

Issue no. 69
March
1981



KR NEWSLETTER

RATES
USA \$12.00 Yr
CANADA \$15.00 Yr U.S.
OVERSEAS \$20.00 Yr Funds

A basis for ideas and food for thought only. Use of any of the idea material is at the user's discretion. Not affiliated with Rand/Robinson Engineering Inc.

There is a small town a few miles north of San Diego called Ramona. Ramona has an airport that is used as a base for the fire bombers so important to Southern Calif. during the brush fire season. Many times this airport is the scene of hustling activity as capable pilots and crew fly missions to save lives, property, and watershed in the California hills.

Once each fall Ramona airport is the site of a happier event. An EAA happening that attracts homebuilts, antiques, ultra-lights and classics from all over California. Each year more and more people come to enjoy the crisp fall air and see what their friends have brought. Last October was no exception and, as usual, the KR's were well represented. Eight KR's were displayed, two KR-1s and six KR-2s. Rand/Robinson's KR-1B was flown in by Jim Loudon who, with Fred Whitcomb, M.C.'d the KR Forum.

Back from last year was Butch Grafton, KR-1, Murray Rouse, KR-2, and Bob Osborn, KR-2. The 1st timers were Dick Kuhr, KR-2 (flight report this issue), Ralph Upson, KR-2, and Tom Criss, KR-2.

It was interesting to note the various engine installations in each of these aircraft and the extent the owners had gone to assure safe, cool operation. I believe the recent series of articles by Rex Taylor of H.A.P.I. in "Sport Aviation" had much to do with this.

The highlight of the whole fly-in for me though, was the all out friendship and helpfulness exhibited by Butch Grafton, Murray Rouse, and the other KR pilots to Tom Criss. Tom did what most other KR pilots have done at one time or another, he bounced his KR-2 a mite too hard. Sure enough, the spring bar poked a hole in the top of the wing on each side. Now, Ramona is not Tom's home field so repairs could have been a real problem. Not to worry...Butch Grafton called home, had some patching materials delivered. Murray Rouse and group helped in the repair and Tom's KR-2 was airworthy again. People helping people! Its a winning combination.

Insurance? EAA Aircraft Hull & Liability Insurance is now available. Contact EAA Insurance, Aviation Insurance Unlimited Inc., P.O. Box 19022, Greensboro, NC 27401. Phone toll free 1-(800)-334-0061.

Dan Diehl reports a change of location for his operations, effective immediately. From now on you can reach Dan at 1855 No. Elm, Jenks, OK 74037. The phone number there is (918) 299-4444.

BUY*SELL*TRADE

WANTED- New Revmaster 2100. Please note mfg. date and accessories with price, no premium. Call or write: John H. McClain Jr. 7175 Salineville Rd. NE, Mechanics-town, OH 44651. Phone (216)768-2481 after 6 pm Eastern.

FOR SALE- R/R 3 blade prop. New, never mounted or used. Purchased 1979. \$225. Tim R. Gibbs 15920 Uppsala Ct., Woodbridge, VA 22191. (703)680-2969.

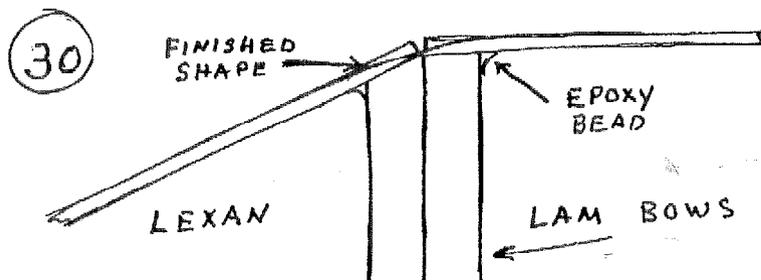
FOR SALE- KR-2 project, tri-gear. Includes Turbo Revmaster w/mixture, and most instruments. \$6500.00. Bob Hamill, 37969 6th Ave. Los Angeles, CA. Phone (213) 299-1434

FOR SALE- 2100 Turbo Revmaster with starter, alternator, dual mags, Maloof C.S. prop, and engine mount. Never uncrated. I will ship for \$4100 certified check. Al Brown, 70 Bandolina, Los Alamos, NM 87544. (505)672- 3419 days, 672-1384 eves, Sunday, and Monday.

