

# EAA CHAPTER - 690 gwinnett county, georgia NEWS - COMM

MEETINGS 2ND FRIDAY EACH MONTH AT STONE MOUNTAIN AIRPORT-8:00 P.M.

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APRIL 1983

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## PATCHES

The Chapter Patches have been ordered and there will be more information at the Chapter meeting as to cost per patch.

## ON THE HORIZON

- April 8 - Chapter meeting, program:  
Ultralights  
April 9 & 10 - Fly-In at Rome, GA.  
May 14 - Our own EAA Chapter Fly-In  
Pancake Breakfast.

## AND 3 MAKES 44

Two new members joining the Chapter for the first time are: Brian Sprehn and John Kytte. Welcome to the EAA Chapter 690 gentlemen.

And one member rejoining the ranks of the Chapter is Reinhart Kuntz.

## CHAPTER MEETING

The April Chapter meeting Friday the 8th of April at the Stone Mountain Airport starting at 8:00 p.m., will be presented by member Stephan De Blasio on Ultralights.

## SOME OF THE FACTS

Twenty-Six of the member information fact sheets have been returned. Some of the new members have not had the opportunity to complete these sheets yet, but they will be sent to them so we can gather the information for the Chapter Directory.

Of the 26 fact sheets received, the following facts are presented:

"Are you interested in a Chapter Flying Club?"

Yes: 16, No: 6, No answer: 4

"Are you interested in a Chapter Aviation Project?"

Yes: 15, No: 6, No answer: 5

Aircraft that are under construction by EAA Chapter 690 members:

Q-2

KR-2

Zenith, CH-200

Zenith, CH-250

Long-Ez (2 are under construction)

Turner T-40A

Scorpion II Helicopter

1938 Aeronca "K"

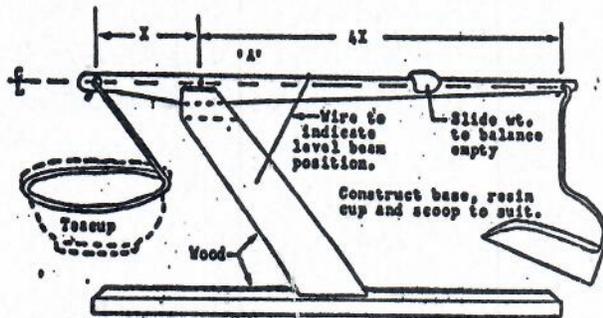
15AC Aeronca Sedan

Midget Mustang I

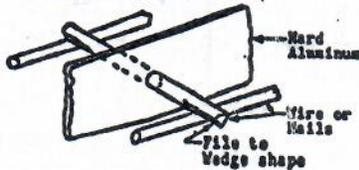
Skybolt (3 are under construction)

**RESORCINOL GLUE SCALE**  
(Measure & parts resin to 1 part catalyst by weight)

X=2 inches



**NOTE:** End suspension points and pivot point must be on straight line.



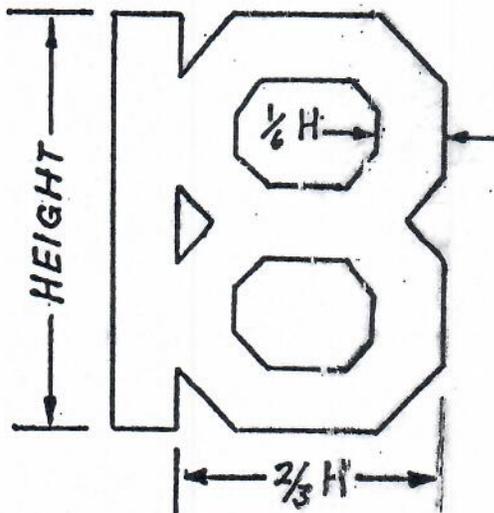
DETAIL 'A'

**TEACUP USED AS MEASURING SCALE TO MIX RESIN AND CATALYST FOR GLUE**

One of the most accurate methods of measuring correct proportions of resin and catalyst for resorcinol glues is by weight. My hat is off to Bob MacDonald of the Greater Boston EAA Chapter for this excellent measuring scale. It works fine and is amazingly accurate. An old teacup is ideal for the glue pot, and easy to mix and wash after use. (Contributed by Jack Denison, EAA Designee 115.)

