

KR Newsletter

SUBSCRIPTION RATES

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CHINO '78

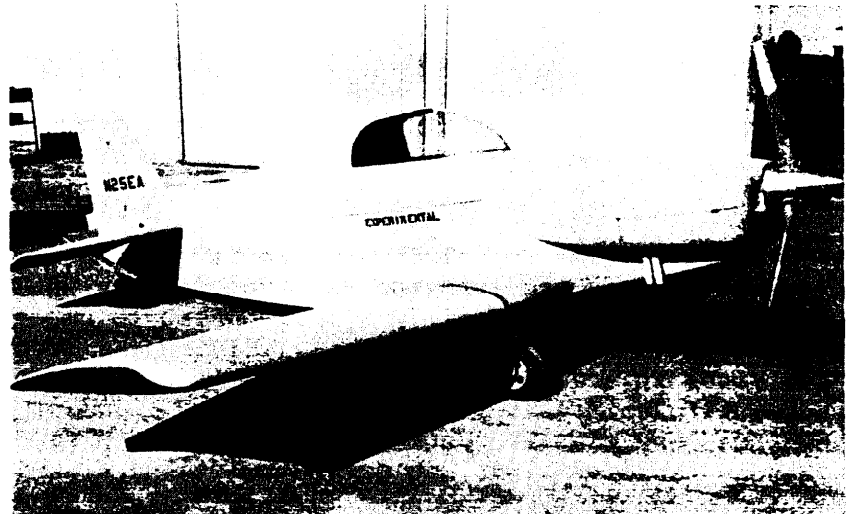
Finally!! The So Cal EAA Fly-in is showing its real potential, a sunny week-end brought 'em all out. There were the Warbirds (better known by the announcer as the "Big Iron", P-51s, Sea Furies (a pair), a real honest to goodness Spitfire, a Corsair, Wildcat, and a B-25 all doing what they do best...Flying. A surprise visit was paid by the Confederate Air Force in a B-17 that looked like it could have just came off the assembly line. It was a beautiful aircraft and it really was a pleasant surprise to all. Then there were the antiques and classics from one of a kind airplanes such as the exquisite "Harlow" to the "garden variety" Piper Cub without which no fly-in is complete.

The homebuilts, of course, were there from as far as Canada (Chris Heintz's Tri-Z) and as close as Chino airport itself, homebase for a great many custom crafted aircraft. The "Quickie" made an appearance, 4 Vari-ezes (one from Wyoming), T-18s, RV-3s, Tailwinds and Stardusters. "But," you say "were there any KR's?" You can bet your squeegee there were KR's! Ten of them, "One-Zero", a double handful of the composite creation of Ken Rand! Ken flew his KR-2 in but the turbo-charged KR-1 was not completed in time and was trailered in as a static display. The long nose and sliding canopy really made it look like a little fighter. Garth Hess brought his partially completed KR-2 as a static display. The project drew attention from all sides as he had some very interesting modifications. Besides the balanced tail surfaces featured in a previous Newsletter, Garth is using a laminar airfoil with reflex ailerons with a 10% increase in wing area. I'm looking forward to hearing more about this fine project. Bill Matto who trailered in his tri-gear KR-2 last year, flew it in this year. He says there has been some performance loss over the original conventional gear arrangement, probably due to weight. Dan Rohn of Whittier is getting his KR-2 ready for final inspection. His KR-2 was one of four turbo-charged KR's at the Chino fly-in this year. Bob Osborne from San Diego, CA flew his KR-2 in for the Saturday edition of the fly-in but did not return on Sunday. Unfortunately most of my Saturday was spent as a parking lot volunteer and I didn't get any specifics from Bob before he left. Maybe he will send us a flight report for a later issue. Butch Grafton was there for both days. I'm sure you remember his KR-1 picture and flight report a couple of issues back. He is still experimenting with different pitch settings on his Warnke prop and will soon try a wider blade. Not that there is anything wrong with what he has but if it can be better...why not? The other KR-2 in attendance belongs to Gerhard Carlson. Mr. Carlson came here from Sweden, built the KR-2 (turbo-charged Revmaster 2100) and plans to fly it back to Sweden. It has flown the initial test flight and is having a temperature problem corrected..i.e. baffles and oil cooler. There was, according to a reliable source, another KR-1 in attendance on Saturday. I never did see the aircraft because of the aforementioned volunteer duty so... will the owner/operator of the phantom KR-1 please drop me a line. We would like to hear about your KR.

