



APRIL 1979 ISSUE NO. 46

NEWSLETTER

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**** 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

Most of the KR-2s now flying are routinely flown at 1000 lbs gross weights and do so with no apparent problems. Climb performance suffers, naturally, but the aircraft still handles well. Extra caution is advisable during landings at these high gross weights however. A hard landing will give you a week-end or so of repair, as well as a damaged ego when the spring bar pops a couple of holes in the top of each wing.

Recently a KR-2 was flown at a total weight of 1120 lbs. Empty weight of the aircraft was 640 lbs., fuel in main tank was 50 lbs., pilot 240 lbs., passenger 185 lbs. and approx. 5 lbs. for miscellaneous papers, etc. The flight was not un-eventfull. Full forward stick was required to raise the tail on the take-off run, but this was expected. What was not expected was the aircraft entering the air before the tail had completely reached a level attitude. Here the aircraft was, several feet above the runway, nose high and full forward stick being held. Airspeed at this point was 55-60 ind. and increasing ever so slowly. To cut power now would surely invite a stall so the decision was made to continue the climb.

The aircraft reached a top speed of 80 mph ind. in the gear down configuration, still full forward stick, still in a nose high attitude. It had also begun a phugoid oscillation that seemed to decrease as the airspeed increased. The problem facing the pilot now was how to increase the airspeed and reduce the oscillations to bring the aircraft to a more stable attitude. Retracting the landing gear brought the desired effect. With the reduced drag the airspeed increased immediately, as it went past 100 mph ind., the oscillation became more manageable. At 120, it had ceased altogether but the KR-2 still required forward stick to maintain level flight. When trimmed for level flight with the elevator trim tab, the oscillations would begin shortly after the pilot removed his hand from the stick. This effect was noted all the way thru airspeeds reaching 145 ind., fastest reached during the flight.

Landing the aircraft was the next task to accomplish. Entering the traffic pattern at 120 mph ind. and turning downwind was non-eventful but when slowed to 100, the aircraft would again begin to oscillate. To keep the aircraft under control would require an airspeed in excess of 100 mph ind. on the final approach. This is not the way to make a short landing, but in this case, flying the KR-2 right down to the runway seemed the most prudent course of action. As expected, when the aircraft neared the runway surface, ground effect took over. The airspeed bled off very slowly and the wheels didn't touch down until half of a 3800 ft. runway had passed underneath. They didn't stay down. There were three more points of contact with the runway before the KR-2 finally settled down to the roll out. Unfortunately, the last contact point coincided almost exactly with the end of the runway with the speed still around 35-40 mph. The landing gear hit some ruts just off the end of the runway with force enough to bend the 1/4" latch bolts. This allowed the down latches to release, in spite of a safety catch, and the landing gear to fold. The remaining skid was over quickly as tall grass on the other side of the ruts finally brought the aircraft to a stop.

There were no injuries to the occupants of the aircraft, damage to the aircraft itself was minor and will soon be repaired. Looking back at the whole incident, there are probably some things that could have been done to avoid any damage at all. Maybe, maybe not. The one sure way to avoid this kind of incident is to not tempt fate by flying with your KR-2 in an over-gross, aft C.G. condition. It can be dangerous to your health!!

BUY SELL TRADE

FOR SALE....Rand/Robinson KR-2 cowl, never used...\$75.00 shipped to your door. Kurt Kannwischer, 2785 Lake Capri Rd., Lithonia, GA 30058 or phone 404-482-1827.

FOR SALE....KR-2 plans plus many EAA How-to Manuals...\$40.00. Unused KR-2 R/R kits, aluminum extrusions, wheels, brakes, axles, tailwheel, AN bolts, cables and pulleys, cowl camlocks, easy eye canopy, latches, seat, 7 gal. Wicks epoxy shipped new 11/27/78, 4130 steel for wing attach. Materials cost me \$580.90 plus shipping, yours for \$500.00. Buy it all and I'll pay shipping. Joe Ed Pederson, 217 Roberts St., Seward, NE 68434 or phone 402-643-6290.

