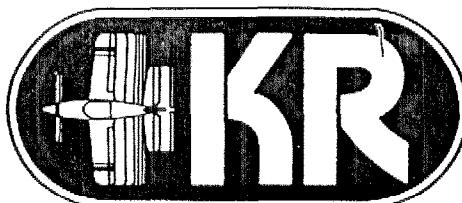


**Issue no. 73  
JULY  
1981**



# 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.

## THE 1st NATIONAL KR FLY-IN

We came from all parts of the country, from Florida to California and from Canada to Arizona. We came because of a common bond.....KRs and our love of flying. We arrived in good spirits and we bathed in a glow of fellowship and fun as we watched the KRs fly. We marveled at their sleekness and we envied their pilots as they flew through the air.

Saturday night we gathered for the awards presentation, wishing to honor those builders we felt had showed qualities in their KRs we would like to have in our own. There were four awards this year. An award for "Best Static Display" went to Bob Perry, 2150 Churn Ct., Redding, CA 96002 for his almost finished KR-2. Rex Taylor of H.A.P.I. won two awards, "Longest Distance Flown" and "Best Engine Installation". Rex flew N19FW, Fred Whitcomb's KR-2, from Calexico, CA to get the long distance award and it should surprise no one that Rex would have the KR with the best engine installation. Now that I think about it....its only logical that these two awards go to the same KR.

The top award for "Most Outstanding KR" went to Wes Evans, 384 Sacramento Drive, Ventura, CA 93004. This was almost a fore-gone conclusion from the time Wes and his wife arrived in N42CW. The clean lines and smooth contours of this fine aircraft attracted us KR builders like moths to a flame. Watching it fly filled us with a resolution to get ours finished and flying so next year our KR would be up there too.

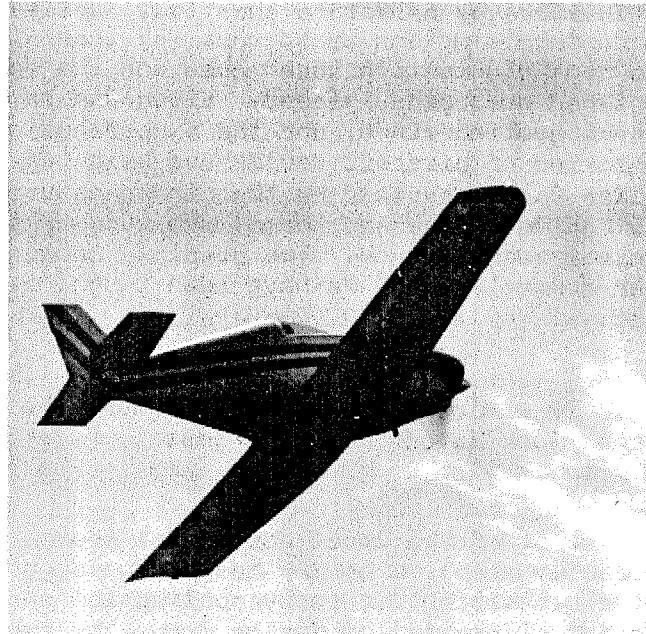
Bill DeFreeze presented the awards Sat. night. We had enjoyed a day full of KR building thru the workshop put on by Lisle Knight and comparing notes with other KR builders. We watched the KRs of Wes Evans and Rick Todd fly and some were given the thrill of flying right seat. It had been a great day and the awards banquet was a perfect ending.

Sunday dawned to clear skies and wind 15 to 20 knots and gusting. We were awakened to the sound of engines as Brad Hummel, who had arrived in a GB-1, Wes Evans, and Rick Todd were once again in the air in spite of the windy conditions. Once again we were thrilled to see the reasons we were spending our time and money on seemingly endless projects. They could be finished...they could be flown...here was proof right in front of our eyes...it was indeed a great fly-in.

The Fly-in ended Sunday morning...Brad Hummel and Patty Helton were killed when the GB-1 they were flying seemed to explode in mid-air as they were about to make a high speed fly-by.

