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## KR NEWSLETTER

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"OSHKOSH" is this month, August 1st thru the 8th. A week long orgy of aircraft and air show to sate the appetite of the most avid airplane bug. The KR activities will kick off on day one (Sat. Aug 1st) with a forum on the KR's, time 9:00 to 10:15 a.m. in forum tent number 2. I don't know how the rest of the convention will be able to follow an act like that but I'm sure they will think of something.

My wife is coming with me again this year. She says Oshkosh is the only fly-in worth going to. I disagree on that. It may be the best, but all fly-ins are worth going to. Anyway, we're staying at the University this year...first time. We usually stay at the campground and have enjoyed the "campfire conventions" each evening. We won't be among strangers, however. A couple of dozen other rooms on the 9th floor of Gruenhagen Hall are ear-marked for KR people and we should have a great time. See you at Oshkosh!!

Two more Continental powered KR's have flown. Konnie Schabackers C-65 KR-2 at Mason City, Iowa airport and Donald Smith's C-75 KR-2 in Uvalde, TX. His flight report follows.

"Am submitting first flight (and second flight) report on KR-2 N801SJ. She was signed off for flight on May 8th after three years and two months into construction. The day after final inspection, I found pieces of epoxy coming off inside my fuel tank. I had run the engine and done some taxiing prior to sign-off so there had been fuel in the tank. I think the problem may have occurred because I had test run some gasahol. The alcohol may have an effect on the epoxy. It could also have happened that my tank interior had not cured well enough before I put it together (R/R parts). To make a long story short, I had to cut into my tank, make a cover plate, clean, scrape, put new epoxy inside, blow air in for days at a time to ensure a good cure. Finally, June 5th, cover plate back on, fuel in the tank, praise the Lord no leaks. June 6, 10:00 a.m., Texas skies nearly clear, 85°, calm winds, time to fly.

801SJ has a 75 hp Continental engine with Posa carb and Warnke prop. Total weight is 531 lbs. with 4 qts. oil in the engine. Wings are built with "winglet" tips. Fuel is a mixture of unleaded and regular auto gas.

I taxied to the runway, prayed for a moment, then onto the runway. Power eased in gradually, speed built up quickly, tail off the ground. Engine rpm up to 2900 so back off the power slightly. It was a nice takeoff, my 400 plus hours in a taildragger made a big difference. I was surprised at how stable this plane is on the ground and how responsive she is to the controls.

The little plane was handling beautifully in the air. Time to retract the wheels.. no effort. Everything went well. Engine temps ran perfectly in spite of high rpm from not quite enough pitch in prop. Flew around for 30 minutes and then the landing... nothing to brag about there, but acceptable. I made some minor adjustments in rigging, turned prop to max pitch and flew again on June 8th. My speed is running an indicated 140 to 150. I still need a lot more pitch in the prop so I am looking for cruise speeds of at least 150. With very little nose down descent I can get to 170 and 180 in a hurry. So far I have only done climbs, turns, and slow flight. As yet no stalls. It is hard to tell what, if anything, the winglets have done. The plane is very laterally stable and extremely responsive to aileron control. It may improve stall characteristics by directing air over the outboard ends of the ailerons.

I have to get new prop blades with more pitch, make some modifications in my cowling to feed out the engine cooling air. I notice a little "ballooning" of my upper cowling in flight. This means too much air going in and not enough going out. All in all, she is a beautiful machine and lives up to all that has been said by many preceding myself." Donald Smith, 217 S. Crisp, Uvalde, TX 78801.