FOR SALE....KR-2 project. Fuselage and center spars made and drilled. Outer spars aligned by engineers transit. Gray canopy, fiberglass fastback and wing tips, foam to complete project...\$1200.00. 50 yards of Kevlar...\$450.00. Vic Kaaria, 1034 N. San Rafael "B", Glendale, CA 91202.

FOR SALE....KR-1 project. Fuselage on gear and ready for foam work. Most materials to complete...\$900.00. T. H. Ratliff, 502 Red Oak Dr., Severna Park, MD 21146 or phone 301-647-1265, no collect calls, please.

QUESTIONS & ANSWERS

- Q. Will the R/R 3-blade prop match up with a Revmaster 2100 D engine on a KR-2?
A. Certainly, the adjustable feature of the prop lets you set the pitch that will work the best with your airframe/engine combo.
- Q. There are rumors of a KR-1 or -2 on floats. Could you give me more info on this?
A. I've heard the rumors too, but have no real facts. If some of the Newsletter readers could offer more information it would be appreciated.
- Q. Can you tell me why earlier KR-2 plans show an empty weight of 400 lbs while the newer plans show 450 lbs?
A. While a 400 lb KR-2 is definitely an achievable goal, 450 lbs was considered more realistic. Most builders are not satisfied with a "basic" airplane and will insist on adding such things as upholstery, electrical system, i.e. starter, alternator, battery, etc. and assorted radio gear.
- Q. Is "Devcon 5 minute" epoxy equalivent to Rand/Robinson's 1/2 to 1/2 epoxy?
A. The 5 minute epoxies are similar but their use should be confined to non-structural applications, such as glueing foam. The slower curing 1/2 to 1/2 epoxies are better suited for the dynel and wood.

TIPS FROM OTHER BUILDERS

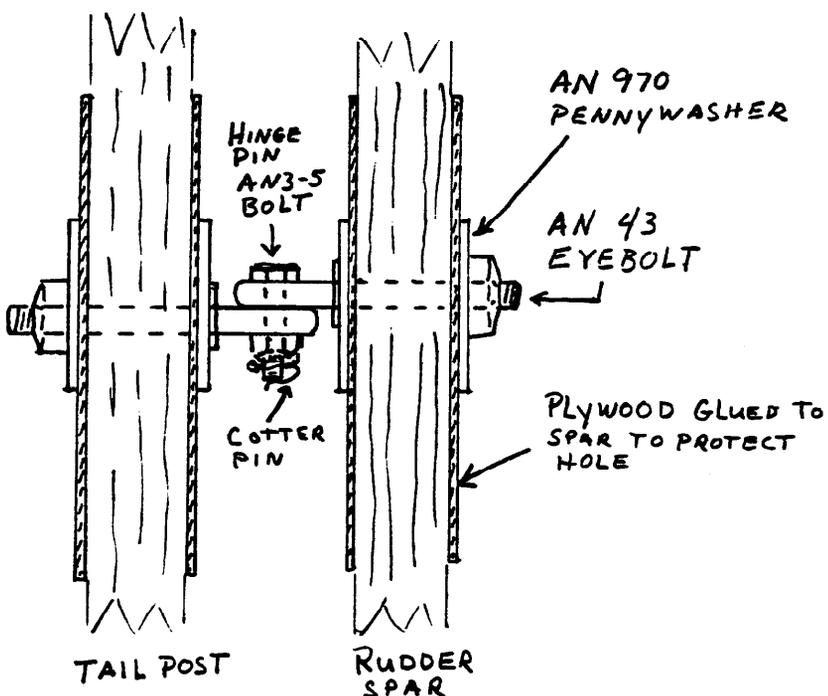
From Don Chisholm, 124W Manville Rd., Scarborough, ONT.....:I've just recently had my first experience with M.O.T. here in Canada. My KR-1 passed its' first inspection with not too much hassle but I did find out what they look for. First off he inspected just about every glue joint on the plane, he inspected the fittings and how well the control surfaces worked. Up here they seem to be very fussy on mods. The only recommendation he made is that what they want to see when they inspect fittings is that when you use any bolts and lock nuts is that there should be a thread and a half protruding past the fibre on the lock nuts. Right now I'm just planning how to do my main gear and waiting for new gear attach castings. Also I'm building up my engine, a 1679 cc VW utilizing all new parts. Please mention *Claudes Buggies, Inc., 28813 Farmersville Blvd, Farmersville, CA 93223 as an excellent source for VW parts, new engine cases \$119.95, machined stroker cranks (not cast), forged pistons, etc. good service, as I imagine a lot of people who build KR's can't afford to buy a built up engine or out of orneryness (both cases myself) build it themselves. Keep up the good work.