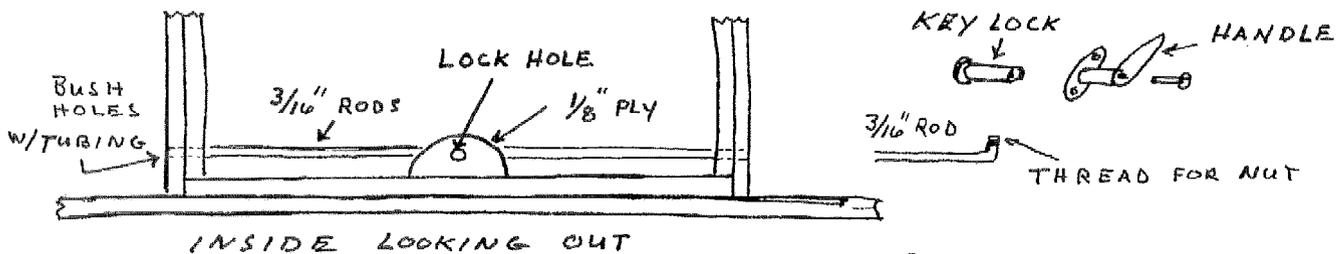
Bill DeFreze reports he has had several requests for photos since his article last month. Evidently you guys are working on your KR's. The following is the conclusion of Bill's article.

GULL WING CANOPY by BILL DeFREZE
(continued from last month)

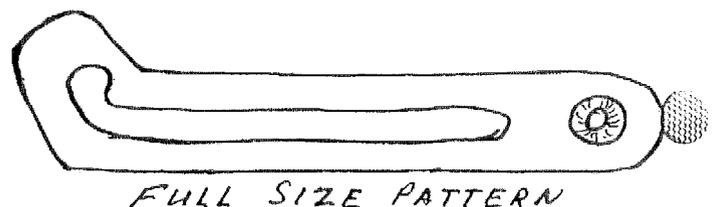
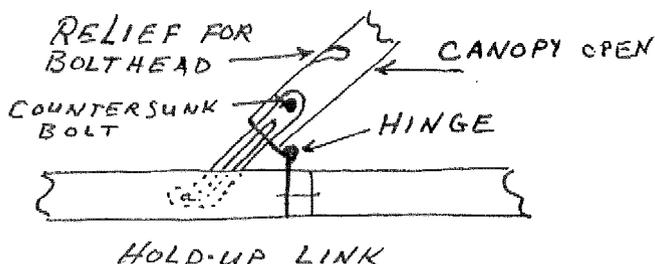
29. After all Lexan is attached, climb inside cockpit with a rag and using your fingers clean away all excess epoxy and it makes a super nice bead inside.
30. At the joint of the windshield and side glass, there will be a sharp edge...using a Stanley "cheese grater" you can shape the Lexan. I was quite surprised.



31. Lexan is tough, so work patiently.
32. Fill screw heads and rivet heads, prime, sand, and paint. Good hardware stores carry aluminum tape. Use tape around edges of Lexan where you will be sanding, it resists tearing much better than masking tape when you get on top of it with your sander.
33. The 2" alum. strip with nut plates is to hold the front turtle deck and fuel tank. Makes access to instrument panel back side and rudder pedal area much more accessible.
34. End result...better headroom, much better visibility and lot better "feel" inside the cockpit.
35. Hold up link and locking system I used.

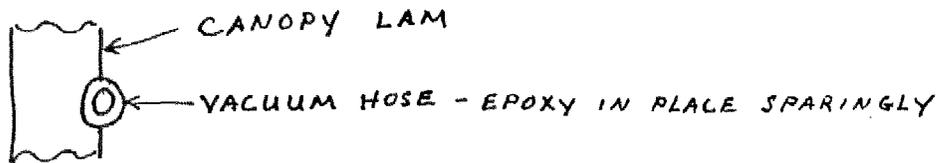


TO DRILL LOCK HOLE, CLAMP 3/4" BLOCKS TO BOTH SIDES WITH 1/8" PLY IN PLACE.