## QUESTIONS & ANSWERS

- Q. Do enclosed spaces in the wing spars need ventilation and drain holes?
- A. 1/8" to 3/16" holes drilled at the lowest point in each bay is a very good idea. Be sure you use a sealer or epoxy around the edges of each hole to protect the wood from moisture.
- Q. Does the firewall shelf come up 3/4" + 1/4" = 1" above main longeron as per drawing #3 or 5/8" + 3/32" = 1 23/32" as per drawing #1? Is this dimension critical with engine installation?
- A. The dimension on drawing #3 should be used for KR-1 and KR-2 construction.
- Q. Has someone came up with a folding wing mechanism for the KR-2 that would allow trailering from home to airport and back?
- A. Not yet. A few builders have attempted something along this line but I haven't heard of any real success.
- Q. I understand Rand/Robinson has a new tri-gear KR-2. When will there be plans or kits available and at what prices?
- A. R/R is indeed working on a KR-2 to have a retractable tri-gear. The tri-gear system itself will be a ready to install unit and can be retro-fit to existing KR-1s and KR-2s with minor modifications. Price has not been established yet.
- Q. What propellers are available and work best for the KR's?
- A. Almost every prop maker in the U.S. has a prop for the VW engine and each have met varying amounts of success. At first there were only a few prop makers making our "backward" props, Ray Hegy the most notable. Then came the ground adjustable props of Warnke, Maloof, and Rand. Performance increased dramatically due, to being able to adjust the prop to the individual engine. Shortly after this there was another innovation, the 2 position air adjustable and constant speed prop of Ralph Maloof. Now in development is yet another cockpit adjustable prop....the Vari-Prop, to be adaptable to any VW without machine work. Ironically, the props giving the best performance today are the "new" fixed pitch wood props sold by the Great American Propellor Co., 555 Westmont Dr. #212, San Luis Obispo, CA 93401 and by Bernhard Warnke, Box 50762, Tucson, AZ 85705.
- Q. I live in an area where there are very few people, much less KR builders. Why should I join the KR club? I thought all pertinent info would be in the KR Newsletter.
- A. The idea behind the KR Club is to get individual KR builders to meet each other, compare notes, and, where possible, lend a hand when needed. I send out addresses of the current KR Club members to each new member in hopes that he will contact them either in person, by phone or, such as your case, by mail. I do try to put all technical info in the Newsletter but it's people out there that send it to me and then it is usually sent at the urging of a fellow KR builder. When you get your KR finished you're going to want to fly it someplace. Why not over to a fellow KR owner in the next county or even the next state?
- Q. What are most KR builders doing for a wing walk area?
- A. Most KR builders don't have a wing walk, they step directly into the cockpit from the ground. The fellows that do have wing walks have used various methods, usually an extra layer or two of fiberglass over the wing walk area. 3/32" plywood glued over the wing root has been used with good success by some builders.

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NOTES FROM ALL OVER....Hugh Joesten, 4405 So. 338, Auburn, WA reports his KR-2 first flight was cut short by the canopy "sliding" out of the R/R latches. Dowel pins have been installed to prevent a similar occurrence.....John Wells, Rt. 5, Box 801J, Canyon Lake, TX 78130 reports his KR-2 is completed and flying. He recommends using a stronger tail wheel fork and the 1/4" gear latch bolts should be changed to 5/16" or larger.... Carl Huckfeldt, 11009 W. Tulane Ave., Littleton, CO 80123 has almost completed his KR-2. Notable modifications: a sliding canopy and fixed gear.

Need a place to stay for Oshkosh? A KR builder in West Bend, Wisconsin has a place. Call Jim Kinkema at (414)334-5603 for more info.

Garth Hess, P.O. Box 33, Ontario, CA 91761 reports his KR-2 was in an accident at Meadowlark Airport in Huntington Beach, CA. As he and his wife were landing in his KR, a Cessna pulled onto the runway underneath him and out of his range of vision. The wheels of Garth's KR-2 struck the wings of the Cessna. This, combined with the prop blast from the Cessna pitched the nose of the KR skyward and into a stall attitude. The aircraft came down on one wing, cartwheeled, and flipped on its back. Garth and his wife escaped with minor scrapes and bruises and he credits this to the use of shoulder straps and a roll-over structure. The aircraft itself suffered major damage, including breakage to the main spar. The break was in precisely the same area that the spar on Brad Hummel's GB-1 broke, between the landing gear hinge casting and the fuselage side. Garth suggests re-inforcing this area, but I will leave that to the engineers.

As noted in the last Newsletter, I'm moving to Oklahoma. The move will take place the end of August. Now, the time period I usually reserve for getting the Newsletter out is...you guessed it...the end of each month. I'm telling you this just in case the next KR Newsletter is late. I don't know for sure that it will be but I don't want anyone to worry. The KR Newsletter will come thru!

The building tip drawing in this issue is by Frank Walker of Whittier, CA and was prompted by a 500% price increase in a firewall fitting. So..he made his own!

