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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

I have been knee deep in work, trying to prepare for the coming E.A.A. gathering at Oshkosh. Trying to get caught up with my job, the Newsletter and making preparations for the trip, have really had me running. I'm not complaining, tho', Oshkosh '80 will be worth every minute. This year there is to be a KR workshop every day! It will be headed up by Rex Taylor of H.A.P.I. with help from myself and others with something to contribute. The KR forum is Thursday, August 7th at 3:00 pm in forum tent #2. Several KR builders plan on camping at the campgrounds so I'm sure there will be nightly meetings there. Look for notices on the bulletin boards and around the KR's on display. Robin Butler had made repeated efforts to get E.A.A. to allow us to have a tent like that of the War Replica group but to no avail. H.Q. feels that if they allow a tent for one type of aircraft they would have to allow a tent for each type. The display area would possibly be turned into a "Big Top" rather than a flight line... O.K., I'll accept that....for now. Many thanks to Robin for trying. There should be a record number of KR's at Oshkosh this year. The Chino fly-in is usually the indicator and there were 17 KR's there this year. At least 7 of those plan on attending the Oshkosh bash. Rex Taylor is going to fly Fred Whitcombs KR-2, Paul Venne plans on flying his, Tom Crise will get his there one way or another, Bill DeFreze is flying his tri-gear KR-2, Jim Evans will take his sleek turbo 2100 KR-1, Jim Loudon's KR-2 will be going as will R/R KR-1 and KR-1B. Now that's just the ones I know of from California. Steve Bennett, Ray Ellis and a group from Iowa and surrounding states plan on flying in together. Dan Diehl will be there (what would the forum be without Dan?) and several others have said they will get there one way or another. If you are flying your KR to Oshkosh contact Bill DeFreze or Ray Ellis if you're interested in going as a group. See you there in any case.

Those of us getting there by car and camper have a friend along the way. KR builder Ken Dahle has an overnight campground in Nebraska on the northeast corner of exit 382 off of I-80, (about 18 mi. west of Lincoln). Ken offers an invitation to all KR builders to stay FREE anytime they are passing thru to Oshkosh or any where else. Ken just flew his KR-2 for the first time, a flight report will be in a following issue. See you at OSHKOSH!!

Sometimes things happen that takes the fun out of writing the Newsletter. True, it doesn't happen often, but even one time is too many. We lost two good friends recently, Ron Sorrell and Gene Muszinski, in the crash of Ron's KR-2. Gene died in the accident, Ron later in the hospital. An eyewitness to the accident reported the following....."the aircraft was landing and then made a go around and came back for another try. They didn't land this time either and apparently were going to go around again. The engine quit when the aircraft was about 200' up while they were climbing out. It looked like they were going to turn back to the airport because the aircraft started a turn...then they went into a spin."

They say bad news travels fast. I think this is especially true when there are good friends involved. The sounds of the crash had not faded when the news of it began spreading across the country.

We can't bring back Ron and Gene. We can't change the course of events that occurred that day. We can try our best to avoid a similar accident. Think about what you would do if your engine quit. Be prepared. We lost two friends....please...lets not lose any more.

??CARB ICE??

Received my first copy of the Newsletter yesterday and was looking over some of the old ones I received when I bought 9241A, my little KR-2.

I was reading the questions and answers on #33 about carb heat on the Posa. I thought I'd better relate an experience I had last Sunday, a.m., June 22.

First though, before I was able to obtain my airworthiness certificate for the KR, my FAA inspector made me build a carb heat set-up before he would issue my certificate. I explained the Posa carb to him in detail and all about the hot air that was already being used and that it COULD NOT ICE! He said fine, put a carb heat box on and make sure it works. Not wanting to waste time getting that piece of paper, I complied. The heat box was a Mickey Mouse set up but it worked and the heat muff was a Dr. Pepper can I found setting close to the plane. I slipped it over an exhaust stack and secured it with clamps on top and bottom, ran a hose to the heat box. I fired the VW up, pulled the carb heat and got an RPM drop. That satisfied the FAA.