FULL SIZE PATTERN

36. Re-inforce back sides of bolts with alum. plate or large washer. In lower link, use round bead bolt and relieve canopy for head. When closed, link disappears between bows.
37. Weather seal...I used $\frac{1}{2}$ " rubber vacuum tubing.



There you have it, now you can finish the job you started last month. The photos Bill sent were color and would not reproduce well in the Newsletter. They do show a lot of detail tho' and Bill says he will send reprints for \$6 and a SASE. Write to: Bill DeFreze, 7530 Ironwood Dr., Dublin, CA 94566. (415)828-2111.

QUESTIONS & ANSWERS

- Q. I am searching for information regarding the moving of the thrust bearing to the #3 main on VW engines. Can you help me?
- A. This information was printed in the October & November 1979 KR Newsletters. Back issues to the Newsletter are \$1.00 each.
- Q. Are there any KR's flying in Minnesota or Wisconsin climates that have had problems with cracks between foam and wood due to extreme temperature changes?
- A. Yes, there are ways to alleviate this problem though. First, all the compartments in the wing should be vented to each other. This will let the air in each compartment pressurize equally with the other. Another thing you should watch for is taking your KR from a heated garage or hangar into sub-freezing weather. Wood, foam, and epoxy tend to contract at different rates when subjected to sudden temperature changes. Keep your KR in an unheated hangar or garage, or turn the heat off a day or two prior to moving the aircraft outside.
- Q. What is the maximum allowable angle for the aileron pushrod between the bellcranks?
- A. This angle should be as near 90° to the aileron hinge as possible. 90° isn't always possible so the bearing in the push rod end becomes the limiting factor. The thing to watch out for here is binding in the push rod due to the bearings reaching their limit of travel before the aileron has moved thru its' full travel. As long as there is no binding and the aileron moves smoothly thru-out its travel, the angle of the push rod is variable.
- Q. The R/R price list on item 8, KR-2 side has wing attach bolts and then 3/8" wing disconnect bolts. What's the difference?
- A. The wing attach bolts are to hold the steel wing attach fittings to the spars. The 3/8" wing disconnect bolts are used to hold the wing outer panels to the center section.
- Q. Will the 1/4" bolt for the axle kit stand the shock of hard landings without shearing?
- A. Yes, this 1/4" bolt in combination with the aluminum axle has never been a problem to my knowledge.
- Q. Can the "Sting" exhaust system be adapted to fit the Type IV VW?
- A. No, modification to the exhaust system would be too extensive. Be easier to start from scratch.
- Q. Do you still sell the "Supertin"?
- A. Yes, price is \$15.00 post paid in U.S.

Appreciative comments on the flight reports in previous issues plus the several requests for more have induced me to publish the following articles. The experience gained by the writers of the reports can help you prepare for the first flight in your KR. Or...if you've already made the first flight, to keep your KR flying safely.

Ron Sorrell and Eugene Musynski were killed in the wreck of Ron's KR-2 last year. The aircraft was at low altitude, climbing away from an airport when the engine quit. NTSB investigation of the accident decided probable cause was engine failure due to unporting of the fuel outlet. There were no baffles in the fuel tank and the angle of climb allowed the fuel to expose the fuel outlet. All who knew these two men were saddened by their death but the most grievous loss was to their families. The following letter is from Brenda Sorrell, Ron's wife. It is directed at the wives of KR builders everywhere.

We all know how true is the old adage "Behind every good man is a good woman". We are obviously all good women and our KR men are the best or they wouldn't be ours.

Our men put in many hours of planning, studying, seeking and finding help and advice, and even some beer drinking during the building of these beautiful KR's. There is no KR under construction or flying today that doesn't require large amounts of understanding from a wife and family. Once the construction of the KR begins quite often we become secondary. Trust me, this is not intentional, he is just working toward a goal and sometimes tends to set aside the other important things in his life. This is where our understanding and help makes us an important part of the project.

Many times I felt like a full time secretary. Parts have to be ordered, numbers have to be obtained from the FAA and many other equally important things require constant correspondence. I felt as if I had type hundreds of letters and, of course, had to have copies of each. I even asked to be taken out to dinner during National Secretary's week.

