

# KR Newsletter

ISSUE #35  
MAY 1978

## SUBSCRIPTION RATES

1 year	\$6.00	Back issues-50¢ ea.
0/seas	\$7.50	Air Mail \$10.00



Are you interested in joining a club for KR builders and pilots? Much enthusiasm for an organization of this type has been expressed by almost all the builders I've spoken with. At present such a club does not exist but I am going to use this Newsletter to get things organized. Suggestions or ideas are welcome, I want to know what you expect a club of this type to offer. Here are a few ideas of my own. Let's hear what you think of them.

A club library consisting of technical manuals, aviation magazines and other books or pamphlets of interest. Club members would be able to use this library by mail, the only charge being for postage.

If enough interest is shown, cassette tapes of various stages of construction and flight testing could be made by and exchanged with other builders. One builder might be a cracker-jack in wood or in engines and lack knowledge in other areas such as instruments or foam construction. This concept could be carried a step further.....the increasing popularity of the video cassette recorders has unlimited possibilities. I recently purchased the Sears model and a RCA camera. Home movies, with sound, were never easier.

Why not exchange knowledge among ourselves via cassette tapes sent thru the mail. A list of tapes available would be kept by the KR club library.

Fly-ins, seminars or picnics could be scheduled for local areas so members could meet and get to know each other. A club emblem, cap, etc. could be adopted so you would be able to spot other club members at aviation gatherings.

Annual dues would be a necessity but should be kept to a minimum and would include club membership, the KR Newsletter, access to the club library, etc.

I could go on and on but I want to hear from you, to get your ideas and thoughts on the subject. Write soon, perhaps we can get the club "airborne" by Oshkosh '78.

## TIPS FROM OTHER BUILDERS

Your issue #34 received this week again reminded me of something I intended to write earlier. I'm speaking of the fellow who asked the question about binding and slack in the controls. It happened to me and I had put bearings on everything. After about a month of staring at the d--- thing, I figured it out. The question asked in the Newsletter did not accurately describe the problem. The question should have read, "Why does the elevator control bind and tighten when full back and forward pressure is applied and when the stick is neutral there is a slack in the cables? I don't think you had this occur to you because you had a copy of the old plan book that did not have a drawing of the control column. When Ken later placed this page in the book he used a drawing you had published earlier, which was modified by the builder so that the dimensions from the center axis to the control cable axis in indicated  $2\frac{1}{2}$ ". The control horn (bell crank) for the elevator and rudder measures 3". These two different dimensions breaks up the parallelogram configuration of the cables. To correct is only a matter of making all the dimensions equal. I simply bored new holes in the control horn to conform to the  $2\frac{1}{2}$ " measurement at the sitck.....Lee Bouey, 11175 SW 70 Ave., Miami, FL 33156.

TIPS (cont.)

Where do you get the tools, brushes, buckets, etc. to work with epoxy? Most builders make do with what ever is handy but would get the right stuff if it was available. Harvey Altergott of Chevy Chase, MD sent me the name of a company that is evidently willing to mail order their products, (which include aluminum powders for U.V. shielding). The address is Gougeon Bros. Inc., 706 Martin St., Bay City, MI 48706.

Bruce Gilinsky, Box 989, Lakeview, OR 97630 is a regular contributor to the Newsletter (and a VW mechanic). His latest letter was very interesting. "I found some sanding tubes at a local body shop, they are 1 3/4" x 24" and come in 2 grits. They sure work better than the peanut jar." For a trim control handle, Bruce has adapted the VW heater control handle and used the plastic spacers as frictions. The handle is mounted on a spruce block and glued in place to suit your needs. Want to know how much your fuel tank holds? So did Bruce, also included in his letter was the following:

Steps to calculate volume (in gallons) of your gas tank.

Step 1 Multiply - width, length, and depth to obtain the volume in cubic feet.

Example 8" x 8" x 32" = 2,048 cubic inches

Step 2 Divide the volume of the tank (cubic inches) by the number of cubic inches in a cubic foot.