Sunday morning after some rain showers passed, I was putting the cowling on, after having to put a new set of cylinders on the Monnet 1700 VW engine. Seems the engine came from them with bent push rods and the wrong pistons (I have the parts that came off and plenty of witnesses to this fact) and was ready to see how the plane would fly with an engine that would run instead of putt at 3100 maximum RPM (in a slight dive that is). I warmed the engine up earlier and checked for leaks and was ready to go.

I rolled the KR out of Brownwood Muni hangar, propped the engine, hopped in and taxied to 35. After the traffic cleared, I took off, gained 500', made a left turn & watched the RPM start dropping. I double checked everything and made a quick downwind turn as the engine kept slowing down. I reached for the carb heat and pulled it full on while telling myself it ain't ice. When I pulled the knob, the little VW sounded like all heck had broken loose. The RPM fell to about 1300-1500 and spit and sputtered for 7 or 8 seconds, then all of a sudden it wound up full throttle. The ice that wasn't there had melted. I could have kissed that FAA inspector then and immediately took back all those bad thoughts I had about him.

I flew 1.2 hours Sunday morning and picked up carb ice 3 times before finally leaving the heat on for the rest of the flight. The temp was about 83° to 85°, and the humidity was very high I'm sure, even for central Texas.

I would probably have banged up my baby as I wasn't where I could have come around to the runway very easily, if I hadn't had the little box. You can rest assured I am now building a better, sturdier unit right now and will design it for ram air with an air filter on it.

The moral of this story is "Who are these so called experts?" Their fallacies are going to get someone killed. Of course they will probably say...it can't happen. Brother, it can.

If anyone has a Monnet engine that will not perform, pull the heads (one head) and see if the pistons come to the top of the cylinder when in the TDC position. I'm not a VW expert but my pistons liked 10 mm coming to the top of the cyl. and compression was mighty weak when hot. Also these push rods in my engine were not a standard length. Took some aluminum push rods and cut them down to 76 mm and they worked perfectly. The ones in the engine were chromaloy and bent (6 of them). The engine had 3 hrs. flight time on it when I bought the plane and I am the only one to work on it. Also, one rocker cover casting is cracked in both bolt holes. You people check your engines REAL GOOD if you don't know what inside. Some people's name don't mean a thing. It is your life....PROTECT IT.....Clyde E. Graham, Jr., P.O.Box 645, Brownwood, Texas 76801.

KR CLUB NEWS

A new group of KR builders have formed on the east coast. Don Lewis reports the forming of KR squadron 339 E.A.A. There will be monthly meetings and interested parties should contact Don Lewis at (804)467-7737 or by writing him at 1856 Old Ridge Road, Virginia Beach, VA 23464.

The L.A. area KR group will meet at Rich Seifferts, August 18th, one week later than usual due to several members being away for Oshkosh. Rich's address is 5306 Lucky Way, Santa Ana, CA 92704. Mark the date on your calendar, we'll have Oshkosh pictures.