My understanding did almost run out many times; you see, N78RS was built in our garage-patio converted airplane factory which was directly under the master bedroom of our home. It was not uncommon to smell epoxy, hear saws or other such noises at two or three in the morning. Then there were the nights that I would awaken at two or three and just hear silence, only seeing the glow of the lights in the airplane factory. I would go down the stairs to see if a problem existed and my answer would be "Brenda, everything has to be just so." The beauty of the finished product of N78RS was a testimony to the hard work and "just so" planning.

KR building is a highly infectious disease. Once it starts there is no stopping it, and besides, which one us would really want to. We have to learn to smile with our KR men at each success and hurt with them at each adjustment. A true KR man never encounters a failure, just an adjustment.

He may not tell you, but it is very important that all his friends and fellow builders know you are a part of the project. At the top of the scale of importance is that you be at the airport to pray, get chills and share the thrill of the maiden flight. According to many great scholars the upper most of man's hierarchy of needs is self-actualization. It is also believed that the normal man never reaches that need. Since KR builders aren't quite normal, they do reach this need. I know my husband reached this need on 5/20/79 when N78RS first flew with the entire EAA Chapter 174 plus many friends and relatives looking on. I luckily captured this look on film as he was shaking the hand of Gene Muszynski, his test pilot, as he climbed out of N78RS after it was taxied back to the hanger.

You must understand that every man must be happy with every aspect of his life to be a total man. I urge you to give your KR man moral support and encouragement as well as a lot of love and understanding.

I had often expressed to my husband the fear that he would be killed flying. His only response to the matter was, "if I die flying, I'll die happy." I know he did die happy. God took N78RS and Gene Muszynski on 7/680 and my husband, KR Designee-Ron Sorrell on 7/7/80 but no one will ever take these happy memories from me.

From Richard Kuhr, 1514 Jade Ave., Chula Vista, CA 92011....."First flight report, 10-20-80 9:00 a.m. 76°F 1835 VW Prop 52 x 47 Plane 549 lbs pilot 215 lbs gas 70 lbs total weight as flown 834 lbs. Pilot experience 200 total hours, 10 in last 10 years, 5 of 10 in tail wheel type. Had about 3 miles of tail up taxi time in type. Pulled out on to the active, slowly applied throttle, established stable tail up high speed taxi, then applied balance of throttle. With 70 mph indicated I moved stick, that was my first mistake, I zoomed (like in Superman) to about 300 agl, I moved the stick again, and saw a whole lot of runway, moved stick again and found semi-level flight, at which point I stopped moving stick and found the remainder of the flight very enjoyable. In regards to the PIO's it should be noted, that my elevator response is 30% slower than the plans show. Found in flight response to be sensitive, but balanced and very desirable after the sensitivity has been adjusted to. Landing(s) were little bouncy, I think I pulled back on the stick after mains touched. Ended up wheeling it on as couldn't get tail low enough without climbing out in ground effect. My plane at the time I flew it, had about 5½ hours on it, accumulated by a veteran test pilot here in my area who looped, barrel rolled, and aileron rolled it at 1½ hours...said the devil made him do it! Rate of Climb is 650 fpm at 95 mph, haven't climbed at slower speeds yet. It appears my speeds will be equal to speeds Ken was clocked at during competition at Oshkosh. 160 indicated at lower altitudes, stalls dirty at about 47, and clean at 53. While I have the opportunity, I would like to publically thank Murray Rouse, KR-2 1998, for his technical help and moral support without which I would still have a canoe in my garage.

