stick forward, the tail of your KR will come up accordingly. You are now flying the tail. Notice how slight movements of the stick cause an immediate reaction via the elevator. Make your control inputs smooth and the KR will respond smoothly. This is almost exactly how your KR is going to feel when you make that first flight. Do this "fly the tail" technique until you are satisfied with the feel of the stick, the response of the aircraft, and with yourself. You and your KR become a team in the air. The sooner you understand each other the better.

The other thing I want to talk about was brought to my attention by Murray Rouse of San Diego. He, like most of us had heard that a "sure" way to increase cruise speed was to adjust the ailerons on your aircraft so they were slightly up when in the neutral position. Murray had been flying his KR-2 for a while and was open to ways to increase his cruise speed. Adjusting the ailerons looked like a sure thing so, why not? Well, in Murray's words, "I took a good flying airplane and turned it into a monster. I was flying along about 90 I.A.S. when the right wing started dropping. Opposite aileron had no effect, the wing kept dropping. I gave it forward stick and the aircraft immediately righted itself." This happened at a time when Murray had plenty of altitude so the forward stick "cure" could be applied without problem. It also happened a few flights after he had adjusted the ailerons so the cause of the wing dropping was not realized right away. Realization came a few flights later...on take-off. "I had about 15 to 20 ft. of altitude when the wing started dropping, that doesn't leave much room for lowering the nose. I'm still not sure how I got off without scraping a wing. As soon as I landed I got out and just looked at the airplane. The only thing I could find out of the ordinary were the ailerons. Both were slightly up at the trailing edge." Murray re-adjusted his ailerons and has now made several flights. No problems. Don't turn your KR into a "monster"! Check all your control surfaces for proper alignment and full travel.

RAND/ROBINSON UPDATE

Finally, a selection has been made of a fabric to replace Dynel in KR construction. It is a 5.9 ounce fiberglass cloth that has the characteristics deemed necessary by R/R for your KR. Price is \$2.65 a yard at their shop.

The KR-1B is being flown regularly and should have the restrictions flown off soon. Performance has been good as expected and plans for the long wing and spoiler flap system should be in process after the 1st of the year. Some of the figures arrived at to date are as follows:

KR-1B MOTOR GLIDER

Length	12'10"	Cruise	125 mph @ 3200 rpm
Wing Span	27'	Stall	38 mph power off
Empty Wt	484 lbs.	Stall	45 mph w/spoilers
Gross Wt	800 lbs.	R/C	1500 FPM
Engine	VW 1834	Glide Ratio	21.12 to 1

The KR-1B is a variation on the popular KR-1. The basic fuselage is the same, as are the center section spars and landing gear. A slightly larger rudder is used. The center section airfoil is the same RAF 48 that is on every other KR-1 flying but the outer wing panels are GA(W)-2 inboard and GA(W)-1 at the tip. Idea of the KR-1B is to have two sets of wings, short RAF 48 for getting places quick, long glider wings for fun and economy. With a L over D of over 21 there is bound to be some thermals out there.

The KR-3 is still progressing ever so slowly. Basic aircraft is complete but wiring and plumbing is currently being worked out. First flight is not expected until after the 1st of year. (1980 ought to be some year!)

BUY SELL TRADE

FOR SALE....KR-2 fuselage on gear, all controls installed and rigged. Wing spars complete, hardware attached and signed off for closing. Horizontal stabilizer and rudder signed off for closing. Rudder has been covered and elevator is being covered now if weather holds to permit completion. Front cowl tank complete ready for bottom closing. Has smoke tint canopy. Center wing section has been finished. Has Rand sling seat. Price is \$2150.00....Robert Perry, 2950 Churn Ct., Redding, CA or phone 916-244-0925.

FOR SALE....Canadian KR-2--60% complete. All wood and mechanicals done, foam work, canopy and cowl to do.)-time A75, instruments, gear plus materials to finish. All for cost of parts.....Jack Anderson, 14736 Oxenham Ave., Whiterock, B.C. Canada or phone 531-5712.