**TIP TO MAKE NUMBER PAINTING ON HOMEBUILTS AN EASIER JOB**

Prolific in his help to builders, Jack Denison, EAA Designee 115 of Stoneham, Mass., has this hint for those painting the numbers on their machines: "Laying out the

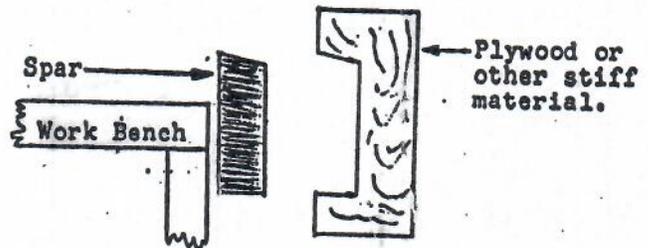


license numbers on your fuselage sides can be a real time-consuming job. However, using a guide as shown below, it is no problem. Make the guide the dimensions you desire out of a stiff material such as aluminum or cardboard.

Using this guide as a template, the outlines of all numbers and letters can be quickly traced directly on the surface. This guide also aids in keeping the numbers uniform. Mask off and spray paint, using three coats. Before applying the first coat of paint, rub down the edges of the masking tape and apply a thin coat of clear dope along the edges. This will help prevent the color dope from bleeding under the tape."

**BEVELING OF SPARS SIMPLIFIED BY USE OF HAND PLANE**

Jack Denison, EAA Designee 115 of Stoneham, Mass., is one of our most frequent contributors to this *SPORT AVIATION* feature, and we are all grateful to him for his efforts. In recent correspondence, Jack stated, "Usually wooden wing spars are beveled on at least one edge. Either the spar must be made to fit the ribs or the ribs made to fit the spar. Most homebuilders seem to build the ribs first and therefore the spar must be beveled to fit the slot in the ribs. This should be a good fit. Spar blanks



the slot in the ribs. This should be a good fit. Spar blanks bevel the edges. This beveling can be done quite easily with a hand plane. Using one of your ribs, plane down one end of the spar to fit this rib. Now make a gauge as shown and using this gauge start planing to the other end of the spar. Check often with the gauge. The beauty of this gauge is that it allows you to check the spar while it still clamped to the side of your workbench.

"One more thing. Your tools must be very sharp to obtain the best possible job with the least trouble."

**RELIEVING STRESSES IN WELDED STRUCTURES**

Luther Sunderland, EAA Designee 60 of Apalachin, N.Y., brought out a problem area which has occurred in a few aircraft. Lu states, "To quote Bob Deyelle, our FAA inspector, 'One of our biggest problems is to get builders to stress relieve their structures after welding.' During the welding of a cluster there is necessarily an uneven cooling which takes place. Since with cooling there is considerable contraction, tremendous stresses are locked up in the structure. Not only are these stresses locked

(Continued on next page)

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**A 1 1/2 NAV-COMM YOU CAN BUILD**

See Page 3 for the 1 1/2 NAV-COMM from a kit from Radio Systems Technology, Inc  
10985 Grass Valley Avenue  
Grass Valley, California 95945