Shock and disbelief was the first re-action felt by everyone watching. That such a thing could happen was unthinkable. It took only a few minutes to confirm the worst possible outcome. Brad and Patty were dead, the plane a total loss.

The Fly-in dissolved after that. People who had been enjoying themselves so much the previous day were somberly gathering up their belongings and were going home.



Brad and Patty left us a legacy, at least those of us lucky enough to know them well. And if you knew them at all, you knew them well. It is not a legacy of money or material things but rather it is the knowledge of having shared their joy and enthusiasm for life, for love, and for flying. While this legacy seems small compared to having Brad and Patty with us now, we can take comfort in the fact they went doing what they loved, with people they loved, and they were together.

There are lessons to be learned from this accident and its causes. As in any accident it is hard to point to any one thing and say "this caused the accident". Accidents are usually caused by a series of events that culminate into the final outcome. This is true of this accident also. Many people have said the airplane was built too fast (24 days) therefore couldn't be safe. Not true. The plane was built using several pre-made components, hence the shorter building time. Some said the spar broke because it was patched and re-drilled....maybe...but it broke first at new and unpatched holes. The F.A.A. and N.T.S.B. conducted their own investigation of the accident and preliminary findings were....pilot exceeded airframe Vne limits in extremely turbulent wind conditions. Flutter apparently developed in the right aileron, as part of the aileron skin was found 200 yds before the crash. The aileron weight broke off and was never recovered. Whether it came off before or after the aileron fluttered is unknown. (It was the angle that held the weight to the spar that broke and not the spar itself.) This happened at an estimated airspeed of between 220 and 240 mph. At this time the canopy must have separated, probably due to vibrations induced by flutter, since it also was found well away from and before the wreckage. Then the center forward spar broke at the landing gear hinge attach point and the aircraft disintegrated. All this took place in a matter of one to two seconds and the actual order in which events took place are conjecture. The only thing we're sure of is Brad and Patty are no longer with us.

That leaves us with a question. While it was a GB-1 that crashed, could it happen to our KR's? My answer to that is...certainly! The GB-1 and the KR-2 share many of the same construction techniques and the center spar that broke was from a KR project that had not been finished. Given the same circumstances i.e. a 220+mph airspeed, strong gusting winds, and the exuberance of a pilot in a fast airplane....I'm not sure what kind of aircraft could have held together.

Ken Rand once told me that the maneuvering speed in a KR-2 was 140 mph indicated and the Vne (never exceed speed) was 200 mph indicated regardless of how well balanced the control surfaces are. The possible consequences for exceeding these limits have now been demonstrated. We have been taught a lesson and we won't forget it. We promise, Brad.....we won't forget.

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There has been several KR builders who found, much to their discomfort, they were extremely allergic to epoxy resin. Many builders gave up their projects, most just stopped working on them, and some looked for an alternative. Ed Cook wrote the following.

A search for a local economical source of the Epon 813 and Versamid 125 resins currently supplied by R/R has produced good prospects of an alternate type and source. After describing our epoxy application and the specified Shell Epon 813 to a marketing chemist of the Allied Resins Corp., he recommended a Dow epoxy D.E.R. 324 with the Versamid 140 hardener to give better all around performance and safety. The diluent used in the D.E.R. 324, an aliphatic glycidyl ether is much less toxic or allergenic than the BGE or CGE dilutents used in other epoxies, including the Epon 813, and should be much safer to use, even for those who have already developed an allergenic reaction. Once a person has become sensitized, it may be difficult to avoid increased sensitivity from further contact but it turns out that the diluent is the most toxic of the epoxy formulation and perhaps a sensitivity will not react to the D.E.R. 324.

Other characteristics of the 324 such as specific gravity, epoxide equivalent weight, viscosity, and various strengths and flexibilities are equivalent to the Epon 813 with the exception that it is almost odorless which is another plus.