Remember the drawing of the fixed gear KR-1 in Issue #11? Well, it's more than just a drawing now! Frank Walker has built the nicest KR-1 I've seen yet. The Fly-in judges evidently thought so too because it was awarded the trophy for "Best Composite". Frank is a high school auto shop instructor in Whittier, CA and did the 36 hp VW conversion himself as well as working out the modifications for attaching the 7075 T6 spring for the fixed gear. Everything in the aircraft shows the thought, care and craftsmanship that made it a prize winner.....Congratulations, Frank!

Shortly after last month's Newsletter was mailed, my local paper ran a picture of an aircraft accident in which the pilot was killed. The aircraft in the picture was obviously a KR and I recognized the name of the pilot as a longtime subscriber to the Newsletter. It was like hearing of the death of an old friend. The few lines below the picture didn't give any reason for the crash, just that it was under investigation by the FAA. The following day after the picture appeared, my mail included a letter and some pictures sent by the pilot shortly before the accident. I want to share them with you.

"I am sending a picture of my KR-1 which I flew for the first time Sat. the 29th of April. It flew like a dream but got hot. So I had to land it on the first round (around the field). Now I realize how you feld on your first flight of your KR-2. I think my Revmaster 2100 will do me a good job when I get the over-heating corrected....Eldon Alt."



What happened to cause the accident? Was it due possibly to the engine failure due to over-heating, resulting in a stall/spin accident? Was there a weight and balance problem due to the large engine? Was it pilot error? As the article said, "The cause is under investigation." I'm trying to find out the results of the investigation so I can pass them on to you. Perhaps the knowledge of what actually happened can prevent a similar accident. I do not care to see pictures of my friends and their aircraft under the circumstances described in the paper and I consider you as my friend. So please...exercise caution, use some common sense or whatever it takes to make your flying safe. I want to meet you, talk with you, not read about you as a "cause under investigation" accident.

BUY SELL TRADE

Charges for ads are as follows: Newsletter subscribers seeking or selling parts, materials, etc. for their projects are not charged. Other ads, including completed aircraft for sale, will be charged according to size..."business card" ads...\$5.00, 1/8 page...\$8.00 1/4 page...\$15.00 1/2 page...\$28.00, full page...\$50.00. Prices are per monthly issue and may be raised without notice. Ads should be camera ready, type setting and halftones available at extra charge.

VENNE KR CONSTRUCTION.....Experienced KR builder offers complete technical assistance, inspections and construction. Charges to suit any budget...international inquiries welcome.....919 Grand Ave., Long Beach, CA 90804 or phone (213)-433-0520

WANTED: Two men to share expenses to Oshkosh. Approx. \$15.00 per day in self-contained mobile home. Lee Collins, Waukegan, IL Phone 312-244-4773.

FOR SALE or TRADE: KR-2, compled Dec 77. Solid white with blue trim, wing tanks, 65 hp VW engine (engine needs repair). Call Ted Cummins at 601-843-9690 (no collect calls please).

FOR SALE: Nico-press tool-1/16, 3/32, 1/8 \$6.00, 11 x 14 breakdown drawing of KR-3 50¢ plus legal size S.A.S.E. BUY: Small Nav-Com for KR-2. Call collect or write price, etc. WANTED: A copy of Barker VW conversion planes. Xerox copy O.K. Write or call collect on price....Jim Mack, 1670 Van Petten St., Reno, Nevada 89503 or phone 702-747-3505

KR STALL CHARACTERISTICS

I was going to write an article about the stall characteristics of the KR's but as I wrote, I found I was writing about the same stalls that have been with us since we first read about them in ground school and practiced them in the air. Anyway, what started out as an article about stalls in a KR ended up as a refresher about stalls in general.....

Power off or approach stalls in a KR are gentle and straight forward. Cut power, hold altitude while the airspeed bleeds off and the break will come about 42 to 45 mph indicated. Unlike most aircraft, the KR has a high degree of aileron control thru the stall so, other than a rapid loss of altitude, the power off stall can be hard to recognize. Recovery is easy, a little forward stick and airspeed will build up rapidly. Apply power to maintain altitude.