From Ron Hillsden, 1760 Green Oaks Tce., Victoria BC, Canada V8S 2B1...We have a KR-2 (actually my Father's) C-GLWS which has been completed since spring of 1978. We did taxi tests on it and got three flights in before the ring gear cam adrift on his Revmaster 2100. We sent the engine back to Revmaster at their request. Apart from this, the only problems experienced were the stock brakes being out of round and rubbing (one of them seized before we got them turned true) and engine cooling. Hope to let you know more when we get some more time on it. I also have a KR-2 just about finished and my brother bought a project which is about 1/2 finished, so we are going to have three of the things around here. Here are a few ideas you can put in future Newsletters to help out the troops (I hope).

TIPS FROM OTHER BUILDERS (cont.)

1. Turn the stock brakes and drums in a lathe. As I mentioned earlier, we had a brake seize due to friction heat generated in taxi tests.
2. If electric trim is used, put the trim tab on the pilot side so it can be set to neutral before entry.
3. For all the wiring going to the back of the fuselage, scrap 1/8" ply cut about 1"x1 1/2" and with three or four holes drilled along the edge and glued to the vertical longerons keep things neat.
4. Nylon shoulder washers (used in electronics to insulate bolts going through electrical chassis) can be used in all the aluminium fittings (such as aileron bellcranks) where a moving bolt is attached or used as a pin. This will prevent the bolt from elongating the hole in the aluminium.
5. Liquid foam can be kept in plastic squeeze bottles for easy dispensing and storage. It is also important that first time users be advised of the dangers of the stuff. A can subjected to direct sunlight may explode. This little characteristic can cause fun for an unsuspecting person prying off a tin lid. Point out to your readers, please, the hazard to their eyesight. Liquid foam is considered a toxic material in Canada and vendors keep it in a vault under controlled conditions.
6. Stits covering people manufacture an ultralight fibreglass filler (like Bondo) under the name "Stits MicroBalloon Putty". Excellent stuff.
7. For painting your new 3" registration numbers or a logo like in number 8, an excellent mask can be made by using self sticking shelf paper, cutting out your design with an xacto knife, sticking it to the airplane, and painting. When the paint has gelled, the shelf paper can be removed. Note..this is not the normal decorative Mac Tac but shelf paper.
8. Cooling tin for engines. Remember Mr. Volkswagen was no dummy. We used stock cooling tin for the top and front, cut back a bit at the front to allow more air to enter since the "pancake" engine is a "bolt on" for our purposes. On the bottom side, we used "super-tin" from *Claude's Buggys in Farmersville, CA. We now have a tight cowling around our cylinders and heads where it is needed most and next to no weight penalty. This makes the rest of the baffling easier.
9. Finally, instead of using Rand's hinges for rudder and elevator, we stole an idea for

for an item that is a little tougher and won't wear itself out. We used AN43 eyebolts bolted through the spars, with a AN3-5 bolt and pinned castellated nut for each hinge location.



