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# NEWSLETTER

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## EMERGENCY!!!

### YOU HAVE BEEN "STEPPED" ON.

Step 1. The F.A.A. has added 80 new Terminal Radar Service Areas (TRSA's) to the 86 that already exist. We have no voice in this.

Step 2. In the 1st of two N.P.R.M.'s the F.A.A. is asking for 44 new TCA's in addition to the 21 that already exist. They also are asking for a lowering of Positive Controlled Airspace to 10,000 ft. east of the Mississippi and over most of California.

Step 3. The 3rd step will come in March when another N.P.R.M. will be posted which would require encoding altimeters and transponders for all 166 T.R.S.A.s (making them T.C.A.s). As of 1982, all transponders would have to be replaced with new units capable of answering collision radar in airliners. The worst part of this N.P.R.M. would, in the words of the E.A.A.: "include the establishment of in-route radar service areas below 10,000 ft. in certain traffic areas around the country. They would function like T.R.S.A.s.

All this "instant safety" is a publicity reaction to the San Diego mid-air between an airliner and a general aviation aircraft. For some unknown reason they are overlooking the fact that both of the aircraft involved were in radio contact with controllers on the ground, precisely in accordance with the very rules they want to foist on 200+ more cities as well as various airways in between. A number that, in true bureaucratic fashion, would grow and grow as time goes by. At the moment, use of TRSAs or Stage IIIs is voluntary but that will almost certainly change and become mandatory. In effect the plan would also give the FAA all the power they need to achieve what now clearly appears to be their goal: TOTAL control of all US airspace.

## DO SOMETHING!!!

WRITE! Tell the F.A.A. you are opposed to their N.P.R.M. that calls for 44 new T.C.A.s and lowering of positive controlled airspace to 10,000 ft. The way to do this is as follows!...

1. Write to:  
FEDERAL AVIATION ADMINISTRATION  
OFFICE OF THE CHIEF COUNSEL  
ATTENTION RULES DOCKET ATC-24  
800 INDEPENDENCE AVENUE S.W.  
WASHINGTON D.C. 20591

Regarding N.P.R.M. Docket #18605  
Notice #78-19

2. Let them know you oppose their plan as a hastily conceived measure that would not increase safety in the air. Offer your own suggestions for improvement of safety. Or...just state that you agree with the E.A.A.'s objections to the F.A.A. plan and ask that the E.A.A. concepts be given consideration. March 5th is the deadline, write a letter now!!

3. Write a letter to your congressional representatives. Refer to the N.P.R.M. and its numbers. Ask for an explanation of the F.A.A. proposal and evidence how it could have prevented the San Diego crash. Stress the fact that E.A.A. has a better and safer plan thru sensible air traffic control. Insist the E.A.A. be heard. Use these addresses.....

Honorable (your Representative)  
House Office Building  
Washington D.C. 20515

Honorable (your Senator)  
Senate Office Building  
Washington D.C. 20410

\*\*\*Petitions and vulgarity will not help.

4. Keep these addresses with you and encourage relatives and friends to write also. Don't wait for the "other guy" to stop this F.A.A. power grab! YOU are the "other guy".

## TIPS FROM OTHER BUILDERS

Due to the importance of proper torque on VW engine bolts and nuts, the guys at Miniature Metrics have offered the following helpful hints and charts. There are also some tips on cleaning up the inside of your engine for better cooling and longer engine life. Y'all pay attention now!

"The following torque values are from charts and experience. Proper use of a torque wrench. First be sure you have the correct torque value from the following list. Then hold the wrench and socket firmly on the nut or bolt with one hand on the head or socket end of the wrench, keeping clear of the pointer rod (some types). Then pull the handle with a steady pressure. Position the work or yourself where you can see the reading clearly. Run all bolts in the series to 3/4 of final torque all around. Then go around again making sure all nuts or bolts are to torque."