A "power on" or departure stall in a KR is normally a straight ahead, wings level affair. With the larger engines this might not hold true. A KR-1 or -2 pushed full power into a stall can snap suddenly to the right and go into a 45° nose down spin, especially if you're a little careless in keeping that left rudder in while the throttle is firewalled. It takes altitude to recover from this situation so don't get caught unaware. Pay attention to your airspeed and keep the ball centered while you're climbing out from take-off. Spin recovery, by the way, is normal: fwd stick and opposite rudder will stop the spin within a $\frac{1}{4}$ turn.

The accelerated stall is the sneaky one. This stall happens when you're in a turn and your degree of bank becomes too great for your airspeed. Rand says at a 60° angle of bank, his KR-2 will stall at 90 mph indicated. Next time you're on base and just about to turn final, you might keep the accelerated stall in mind. Since the pattern airspeed is generally in the 70 to 80 mph indicated range, too steep of a bank could easily cause an accelerated stall at a most inopportune time.

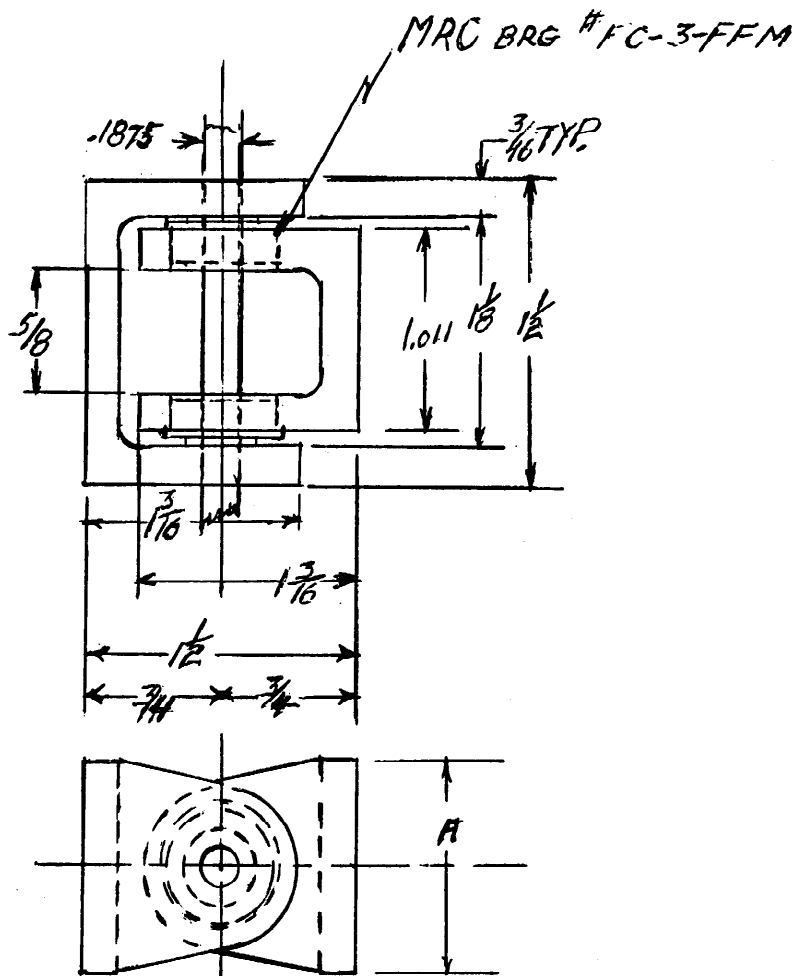
Well there you have it, as I said at the beginning, stalls in a KR are just like stalls in most other aircraft. Next time you're up flying you might get in some practice on stalls. Sure couldn't hurt and it sure might help.

QUESTIONS & ANSWERS

- Q. Is it O.K. to use Kevlar 49 in place of Dynel fabric over the foam?
- A. Yes, certainly. Kevlar is roughly 10 times stronger than fiberglass and is lighter in weight. It is much more difficult to work around compound curves tho and you will take much longer to get an acceptable surface.
- Q. Where is a good attach point for an electrical oil pressure gauge?
- A. Use the existing hole at the top of your engine, just below the distributor hole.
- Q. Is anyone using a VW fuel injection system on their engine?
- A. I haven't seen one in use as yet but I don't see why one couldn't be adapted for aircraft use.
- Q. I have created a problem for myself by carelessly over-reaming my wing attach fittings. Is it possible to use a 7/16" bolt rather than the 3/8" bolt the plans call for?
- A. Yes, the larger hole will not affect the capability of the part appreciably. I do recommend using a separate bolt for each pair of main spar wing attach fittings (a total of eight).

