



July 1979 Issue #49

## NEWSLETTER

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\*\* A monthly publication for communication between KR builders and pilots world wide.\*\*  
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Have you looked at the long, long list of fly-ins happening everywhere this summer? Pick up any aviation magazine and take a look. Remember when four or five fly-ins would be a great year? Now there just isn't enough time to read about 'em much less get to all of them. How does it feel to be a part of this almost unbelievable world of "grass roots" aviation? You are a part of it you know, and it should give you a sense of pride in what you are doing. Homebuilt, custom, antique, classic, ultralight, whatever you want to call it, are part of "grassroots" aviation and it needs your support to continue growing. Take your aircraft to a fly-in this summer. It doesn't matter if it is "show quality" or not. It doesn't even have to be a finished aircraft. There is an abundance of interest in how to build an airplane as well as what they look like ready to fly. Encourage your non-flying neighbors to come to a fly-in in your area. The more people that become interested in our sport, the stronger grassroots aviation will become.

You've heard the term "Golden Age of Aviation", it is usually referring to the mid 1920s and 30s era when there were so very many aircraft manufacturers. It was a good era, no doubt about that....but...look around. There is more interest in "grassroots" aviation right now than any time in the relatively short history of flight. The "Golden Age of Aviation is NOW and you are a part of it. Be proud of it, nurture it, share it with your friends.....it could even be better.

The Chino airshow had a good turn-out earlier this spring. There was one KR-2 expected that didn't arrive, however. The following letter explains what happened:

I would like to thank Frank Smith and James Demick both of Albuquerque for their help. On a recent trip to Chino, CA fly-in, I had an engine failure in my KR-2. A very successful forced landing was made on an airport. A call to Frank Smith put the entire KR population of Albuquerque into action. I put my engine in the right seat of Frank's Cessna 150 and flew it back to Tulsa. I pulled the engine out of my other plane and returned to Albuquerque with it in Frank's plane. Put the new engine in my KR and returned to Tulsa; safely. I might add that the entire incident took nearly three weeks due to weather back in Tulsa which kept me from returning to Albuquerque and also a stomach flu that kept me in bed for several days. Jim Demick and his wife, Anne, took excellent care of me and also loaned me one of their cars to run around town. Frank Smith had his KR-2 ready to fly and signed off but hadn't flown it yet. After a few modifications I was given the honor of flying it for the first time. It flew well. He is now flying it himself. The Albuquerque EAA Chapter let me keep my plane in their hanger. It's good to know that there are still people around who will help the way these people did me. On the return trip to Tulsa I ran the turbo 2200 CC at 3200 rpm and 25" manifold pressure. At 11,500 ft. I was able to average 185, 190 mph ground speed and burned only 3.85 gph. On studying the engine it was found that the crankshaft had broken at the center main. The crank was a welded stroker, without counter weights. I feel certain that this is what caused the failure at 450 hrs. I have ordered a forged 4130 crank from Scat to replace this one. I am now installing wing tanks to give me 6 hrs. range. At present my main tank holds 13 gal. The wing tanks will hold 6 gal. each.

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

\*\*\*Request from people up in snow-mobile country. Rand/Robinson is out of the 12 volt starters used on the "Supercases" and most other conversions. The starter is a Bosch unit #0-001-160-002. It is used on snowmobiles with Sach or JLO engines. Some of the Artic Cats use this with the Nipendenso engine. If you will please ask around for these please contact me about price and quantity you are able to find. There are many guys looking for these now and down here we don't have snowmobiles. Thanks, Dan Diehl