Example a. 1 cubic foot = 12"x12"x12" = 1728 cubic in. (constant)

b. 2,048 divided by 1728 = 1.185 cubic ft. = volume of tank in ft.

Step 3 Multiply volume of tank by the number of gallons per cubic ft.

Example 1 cubic ft. = 7.48 gallons (constant)

7.48 x 1.185 = 8.86 gallons in your tank.

After I found out how many gallons I had, I bought Rand's tank and added about 10 more gal.

I "borrowed" the following item written by Robin Butler from EAA Chapter 588's Newsletter. I found it interesting and I'm sure you will too.

"So many times during the static display the thought crossed my mind: I wish I had gotten more done in time for this! Why, I wonder, does a man put off the effort it takes to achieve a personal dream? Why are we so willing to fill our time with "obligations" from which we get little pleasure or reward and then find we have no time left to put in on what we want most to do? Well, I believe we are all "brainwashed" from the cradle up, to put ourselves last, so that eventually, deep down inside, we come to feel that we aren't "entitled" to the joy of rewarding ourselves with the accomplishment of a cherished dream. And that's why that airplane gets put off, and put off, and put off. At the static display I resolved to change that pattern of behavior in myself. The principle of "paying yourself first" should apply to dreams as well as money. I resolved to begin my day with work on my KR-2. Monday morning I awoke to an earlier alarm than usual, forced myself out of bed, plugged in the coffee, then got dressed. I filled a cup on my way out the back door to my workshop. My wife would awaken about an hour later and I would have my breakfast then. Fortified with a cup of coffee, I cleared my workbench and arranged lumber for wing spar laminating. It took an hour, at the end of which I turned off the shop lights and went to breakfast. The rest of the day was the same as a thousand days before: errands to run, faucets to fix, bills to pay, people to call and eight hours at my regular second shift job. But there was a difference! The day was lived with a feeling of accomplishment and I actually began to look forward to getting up early the next day! Well, I did...and I do. Every morning now. And the airplane is progressing. Sometimes only a half hour goes in on my project, sometimes two or three hours, the time total is not important, although I do think in terms of at least one hour. What's important is the fact that I am actually putting the airplane first each day. I am starting each day with an immediate exercise of what I want to do. And it's doing more for me than just build an airplane. My whole view of the day and its activities is changing. I approach my job with more confidence and less worry. I linger less on the edge of the bed in the morning, no longer reluctant to face the old boredom of another ho-hum day. Try it. The personal reward is fantastic. It surely can't hurt me to put myself first for a mere hour. I did not neglect my other obligations in order to cherish this dream. Therefore I really am entitled to this airplane and the joy of building it. In other words...I OWE IT TO MYSELF. It's the most enjoyable debt I ever paid."

## TIPS (cont.)

A note from Jim Snyder sent in the tip on using microballoon slurry in issue #33 and now sends this follow-up: "I've found it better to mix the epoxy and microballoons about 1:1 to make it runnier. It spreads out better on the rough epoxy skin, has less air pockets in the slurry than did the former 1:3 mixture. I've also found it is more difficult to lay up a rudder side using the method I described (and still get a good looking finish) than it is to do a small sample 6" square! Now I'm working to try to leave off the Mylar completely and just dressing down the slurry surface by using a grinding wheel on my rotary drill (#50 grit). This makes tons of dust but it goes fast. I wear a mask to keep the dust out of my lungs."

## BUY SELL TRADE

I originally intended to use this section of the Newsletter so builders could sell or exchange surplus parts and materials with other builders. As some have noted, the ads have become more and more commercial. I feel a change is in order. Effective next month there will be the following changes.....

1. Free ads to the Newsletter subscriber (or club member) seeking or selling parts and materials, etc. for their KR projects.
2. Other ads, including completed aircraft for sale will be classified as commercial and will be priced according to size. "Business card" ads...\$5.00 min. 1/8 page.... \$7.00 1/4 page....\$15.00 1/2 page....\$26.00 full page....\$50.00.

Prices are per monthly issue and may raised without notice.

Ads should be camera ready. Typesetting and half tones if desired will be available at an extra charge. By charging for advertisement space I will be able to expand the Newsletter. This way I will be able to have more construction sequence photos, more detailed drawing and more "How to" articles.