LOCATION	SOCKET SIZE	METER KILOGRAMS	FOOT POUNDS
Crankcase 8mm nuts	13 or 14 mm	2.0	14
Crankcase 10mm nuts	17 mm	3.5	25
Crankcase 1500 plastic insert	17 mm	2.5	18
*Cylinderhead nuts	15,16,17 mm	3.7	23
Rocker shaft nuts			
1500	13 mm	2.5	18
1600	13 mm	2.0	14
1700 IV	13 mm	1.4	10
Flywheel Gland nut	36 mm	30.0	220
Conrod nuts	14 mm	3-3.5	22-25
Crankshaft/prop hub	30 mm	6.0	44
**Spark plugs	21 mm	2.5-3.0	18-22
Oil screen nuts	10 mm	0.7	5
Oil pump cover nuts	10 mm	1.0	7
Type IV	13 mm	2.2	14

\*Aluminum cylinders should be torqued to 2.5 meter Kilograms or 18 foot pounds.  
**\*\*NEW INFORMATION!!**

### GENERAL ENGINE NUTS & BOLTS

BOLT SIZE	SOCKET SIZE	METER KILOGRAMS	FOOT POUNDS
6 mm	10 mm	0.7	5
7 mm	11 mm	1.0	7
8 mm	12 mm	1.5	10
8 mm	13 mm	2.0	14
8 mm	14 mm	2.5	18
10 mm	17 mm	3.0	22
12 mm	17 mm	3.0	22

Many have experienced problems with oil flow and cooling. Try removing the core plugs and clean out the oil galleys and tap for pipe plugs. To save weight install dural or light alloy plugs. Be sure all swarf or drilling/tapping garbage removed with air or steam pressure. Use a wire brush like a rifle cleaner to clean and brush narrow passages. Remove sharp edges before re-assembly as they can break off later.

The outside of the engine should be rough and unpolished surfaces. No polish or chrome except on hardware not touching the engine. An anodizing in black or a coat of flat black will cool the engine better. No paint on the oil radiator or a thin coat of flat black. Then check your operating temps.

We also recommend sand blasting cylinder heads and thorough cleaning. Paint before assembly and protect all surfaces that mate from paint. There's better rounding of electrical circuits and less static from clean mating parts....Miniature Metrics, 7801 14th St., Westminster, CA 92683

## TIPS FROM OTHER BUILDERS (cont.)

Here's a tip for builders frustrated by those little triangular glue blocks in the frame. Before you start, make a set of "measuring blocks". Cut a strip of 5/8" material into 1" lengths, changing the miter 1° each end. Ten blocks with twenty angles should serve. To use, just find the measuring block that fits and you can cut the glue blocks perfectly on the first try. Saves a lot of trial and error.....Tom Hoopengardner, 1658 Primrose Lane, NW, Washington, D.C. 20012.

"I found my Posa carb performed much better if I installed a velocity stack or tube (not ram air) 6" to 8" long over the intake. Longer is OK. You can use flexible wire reinforced airduct and incorporate a remote air filter in the system".....Dan Diehl, 4132 E. 72nd St., Tulsa, OK 74136.

"When mixing Rand's epoxy for gluing I use two of those disposable plastic glasses, scribing a line around each at equal heights. Fill each to line the pour part "A" into part "B" to mix. Note...part "A" will pull up the sides of the glass a small amount, part "B" will pull down.....Don La Moreaux, P O. Box 13, Sand Point, ID 83864.

## KR CLUB BULLETIN

New KR Club members were sent a list of the club members in their area. This was done in hopes that they would take it upon themselves to meet and get to know each other. I'm happy to say this has proved very successful, regular meetings have been set up where the members could compare notes, building hints, and flying tips. If you and the members in your area have set a regular scheduled meeting date please notify the Newsletter so the time and place can be published.

Regular meeting dates have been set up in the following places:

First Tuesday at 7:30 pm every month. Contact Lisle Knight, 36 Margaret Ave., San Francisco, CA, 94112 for more info.

Second Monday every month at 7:30 pm at 6141 Choctaw Dr., Westminster, CA 92683. Phone 714-897-2677.

Wisconsin area members should contact Robin Butler, 1841 Michigan Ave., Manitowoc, WI 54220. Phone 414-684-3007.

