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KR 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

HAPPY NEW YEAR!!

The past year has been an emotional one for me, starting out as it did with the passing of Ken Rand and continuing with the loss of other wonderful people. There have been highlights too, like the acceptance shown by the KR builders for the KR Club and KR Designee idea, the camaraderie and good fellowship at Oshkosh that just has to be experienced to be believed and the flight to Tullahoma with Dan Diehl in his KR-2. Mostly tho, it has been knowing of all the the friends I have made thru the Newsletter.

1980 is here and is ours to do with as we will. Lets make it the best ever, so we can look back with satisfaction this time next year.

Last month's Newsletter article about the KR-2 accidents brought a lot of response by phone and mail. Most of the questions were repeated each time so I thought it would be a good idea to print them so all of the KR pilots and builders could benefit. The answers are mine and are open to comment.

Q. What type of engine was it that failed?
A. One was a homebuilt, one type unknown, and two were Revmasters.

Q. Why did they fail?
A. This is very difficult to determine after an accident. We know that one turbo-charged engine had a broken crankshaft when it was disassembled but the cause of the fracture is unknown. Almost all of the VW engine failures I have seen can be traced directly to one of two causes....fuel system failure or improper engine cooling. I can't stress enough how critical these two factores are in the safe operation of a VW conversion. I have seen KR builders spend hours of time and hundreds of dollars on their engine and then be reluctant to spend an extra couple of hours or $20.00 to properly install it in his KR. You explain it, I can't.

Q. Is there someting in the design of the KRs that cause them to stall or spin when the engine quits?
A. No. The cause of a stall/spin in a KR is the same as any other homebuilt or factory built aircraft.

Q. Why, then, do the KRs seem so likely to stall after a power loss?
A. This is the point I was trying to make in the last Newsletter. KRs and other very light aircraft tend to slow down rapidly when the engine quits. If the engine quits when the aircraft is in a steep climb configuration (full power, low airspeed), the airspeed loss is critical. The only sure way to avoid a stall is to get the nose down to maintain airspeed. DO NOT try to make a turn until a glide is established, 80-85 IND. A.S. usually, and then make the turns gentle, 30° or less angle of bank.

KR CLUB NEWS

KR Club members in Kansas will be meeting at 7 pm, Jan 12 at the El Dorado, KS airport. Host will be William Churchman who has recently completed his KR-2.

Chicago area builders interested in getting together should contact Jon Freund, 2 S 514 Iroquois Ct. W., Warrenville, IL 60555 or phone (312) 393-2354.

New Zealand KR builders can keep in touch thru Anthony Chaytor, Marshland, Blenheim R.D. 3, New Zealand. Anthony is very involved with building and restoring aircraft and appears to be well qualified to offer advice to N.Z. homebuilders.

Locally, the KR Club members here in the L.A. area are going to meet at Carey Anderson's, 7801 14th St., Westminster, CA 92683. There is going to be a buy-sell-trade table so bring your surplus parts, maybe someone else can use them. I'll have a slide projector and screen available if anyone wants to bring slides (please do). See you there.....

FLIGHT REPORT

From Robert Wood M.D., 14136 Oak Knoll Rd, Sonora, CA 95370.....I started my KR-2 in November of 1976 and finished it in January of 79. My friends think it a little odd when I tell them I really enjoyed building it, but its true anyway. Its a good way to let off steam after a hard day in the office and it sure beats watching T.V.! I probably should have kept a work log of time, but I get too much paper work to do in the office as it is. I can't think of any major problems in the construction. The main thing is to try to get something done every time you can even if its just a little bit. That way the project moves along steadily. I owe much to my wife who complained very little about the continual cloud of dust out in the garage, not to mention other annoyances such as dirty hands and clothes. I think my next project will have to be somewhere else though!

Testing program started the first of January. I think that everybody around the airport thought I was the biggest chicken around as I spent about 15 hours just taxiing. Also did a lot of lift-offs and found it quite manageable. Had to do a little hitching up of the tailwheel cables as they were loose. The engine is a 2100 D turbo-charged Revmaster with a two speed Maloof prop. After my initial FAA inspection, the moment of truth arrived and I found out that I had been doing the hard part all the time on the ground! When you're in the air there's no problem. I have found the craft so stable, that you can fly it hands off. Just lean in the direction you want to go. I was apprehensive that overcontrol was going to be a problem but I have not found this so at all. I have noticed, however that 150s, etc. handle like trucks now!