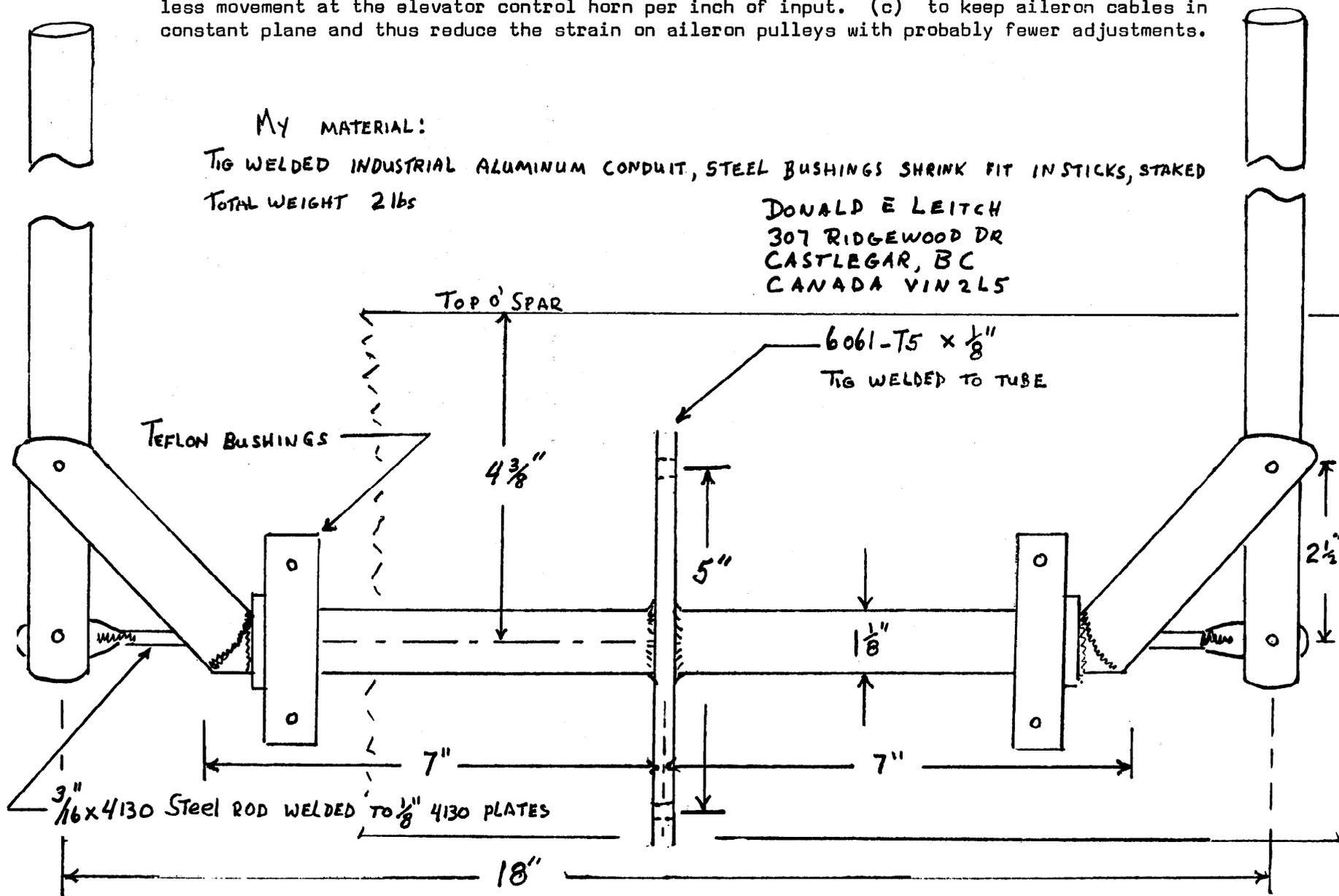
CAUTION...the eyebolt should be tacked with a welder to the large washer behind it, a small screw put in the edge of the washer to prevent the eyebolt from turning and binding. We used epoxy in place of weld and screw.