RAND/ROBINSON UPDATE: Ken Rand is continuing to add new items to his already long list of parts and supplies for KR builders. New price lists are available that contain all the new items so send a S.A.S.E. to Rand/Robinson for the latest sheet. Ken just completed a non-stop flight from So. Cal. to the fly-in at Enid, Oklahoma. Distance covered approx. 1300 miles, time..6 $\frac{1}{2}$ hours, fuel used..30 gallons. He was very happy with the performance of the turbo KR-2 and plans more long distance trips to future fly-ins.

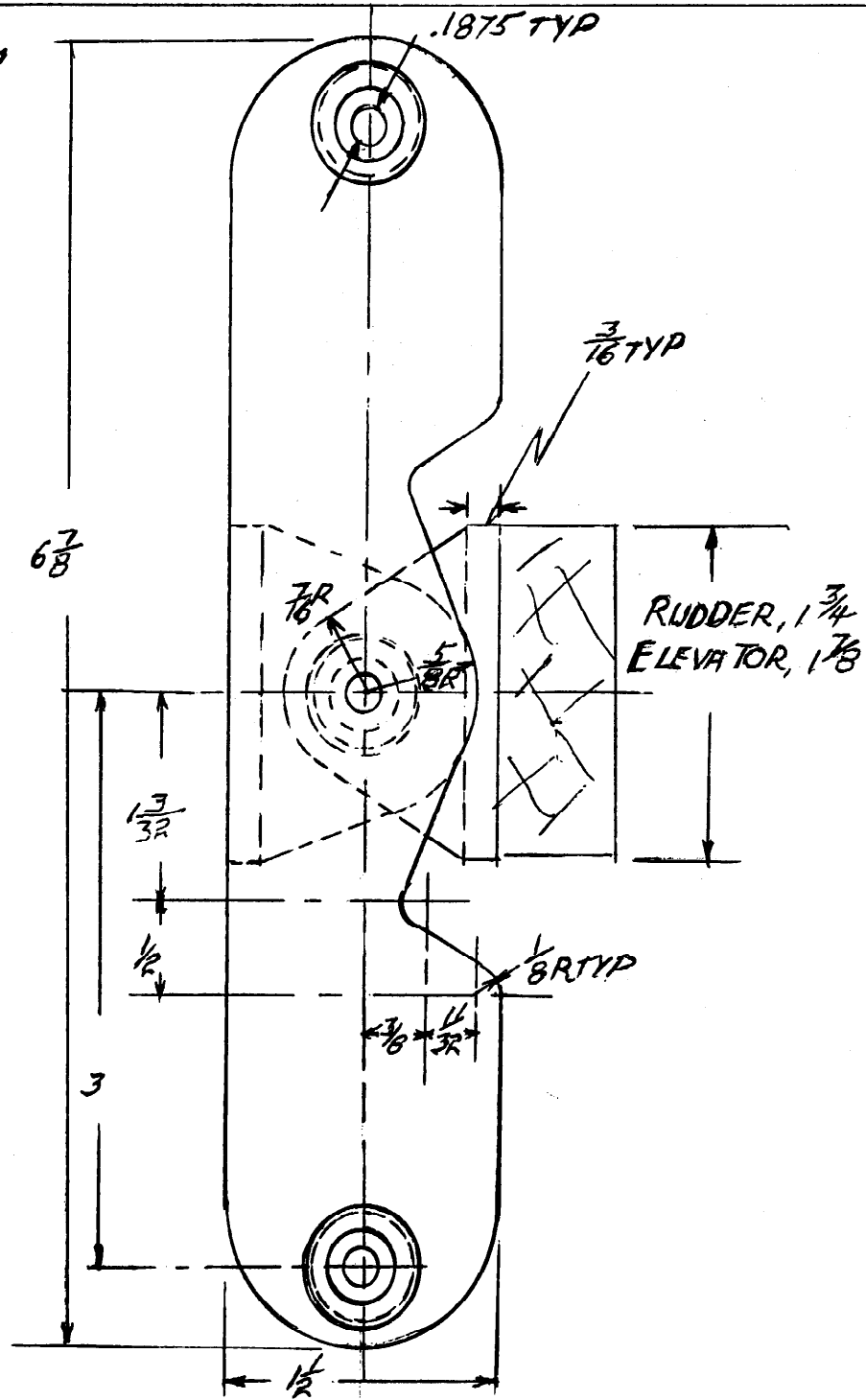
Bill DeFreze telephoned the other night. Seems he has been getting a lot of mail with questions about his retractable tricycle gear KR-2. Because of all this interest, Bill says he will make drawings and construction notes as soon as he is satisfied there won't be any unexpected problems with the tri gear system. One more note, the last Newsletter indicated that the nose wheel on Bill's KR-2 was steerable, it isn't. It is castering and responds readily to individual brakes.