QUESTIONS & ANSWERS

- Q. I would like to build my KR-2 in a tandem seat arrangement. Is there any information available on this modification?
- A. I don't know of anyone that has built or started to build their KR-2 as a tandem seater. The prototype KR-1, N1436, was originally designed as a tandem seat aircraft and, indeed, had a jump seat installed. It was never flown with two people on board but did make several taxi runs. Whether or not the KR-2 could be flown as a tandem would naturally depend on the c.g. of the modified aircraft. If it falls with the envelope...it should fly.
- Q. May I use plastic (poly-ethylene) sheet instead of wax paper? Will it seriously affect my lay-ups?
- A. Several different items have been used successfully, the plastic you mention is one. I personally prefer no wax paper or substitute on large lay-ups because it uses additional epoxy, leaves ridges that have to be sanded and adds weight.
- Q. What are the performance difference with various size engines (1600 to 2180) in the KR-2?
- A. The performance of a KR-2 with different engines will vary according to weight as much as to size of engine. A basic 450 lb. KR-2 (is there really such a thing?) will do nicely with a 1600cc engine, i.e. a 700-800 R/C and 135-140 mph cruise. This same KR-2 with a 2180 cc and no other added weight will have a R/C of 1500-1700 FPM and a cruise of 165-175 mph. These figures are not absolute and will vary with prop, workmanship, etc. A 550 lb KR-2 will fly with a 1600 VW. I would be very careful before carrying a passenger in it tho. A KR-2 this heavy would need a minimum of 1835cc for adequate performance. You can interpolate the performance of various weight KR-2s using these figures and arrive at a reasonable guesstimate.
- Q. Should the firewall be reinforced in a KR-2 if an 1834 cc engine is planned?
- A. The firewall area in a KR-1 or -2 will support a VW engine 1300-2180 as long as standard aircraft practices are used in making the glue joints i.e. 90% or better contact in all joints and well controlled glueing practices.
- Q. Is it possible to use fuel resistant plastic or neoprene fuel lines in place of metal ones?
- A. Plastic and neoprene hoses are used regularly to carry fuel in our KR's. They do require close inspection as time goes by since they harden and crack with age.
- Q. Could I get Brad Hummel's address? I would like to get some information on his sliding canopy.
- A. Brad's address is 15872 Puritan Circle, Huntington Beach, CA 92647 phone (714) 894-3888.
- Q. I've used Don Land's tri-gear in my KR-2 and I understand the Newsletter has information on a control system that will work with this system.
- A. I think you are referring to a sketch of a control system using push/pull tubes rather than cables. It was only a sketch and there were no dimensions. This does bring a point I've made many times...modifications lead to modifications lead to modifications, etc.

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A note to purchasers of Bill DeFreze's tri-gear plans.....a correction sheet is available. Send him a S.A.S.E. and he will send you one.

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Ed Nelson, Box 858, Pinehurst, ID 83850 has flown his continental A-75 powered KR-2. First flight was just before the Mt. St. Helen eruption and the drifting ash has kept flying to a minimum. We'll have more info on Ed's KR-2 in a later issue.

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Jerry Russell, 5600 Albright Dr., Virginia Beach, VA 23464 is making a full length aluminum wing tanks in his KR-2 and will price a set to anyone interested. After reading the following letter I might be writing him myself.

From Brian Benjamin, Rte. 6, Knollwood Acres, Spartanburg, SC 29303....Some cars have operated satisfactorily with gasohol but some have had problems. Disintergrated hoses, plugged fuel filters and damaged carburetor floats are some of the problems encountered. Of greater interest to homebuilders is the fact that some types of epoxy can be affected by gasohol. For example, Epon 815 epoxy resin and Versamid 125 curing agent worked very well on my KR-2. However, when I used two gallons of gasohol for ground testing, my epoxy fuel tank was severely affected. The epoxy was softened and even flaked off in small globs. I may have mixed a bad batch but so could a lot of other people. In view of my experience I checked with a couple of epoxy suppliers who recommended the use of polyamine curing agent such as DETA. This apparently provides a much more chemically resistant epoxy. (The polyamines are also more toxic that the polyamides.) I have begun some testing of epoxies and hoses in gasohol, 100 L.L. and 80 octane fuels. So far, the results of my tests (at up to 150^oF indicate that the polyamine cured epoxy is very good in 100 L.L. and 80 octane. There was a very slight softening in gasohol but apparently no further degradation. Some clear plastic tubing such as polyurethane and certain vinyls appear to be OK. However, I strongly recommend that all homebuilts have tests done on the materials used in their fuel systems.

BUY ◊ SELL ◊ TRADE

HAVE SOMETHING TO SELL?

Advertise it in the KR NEWSLETTER
25 words FREE to NEWSLETTER subscribers
seeking or selling parts for their KR's.

Other rates are as follows:

15¢ per word for typed ads.

Display ads are charged according to size.