## QUESTIONS & ANSWERS

- Q. I read in Dan Diehls info sheet that R/R sells the 4016 magneto but the R/R price list only shows a 4216 magneto. Is there a difference in these two mags?
- A. R/R informed me that Slick is not longer manufacturing the 4016 model. The 4216 is the replacement and will fit where the 4016 did before. The 4216 model is rebuildable, the 4016 was not.
- Q. Can I make the vertical pieces in the spars full width?
- A. Yes. You are adding needless weight however. I would use the sizes advised in the plans. Just make sure there is full contact with the spar web.
- Q. I noticed the flap handle in Issue #48. Who has the plans to install flaps?
- A. The flap drawings are in Newsletter #42.
- Q. The Posa carb doesn't have a spring for slide return and it has an extra outlet. Is this for a vacuum line? What is it connected to?
- A. The cable that operates the slide can be replaced with a push/pull rod, a return spring is not necessary. The outlet you refer to is a drain to alleviate flooding the plenum chamber.
- Q. What is the ideal angle of incidence for the horiz. stab on a KR-2, 2100 turbo with a R/R 3-blade prop?
- A. Level your fuselage exactly. Your horiz. stab. chord line should also be exactly level. This will give you an  $0^{\circ}$  angle of incidence for the stab., or about a  $-4^{\circ}$  in relation to the wing if you installed the wing spars per your plans.
- Q. Is the aileron spar covered with dynel or is epoxy all that holds the spar in place?
- A. Epoxy is all that is needed. The spar must fit as well as possible, contacting the skin along its full length. This means all the foam must be removed in the 1/4" recess you make for the spar so there is good spar to skin contact.
- Q. Does the trim control cable go thru the elevator spar? I hope so because that is how I have drilled mine!
- A. The trim cable should go over (or under) the elevator spar. Not only do you weaken the spar by going thru it, up and down movement of the elevator can cause the cable to rub against the rear horiz. stab. spar and cause damaging wear. I recommend you plug the hole in your elevator spar and possibly cover the area with a plywood web, then re-route the trim control cable. There is ample area in the fillet area of the empennage to conceal the cable.
- Q. Does the brake cable run thru the I sections for undercarriage locks? What type of fair lead should be used?
- A. The cable does go thru the I section. A nylon or teflon fairlead would be satisfactory.
- Q. Is it necessary to have the cut-out in the fiberglass fuel tank? I presume it is for fitment of radios.
- A. The cut-out is for radio clearance but it does provide some stiffening to the tank construction. If you block off the cut-out to add more capacity to the fuel tank I suggest you leave it in place to serve as baffling. This can be done simply by putting holes in the sides of the cut-out to allow fuel to flow through it, then covering the outside of the cut-out with three to four layers of glass cloth and epoxy to match the contour of the back of the fuel tank.
- Q. Has anyone tried using the urethane foam dust mixed with epoxy and used as a filler?
- A. Several builders have reported trying this method with good results. I doubt if it would be as easy to work as microballoons but it would certainly cost less.

**\*\*Questions directed to the Newsletter editor by mail will be answered in the following issues of the Newsletter. Questions requiring an immediate answer should be made by phone to 714-897-2677 evenings 5 p.m. til 11 p.m. Pacific time. Overseas subscribers are the exception.**

The lower cylinder cooling shrouds (Supertin) in the last issue was well accepted so I've ordered another dozen. Cost is \$12.50 U.S. per set and \$2.00 shipping as long as I can get them at this reduced price. (Canadian shipping \$3.00 and overseas shipping \$4.00)

I've ordered a vinyl stick-on KR patch, 2" x 4", KR Club members can get one free by sending me a S.A.S.E. They are 50¢ each to everyone else.

*Ernest Koypp*

## HAPPENINGS

Oshkosh is just around the corner and from here it looks like a good turn out of KR's will be there. I've had great expectations before but this year it doesn't look as tho' I'll be disappointed. The KR Forum this year will on Monday, July 30th, 12 noon to 1:15 P.M. in Forum tent #2. Look for all your KR Designees to be there.

July 13-15 Orillia, Ontario, Canada Annual E.A.A.C. Sport Aviation Convention. Contact George Jones, 246 Renforth Dr., Etobicoke, Ont., Canada M9C 2K9. Phone 416-621-0381.

Aug. 10-12 Arlington, Wash. 10th Annual Fly-in. Contact Dick Baxter, 15845 8th NE, Seattle, WA 98155.

Sept. 14-16 Kerrville, Texas 15th Annual EAA Southwest Regional Fly-in. Contact Dave Beckett, 5103 Village Row, San Antonio, TX 78218. 512-653-4710

Oct. 20 & 21 Copper State Fly-in at Marana Air Park. KR builders and pilots contact Ray Backstrom for further info. If there's enough interest there will be a KR Club meeting. Ray's address is 7721 N. Soledad Ave., Tucson, AZ 85704.