KR-2 patches, can easily be converted to KR-1....\$1.90 ea. Darwin Roach, 1158 Wanda Dr., Granite City, IL 62040.

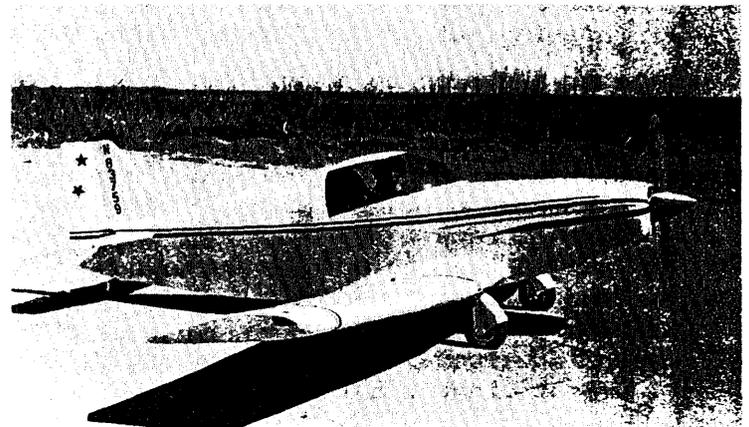
Need help? "Factory" experienced in all phases of KR construction...\$10.00 per hour. Paul Venne, 919 Grand Ave., Long Beach, CA 90804. Phone 213-433-0520.

Photo Exchange Service, KR-1s and KR-2s Wanted: good clear color negs (Kodacolor) of completed projects for personal collection. Will send color prints to persons requesting them, at cost (about 40¢ ea.). Please include info on name and address of builder. Jim Snyder, Box 696, Hesston, KS 67062.

Nylon bar stock...\$1.50 per ft. (3/4" x 1" stock) 2 part liquid foam...\$30.00 per 2 gal. kit. Epoxy paste, will not run....\$7.00 per qt. kit. Sunflower Aircraft, Box 696, Hesston, KS 77062.

NICHROME wire and plans for hot wire foam cutter...\$1.00. Bernie Steinbaugh, P.O. Box 64, Waterville, OH 43566 NOT FOR USE ON URETHANE FOAM.

KR-2 FOR SALE....completed 3/23/78.  
Awaiting final inspection. The aircraft features full electrical, 1834 engine, 52 x 50 Hegy prop, 20 gal. fuel, 5 gal. in each wing tank, weight 540 lb empty, Imron paint. The KR-2 has been test hopped off the runway about 3 times, ground handling compares with a Cessna 140.....\$5,500.00. R. C. Holcombe, Box 28, Sanderson, TX 79848.



Buy Sell Trade (cont.)

FOR SALE: KR-1 kit, everything but engine and instruments. New plans and a 14 foot work table.....\$1000.00. Maurice McCraw, 825 N. Janss, Anaheim, CA 92805. Ph. 714-991-6057.