1/8 page...\$12.00 1/4 page...\$22.00

1/2 page...\$42.00 Full page...\$80.00

Typesetting and halftones extra.

FOR SALE...KR-2 project. Complete minus cowl, outer wings & engine. Set up for 2100 Revmaster...Dill Henderson, 816 E. Edna Pl., Covina, CA 91723 or phone (213)331-3307 (work) or (213)964-1917 (home).

WANTED...Complete KR-2 landing gear system with or without wheels & tires. Will pay in the \$150.00 range minus tires and wheels. Contact Herb Spies, Painter Hills, Middlesbury, VT 05753 Phone (802)388-7443 after 6:00 pm.

FOR SALE...KR-2 project. Lower fuselage & all controls finished. Tail & center wing fiberglassed, outer wing spars finished. All R/R molded parts to finish. New boat trailer with deck for hauling. Excellent workmanship. \$1500.00 for all....Bill Speyer, 867 Rockcreek Dr., Dayton, OH 45459 or phone (513)433-9915.

FOR SALE...1600 cc VW Barker conversion Test run but never used...\$1000.00 or best offer....Delford Roth, Warroad Clinic, Warroad, MN 56763 or phone (218)386-2631 or 386-2160.

MINIATURE METRICS

Quality bolts for the Diehl Supercase.. \$10.00 per set. Control stick bearings and other hard to find items. Send S.A.S.E. for more info.

Minature Metrics
7801 14th Street
Westminster, CA 92683

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.

FOR SALE...Bolt on conversion parts for your VW engine. Starters, flywheels, magneto drives and alternators. Over 120 "Supercases" delivered, many flying!! ***New item...transistorized fuel pump for fuel transfer, light, efficient & safe. ***Send S.A.S.E. for more info. Dan Diehl, 4132 E. 72nd St., Tulsa, OK 74136 phone (918)492-5111.

FLIGHT REPORT

First Flight Report KR-2 (Modified) N88GH Garth Hess

Date: July 11, 1980

Location: Chino Airport, Chino, CA, Runway 21

Experience: Total time 125 hours, about 45 hours in a Taylorcraft, five years ago. Balance in Cessna 150 and 172. For the last three years have averaged about 10 hours in the 150 and 172.

KR-2 Experience: Approximately four hours of taxi runs (no wings) up to 55 mph. About 15 minutes inflight practice with Dan Diehl in N400 at Chino fly-in in April. One hour elevator sensitivity tests on ground (blocked wheels on 5" high chocks, tied tail to eliminate prop striking ground and "flew" with tail in level attitude).

Weather: 96° in shade; wind approximately six knots at 240 degrees; medium smog level.

Aircraft Condition at Take-off: Oil temperature at 210° (start of yellow caution area).

Take-off: I opened the throttle possibly faster than in previous taxi tests. The torque caught me by surprise and we started veering to right; reduced throttle, straightened out, added power, veered to right again, reduced throttle, straightened out, added power, stayed straight, wheels got light with a few little bounces. Next thing I knew I was up about ten feet. Bobbled slightly in roll and pitch, settled down for climb-out. Due to high oil temperature, pulled back power and climbed slowly.

Flight: Flew around slowly getting the feel of the plane and trying to cool the oil. After about 20 minutes, I remembered the wheels were still down, up they came, with an increase of about 15 mph and smoother flight. Next I remembered I hadn't touched the elevator trim. The light elevator force on the stick had essentially masked a slight nose down tendency. The trim worked well (my trim tab area is about 70% larger than shown on plans). I made some fairly steep turns and found that the plane handles beautifully. Dan Diehl told me not to consciously move the stick, just sort of think about it and the plane responds. It does. I used a laminar airfoil section instead of the RAF-48 so that the stall behavior is no doubt different but I found that a very gentle more or less level attempt to stall resulted in a slightly nose high mush with all controls still effective but a descent rate of 500 to 700 feet per minute. Adding power slowly reduced the descent to a climb. A more pronounced nose high stall resulted in sharp and heavy buffeting before the final drop.