## SURVEY

The mail really poured in this month, mostly survey response from Issue #47. You can see it is quite a list and takes up a considerable amount of space so next issue will be the last time it is published. If your name hasn't appeared in the survey list yet, be sure to get a card or letter mailed soon

KR-1	1%	Dale Walker, Houston, TX	KR-2	20%	Floyd Koppehaver, Millersburg, PA
KR-1	5%	Laurel Jone, Houston, TX	KR-2	5%	Ted O'Dell, Milan, MI
KR-2	40%	Bob Hilliard, Houston, TX	KR-2	5%	Martin Luker, Austin, TX
"	5%	Sid Irby, Houston, TX	KR-2	70%	Curtis Wilson, Clarksfield, MN
"	40%	John Well, Houston, TX	KR-2	20%	W. Doxsee, Ont., Canada
"	1%	Dave Turner, Houston, TX	KR-2	25%	Charles Edwards, Sapulpa, OK
"	30%	John Dowdy, Houston, TX	KR-2	30%	Dennis Harms, Newton, KS
"	20%	Geoff Jones, Houston, TX	KR-2	35%	Roger Reese, Kearns, UT
"	30%	Bill Wafford, Houston, TX	KR	40%	Bud Shanks, Ohio
"	5%	Chuck Borne, Houston, TX	KR-2	25%	H.S. Talton, Jr, DeLand, FL
"	30%	Rex Ellington, Houston, TX	KR-2	60%	Bob Schlaegel, Florida
"	20%	Bob Patlovany, Houston, TX	KR-2	90%	Ken Ranta, Omaha, KS
"	10%	Pete Gandy, Houston, TX	KR	30%	Rod Troyer, Wooster, OH
"	20%	Mark Mitchell & Ed Taylor from Houston, TX	KR-1	35%	Jim Snyder, Hesston, KS
KR-1	75%	Brian Benjamin, Spartanburg, SC	KR-2	80%	Richard Narber, Glendale, AZ
KR-2	30%	Gene Elletson, Cartwright, ND	KR-1	50%	CJ Soboleski, Riverton, VA
"	40%	Richard Nichols, Corpus Christi, TX	KR-2	30%	Mike Hein, Griffin, GA
"	80%	Don Hunter, Ontario, Canada	KR-1	78%	Ray Backstrom, Tucson, AZ
"	50%	Steve Makish, Ft. Lauderdale, FL	KR-2	7½%	Robert Steffens, Rutherford NJ
"	5%	Hamilton Ryder, Cupertino, CA	KR-2	50%	Jeanette Dobias, Minneapolis MN
"	100%	Paul Venne, Long Beach, CA	KR-2	68%	Bruce Gilinsky, Lakeview, OR
"	50%	George Holt, Granada Hill, CA	KR-2	45%	Don Smith, Uvalde, TX
"	60%	Emmett Dignon, Campbell, CA	KR-1	30%	C H Bliss, Rockledge, FL
"	80%	C.S. Jackson, Sterling Hts, MI	KR-2	25%	J Milligan, Blauvelt, NY
KR-1	100%	Bruce Bateman, Phoenix, AZ	KR-2	75%	Garth Hess, Upland, CA
KR-1	50%	Frank Magyar, Cottage Grove, MN	"	90%	Ed Nelson, Pinehurst, ID
KR-2	45%	Joseph Maas, Naranja, FL	"	40%	Gus Sabelino, Huntington Beach, CA
KR-2	45%	Gilles Ducharme, Terrebonne PQ Canada	KR-2	15%	Jaques Carbonneau, Que.Canada
KR-2	60%	Johnny Hinton, Florence, AL			

Some of you guys questioned the percentage of completion as outlined by Bill DeFreze in Issue #47 but I think you will find that is a reasonable estimate. It is all relative anyway, what counts is getting it to that final 100% complete and flying stage. The schedule just gives something for the builder to look at, point his finger to, and say "My KR is at this stage."

## TIPS FROM OTHER BUILDERS...

I subscribe to the \*EAA Designee Newsletter, a month publication with all sorts of ideas, building tips, and other information a homebuilder would find valuable. This month's Designee News came just as I was sending the KR Newsletter to the printer but contained an article that should be spread around. So....stop the presses!

Dear Ron:

The Designee Newsletters have been great and our Chapter (#498) find it a truly valuable source of information. Keep up the good work.

My reason for writing is the posa or injector carburetor and adjusting same. I have had three of these to play with, the first on a 1700 CC Volksplane which I flew for 200 hrs., the second on my Sonerai II's first engine which was 1700 CC and now the third on my new engine which is 2180 CC Volks conversion. This gives me a total of 350 hrs. to use as an experience background...not much, but enough.