FOR SALE....KR-2, woodwork, controls, gear, all complete. R/R cowl, 2100 Revmaster, prop, panel, all engine, instruments. Needs covering....\$3500.00...James Lessel 501-225-5368 or (office) 666-8290.

FOR SALE....KR-2, fuselage construction complete, rear spars ready for closing; includes also, wood kit, birch plywood kit, marine plywood (for firewall and floor), 4 gallons R/R epoxy, KR newsletters and plans. Must sell, have another project. \$400.00 or best offer.....Mike Hull, 9043 Warmer, Redford, MI 48239 (Detroit area) or phone 313-531-2213.

FOR SALE....Unused R/R parts: KR-2 cowl..\$80.00, VW engine mount..\$65.00, slick 4016 Mag and harness..\$110.00....Dan Houseman 815-623-6332.

FOR SALE....Dynel--supplied by Rand for KR-1. 30 yards by 48 inches wide....\$50.00 C.O.D. 515-782-8190 after 5:00 p.m. or write to Joe Wallace, c/o Vanmark Corp., Industrial Pkwy., Creston, IA 50801.

FOR SALE...Scavenge pump...\$70.00. One pair of new dual port heads. New valves, bored and cc'd for 7.5-1 turbo 1834 cc. Heads are machined for dual spark plugs for dual ignition...set \$240.00.....Dan Diehl, 4132 72nd St., Tulsa, OK 74136.

WANTED....Corvair turbo-carburetor assy., distributor and/or shop manual. And cond- ition. Narco VHT-3 radio crystals 120.5, 121.9, 118.5, 121.6 and others. Cash or will swap parts/services. Paul Venne, 3811 "B" Livingston Dr., Long Beach CA 90803.

FOR SALE....KR-2 project, fuselage, wing fittings and controls 90% complete. Rand fiberglass cowling and canopy. All materials to complete airframe including spruce, slywood, foam, dynel, gear, airspeed ind., and all AN hardware. Over \$1625 invested, asking \$1550.00. Call Jack...home 213-575-4601 or work 213-943-6703.

FOR SALE...All R/R kits to build KR-2. Many fiberglass components. Going into Air Force. Price negotiable, asking \$1500.00....Larry Oppegaard, Rte. 3, Box 414, King, NC 27021 or phone 919-994-2142.

FOR SALE....Super KR-1, 3 hrs, 75 hp Lyc. Warnke 3-blade adjustable prop, beautiful finish.....\$4500.00. Send S.A.S.E. for details and picture. Also KR-1 canopy 20" wide by 47" long by 14½" high...\$50.00.....Melvin J. Boggs, 1141 St. Agnes Ave., Columbus, OH 43204.

FOR SALE....TYGON tubing for fuel transfer lines and sight-glass tubing. Transparent. Formulated for lab use. 3/16" ID 3/8" OD. \$1.00 per foot, postage paid, USA and Canada.....Jim Snyder, Box 696, Hesston, KS 67062 or phone 316-327-4053.

Good News!! Those who have waited patiently for the intake/exhaust system I described in earlier Newsletters can now order one for yourself. I just received the first bunch off of the production jigs. For those who are new to these pages the intake/exhaust system has been under development for almost a year now. The intake manifolds, dual or single port heads, will fit most all VW conversions from 1300 to 2200. It is designed around the Posa injector but other carbs could be used. The exhaust manifold is a tuned, split "Y" system. All pipes are equal length and designed to fit inside a KR-1 or KR-2 cowling. Price of the intake /exhaust system is \$180.00 single port, \$185.00 dual port. I've had many request to separate the systems and will do so. Price separate is single port intake \$60.00, dual port \$65.00, exhaust manifold \$130.00. California residents add 6% sales tax. There will be a shipping charge of 10%. All overages will be refunded.