#### AIRCRAFT STYLE RUDDER PEDALS

\*with brakes\*  
FOR YOUR KR

Build them yourself from complete professional plans. Uses Cessna and R/R parts. Complete list of materials. Full size templates.

\$30.00 Canadian      \$24.00 U.S.

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FOR SALE...KR-2 for parts. 1835cc engine with Revmaster case, Posi carb, starter, new spinner, (no prop). New canopy, easy eye tint. Rand cowling. Instruments: T & B, Alt., A.S.I., M.P.G., Tach, CHT, EGT, Hobbs, oil temp., oil press. 2 fuel gauges, ammeter, & a suction gauge with Venturi & regulator. All with a custom built trailer..\$2500.00 For info call (714)633-8811 after 7 pm.

TRI-GEAR PLANS...Retractable system that uses Rand's parts, wheels, gear legs and spring bar. Conversion plans..\$25.00. Bill DeFreze, 7530 Ironwood Dr., Dublin, CA 94566 phone (415)828-2111.

#### THE DIEHL SUPERCASE

The only accessory case on the market designed to fit either of Rand's engine mounts. Provides electric starting and 20 amp solid state alternator. Now available with starter on top to allow clearance for tri-gear.

#### Current Prices

ACCESSORY CASE.....\$125.00  
RING GEAR ASSEMBLY.... 85.00  
20 AMP ALTERNATOR..... 100.00  
MAGNETO DRIVE..... 40.00  
STARTER..... 65.00

We also have the special tailwheels for the KR's. These are \$15.00 and will fit the Rand fork. And... TRANSISTORIZED FUEL TRANSFER PUMP for \$25.00. Price on wheels and pumps include shipping...Dan Diehl, 4132 E. 72nd St., Tulsa, OK 74136 Phone (918)492-5111.

## FABRICATING A THROUGH THE BULKHEAD FITTING

The following instructions are for 1/8" pipe threads but the process will work as well for 1/4" pipe threads.

1. Place the fitting in a vise and run the 3/8-24<sup>die</sup> down the pipe threads. (Be sure and start the wide tapered end of the die first) see fig. #1
2. Remove the die, reverse it, and run it down the threads again. This will insure that the new threads are evenly cut all the way to their base.
3. Drill a 1/4" hole in the newly-threaded end to a depth approximating that of the threads. see fig. #2
- 4.. Cut and trim a piece of tubing 1 1/2" long.
  - a. Try and find tubing that is a few thousands oversize (e.g., .252). It is desirable - but not necessary - to have the tubing a press fit.
  - b. If you have a flaring tool you can slightly flare one end of the tubing to aid as a hose seal. see fig. #3. The flared end is not absolutely necessary as the hose clamp will do an adequate job of sealing.
5. Press the tubing into the drilled end of the fitting using a vise. (You will have to perform this step only if your tubing is oversize) see fig. #3
6. Using a propane (or acetylene) torch, heat the fitting and sweat-solder the tube to insure a leak-proof seal.
7. This fitting can be attached to any bulkhead or fire-wall up to .100" thick if you use two thin AN washers and a thin nut.

There is a difference between the number of pipe threads per inch and the number of National fine threads per inch but the difference is negligible.

Fitting sizes are changed as follows:

1/8" pipe to 3/8-24 (NF) tubing size 1/4" (OD)

1/4" pipe to 1/2-20 (NF) tubing size 5/16" (OD)