The recommended Versamid 140 is half as viscous as the Versamid 125 and makes wetting fabrics and fillers such as microballoons easier. The pot life or set time of the 1 to 1 mixture is several hours for small quantities, down to approx. 1 hour for large batches

due to exothermic heat build up. My experience has been that after a 12 hour 65° F cure it is still flexible and takes about 48 hours for a hard cure that can be sanded. Maximum strength does not develop for 7 days. The proportion of the Versamid 140 to the resin can range all the way from 33 PHR (parts per hundred resin) to 400 PHR and still have a complete cure. It is unusual that the greater the proportion of the Versamid, the greater the flexibility but the less strength. The 100 PHR (1 to 1 mix) would have the best compromise of adhesive qualities and elasticity comparable to the dynel fabric, but you can see that the ratio is not critical. I believe that a ratio of 65 PHR of Versamid 140 would be better than 1 to 1 when fiberglass fabrics were used for a better flexibility match and provide greater strength.

Now for the price...as of January 1981 the D.E.R. 324 is \$21/gal up to 3 gallons and \$20/gal in 4 to 19 gallon lots. The Versamid 140 is \$25/gal., dropping to \$24.50 in 4 to 19 gallon lots. Five gallon pails are \$19.50/gal. and \$24/gal respectively. Prices will probably go up in April. Allied Resins address is: Weymouth Industrial Park, East Weymouth, MA 02189. They have a nice products catalog that includes 2 lb. density liquid urethane foam and lots of other goodies and have assured me that there is no problem shipping anywhere. If anyone would like additional info or has had some other experience with this resin, drop a line to ED COOK, 80 J.B. Drive, Marstons Mill, MA 02648.

A few weeks after I received the first letter this second letter followed:

Ernie, I received this letter from Paul Semco of Providence, R.I. after I sent him a sample of the epoxy I wrote you about. He was so sensitized to the Epon 815 that he couldn't even pick up a sealed container without breaking out, and as you can see, he had no reaction at all to the D.E.R. 324.

"Ed, I glued up a half dozen wood samples, with the Dows D.E.R. 324, last week and tested them yesterday. Not one of the samples parted at the glue joints. I purposely allowed some of the glue to smear on the most sensitive parts of my hand for test purpose. Ed, the glue is great! Absolutely no reaction at all. I'm amazed, I couldn't touch the Epon 815 without breaking into a rash"....Paul Semco

O.K., you allergic types now have an alternative. Looks like the rest of us could benefit by the lower price.

#### \*HAPPENINGS\*

'Bout 3½ yrs ago I met a nice couple at the Ramona, CA fly-in. They were demonstrating their version of what a VW aircraft engine should be. The couple was Rex and Phyllis Taylor and they called their newly formed company Homebuilt Aircraft Products Inc. or H.A.P.I. Now how can you miss with a name like that? Well, Rex must have been right on target. Since that first fly-in Rex and Phyllis have been working night and day to supply homebuilders with engines and related merchandise. All the while their company has been growing. Right now H.A.P.I. is delivering more VW aircraft engine conversions than anyone else in the world. This success has brought some problems, H.A.P.I. is out-growing its current location. Rex has found a new place, tho. A whole airport! They have leased the airport located at Eloy, AZ, its half way between Phoenix and Tucson, 17 miles from Casa Grande Vortac. The airport is lighted and fuel is available. If you're driving you'll find it just off interstate highway 8. Rex says they expect to occupy the place about the 1st of October and visitors will be welcome. Drop by and say hello.

Oshkosh is next month, 1st thru the 8th. I don't know about you but I'm looking forward to being there. The opportunity to renew friendships especially appeals to me this year. My wife, Maxine, and I are staying at the University along with 30 or 40 other KR types. We're supposed to have the 9th floor of Gruenhagen Hall, so drop by some evening for a visit (days will be spent on the flight line). We're driving this year and intend to swing thru Oklahoma to locate a new place to live. California has been great but its starting to get a little crowded. The KR Newsletter will move with me and will continue from there.

# BUY\*SELL\*TRADE

**FOR SALE...**KR-2 kits, wood (side frames assembled), foam, metal, including landing gear and pre-molded fiberglass parts...\$1200.00. Chuck Stertz, Rt. 1 Box 300, Enterprise, OR 97828 Phone (503)426-4698.