As of now I have about 80 hours total KR-2 flying time and have had a few exciting interludes. The first time I lost oil pressure and had to get down fast. Sheared copper tubing was the culprit. Don't lead off the engine with copper tubing, it won't last long. Oil temperature became my most pressing problem and it was finally solved with Revmaster's oil cooler and that has never been a problem since. Then cylinder head temperature gave me fits. That was taken care of when we finally found the right baffle arrangement. I didn't think I would ever get it to quit throwing oil out the vent pipe! It was using a quart to a quart and a half per hour. Finally, with advice from Joe Horvath of Revmaster, we got that one licked at last and now a quart will last several hours.
To top it all off, the crank-shaft broke while I was over Turlock at 6000 feet. With the fine glide ratio and the abundant supply of altitude I was able to glide into the airport without incident. Revmaster kindly replaced the crank and now, 30 flying hrs later I am beginning to relax more while flying although I still like to keep a prospective landing strip within view. At this point I have not attempted to probe its maximum performance. At 29 inches manifold pressure, it trues out at 165 mph. Climbs quite easily at 1000 fpm. Stalls at about 50 mph. Controlability is good all the way down. Its hard to get used to slowing down so much for landing after cruising along so fast. It seems that you will fall out of the sky!
I have been flying light planes now, for about 17 years and always enjoy the experience regardless of what kind of aircraft I happen to be in but this little KR-2 is just about the nicest and most enjoyable of them all. I guess that is why I keep coming back for more.....Bob. P.S. Passed final inspection last month and can now go anywhere. See you at some fly-in when it gets prettied up a bit!

REMINDER.....There are five KR Designees... all willing to help you with your problems. We've all built and flown at least one KR and we've helped on dozens of others. Below are our names, addresses and phone numbers. Call or write the designee nearest you (or all of us for that matter). We can help!

Bill DeFreze	Dan Diehl	Ray Ellis	Ron Sorrell	Ernest Koppe
7530 Ironwood Dr.	4132 E. 72nd St.	2416 E. Douglas	6505 Sassafras Dr.	6141 Choctaw Dr.
Dublin, CA 94566	Tulsa, OK 74136	Des Moines, IA 50317	Independence, KY 41051	Westminster, CA 92683
(415) 828-2111	(918) 492-5111	(515) 265-3007	(606) 356-6242	(714) 897-2677

QUESTIONS & ANSWERS

Q. Should I use wedges between the gear legs and spring bar to avoid the splay effect? If so, what size? Where can I get them?

A. Using wedges has been recommended by several builders, I haven't used them myself but they do look like a good idea. The size will depend on the weight of your KR but I would say a ¼" wedge would be the minimum size to be really effective. As to where to get them, try a wheel alignment shop that specializes in large trucks, they have a variety of sizes.

Q. I just installed the flap system from Newsletter #42 and called the FAA to inspect the completed system. They were impressed overall but had one reservation, they feel the inboard hinge bracket should be attached to the aft spar rather than just thru the fuselage skin. Have there been any problems in this area?

A. There have been no problems reported but this is still a relatively new modification. However! The inboard hinge bracket should have a back-up block glued to the inside fuselage skin. Your letter seemed to indicate no back-up block was installed.

Q. As you know, Rand/Robinson installation instructions supplied with their fiberglass parts are minimal. Many builders don't know where to start. For instance, which component is installed first?

A. All the fiberglass parts can be trimmed or added to as needed. The cowling should be installed first since it dictates the lines of the rest of the aircraft.

Q. Should the fiberglass tank be built separately so that it can be removed in case of leaks?

A. No. The top of the tank should be fit to the fuselage and cowling. The filler cap should be installed, then the bottom of the tank should be trimmed to fit the top half. Then epoxy the two halves together, cover all cracks, joints, and holes with at least two layers of epoxy and cloth. Now check carefully for leaks and install on the fuselage.

Q. Is the instrument panel re-inforced with foam, wood or both?

A. I used ¼" plywood but other builders have used foam, plywood or aluminum, each with good success.

Q. Does the canopy frame require stiffeners?

A. Yes, a semi-circle of ¼" plywood at the back and ¼" plywood rails down each side to attach hinges and latches should be installed.

BUY SELL TRADE

WANTED....Local Thorp T-18 or Vari-eze owner /pilot to test electric trim. Contact Paul (213) 433-0520 Long Beach, Ca.