From Donald E. Leitch, 307 Ridgewood Dr., Castlegar, BC Canada V1N 2L5....Hints: (1) Use round toothpicks to: (a) to join foam planks together and to formers. They can if need be sanded along the foam and even remain in. (b) to act as permanent dowels when assembling fuselage sides together. Locate transverse 5/8" pieces, drill 5/64" hole through longeron into cross piece, glue and drive in 2/3 of the toothpick with tackhammer and clamp up. Then the clamping pressure won't squirt them out of position. (2) As regards overcontrol sensitivity I feel that with the center stick, center retract, center throttle and being right handed in writing, I just had to build dual sticks, my philosophy as follows; (a) to lower the control column so there would be less interference with the seat and so that I could use fairleads to take the elevator cables under the rear spar. (b) to lengthen the stick for more input travel and thus less movement at the elevator control horn per inch of input. (c) to keep aileron cables in constant plane and thus reduce the strain on aileron pulleys with probably fewer adjustments.

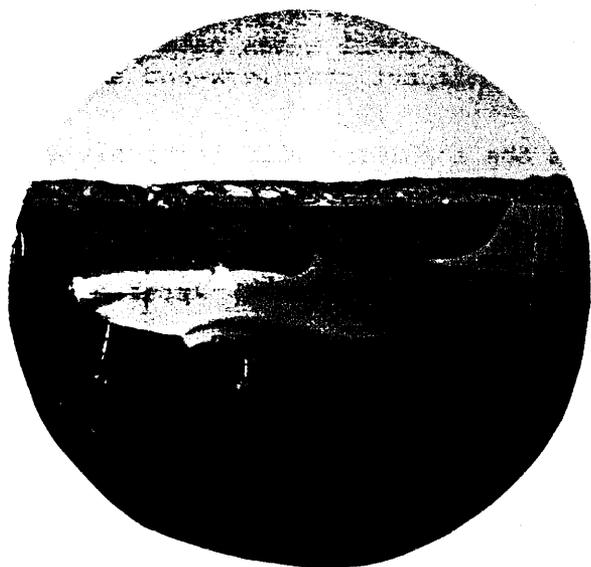
MY MATERIAL:

TIG WELDED INDUSTRIAL ALUMINUM CONDUIT, STEEL BUSHINGS SHRINK FIT IN STICKS, STAKED
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307 RIDGEWOOD DR
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KR CLUB HAPPENINGS

Donations to the memorial fund for Ken have assured that there will be an award presented at the Chino, CA EAA Fly-in and at Oshkosh "79". Many thanks are in order to the people who sent the funds that made this possible. Those who still wish to contribute can make their checks payable to the Kenneth C. Rand Memorial Fund. Mail them to the KR Newsletter or to Rand/Robinson. With enough support these awards will be presented annually.

The VW powered fly-in at Mojave on May 19 & 20 has been cancelled until a new date can be established. There is an aerobatic competition sheduled at the airport that week-end so the VW fly-in will be re-scheduled.

Work on the KR-3 is progressing slowly but it is felt that the amphibian will be completed in time for Oshkosh.

News from Australia indicates that progress is being made toward certification of the KR-2 as a factory built aircraft. Ray Creed of Raylin Pty. Ltd was here in the States gathering suppliers etc. with the idea of turning out KR-2s on a "ready to fly" basis. Apparently the Australian D.O.T. approves and is working closely with Mr. Creed.

All eyes are turning toward Chino for the EAA fly-in on April 28 & 29. I've talked with KR builders hundreds of miles away who are planning to attend. Be there if you can, there should be a record number of KR's on the flightline.

The designee idea outlined in the last Newsletter appears to be working well. Bill DeFreze phoned to say that he is getting calls every week-end for advice and information. I haven't heard from Dan Diehl yet but I'm sure he is getting a similar response. The phone listed for Dan in the last Newsletter was off one digit. Apologies to whoever it might have inconvenienced. Should you wish to discuss a problem in building/flying your KR just contact Bill, Dan or myself....we want to help.

Bill DeFreze, 7530 Ironwood Dr., Dublin, CA 94566. Phone 415-828-2111.

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

Ernest Koppe, 6141 Choctaw Dr., Westminster, CA 92683. Phone 714-897-2677

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