DRAWING ON NEXT PAGE

FIGURE #1

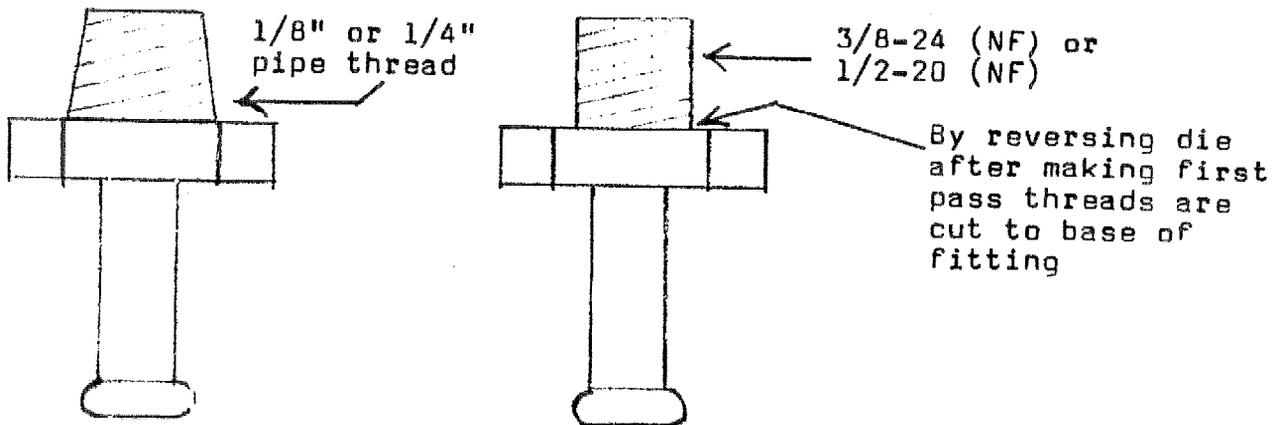


FIGURE #2

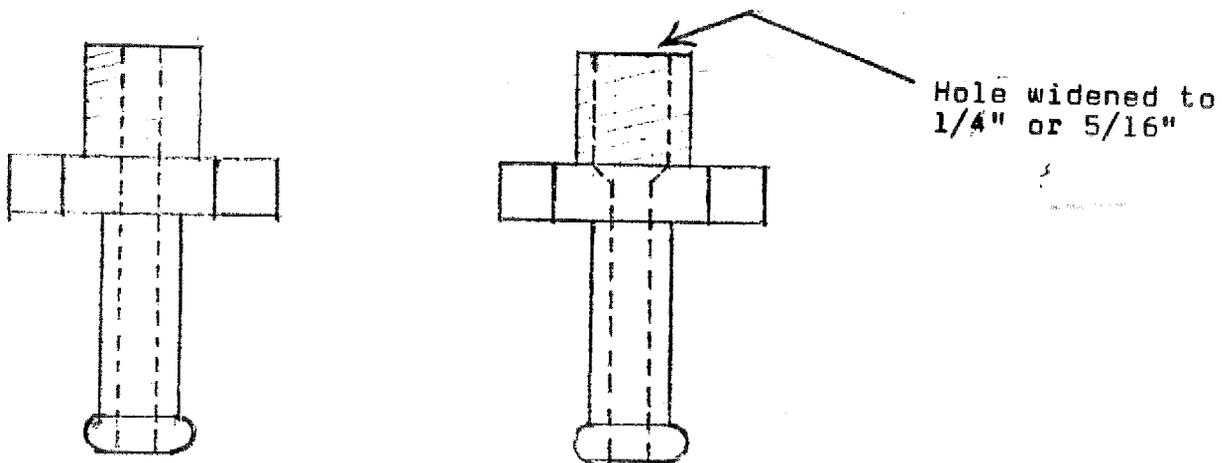
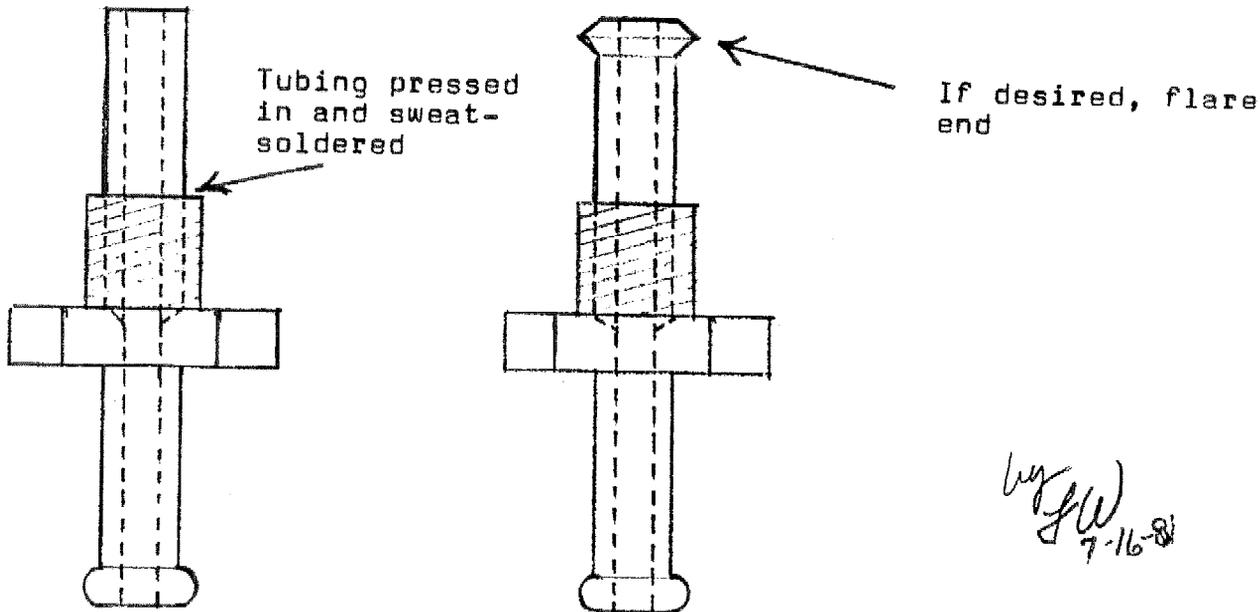