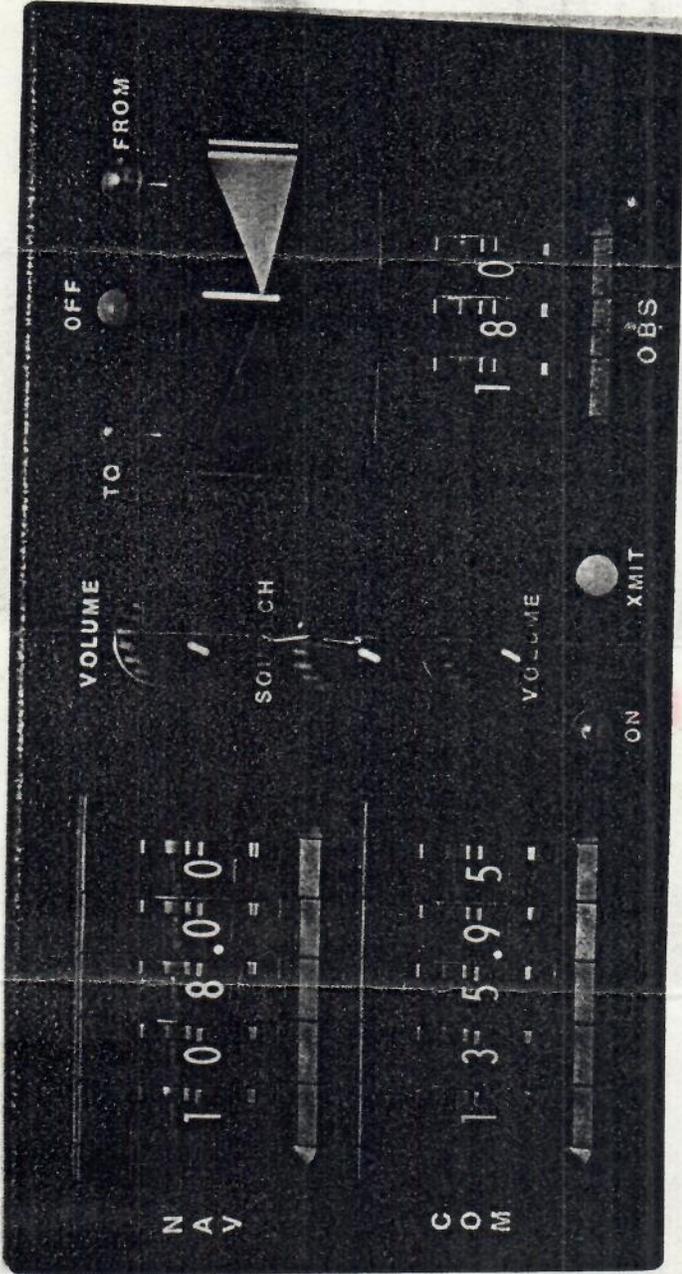
# AVIONICS—NAVCOMS

## GENERAL SPECIFICATIONS

SIZE, 6.5"x3.5"x11.0"  
 (CUT-OUT: 6.25"x3.10")  
 WEIGHT: 4.5 LBS (2.0 KG)  
 VOLTAGE: 11-16 VDC  
 (28 VOLT ADAPTOR AVAILABLE)  
 CURRENT: RX, SOULCLED AUDIO--  
 450 MA; TX, MAX AUDIO--800 MA;  
 TX--1300 MA (1.3 AMP)

## COMMUNICATIONS TRANSCIEVER

FREQUENCY RANGE: RST-571 -- 360 CH,  
 118.0 TO 135.95 IN 50 KHZ STEPS;  
 RST-572 -- 720 CH, 118.0 TO 135.975  
 IN 25 KHZ STEPS  
 SENSITIVITY: 1 UV FOR 6 DB S+N/N  
 BANDWIDTH: ±10 KHZ 9 - 6 DB, ±25  
 KHZ 8 - 40 DB, ±50 KHZ 8 - 60 DB  
 AGC: LESS THAN 6 DB CHANGE FROM  
 IMAGE 80,000 UV  
 POWER OUTPUT: 10 WATTS (PEP), 2.5  
 WATTS (CW)  
 MODULATION: 90% NOMINAL  
 FREQUENCY ACCURACY: ±.002% FROM  
 -30°C TO +40°C  
 AUDIO OUTPUT: 4 WATTS INTO A 4 OHM  
 SPEAKER



## NAVIGATION RECEIVER

FREQUENCY RANGE: 108.0 TO  
 117.95 IN 50 KHZ STEPS  
 SENSITIVITY: 1 UV FOR 6 DB S+N/N  
 AUDIO FILTERABLE CHANNELS: 1 WATT  
 SELECTIVITY: ±15 KHZ 9 - 6 DB,  
 ±75 KHZ 9 - 60 DB  
 AGC: LESS THAN 6 DB CHANGE  
 FROM 10 TO 5,000 UV  
 IMAGE REJECTION: OVER 60 DB  
 DOWN  
 VOR ACCURACY: ± 2°

## ILLUSTRATION

TO THE LEFT IS A PHOTOGRAPH OF  
 THE FRONT FACEPLATE OF AN RST-  
 571. THE SCALE IS 1:1. THIS  
 THIS IS THE ACTUAL SIZE OF THE  
 RADIO. THE RST-572 IS IDENTI-  
 CAL IN APPEARANCE WITH THE  
 EXCEPTION OF A DIFFERENT SWITCH  
 FOR THE SELECTION OF THE COM  
 FREQUENCIES.