"A" DIM: $\frac{3}{4}$ " RUDDER, 1 REQ
 $\frac{1}{2}$ " ELEVATOR, 2 REQ

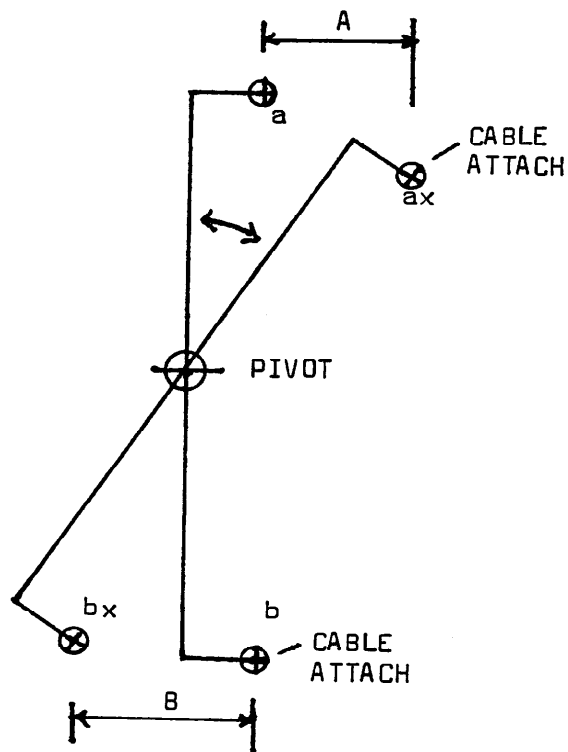
"Being a toolmaker, I know that a steel pin in aluminum can gall or wear very rapidly. Here is my idea for using ball bearings."

Grant Pence



TIPS FROM OTHER BUILDERS

***Several builders have asked what is used to cover the gap where the outer wing panel joins the wing center section. A fabric reinforced tape is the most commonly used, such as Scotch brand "Mystic" tape. However.....the same rules apply to colors of the tape as to the rest of the aircraft. Darker colors will absorb heat more readily than lighter ones. Frank Walker used 2" wide black tape on his and found that it absorbed enough heat from the sun to actually soften the epoxy skin beneath the tape. The tape actually became too hot to touch with your bare hand. So....use white or one of the lighter colors, save yourself some problems later.