From Jack Ross, 715 6th, Brookings, OR 97415....."I first flew my KR-2, (N23RP) in Feb. '78 at Crescent City, CA. As soon as I was airborne I scanned the gauges and discovered the airspeed indicated 40 mph! I lowered the nose and it still indicated 40 mph. I was flying level with full power and it still indicated 40 mph. I judged by the passing "scenery" that my speed was much greater than the 40 indicated. I was committed, as the runway had run out, so I eased back on the stick and made a very shallow climbing turn with full power. I stopped climbing when I was 3500 feet over the airport, no matter what I did it still indicated 40 mph. Stick pressure was very light and I found I could keep from over controlling by resting my thumb on the instrument panel and holding the stick in my curved fingers. I carefully raised the landing gear and got more speed and a more nose up attitude. I made a few turns and found I could make a 40° bank without touching the rudder pedal! What a fantastic little airplane! I found that when making turns at slow speed a little "top" rudder was required. I spiraled down to pattern altitude and landed. I had a very long (4000') runway, so no sweat about landing. It was my first landing in a taildragger! The reason for the bum airspeed was my static tube was not positioned properly. I never could get the air speed to be accurate. It always indicated slow. Since Rand failed to tell where to place the static vent maybe someone could tell where it is supposed to be. The next day I moved the KR to its home field, Brookings, Ore. I landed on the 2600' strip OK but, needed most of it to roll out. After a few practice landings I could get by with about 1300' of runway with moderate use of the brakes. I had to true the brake drums on a lathe in order to get smooth braking. A few days later I was flying around locally and all of the sudden I had oil all over my windshield. I managed to get back down OK looking out the side of the bubble with one eye and watching the oil pressure gauge with the other. I discovered that the "number one quality" engine that a local VW expert had converted for the "right price" was nothing but junk. The case was cracked and painted over. Of course, this is where the oil came from. Upon disassembly, the engine was seen to be nothing but junk. I then built up my own 1834 cc engine using N.P.R. pistons and aluminum cylinders. It was a modified Barker conversion. Rimco in Santa Ana, CA did the machine work and it was excellent. After about 50 hrs on this engine I was taking off from Florence, Ore at about 1000' above the airport when I heard one hell of a noise and the engine quit. Fortunately there was about 50 miles of ocean beach ahead of me and the tide was out. I made a beautiful 3 pt. landing and rolled to a stop. Lee Sparks, who runs a flight service and instructs at the Florence airport, spent the whole day with his truck and trailer getting me off the beach. He wouldn't take any money for his efforts. He is a real

super guy doing a super job to promote private aviation. Thanks to him my plane was saved from the incoming tide. The reason the engine quit was that the wrist pin on #1 piston was defective, and had broken. The engine was destroyed. I had some long distance telephone talks with Rex Taylor of H.A.P.I. Engines before building my next engine. Rex was very helpful and very generous with his knowledge. Another super guy. Heeding Rex's advice I built another 1834 cc engine. N.P.R. was very good about replacing the cylinders and pistons. They were truly sorry their product had failed. This engine used Rex's matched connecting rods, Rex's rebuild on my heads and Rex matched all the pistons. All very good work. All rotating parts were electronically balanced, all ferrous parts magnafluxed and all non ferrous zyglowed. Rex did the machine work on the case and again a good job. I used R/R manifold and exhaust pipes and a Rajay B-25 turbo-charger with a 29 mm Posa carburator and no carb heat. The new engine was smooth as a turbine and the turbocharger worked like a charm. Sea level performance at any altitude was a neat new experience to me. By now most the bugs had been worked out of the airplane and I was making a few cross country trips. Once at altitude and all trimmed out I could fly for miles "hands off". If I wanted to fine trim I would move my arm to the instrument panel or to the back-shelf. The nose would go down or up accordingly. On Jan 29, 1980 I took off runway 30 at Brookings bound for Crescent City, CA. I was about 200' off the runway when the engine quit! No warning, it just stopped. I managed to find a small spot of brush among the trees and boulders below me and I crash landed there. There was a Cessna 150 taking off behind me and fortunately he saw my engine quit and called for help. Help was on the way before I hit the ground. I shattered both ankles. The right one so bad the doctor had to make a new leg bone with a piece of my hip. My lower face was pushed in, both cheek bones and my upper jaw was broken. (No shoulder harness.) I never would have survived had it not been for the 150 pilot seeing me go down and the expert work of our local E.M.T. volunteers. This is desolate country and very rarely are there two planes taking off at the same time. I am very lucky to be here! I spent 7½ weeks in the hospital and 3½ months off work. I am still on "light duty" status at work. The engine failure was caused by the magneto "P" lead grounding out on the aluminum instrument panel. The screw that held the lead on the mag switch had vibrated all the way out. This screw was secured by a lock washer that did not lock. The KR was destroyed. I managed to salvage the engine, landing gear, spars and, of course, all the hardware. I am going to build another KR-2. I don't think I will use a VW engine. I would feel safer with a "real aircraft" engine. In any case, dual mags would have saved by "bacon".