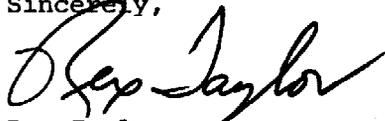
Dear Ernie:

The info and drawings on moving the thrust to the #3 main bearings in V.W. conversions in last month's newsletter were very good, but perhaps not completely correct in all instances. We have found at H.A.P.I. that most cases will not accept a #1 main bearing in the #3 saddle due to web misalignment as shown in figure #1.

Both sides of the #3 bearing saddle are not machined with the cases bolted together at the factory, and in most cases while a #1 bearing may fit either side of the case, the cases will not mate with a #1 bearing in the #3 position due to this condition. What must be done is to remachine both sides of the saddle (see figure #2) and remove metal in shaded areas. This will leave the saddle with both sides parallel, but a smaller width than the standard .866 dimension. (see figure #3) So you purchase a set of bearings, ask for oversize thrust, which are made for engines with a damaged thrust and have an extra thick flange on one side to allow for fitting to a recut saddle. These bearings are only made in oversize align bore sizes, so even if you have a new case you will have to align bore it oversize when making this thrust change.

Now you machine the distance between the flanges (see figure #4) on your #1 bearing to the same dimension as the thickness of the #3 saddle and, now everything will fit and go together properly. (See figure #5) I have never seen a thrust bearing failure regardless of location that originated as a thrust problem, usually the failure is due to low oil pressure, no oil, or contamination in the oil. The front thrust is no better or worse in my opinion, they both work very well if done right. H.A.P.I. can supply all the machining necessary to do this thrust conversion including the align bore and facing the #3 bearing saddle.