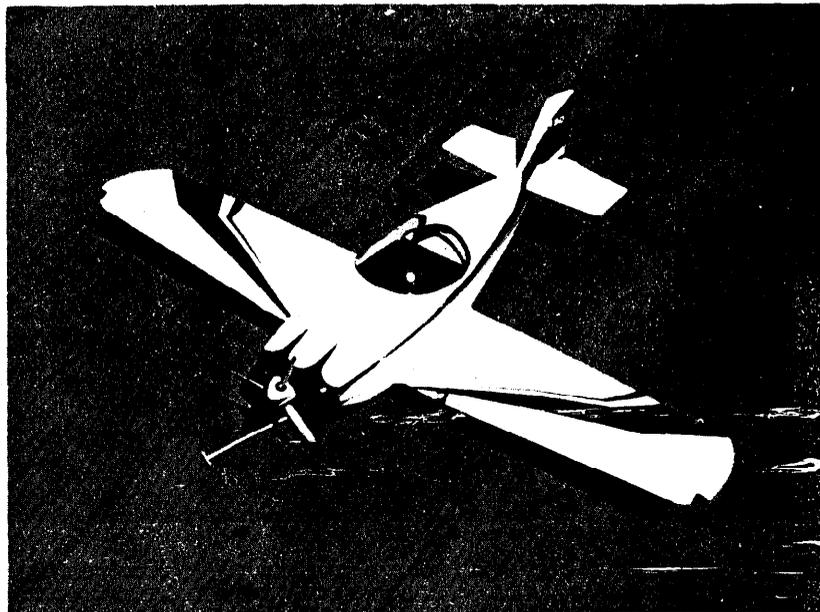
QUESTIONS & ANSWERS

- Q. Have you heard of anyone using a rotary engine in a KR?  
A. No, a couple of builders had planned on using a Mazda engine but to my knowledge they have not done so.
- Q. What kind of alternator did you use on your KR-2?  
A. I used the Honda 125 alternator but I don't believe this is adequate if a starter installation is planned. Max output was 4 to 6 amps.
- Q. I have a 412 engine for my bird, where can I get conversion parts for this engine?  
A. A KR builder has informed me that Custom Aircraft Engine, P.O. Box 441, Sandford, NC 27330 is developing an aircraft version of the 412/412 engine.
- Q. Will the aluminum undercoat for protection from U.V. rays interfere with radio reception?  
A. Since each aluminum particle is in suspension, interference is negligible and you won't notice it.
- Q. Is it necessary to balance the rudder and/or elevator?  
A. Ken Rand says the empennage does not need balancing because it will not flutter until well past the 200 mph redline.
- Q. How fast can I expect to lift off and climb out at my elevation (4,400') with a turbo-charged 1600 VW?  
A. Your take-off run might be as much as 400', your rate of climb should be 700 to 1000 FPM depending on prop and weight
- Q. Is the Newsletter interested in pictures of KR's under construction or just finished jobs?  
A. All pictures are appreciated.
- Q. My plans aren't too clear on this, could you help? 1. Define washout 2. What is its function 3. Is it used on both wings and how is it applied?  
A. 1. Washout is the difference of the angle of incidence in the wing when measured at the tip as compared to the root. 2. Since a wing will stall at high angles of attack, decreasing the angle of incidence at the tip allows the wing tip to stall last. This will give more aileron response into and during a stall. 3. It is used on both wings and it is built into the KR wing by decreasing the angle of incidence of the tip rib 3° in relation to the root rib.
- Q. Has there ever been any testing done on the KR-2 in respect to Aerobatics?  
A. There has not been an official test program regarding aerobatics on the KR-1 or -2. Several builders report that it can do limited aerobatics with ease however.
- Q. How does the KR-2 perform with the stock VW engine? Where can I get parts for the larger displacement engines?  
A. The KR-2 will perform very well with the stock 1600 VW engine, however performance with the larger engines 1834cc to 2180 is fantastic. I'm sure you can find a VW or dune buggy shop near you that carries the parts you need. If not, may I recommend "Rimco" 520 E. Dyer Rd., Santa Ana, CA . Several local builders bought parts there and have nothing but praise for the parts and service.

I have an answer to a question in the last Newsletter, sounds like these guys have a good thing going!

We of EAA Chapter 338 in San Jose, CA have a get together on the fourth Wednesday of the month for builders of foam and fiberglass aircraft which included KR and WAR and anyone else interested in the type of aircraft. We kick around the problems we have and methods to correct same. There is only one flying KR-2 in the group. We meet at the location of any one of the projects so we have no formal meeting place. The location of the next meeting is determined at our EAA meeting which is held on the third Wednesday of each month at Norton Abrasive Co. on LaFayette St. at approx. 8 p.m. Anyone interested in our group is welcome to join us in our building problems. We are not a social group.  
V. Emmett Dignon, 581 Nello Dr. Apt. 5, Campbell, CA 95008.