I would like to hear from some of the people who have used Cont. or Lyc. engines in their KR's. A couple of remarks in closing...1. If you buy a "ready build" engine buy from known quality builder (Revmaster, H.A.P.I., Monett, etc.). They have proven their products and stand behind them. 2. If you build your own engine buy only the best quality components that are made for aircraft use. H.A.P.I., Rimco, etc. Dune buggy parts just don't do it. Have all ferrous parts magnafluxed and non ferrous parts zyglowed for defects. 3. If possible, use dual mags. All magneto "P" lead connections double nutted or use loctite or both. Believe me when the fan stops turning, the pilot starts to sweat. I will gladly help anyone who needs advice or information about building a KR-2."

From Carl West, 1208 Vine St., Girard, OH 44420....."I thought I'd write and let you know how my first flight went in my KR-1. In issue #66, I wrote about the first flight of the plane itself with Bill Reents at the controls. In the middle of November, all damage had been repaired and I ran out of excuses not to fly. I had told Bill that I might give it a try on the following Saturday, the 15th, the weather permitting. I guess I'm typical of the type of pilots that have been sending in flight reports to the Newsletter. I'm a low time private with no taildragger time. I did however get two hours in a Grumman trainer and also an hour of loops, spins, wingovers, and etc. in a 1941 T-craft tandem. I had also "flown the tail", and made many taxi runs. Well, anyway, I got out of bed that Saturday morning and looked out the window. Darn it, overcast but not too bad. I knew it was the day. I drove the 20 miles to the airport in a semi'conscious state. Bill had already had his plane up and had landed and was waiting for me. I rolled my plane out, checked and re-checked everything, belted up, and got a prop start from Bill. As I taxied out, I couldn't help but wonder why

I didn't take up golf and bowling or some other hobby instead of this. Run up engine-check everything-a practice run-return to end of runway-closed eyes-prayer-line up -scared-1/3 throttle-moving-more scared-this is it-full throttle (mistake)-tail up-very scared-oops!! nose right--nose left oh-oh!!-nose right-going off right side of runway-ease stick back slightly-flying!! (sort of)-wobble-porpoise-porpoise-porpoise-grab stick with both hands and climb out smoothly. I climbed to 2000 ft. and leveled off. My first impression was "Boy, this thing flies just like a real airplane." After a few gentle turns I relaxed a little. I was not as scared as I thought I'd be once I was airborne. Cyl. head temp. was in the red so I eased the throttle back to about 2600 rpm and slowly flew it at about 105 mph ind. I realized later that if I had went faster and put the gear up, the engine would have cooled better. I didn't touch the gear because everytime I looked down, I was either climbing or diving. I looked down at the runway and saw Bill taking off. A minute later I saw Bill approaching at 4 o'clock. His face was clearly visible behind the swirling propeller. Wow, this is just like "Baa-Baa Black Sheep". Bill peeled off to the right and I went after him, "guns blazing". A little voice said "quit horsing around, your not that good yet" so I flew around the airport area for 25 minutes while Bill took pictures. I watched as Bill landed. It didn't look too hard, so I figured I'd give it a try. My first approach just didn't feel right, so at about 50' AGL I made a go around. My next approach was much better. I carried power all the way down to the numbers indicating about 85 mph. I was about 5" from a perfect 3 pointer when I forgot I wasn't in a Cessna and pulled back on the stick. It started flying again so I lowered the nose and bounced it on. After touch down I kind of lost my fine touch and alternated trying to put my left and right feet through the firewall. I finally got it going straight and pulled on the brake cable. It stopped. I had done it!! I gave thanks for my answered prayer. I taxied over to the pumps, shut down, opened the canopy and yelled YAH-HOO!! A small group of spectators offered congratulations. I accepted with no sign of modesty. I wanted to fly again but I talked myself into waiting until I changed the baffling for better cooling. The cyl. head temp. stayed right around red line and I have visions of the engine seizing on take-off. I started re-baffling but a severe winter has settled into NE Ohio and its hard doing anything with numb fingers and feet. The plane flies almost exactly like the Grumman, except the KR elevator is about 5 times more sensitive. The Grumman elevator is $\frac{1}{2}$ the size and spring loaded, thats probably why. "flying the tail" feels just about the same as it does in the air. The airplane is like a little hot rod in the sky. A skilled tail-dragger pilot would have a definat advantage, but I feel that with a little practice I'll be able to tame it, and keep it going straight. You just haven't lived until you've been 2000' above the ground in something you put together out of plywood and styrofoam!!