Sincerely,



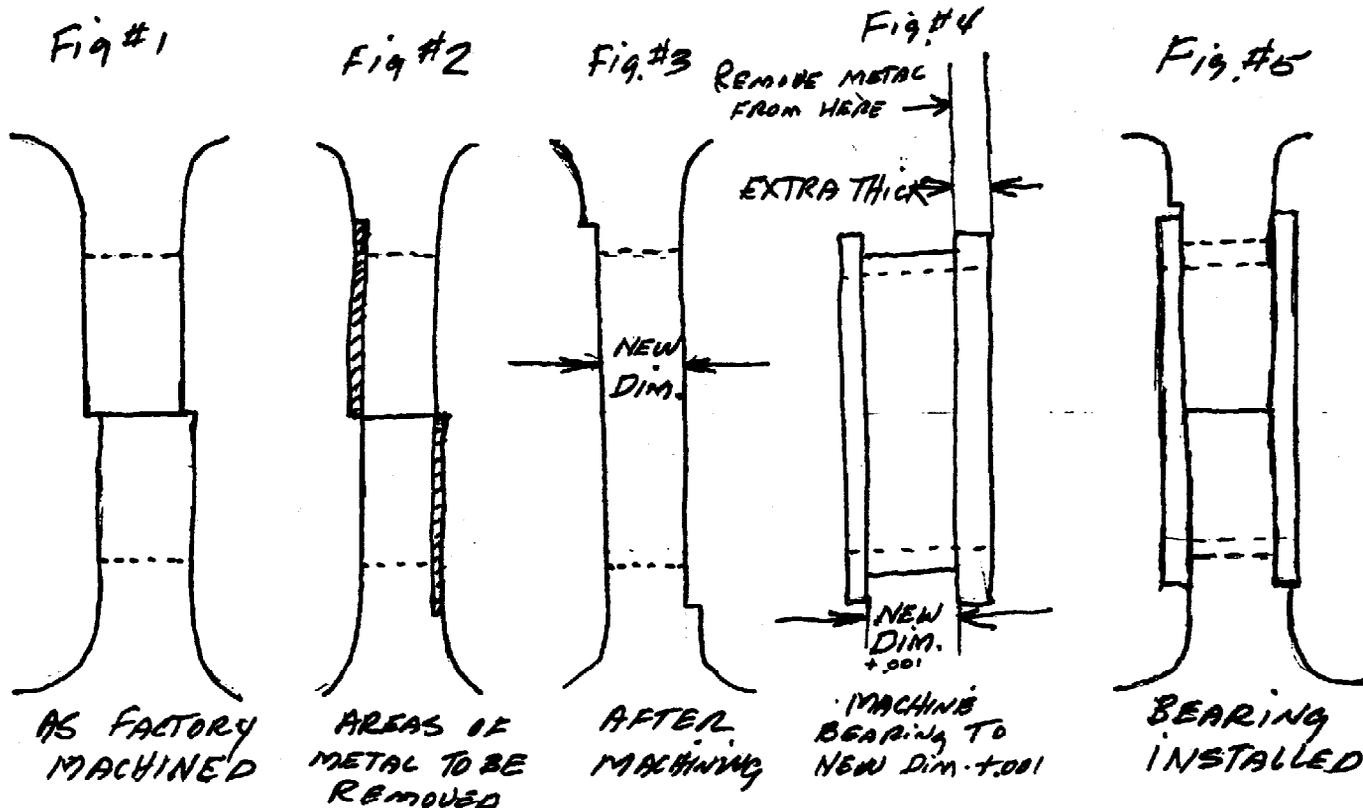
Rex Taylor

H.A.P.I. Engines

rt

HAPI

HOME BUILT AIRCRAFT PRODUCTS INTERNATIONAL
HANGAR 4, CALEXICO INTL. AIRPORT
BOX 5951 CALEXICO, CA. 92231
714-357-8342



"THE SUPERCASE"

Bolt on conversion for your VW 1300 to 2200 cc Type II & Type III engines.

Parts available include flywheel, alternator, and magneto drive. Send S.A.S.E. for more info.

Dan Diehl
4132 E. 72nd
Tulsa, OK 74136
ph. 918-492-5111

Retractable tri-gear for KR-1 or KR-2. Stress analyzed to 3x gross by Marshall Wood, senior design engineer at Rocketdyne. Plans are now available @ \$40.00 for complete system. Material kit, excluding wheels \$250.00. Ready to install assemblies \$800.00. Free isometric view with S.A.S.E.

Don Land
906 Manzanita
Los Angeles, CA 90029

MINATURE METRICS

Special length bolts for your VW conversion. Extra length studs, long prop hub bolt. We can supply your special needs in a variety of materials, from aluminum to stainless steel.

Minature Metrics
7801 14th Street
Westminster, CA 92683

Retractable tri-cyle landing gear conversion plans by Bill DeFreze. Uses many of Rand's parts, including gear legs & spring bar.
\$25.00

Bill DeFreze
7530 Ironwood Drive
Dublin, CA 94566
Ph.415-828-2111

NOW FROM VNE KR

Jim built wings....

KR-1 \$686.00

KR-2 \$870.00

Wet wings....

KR-1 \$59.50 (1/3 capacity)

KR-2 \$75.50 (1/3 capacity)

Send spars (signed off), plywood ribs, attach fittings, & bolts U.P.S. Specify Hi or Lo speed tip or send photo. VNE wings have straight sharp trailing edges and contour accurate to +/- 1 M.M. Crated wings shipped FOB Long Beach.

MASTER-SLAVE electric trim... \$125.00. Meets or exceeds KR-2 prototype specs. 2" x 1 5/8" x 2 3/4" master unit sets and holds position of remote mounted servo. Will remember setting if trim moved while plane hangared. Kit includes servo, hardware, wire & directions.

"TRICKS"...A builders supplement, only \$15.00. Many other services. S.A.S.E. and \$1.00 for lists.