WANTED....Revmaster R-2100 D turbo-charged. Call collect to Martin Rowe (214) 376 2739.

FOR SALE..KR-2 project, fuselage 30% complete, wing spars signed off, complete R/R KR-2 kit including 3 blade prop, engine mount for Revmaster and all R/R fiberglass parts. $1500.00 or best offer. Phone Mike at (404) 227-0357 Atlanta, GA.

WANTED....KR-2 project or kits for 6'3" pilot. Enlarged cockpit preferred. Bob Thompson, 14735 Amberwood Ln., Morgan Hill, CA 95037. Phone eves or week-ends (408) 779-2054 for fast response.

FOR SALE..High performance exhaust for your KR....$130.00...Intake..$65.00. Both for $180.00. Ernest Koppe, 6141 Choctaw Drive, Westminster, CA 92683.

FOR SALE..KR-2, fuselage on gear, all wood spars complete, dynel, foam, some controls installed, rudder pedals, R/R wingtips dynel and eopxy on rudder and elevators..... $1500.00 or best offer. Arden Adamson 715-394-5104 Superior, WI.

KR-2 PROJECT.....On gear, tail covered, controls installed. Dual, flaps, Arc gear lock. Approved to close. Many instruments, new Revmaster 2100 D, new Maloof prop. Less than cost....$5950.00 firm.....G. Davis, 2349 La Salle Ave., Ft. Myers, FL 33907 or phone 813-939-4162 (no collect calls).

KR STUFF

Embroidered KR patches for hat and jacket, $1.50 ea or 3 for $3.50.
Vinyl patches, stick anywhere.... 50¢ ea or 3 for $1.00.
KR belt buckles..$5.50
T-Shirts..med., large, extra large
cotton/polyester blend
$6.00 ea or 3 for $15.00

Ernest Koppe
6141 Choctaw Dr.
Westminster, CA 92683

* ECONOMY TRI-GEAR *

Retractable system using Rand's parts, wheels, gear legs and spring bar. Conversion plans.....$25.00.

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

MINATURE METRICS

"Nyloc" Aircraft type nuts, complete metric set for the VW engine...$10.00 per set. Correct length bolts and studs to attach the Diehl "Supercase" to your engine.

Minature Metrics
7801 14th St.
Westminster, CA 92683

VNE KR Contruction
3811 "B" Livingston Dr.
Long Beach, CA 90803
Phone 213-433-0520

New .003" polyethylene wing tape 250 lb. tensile strength, tested to 185 MPH. 55 yard rolls in white and many other colors.....$10.00 post paid.

KR-2 UPHOLSTERY

Six piece, custom designed, light weight upholstery kit. Avialable in most colors of naugahyde. Kit includes all snaps and fasteners to install.

2 side panels with pockets.....36"x 18"
2 seat cushions..... 25"x 15½"
1 seat back.....33"x 17"
1 boot for turtle deck.....35"x 13"

Send S.A.S.E. for color sample (state preference)
ORDERING INFO
Price $180.00
Delivery UPS (or best way)...4 to 6 weeks
Send cashiers check or money order to:

Gary Boyd
2250 Judith Lane
Santa Ana, CA 92706
Phone 714-836-6580

P.V.P.A. FLY-IN JAN. 12-13
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"THE SUPERCASE"

Flight proven bolt on conversion system for your VW. Starters, alternators, Magneto drives and fly wheels. Send S.A.S.E. for more info.