From Joe Gilewski, 43 Davenport Ave., Roseland, NJ 07068.....I have accumulated $28\frac{1}{2}$ hours on my KR-2 since my first flight on Aug. 16, the account of which you published in the November Newsletter, and have learned many things, most of which are common knowledge or have at least been mentioned somewhere. The one experience I've had which seems uncommon or which I have never heard mentioned, is with my radio transmitter. My plane is equipped with a King KX145, a Narco AT-50A transponder, a King KR86 ADF, and a marker beacon receiver...All those antennas have been installed in the tail cone. I happen to be rather deeply involved in electronics and avionics and have a fairly respectably equipped electronics shop for an amateur. Therefore it was a matter of deep frustration to see that no matter what I did to my radio transmitter, the best report I could get on a radio check was "fair""readable", and that only when I was on the ground or in the pattern. I fly out of a controlled airport and sometimes couldn't get off the ground because my transmitter was unreadable. Getting home was always an adventure. I installed mods 6 & 8 into my KX145 which originally had mods 1-4, in order to obtain clearer transmissions--to no avail. The solution was to install an outside transmitter antenna with a good ground plane--which gets me "Loud & clear" reports to 35 miles away. When I had my transmitter antenna among four other antennas and the elevator and rudder control wires, it would'nt work very well.

FEEDBACK DEPARTMENT

Dear Ernest,

Enclosed is my renewal for the KR Newsletter and with your permission will rap a bit, for what it's worth.

My project is the KR-2, approx. 75%+ complete. It has wing tanks, flaps, all contols balanced, NASA low drag tips, fully enclosed gear covers, dual controls, positive locking gear, etc.. To speed up the project I ordered and received from Rand/Robinson the fiberglass engine cowl, and turtle deck. Of which, I am somewhat less than ecstatic to say the least.

I was elated to read in the Dec. 80 issue about Mr. Carl Laetare and Mr. Forbings experiance with the supposed epoxy reaction. (I started to burn and itch all over again, Ha!) I almost had given my project up because of the very same reaction. Since reading their experiences I recall in the beginning I had a pair of Playtex gloves, everything was fine. They finally went the way of all flesh and I purchased some other brand rubber glove. After two-2 to 3 week battles with the very same skin eruption (hands only) described by Carl Laetare, my good wife got me a box of medical examination gloves. Same routine over again (hands only). I was at the end of my rope. I thought perhaps fumes from the epoxy was getting into the gloves and I tried rubber bands around my wrists with no better results. So was glad to be enlightened. I shall search for some Playtex gloves and continue.

All hail the makers of the (living bra) gloves. (Ha,Ha) I had found that very hot water soaks and the application of Vasoline Intensive Care lotion gave some relief from the throbbing pain and itching. So much for that. Thank God and everyone concerned for the good information.

Oh, yes, my air strip (McClain Field 1800 ft plus) is now on the new sectional for the Ohio area. And Bill Rentz, also mentioned in Carl West's accident report (Dec. Newsletter) has flown his KR-1 in and out at least 4 or 5 times. We have a hanger for five full sized planes. Any and all EAAers are welcome anytime.....John McClain, Jr., 7151 Salineville Rd. NE, Mechanicstown, OH 44651.

ERNEST KOPPE
6141 CHOCTAW DRIVE
WESTMINSTER, CA 92683
MAR 1981 ISSUE #69