\*\*\*Leon Self, 404 Standish Dr., Bloomington, IL 61701 is claiming the title of "USA Largest KR-1 Pilot", at 6'3" tall and 225 lbs. Any other claimants to this title? Leon also sent the following report on his KR-1: "On May 27th I made a gear-up landing (forgot to lock the gear down on landing). The only damage was to the tips of my 2-blade prop. I have replaced it with Rand's 3-blade ground adjustable prop. The ship will cruise at 140 MPH, at present pitch setting, at 3400 RPM. Rate of climb is 1100 to 1200 ft/min. This is fantastic considering my size. I intend to set prop to run 2900 RPM static, this should give faster cruise. I have 25 hrs. time in this little bomb. From my gear up experience I certainly would recommend anyone having an emergency landing do it with wheels up. Especially if on a rough field. If I had been able to rotate prop there would not have been any damage. Of course I didn't know what I had done until after I got out, walked around and mentally flew the pattern. Five of us picked the plane up, I looped my belt over the gear lever, popped the gear down and locked and pushed the KR-1 to the hangar. My Rand had rolled on wheels extending out of wings and skidded on lower part of bottom cowl. I told the FAA I planned to demonstrate wheels up landings at airshows. He really wasn't interested in issuing a waiver!"

\*CORRECTION notice: Last issue of the Newsletter had an article about the three different tricycle gear systems available. The article said that a complete tri-gear system was available from Finellis Machining and Welding. New information brought to my attention reports that this is not the case. Completed assemblies will not be sold by Finellis, only plans. The address for more info is 5327 West Ave. L10, Quartz Hill, CA 93534.

## RAND/ROBINSON UPDATE

Due to the increasing amount of allergic reactions to Shell Epon 815 (R/R epoxy Type A) the Dept. of Consumer Affairs is suggesting the use of an alternate. R/R Type A will be Shell Epon 813, a less toxic, more costly product. Price will be increased to \$21.50 per gallon.

## QUESTIONS & ANSWERS

- Q. What are the front & rear CG limits of the RAF 48 with reference to the wing leading edge as a datum?
- A. Forward limit is 15%, rear 40%. On a 48" airfoil this is 7.2" and 19.2" respectively.
- Q. Does air come in or out of the opening around the main gear spring?
- A. Since the bottom of the wing is a high pressure area and this is where the opening eventually leads, air will enter the fuselage thru the spring bar opening. How much air actually comes in will depend on how much gets out at various other cockpit and fuselage openings.
- Q. I've installed the dive brake shown in Newsletter #12. Should I remove it and put on flaps? How about both?
- A. The dive brake was devised as a system for glide path control and as such worked very well. Flaps generally have the advantage of lowering the stall speed. I think either system is effective enough to use without the other.
- Q. What system is used to mount drive pulley to the magneto? Is impulse used on the mag?
- A. The belt drive pulley is bolted to the impulse coupling of the magneto after first removing the drive lugs on the coupling.
- Q. Do the heavier KR-2s (600 lbs +) require the use of 1" rather than the 3/4" spring bar?
- A. Some builders are shortening the 3/4" spring bar 1" on each end. This stiffens the spring action and has no extra weight penalty.
- Q. Are most KR-2s sensitive to elevator inputs? Should the elevator be shortened?
- A. All KR-1s and 2s are sensitive to control inputs, especially elevator. If you want less sensitive controls change the bellcrank geometry, not the size of the control surface or their degree of travel.
- Q. Rotorway's new engine weighs approx. 160 lbs dry. Will that cause weight and balance problems in a KR-2?
- A. Some KR-2s are flying with heavier engines, if cooling and electric systems on the Rotorway don't add too much weight, I don't see any problem.
- Q. Have you heard of the foam, that when covered with fiberglass and resin, you could cut a hole in it and use it for a fuel tank?
- A. I haven't heard of a specific foam made just for that purpose. However, styrofoam blocks can be shaped to any desired configuration, covered with cloth and resin to form the tank (or anything else) and then the foam is easily removed with solvents or gasoline.
- Q. Will Rand be marketing the "flap kit" as a separate item soon?
- A. There is no intention of doing so in the near future.
- Q. You said you were building a "KR-1½". Is this something new from Ken Rand?
- A. "KR-1½" is my term, basically its a single place KR-2. (Maybe a stretched KR-1.)
- Q. What pitch do you recommend for a fixed pitch cruise prop on a KR-2 with a Revmaster 2100 D engine (no turbo)?
- A. Ask your prop maker what he recommends. If you are making your own I would suggest trying a 54" prop with 60" pitch and go from there.
- Q. Can you give me any performance figures on Frank Walker's fixed gear KR-1?
- A. Not at this time. Frank sold the aircraft and it was later involved in an accident because of engine failure due to overheating.