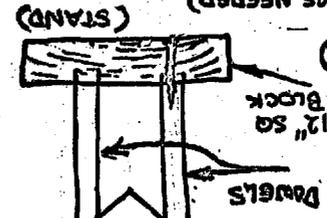
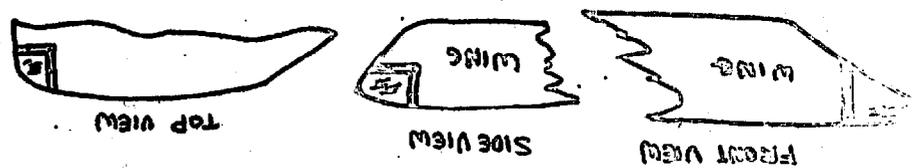
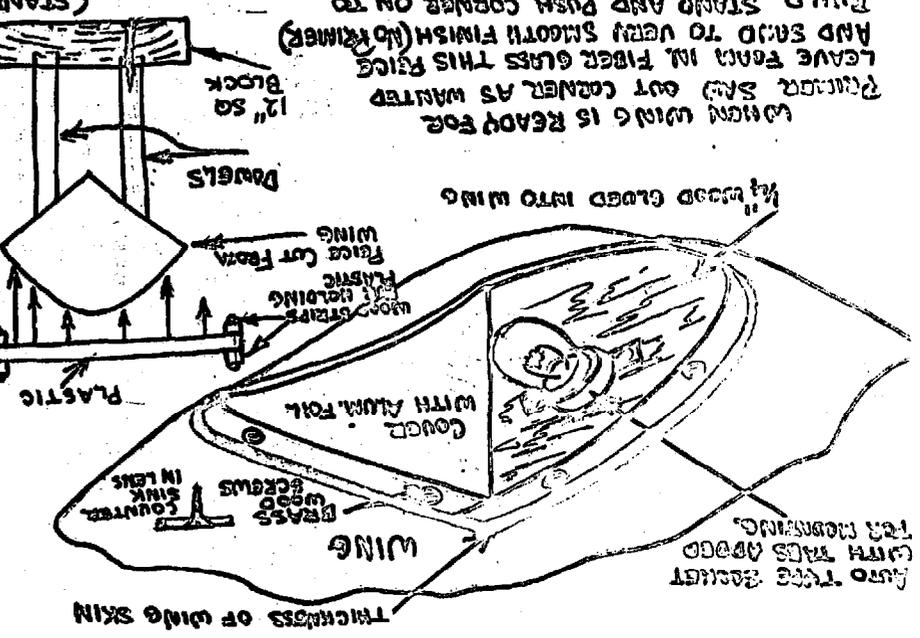
**V
NE**

Paul Venne
K R CONSTRUCTION
3811 "8" Livingston Dr.
Long Beach, CA 90803
213-433-0620

ENJOY THE BIBLE

Advertising rates are as follows: Newsletter subscribers seeking or selling parts, materials, etc. for their projects are not charged. Other ads, including completed aircraft for sale, will be charged according to size... "business card" ads... \$6.00, 1/4 page... \$10.00, 1/2 page... \$18.00, 1/2 page... \$35.00, full page... \$65.00. prices are per monthly issue and may be raised without notice. Ads should be camera ready. Typesetting and halftones available at extra charge.

WING TIP MAT. 2" LEAN PLASTIC
 WAV. LIGHT MAT.
 1/4" SOLID WOOD
 BRASS SCREWS



WHEN WING IS READY FOR
 REMOVAL SAND OUT CORNER AS WANTED
 AND SAND TO VERY SMOOTH FINISH (WORKER)
 BUILD STAND AND PUSH CORNER ON TO
 DOUGLS. ATTACH STRIPS TO PLASTIC (SIZE AS NEEDED)
 WING IN OVEN AT APPROX 350° OR JUST WHEN EDGES (SMALL)
 START TO BUBBLE. REMOVE AND PUSH DOWN OVER CORNER.
 LEAVE TIP CORNER (USE GLOVES-IT'S HOT) MARK EDGES AND TRIM.
 THE BUBBLES ON THE WOOD MARK FOR CUTTING. (GLUE FOR
 THICKNESS OF PLASTIC) PAINT INSIDE OF LEGS WITH A COLORED
 GLOSS OR ENAMEL. USE ALUM. FOIL OVER WOOD FOR

ERNEST KOPPE
 6141 CHOCTAW DRIVE
 WESTMINSTER, CA 92683
 Issue #53

FIRST CLASS MAIL
 U.S. POSTAGE
 PAID
 WESTMINSTER, CA
 Permit No. 369