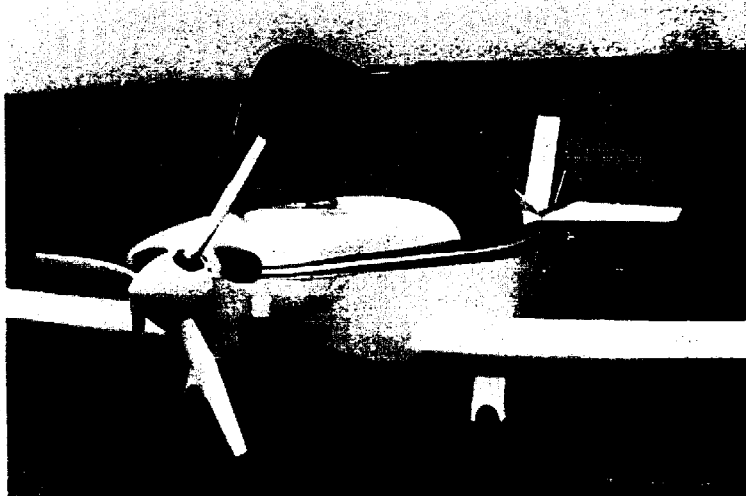
Landing: Due to the mushing characteristics previously noted and not being too sure of its effects in a full stall three point landing, I elected to try a wheel landing. I, therefore, made the approach a little high (in case engine quit) and fast (80 to 85 mph to stay away from mush). Touchdown was surprisingly and exceptionally smooth after a good deal of nervously jockeying it down for those last 20 feet. Because I landed on the wheels with the tail up, I did not have the feeling of skidding on the runway with the seat bottom that I had expected. Point of touchdown was about one-third down the 6200 foot runway. I wandered a bit back and forth across the runway while slowing down, but the plane answered very quickly to the rudder. Practice should reduce the wandering considerably. I must have touched down at about 75 mph because it seemed to take forever for the tail to drop. I didn't want to apply brakes until the tail was down for fear of nosing over. Also, due to the excessive speed, I didn't want to force the tail down for fear of becoming airborne again. The end of the runway was approaching. Happily the tail lowered, and I applied the brakes (I have individual heel brakes). Forward motion stopped sufficient to turn on the last taxiway, which is about 75 yards from the end of the runway. The taxi back to the tower where the family waited was pure pleasure.

Conclusion: I must say that never in my life have I experienced such extreme exhilaration and stark terror in such a satisfying, egg building culmination of five years of building and dreaming.

From Charles Grassie, 55 Evergreen Rd, Attleboro, MA 02703.....Here is a picture of my KR-2 and flight impressions. The airplane is very responsive to elevator inputs, but after a few hours flight time, it seems natural. The restriction was lifted after 26 hrs. The only problem encountered has been with wearing out R/R tailwheel. I solved this problem by installing a Pober Pixy spring and tail wheel assembly. Now I have great forward visisbility as the airplane sits higher on the tailwheel. I also installed a flap-dive break combination at the center of gravity under belly. The landing distance has decreased dramatically from 3000' to under 1500'. The more I fly this airplane the more I like it!

TACHNICAL DATA

Airplane.....KR-2 N9038X
Engine.....Revmaster 2100D
Radios.....Nav. & Com.
Empty Wt.....605 lbs
Take off Run.300-500 ft. est.
Take off Speed...65 mph
Climb out Speed..80 IAS
Climb Rate...1000 fpm
Oil.....60 psi at 3000rpm 160°F
Cyc Temp.....300-340°F
Cruise.....70-75% power
RPM.....3000
Cruise wheels down...125 IAS
Cruise wheels up.....145 IAS
Ammeter.....15 amps
Oil, level flight...50 psi-60 psi
 160°F
Cyc Temp, level flight...300-340°F
Landing pattern speed...80 mph
Landing technique...Hold off on float
 Keep straight with rudder
 & it will land itself



Landing distance...3000' w/o dive break
 1500' with dive break

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