## A KILL AVIONICS ELBIS

AT LAST, LIGHTWEIGHT, COMPACT, HIGH TECHNOLOGY, DIGITAL NAVCOMS ARE AVAILABLE IN KIT FORM. ALTHOUGH  
 THESE RADIOS ARE CERTAINLY NOT INTENDED FOR A FIRST TIME KIT-BUILDER, CONSTRUCTION IS STRAIGHTFOR-  
 WARD AND SHOULD PRESENT NO GREAT DIFFICULTIES FOR ANYONE SKILLED WITH A PENCIL-TIP SOLDERING IRON.  
 AS WITH ALL RST KITS, CONSTRUCTION IS BROKEN DOWN INTO A SERIES OF RELATIVELY SIMPLE TASKS -- EACH  
 WITH STEP-BY-STEP INSTRUCTIONS. A PERFECT 'WINTER PROJECT' (AFTER ALL, ONE CAN'T FLY ALL THE TIME).  
 THE ENTIRE RADIO MAY BE COMPLETED IN AS LITTLE AS 40 HOURS. ALTHOUGH NO SPECIAL TOOLS ARE RE-  
 QUIRED BEYOND THE USUAL PENCIL-TIP SOLDERING IRON, NOSE PLUGS, WIRE CUTTERS, SCREWDRIVERS, ETC., WE DO  
 RECOMMEND PURCHASE OF AN RST-315 CRIMPING TOOL SPECIFICALLY FOR THE PURPOSE, WHICH IS BOUND TO  
 STALLION OF CONNECTOR PINS. THIS IS A TOOL MADE SPECIFICALLY FOR THE PURPOSE, WHICH IS BOUND TO  
 PROVE HANDY WHENEVER YOU WISH TO ATTACH MULTI-PIN, QUICK-DISCONNECT FITTINGS IN ANY FUTURE PROJECT.

AS WITH RST'S 6 CHANNEL RADIO, INITIAL ALIGNMENT AND CERTIFICATION IS PERFORMED FREE OF CHARGE AT  
 THE RST LABS. THIS FREES THE KIT BUILDER FROM THE NECESSITY OF INVESTING IN ANY COMPLEX PRECISION  
 TEST EQUIPMENT. FOR THE FIRST TIME THE PILOTS HAVE THE OPPORTUNITY TO BUILD THEIR OWN SOPHISTICATED  
 NAVCOMS -- GAINING NOT ONLY THE PRIDE OF PERSONAL CRAFTSMANSHIP, BUT APPRECIATING AN ECONOMIC  
 SAVINGS OF HUNDREDS OF DOLLARS AS WELL.

## A TRIUMPH DE SOLID STATE DIGITAL TECHNOLOGY

THE RST NAVCOMS MAY BE CONSTRUCTED IN EITHER OF TWO VERSIONS; THE RST-571 WITH 360 COM CHANNELS OR  
 THE RST-572 WITH 720 COM CHANNELS (BOTH RADIOS HAVE 200 NAV CHANNELS). IN RADIOS WITH JUST A FEW  
 CHANNELS, THE COST OF THE RADIO IS OFTEN DETERMINED BY THE NUMBER OF CHANNELS. AS NEW FREQUENCIES  
 ARE ADDED, EXPENSIVE QUARTZ CRYSTALS MUST BE INSTALLED FOR EACH ADDITIONAL CHANNEL, THEREBY SUBSTAN-  
 TIALY INCREASING THE COST OF THE RADIO. THE RST-571/572 NAVCOMS, HOWEVER, EMPLOY MODERN DIGITAL  
 FREQUENCY SYNTHESIS TECHNIQUES WHICH ALLOW ALL POSSIBLE FREQUENCIES (UP TO 920 = 720+200) TO BE  
 QUARTZ LOCKED TO A SINGLE STABLE REFERENCE FREQUENCY. THE COST OF THE RADIO IS THUS NO LONGER DE-  
 PENDING ON THE NUMBER OF CHANNELS IT CAN USE. IN FACT, THE 360 CHANNEL RST-571 HAS BEEN DESIGNED  
 TO BE EASILY CONVERTED TO A 720 CHANNEL RST-572. THE COST OF THE CONVERSION KIT? ONLY \$100.00  
 PLUS A \$40.00 CALIBRATION FEE.

BECAUSE SEPARATE MONOLITHIC CMOS SYNTHESIZER CHIPS ARE EMPLOYED IN THE NAV AND COM SECTIONS OF THESE  
 RADIOS, IT IS POSSIBLE TO UTILIZE BOTH NAV AND COM RECEIVERS SIMULTANEOUSLY. THUS THE RST-571/572  
 THE NAV RADIO IS AUTOMATICALLY DISABLED DURING PERIODS WHEN THE COM TRANSCIEVER IS TRANSMITTING.  
 NOT POSSIBLE TO PUT A 2.5 WATT TRANSMITTER IN THE SAME CHASSIS WITH A 2 UV RECEIVER NEAR THE SAME  
 FREQUENCY WITHOUT THE POSSIBILITY OF INTERFERENCE. AS SOON AS TRANSMISSION IS COMPLETED, THOUGH,  
 THE NAV RECEIVER IS BACK ON-LINE WITH A VALID DISPLAY OF INFORMATION.