**TRADE...**Sailboat designer will trade plans for 24 ft. sloop or 32 ft. ketch for old but usable (not dog-eared) set of KR-2 and/or KR-1 with long wings plans. Write to H.B. Borges, 5048 10th Ave. So., Gulfport, FL 33707 or phone (813)321-7875 anytime.

**FOR SALE...**Complete KR-2 with custom built trailer, to be used for parts only. Has new 1835 engine with Revmaster acc. case, single ignition, generator and starter. Many instruments, incl. G-meter...\$2500.00. For more detailed info call (714)633-8811 after 7 p.m. or call Ernest Koppe at (714)897-2677.

**WANTED...**KR-2, complete and flyable. Contact Bergman Atkins at Baxa International Inc. in Florida. Phone (305)791-4387.

**FOR SALE...**1678cc VW, built by VW shop foreman. 0 time, has NPR cyl and pistons, Scat oil pump, Rocker buttons on re-manufactured 0 time heads, Rand prop flange, Sonerai intake, Posa carb, H.A.P.I. case, Slick mag w/shielded cables. All on a '75 case....\$850, could deliver to Oshkosh. Building a Subaru for my KR-1 and need space and funds. Bud Bossart, 147 Lakefield Ct., Racine, WI 53402 (414)639-3049.

**FOR SALE...**KR-2 extra wood, fuselage, spars, machined wing fittings, plans, etc. Nice work. Tedious work completed--no time....\$425.00 Ft. Myers, FL (813)549-7840.

**FOR SALE...**KR-2 project....approx. 60% complete. Turtle deck and forward deck foamed. C-65 engine partially overhauled, many extras. Only 50 miles from Oshkosh. (715) 823-2409 no collect calls.

**FOR SALE...**KR-2 complete kit. Woodwork 90% complete, metal work 95%. 3 blade prop for Revmaster 2100, Revmaster motor mount. Have most all engine and flight instruments. Have extra revised book and plans. All for \$3200.00. Kenneth Bristow, Box 33, Tappahannock, VA 22560 phone (804)443-5145.

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**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
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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.

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PHONE: 815-661-7704

#### SERVICE BULLETIN 1-81

#### Possible Magneto Malfunction Due to Cracking of the Coil Potting Compound

#### BACKGROUND

There have been magneto malfunctions reported recently that have resulted from a circumferential crack in the orange potting compound of the magneto coil. The crack is observable as emanating from the high voltage output post of the coil.

#### EQUIPMENT AFFECTED

Only the following magneto model numbers are affected:

4201, 4201R	4252, 4252R	4216, 4216R
4230, 4230R	4281, 4281R	6210, 6210R
4251, 4251R	4250, 4250R	6214, 6214R

The serial number range of these magnetos includes:

9050000 - 9059999  
9060000 - 9069999  
9070000 - 9079999  
9080000 - 9089999  
9090000 - 9099999  
9100000 - 9109999  
9110000 - 9119999  
9120000 - 9129999  
0010000 - 0019999  
0020000 - 0029999  
0030000 - 0039999  
0040000 - 0049999

It also includes all coils that have been installed in magnetos as replacements between May 1, 1979, and April 6, 1981.

#### COMPLIANCE

The coil must be visually inspected within the next 25 hours of service, or no later than June 30, 1981. No material and/or labor claims will be honored if submitted later than July 31, 1981.

#### CERTIFICATION OF COMPLIANCE

All magnetos inspected and/or serviced as per this Service Bulletin must have the letter "C" stamped into the metal name plate following the last digit of the magneto serial number.

#### IMPORTANT: COMPLIANCE REQUIRED.

The following letter from R/R is self explanatory. If you have a Slick magneto, check it now! Rex Taylor of H.A.P.I. tells me he received the same letter from Slick so if you bought a Slick mag from R/R or H.A.P.I. or anyone else check the serial numbers against the list on the opposite page.

Rand Robinson  
Engineering, Inc.



5842-K McFADDEN AVENUE  
HUNTINGTON BEACH, CA 92649  
BUS. (714) 898-3811

April 6, 1981

June 19, 1981

Dear Customer:

We have just received the following service bulletin from Slick, concerning the Magneto for your engine.