Schematic drawing of Control Stick to show bind/slack problem

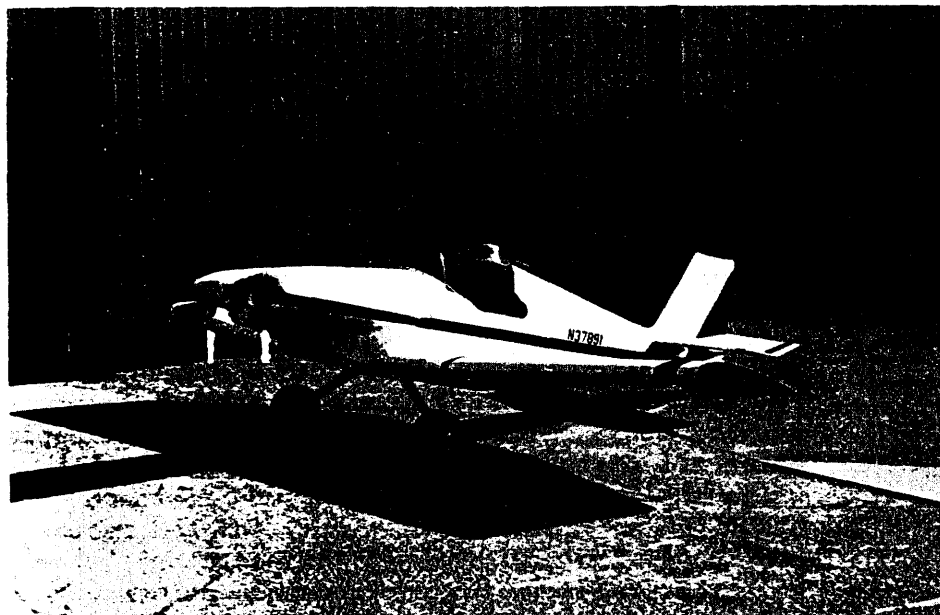
***Just a note to point out that the cause of slack cables is not the result of different distance between pivot and cable attach points on control stick and elevator control horn as reported in last Newsletter. That would only affect mechanical advantage/sensitivity of controls. Real problem is that in control stick (such as shown on page 3 of Issue #11) where the cable attach points on the stick are not in line with the pivot point. See drawing at left. If stick is pulled aft in such a set up, cable attach point 'a' goes to position 'ax' and attach point 'b' goes to position 'bx', that means the upper cable moves aft distance the horizontal distance 'A' while the lower cable moves forward distance 'B'. Since 'B' is a greater distance, the top cable goes slack (bottom cable at the elevator). The solution...be sure the cable attach points (the hole in the eye bolt) is in line with the pivot point. The illustration on page 4 of Issue #11 is closer to this ideal situation. I found I had to make a mounting bracket about 1" longer (fore and aft) to allow such a stick not to interfere with the spar. Hopes this helps clear up someone's problem before they repeat my initial mistake....Harvey Altergott.

***Oil leaks are messy, unsightly and a potential fire hazard. They should be corrected as soon as possible. The VW engine has an oil slinger just behind the generator pulley (prop hub) to keep oil from coming out around the crankshaft. Unfortunately it doesn't always do the job it was intended for. A 2" front wheel grease seal (G.M.) installed on the front of your engine case with some G.E. silicone sealer will end your leaks in this area. Be sure you use the orange colored silicone as it is better than the clear or white stuff.

***To answer the guy who wrote asking about a KR-2 club in the San Jose area, it isn't really a club in the sense of having business meetings, dues, etc. but it's a splinter group formed by guys in EAA Chapter 338 (Santa Clara, CA) who are building or are interested in KR's and has expanded to include non EAA builders. The roster now shows 21 names, most of whom have a project under way. A few are non-KR's but structurally similar, most notably an exquisite WAR Corsair. Meetings are usually held on 4th Wednesdays at member's workshops, and talk generally centers around specific problems and solutions, techniques, and bright (?) ideas. Meeting place info can be had by calling me after the 3rd Wed. at Litronix, 257-7910 ext. 215.....Chuck Cooke

***In regard to your caution to "taxi with the stick back"...I fly a Baby Ace with 65 h.p. She has several hundred hours on her and is a delight to fly. She is also light on the tail and has twice been over on her nose. You do not taxi her down-wind with the stick back. Never let the wind get under her flippers. Run up...(A) face into wind (B) brakes on (C) stick full back (D) open throttle and check mags (E) close throttle (F) release brakes (G) neutralize stick....in that order. Reversing sequence (E-F) can put you on your nose. Perhaps this applies to the KR?.....Gordon Lillie. ***Ed. Note...Gordon is right, to taxi down wind in almost all taildraggers requires fwd stick. A sudden gust of wind against the backside of an up elevator can easily lift the tail and wipe out your prop.

SUBSCRIPTION INCREASE...due to increasing costs of paper, printing and postage, it has become mandatory to increase the subscription rates to the Newsletter. Effective July 1, 1978 the following rates will apply: United States & Canada (1st class)...6 months @ \$5.00 one year @ \$9.00....Overseas (air mail only)...one year @ \$15.00...back issues @ .75¢ each. You can beat the increase by getting your renewal or new subscription mailed in now. It must be received before July 1st however, at that time the new rates become effective.



Here is a picture of Frank Walker's prize-winning KR-1. If you missed it at Chino, look for Frank and his sleek little craft at Oshkosh '78".

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K·R *Newsletter*