ALL FREQUENCY SELECTION IS PERFORMED WITH STURDY, RELIABLE, THUMBWHEEL SWITCHES. THERE IS NEVER ANY  
 AMBIGUITY AS TO WHICH FREQUENCY HAS BEEN DIALED UP. GOLD PLATED SWITCH CONTACTS ASSURE LONG SWITCH  
 LIFE AND RESISTANCE TO SWITCH NOISE. INTERNALLY ILLUMINATED, THESE SWITCHES ARE ALSO EASILY VISI-  
 BLE AT NIGHT. THE 'NAV HEAD' IS NOT ILLUMINATED, THESE SWITCHES AND THE VOR RADIAL (OBS) IS ALSO  
 SELECTED WITH A THUMBWHEEL SWITCH. THERE IS ALWAYS A POSITIVE INDICATION OF THE SELECTED RA-  
 DIAL AS WELL AS A MUCH-IMPROVED METHOD OF RECIPROCAL BEARING CALCULATION. USING A DIGITAL VOR/LOC  
 CIRCUIT WHICH IS PHASELOCKED TO THE RECEIVED NAV SIGNAL, THE RST-571/572 RADIOS PROVIDE VASTLY IM-  
 PROVED ACCURACY OVER EARLIER CONVENTIONAL ANALOG CIRCUITS.

THE COM TRANSMITTER FOR RST'S NAVCOMS PROVIDES A SOLID 2.5 WATTS CW (THAT'S ALMOST 10 WATTS PEP)  
 WITH MODEST CURRENT REQUIREMENTS OF 1.3 AMPERES ON TRANSMIT AND ONLY 450 MA (LESS THAN HALF AN AMP)  
 WHEN IN RECEIVE MODE WITH THE AUDIO SOULCLED.

THE COMMUNICATIONS RECEIVER IS EQUALLY EXCITING. USE OF LOW-NOISE, DUAL-GATE, FIELD-EFFECT TRAN-  
 SISTORS IN THE INPUT STAGES PROVIDES EXCELLENT SENSITIVITY AND BURN-OUT PROTECTION. THE INTERME-  
 DIATE FREQUENCY AMPLIFIER HAS MULTI-POLE CRYSTAL FILTERING FOR BEST ADJACENT CHANNEL REJECTION.  
 AUTOMATIC GAIN CONTROL CIRCUITRY ALLOWS CLEAR RECEPTION EVEN FROM NEARBY TRANSMITTERS. THE AUDIO  
 CIRCUITRY IS FILTERED FOR MAXIMUM PERFORMANCE IN THE 300 HZ TO 3,000 HZ RANGE FOR REDUCED NOISE  
 AND IMPROVED COMMUNICATIONS. A GENEROUS 4 WATT AUDIO OUTPUT ASSURES THAT THE CABIN SPEAKER WILL  
 BE EASILY HEARD EVEN IN A NOISY COCKPIT.

IF YOU PREFER FLYING WITH HEADSETS, YOU WILL APPRECIATE THE BUILT-IN INTERCOM WHICH ALLOWS THE USE  
 OF UP TO 4 HEADSETS IN A HOT-MIC PILOT-TO-PILOT/PILOT-TO-CREW INTERCOMMUNICATIONS SYSTEM - A NICE 'EXTRA' THAT  
 IS A STANDARD FEATURE ON ALL RST-571/572 NAVCOMS.

MODEL	D	W	H	WT
RST-571	11"	6"	3"	4 1/2 lb
RST-572	11"	6"	3"	4 1/2 lb

\*28 volt option for either RST-571 or RST-572

CURRENT	VOLTAGE	BUILD HOURS	PRICE
450/1300mA	14/28*	40	\$599.50
450/1300	14/28*	40	\$699.50

\$ 15.00

\$100 DEPOSIT ACCEPTED  
 FOR JUNE DELIVERY

ALL SPECIFICATIONS SUBJECT  
 TO CHANGE WITHOUT NOTICE.