Please check the serial number on your magneto and determine whether this bulletin is applicable.

Should your magneto be found among the affected serial numbers you should return it to Rand Robinson Eng., Inc. for inspection and replacement of magneto coil.

Magneto will be serviced to comply with this bulletin at no charge to you, except shipping charges. Slick will pay a local A & P mechanic 1 hour labor to reinstall and retime the engine. Instructions for retiming will be sent to you with the returned magneto.

Magnetos will be worked on a first come first serve basis only, and returned as soon as possible freight only collect U. P. S., or by best method for foreign customers.

Local labor allowances will be paid by Slick, through Rand Robinson Eng., Inc. upon receipt of billing by your mechanic. We strongly urge that affected customers comply with this bulletin for safety sake. All coils with less than 250 service hours must be replaced.

Please note that no materials or labor claims will be honored unless submitted to Slick before July 31, 1981, so we must have your magneto as soon as possible.

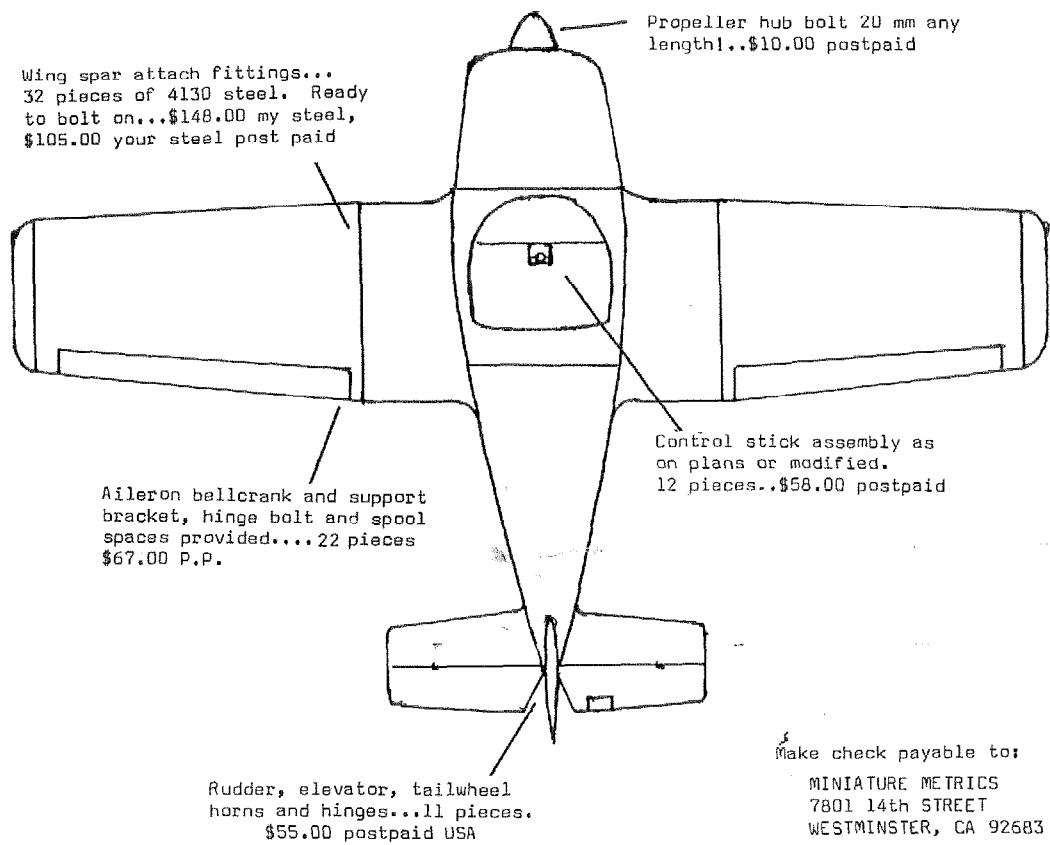
Rand Robinson Eng., Inc.  
*Jeannette Rand*  
Jeannette Rand  
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