Bill De Freze has completed his tri-cycle geared KR-2 and sent in the nice photos. The gear does retract so performance should not be any less than a conventional gear KR-2. A problem with getting the turbo-charged engine to run the way it should was finally located. Many hours of trouble-shooting turned up the cause and it is something all of the guys building their own engines should watch for... the dowel pins had elongated the holes in the crankshaft and in the cut down flywheel. This was probably caused by the flywheel bolt not being torqued properly while the engine was still in the car. The magneto drive is bolted to the turned down flywheel stub and the elongated dowel pin holes allowed the timing to wander. Bill was able to solve this problem by drilling and tapping the dowel holes for a 3/8" allen head bolt. Bill's workshop includes a lathe, arc welder, acetylene torches, and many other tools. Local KR builders are welcome to use these tools, and more than welcome to come by just to talk airplanes, KR's in particular. Taxi test are being carried out at Tracy airport so drop by if your in the neighborhood. If you don't see Bill at Tracy, you can catch him at the Watsonville fly-in, May 26th thru the 28th.



#### HAPPENINGS

May 5-7 Chino California, 4th annual Southern California Regional Fly-in

May 13, 14, E.A.A. Chapter 532 Fly-In. Ocean City Airport, Ocean City MD

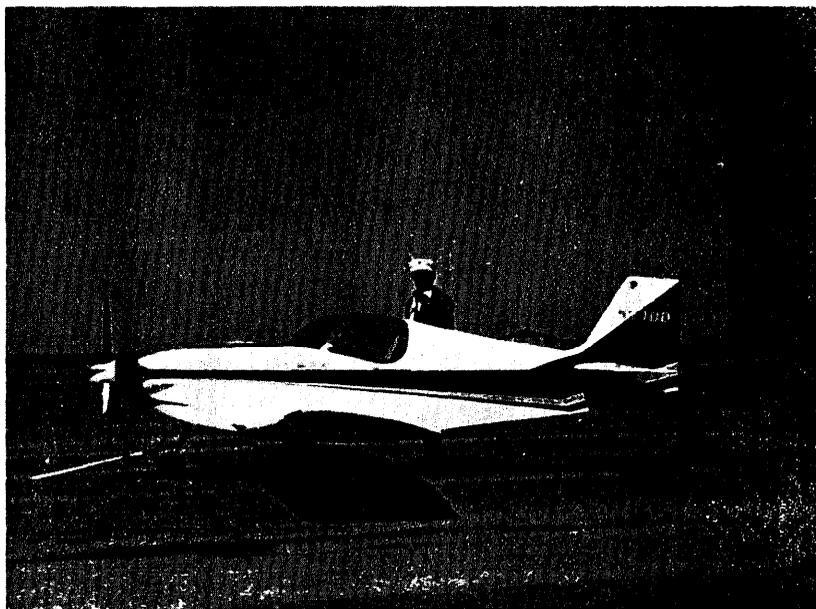
May 20-21 Rochester, New Hampshire Skyhaven Airport. Air Fair sponsored by EAA chapter 225

May 20-21 Enid, OK - 6th annual EAA Chapter 455 Fly-in and Air Show. Free breakfast Sunday for fly-ins. Air Show Sunday. For reservations and info contact Ron Pair, 524 N. Taylor, Enid OK 73701

May 21 Arlington, TX - EAA Chapter 34 Third Annual Air Show.

May 26-29 Watsonville, CA - 14th Annual West Coast Antique Aircraft Fly-in and Air Show.

July 29 - August 5, 1978 - OSHKOSH, WI Start making your plans now. It isn't too early. We want to see a lot of KR's this year



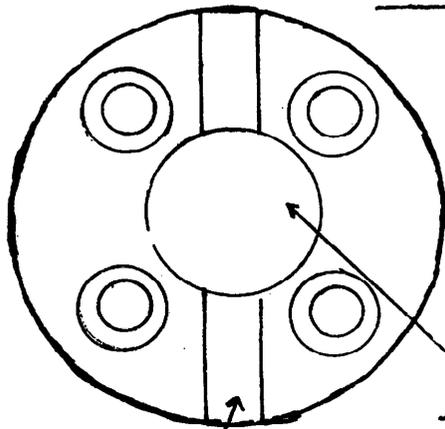
The nose wheel strut on Bill's "Baby" is modified from a Teenie Two, it is steerable and fully retractable. The main gear is modified from the original KR parts, including the spring bar. He is happy to answer your questions so don't hesitate to write or phone.... Bill DeFreze, 7530 Ironwood Drive, Dublin, CA 94566. Phone number is (415) 828 2111