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

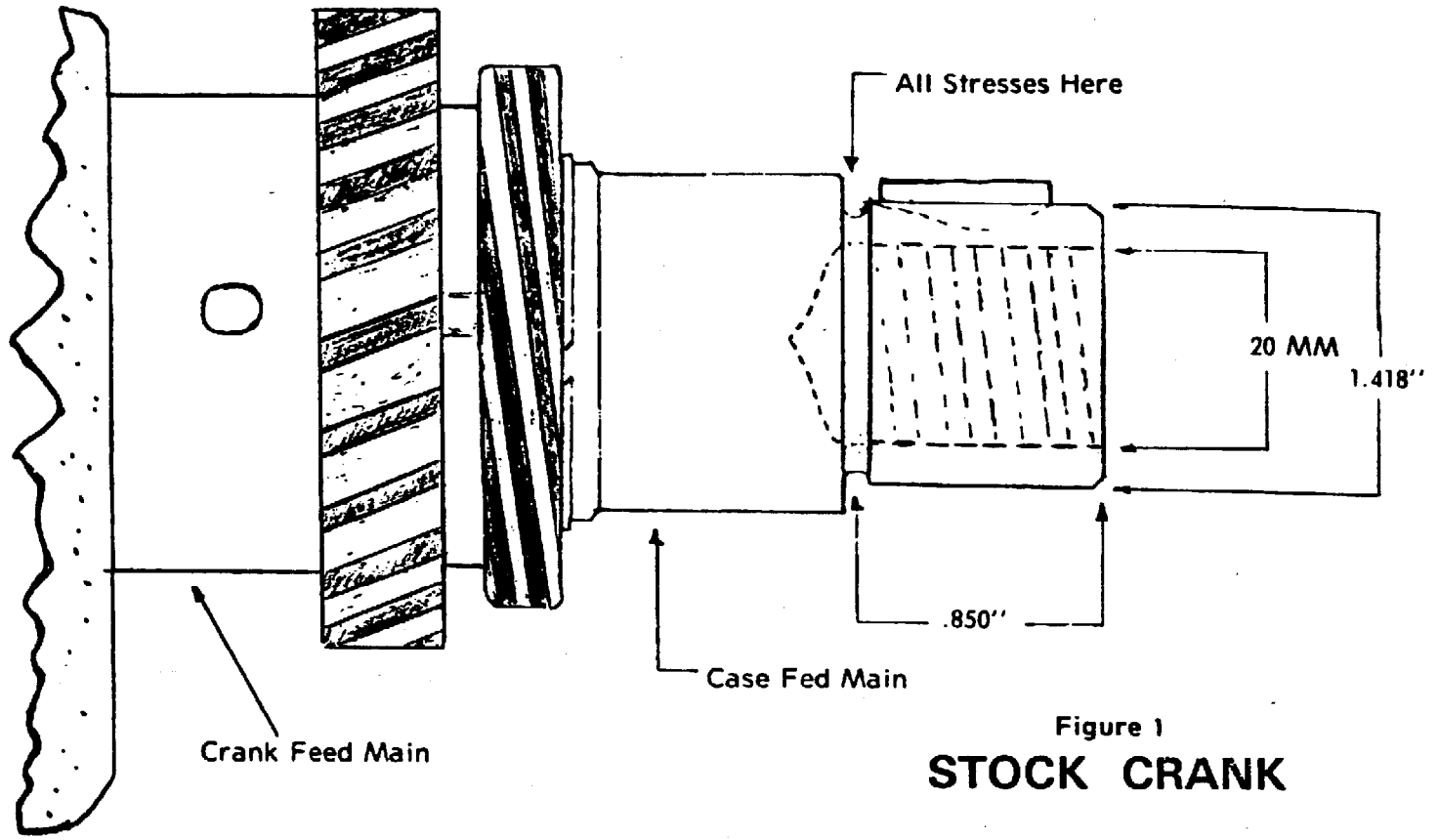

Figure 1

STOCK CRANK

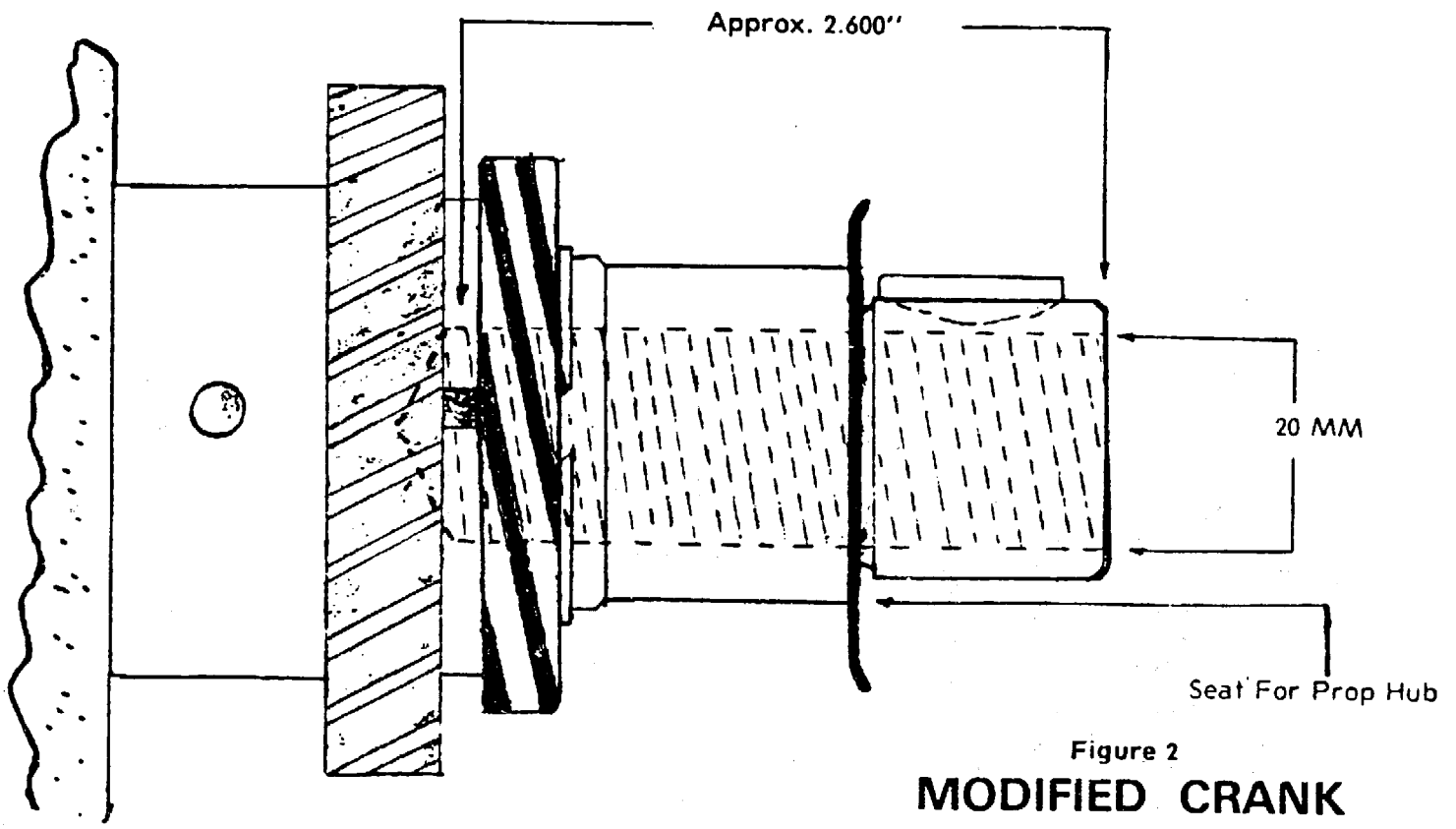

Figure 2

MODIFIED CRANK

TIPS FROM OTHER BUILDERS..... The drawings on the preceeding page were lifted from the EAA Designee Newsletter (Oct. 79) which lifted it from EAA Chapter 345 Newsletter which lifted it from someplace else....Now that is real information circulation!!!

"As you can see in figure 1, the stock VW crank is hardly what you would call beefy. The moment the prop hub is tightened down, the oil slinger groove is under stress from the bolt pulling and the edge of the prop hub pushing against the first main bearing edge....

From what I gather, the first inclination of the average builder is to up the recommended torque values because 60-70 lbs. doesn't seem tight enough to him. In this particular case, it makes matters worse. The methods of improving the crank are, on the most part, expensive, heavy and time-consuming.

After reading the December '78 issue of PRF, I called a friend of mine, Alf Hardwick, to find an easy cure for this problem. After a couple cups of coffee and inspecting the crankshaft and crankcase, numerous ideas were discussed, including additional bearings with a housing, but proved too expensive or too much work. Figure 2 is what we came up with.

First of all, don't get excited about taking the engine apart because it's not necessary. When the engine is put on the table of a radial arm drill, the crank is inline with the spindle (double check this). Inside the stock crank there is already a center to go by. Depth of drill is approximately between cam and distributor drive gears. Drill size is as large as possible without damaging existing threads. After the hole is carefully tapped, a new retaining bolt is made on a lathe. The threads are cut to mate as closely as possible to the crank threads. The bolt material is a personal choice, but I am using normalized SPS.

Ron Babos, 286 Kendall Ave., Woodstock, Ont., Canada N4S 2B5.

(Ron's crank mod is a worthwhile improvement. Prop bolt can best be made by re-machining a 7/8" diameter grade 8 or, better still, L9 bolt. A tapered stud, with the taper extending past the oil slinger, would be the best mod of this type..... Chuck Beaty)

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HAPPY NEW YEAR!