\*\*\*Along with the other questions I received the following short letter.....

Dear Ernest,

I'm sending \$15.00 for another year of your good KR Newsletter. Have enjoyed it and saved many times the cost. A couple of questions you could answer in the Newsletter:

1. Where can I get a Xerox of the blue print for machining the VW cyl heads for the dual spark plugs? 2. How about some more info from the Continental C-65 guys on their installations and problems.

The first homebuilt airplane in Ecuador flew two weeks ago. I began mine almost two years ago and it caught on. One of the Catholic missions on the airport here built one also and beat me!! So the first airplane ever built in Ecuador is a KR-2!!! I'm still working on mine. Happy New Year.....Bill Clapp, Alas de Socorro, Shell, Pastaz, Ecuador.

If any one out there can help Bill with his questions he would be very happy to hear from you. Or you could write to me and I will forward any info. E.K.

BUY SELL TRADE

TRADE for Lyc. 135 HP 0-290D2.....KR-1 project on gear, ready to cover. Center control stick, cables run. Custom white leather seat. Everything to finish including engine (73 VW already rebuilt, converted & running on test stand) and instruments. Will sell outright for \$2500 or trade for Lyc....John Schmidt, 802 N Main St. Elkader, IA 52043.

SELL.....40 HP VW case and 83 MM jugs, all new parts. Ran 15 hrs. Phone 717-393-5928 eves. (no collect) or write....Jim Peris, 129 Crest Ave. Lancaster, PA 17602.

DESK MODEL of your own KR-1 or KR-2, painted to your style or plain.....Jim Peris, 129 Crest Ave., Lancaster, PA 17602.

KR-2 Project....Fuselage on gear, wing, spars, tail. Revmaster engine mount. Controls are in. Materials to finish...\$1000.00. KR-1 or-2 trailer..\$325.00. Phone Don Dobbins, 11742 Glencove Dr., Garden Grove, CA 92643 at 714-530-3812 or Paul at 213-569-2908.

FOR SALE....Rand KR-2 cowling. New, never used...\$75.00. Tom Loftin, 3675 Noland Rd., Suite 150, Independence, MO 64055 or phone 816-836-1414.

WANTED.....Converted VW engine for KR-2...D. Richardson, North Court St., Irvine, KY 40336.

"SUPERCASE" adapts your VW engine to aircraft use. Starter, alternator and magneto are bolt on items. Send S.A.S.E. to Dan Diehl, 4132 E 72nd St., Tulsa, OK 74136.

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

TRI-GEAR PLANS, uses Rand's parts..\$20.00. Bill Defreze, 7530 Ironwood Dr., Dublin, CA 94566.

TRI-GEAR PLANS and stress anylsis....\$40.00...Don Land, 906 Manzanita, Los Angeles, CA 90029

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JACK MOELL  
11432 GLEN COVE DR.  
GARDEN GROVE, CA 92643

FROM A LETTER TO RAND ROBINSON.....Here is a photo of a KR-1 built by myself from your plans. Power is an inverted, inline 4, Walter Mikron motor, 62 HP at 2600 (about 38 yrs. old). Prop is 55" x 60" from Ray Hegy. Performance is just about as stated in plans and it is real nice to fly. Building time was 12 months and a further 8 months to satisfy our Aviation Dept., mostly over engine change. I fitted nylon wheels with larger tyres and used your early type drag brake but operated (one to each wheel) by a motorcycle hydraulic brake unit. I can run-up 2,000 RPM and hold with brakes. I have owned nine other aircraft from a Taylor Cub in 1949 to a Cessna 336 push/pull, EKT is about the nicest to fly and the first retractable. Thank you for a nice design, easy to build for a 52 year oldie.



R. G. "Bob" Maisey  
P.O. Box 392  
Taupo, New Zealand

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