NOTES:

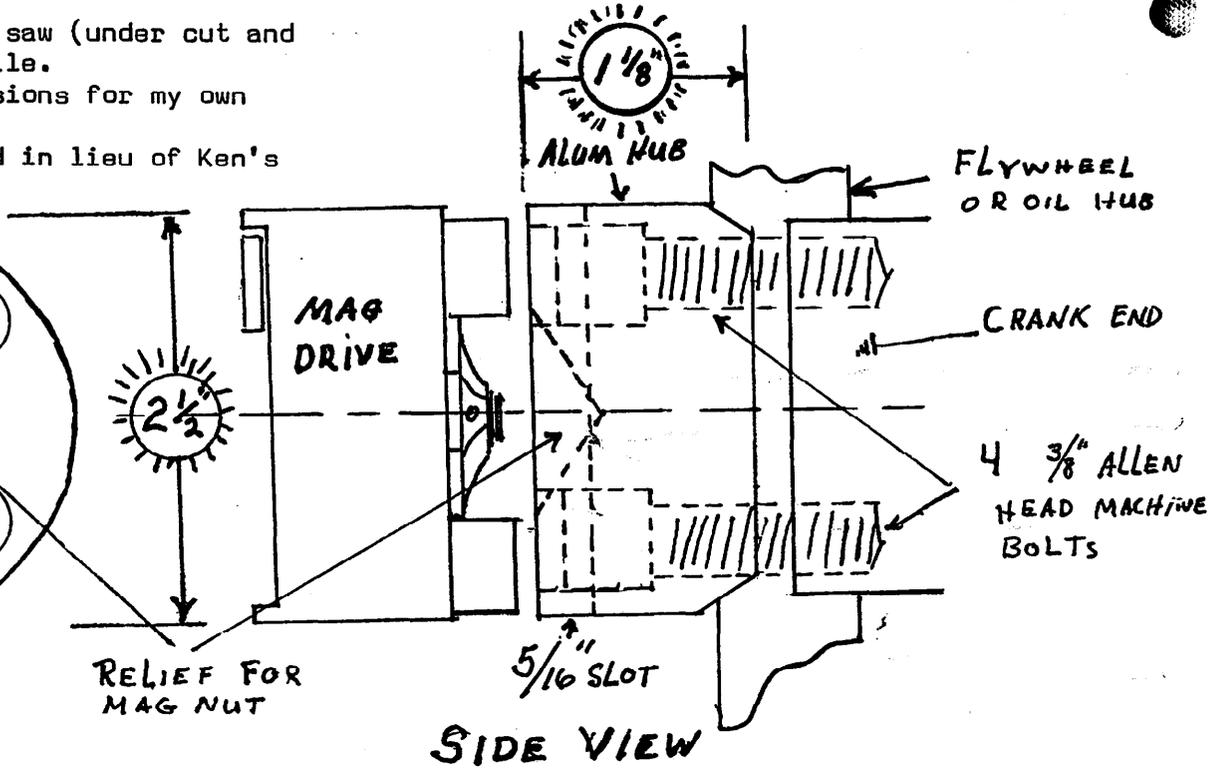
1. Discard 4 dowel pin
2. Drill and tap dowel holes (I used 3/8" as my dowels had elongated my crank and fly wheel).
3. Cut slot with band saw (under cut and finish with hand file.
4. These are my dimensions for my own design acc. pak
5. This design is used in lieu of Ken's belt drive.

# MAGNETO DRIVE

BILL DE FREZE  
 7530 IRONWOOD DR.  
 DUBLIN, CA 94566  
 415-828-2111



END VIEW



SIDE VIEW

ERNEST KOPPE  
 6141 CHOCTAW DRIVE  
 WESTMINSTER, CA 92683  
 ISSUE #35