First thing I would like to say about this style of carburetor is that although the FAA wants to see carb heat boxes installed, I have yet to get any carb ice and I fly year round. This is probably because the posa is really just a mixing valve and does not have a true venturi such as found in normal carbs.

It seems that when you try to adjust these as the posa directions tell you, about the time your max rpms are lean enough for a nice light grey stack color, the engine will not idle as it is too lean on the low end. The situation reverses itself when you go the other way; if the engine goes good it will be too rich at cruise rpm.

After putting up with a rough idle and having it stall on roll out a couple of times I decided to do something about it and it worked. My 2180 with a 32 MM posa now idles beautiful and cruises fine with no elaborate mixture controls as others have done.

This is how I did it and maybe someone else can benefit by it.

First establish the carb setting for a good max rpm mixture, write down no. of turns with which needle.

Second, find the setting at which your engine idles best at, write it down.

Next, remove the carb and set it up on your work bench with a make shift gravity feed fuel tank.

Set the carb in the updraft position on a tin can to collect the fuel and hook up the gas. The fuel supply does not have to be the same height above the carb as in the aircraft as long as it is kept at a constant height so all measurements are with the same head of fuel.

Adjust carb for setting which gave you a good idle, close carb air shutter or slider and turn on fuel for six minutes and measure amount of fuel in the can. This amount times 10 will tell you how much fuel your engine needs to idle properly per hour. Now change adjustment to the one which gave you a good max rpms and check the flow again with slider closed as before. My particular situation worked out to be 25 ounces per hr. desired flow and only 15 ounces flow in the good max rpm setting.

Now that you know how much flow is needed, open the slider and looking down into the carb from above (this is the reason you can't do this on the engine), take a sharp instrument and lightly scrape some of the brass away from the flat area of the needle at the root which effects idle flow. After doing this several times you can gradually increase the flow to the desired amount and you now have a good running engine with a custom adjusted carb just for your aircraft.

This whole procedure sounds very time consuming but only takes about an hour or so and is well worth the effort.

Jim Wright, Designee #942  
80 Evans Street  
Osterville, Massachusetts 02655

\*The Designee Newsletter is available from E.A.A., P.O. Box 229, Hales Corners, WI., 53130 @ \$7.00 per year.

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

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

Retractable tri-gear for KR-1 or KR-2. Stress analyzed to 3x gross by Marshall Wood, senior design engineer at Rocketdyne. Plans are now available @ \$40.00 for complete system. Material kit, excluding wheels \$250.00. Ready to install assemblies \$800.00. Free isometric view with S.A.S.E.

Don Land  
906 Manzanita  
Los Angeles, CA 90029

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## Tips from Other Builders

From Don Smith, P.O. Box 1644, Uvalde, TX 78801....I started using excess two-part epoxy on wood parts for a sealer. It made a good sealer and covered well but took too much for a practical sealer. I started looking for a thinner. COPON, which is a two-part epoxy paint thinner does the trick. Mix epoxy first then add thinner at a rate of two parts epoxy and one part thinner. It makes an excellent sealer. The wood soaks it up extremely well and two coats gives a good total seal. It can be brushed or sprayed. The thinner is good for cleaning utensils and hands. Obviously, the thinned epoxy should not be used for any structural application. It doesn't appear that the thinned epoxy is any heavier than an ordinary sealer and varnish.

I would be interested in forming a Texas KR club if the Texas builders would care to write to me and express their interest.

### BUY SELL TRADE

WANTED...Flight instructor building KR to trade instruction for parts/service. Must be checked out in a Piper Tomahawk or Grumman "American"....Paul Venne, 3811 B Livingston Dr., Long Beach, CA 90803. Phone 213-433-0520 eves.

FOR SALE...KR-2 project. Fuselage complete, on gear, ready to foam. All R/R fiberglass parts. 1834 VW conversion with R/R prop, hub and spinner. Several instruments and other goodies....\$4000.00. Also have another KR-2 wood kit w/plywood, fuselage partially complete....\$300.00 and a R/R landing gear ready to install (less wheels).. ..\$150.00.....Bob Hamill, 3967 6th Ave., Los Angeles, CA 90018, phone 213-296-5294.

KR-1 FIBERGLASS COMPONENTS...Cowling, fuel tank, instrument panel, fast back. Send S.A.S.E. to Danny McCormick, 16902 Happy Hollow, San Antonio, TX 78232.

ERNEST KOPPE  
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