FIGURE #3

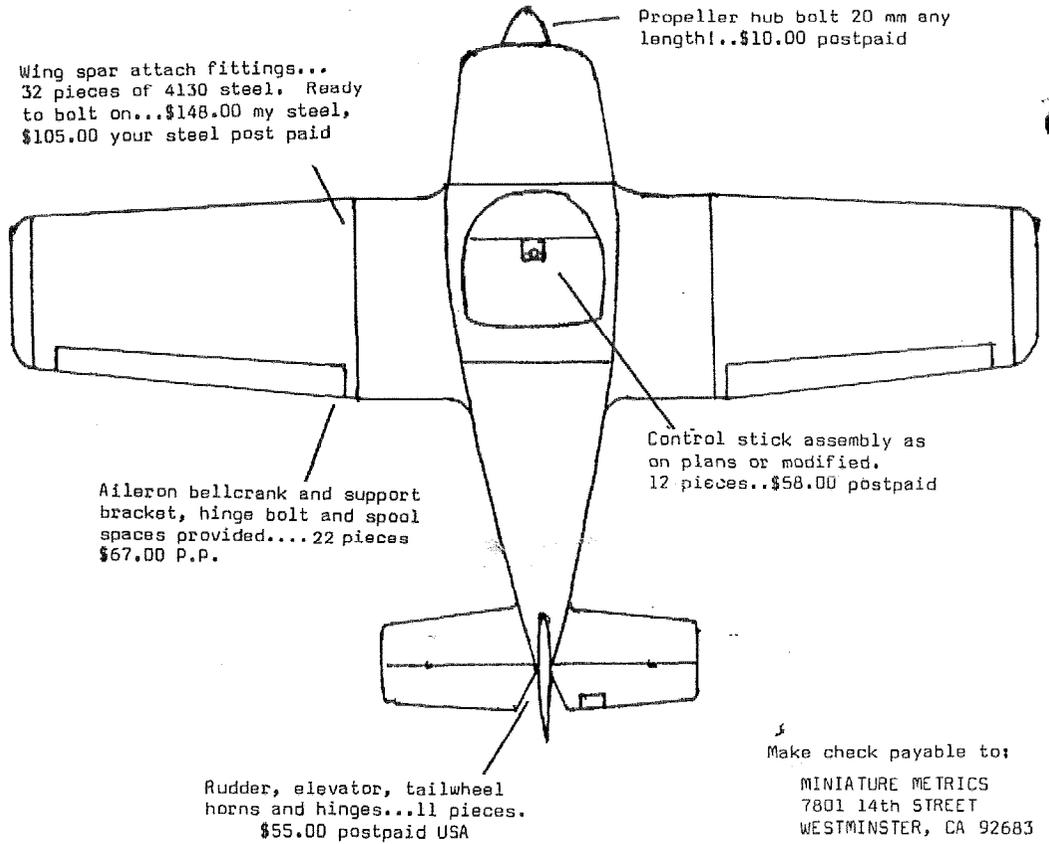


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