

**Revolutionary New CITIZEN-SHIP
465 mc Model AR Receiver**

for SMALL R/C planes including 1/2A
Requires only 2 1/2 inch wide fuselage

... the new CITIZEN-SHIP model AR receiver is similar to the famous CR but has the antenna removed resulting in 70% volume reduction and width reduction of 30%. It has just two simple tuning adjustments allowing it to be TUNED ON THE FIELD. A true value at..... **\$24.95**

We are NOT discontinuing 465 mc CITIZEN-SHIP model CR receiver with antenna for medium and larger size models... guaranteed **\$29.95** to fly "out of the box"

TRANSMITTER model CC, for use with AR or CR receivers; price less batt... **\$39.75**

NEW Lower Price Model PSN Escapement **\$5.95**

CITIZEN-SHIP "27" LR RECEIVER for use on 27.255 kc. Wt. only 4 ozs... **\$24.95**

CITIZEN-SHIP "27" LC TRANSMIT. for use on 27.255 kc. Price less battery **\$34.95**

Citizen-Ship Test Meter **19.95**

Good Bros. 4 position escapement.... **13.50**

Bell Crank and Rudder Horn..... **.75**

VERNON C. MacNABB CO.

announces change in name only to

CITIZEN-SHIP RADIO CORP.

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Powerful, 1 lb. thrust, instant starting, 26" long.
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6" long, easy to assemble.
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Burns gasoline or alcohol. Complete, absolutely nothing else to buy.

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NEW: BEEP BOX
Fits in palm of hand! Rotary type, works with any transmitter & self-neutralizing escapement. Complete with 10-ft. cord **\$1.95**

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Parts packages including Diagram Potentiometer & all parts (except tubes, relay, OSR coils)

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MILLER..... **\$10.05; SIMPLE SINGLE**..... **9.90**

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Above KIT, complete with tubes, relay & choke **13.95**

MINI-MAC KIT with Tube, less relay..... **5.95**
Above kits with wound coils & drilled chassis, add..... **.50**

R/C RECEIVERS—any of above kits wired & tested, ready for use, **ADD**..... **5.00**
TRANSMITTER & RECEIVER KIT..... **9.95**
Parts and diagrams (less tubes & crystal) to build famous **MAC II** Transmitter Unit and **LORENZ RECEIVER**, Sigma 10,000 ohm relay included.

CRYSTALS, 27.255 Mc Peterson Z9A..... **4.75**

License-Free R/C TRANSMITTERS—27.255 Mc.
Powerful 5-watt, 2 tube MAC II circuit. Available in following models—incl. antenna, meter & keying switch—ready to operate. **FULLY GUARANTEED.**

MODEL X1 in attractive case with built-in storage battery, vibrator power supply & btry. charger..... **37.50**

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MODEL X, MAC II, 2-tube Transmitter Unit, as used in above transmitters. Only 3"x4"x1 1/2", wired and tested. Complete, install in your case..... **16.50**

MODEL X3, Btry. operated transmitter using powerful 1 tube circuit for low btry. drain..... **23.95**

Free Catalog

GYRO ELECTRONICS
325 Canal St., N.Y. 13, N.Y. WO 6-1290

R channel chatter

by Phil Greenberg

● Many of present day R/C fliers are using a "gas-tube" receiver in their planes. Despite the fact that the tuning and maintenance of this type of receiver involves only a few simple steps, we have had a number of letters asking for help. Here is what is involved to be sure of trouble-free operation:

THE AEROTROL RECEIVER: One of the "gas-tube" receivers we've been using is the Berkeley Aerotrol receiver. It is designed to operate with an XFG-1 or RK-61 tube. Technically, these tubes are classified as sub-miniature gas-filled triodes, of the thyatron variety.

The first thing we did with our set was to replace the tuning-screw locknut with a spring nut, as shown in the diagram. The nut is bottomed on the mounting nut, and drawn up to give the desired tension on the tuning screw, after which it is cemented in position. The result is a spring-loaded slug which doesn't require any additional locking after tuning.

PRELIMINARY CHECK: Before tuning up, check and set the relay to pull in at 1.1 ma. and drop out at .7 ma. The relays are adjusted at the factory, but if yours has been mishandled or bounced around, it may have to be reset. (See April 1953, FLYING MODELS for details).

First, set the "pull-in" by adjusting the lower contact so that the armature pulls in as the plate current is raised to 1.1 ma. Next the upper contact must be set, so that the armature drops out when the current is lowered to .7 ma. The upper contact should prevent the armature from contacting the coil core when it's pulled in.

If the relay pulls in and drops out within the .4 ma. operating range, but the range is higher than the .7 to 1.1 ma. range specified, then the tension of the spring must be decreased to lower the range. A piece of Scotch tape over the coil core will eliminate any sluggish response due to residual magnetism in the core.

Check all battery connections before plugging in the receiver. Also check the tube to see that it is not reversed. (Red dot goes to the inside of chassis). Filament voltage should be 1.5 volts and plate voltage 45 volts. Connect a 28" to 30" wire to the antenna post, and support this antenna away from any wiring in the plane.

Turn the potentiometer to minimum plate current (maximum resistance), and set the antenna trimmer to minimum capacity (solder-dot towards edge of chassis) and you're ready for business.

TUNING: Plug in your milliammeter (0-3 ma. range) and turn on the receiver. Adjust the "pot" for 1.1 ma. plate current. Use an insulated tuning tool with a long handle for any tuning operations. While keying the transmitter, slowly screw the tuning slug in until the meter shows a sharp "dip" in current (It should drop to

.1-.5 ma.). Key the transmitter to be sure that this is what's giving the result.

With signal "on," adjust the tuning screw for the minimum plate current value. With signal "off" the plate current should rise back to the original 1.1 ma.

Reset the "pot" for 1.5 ma. current and walk about 20' to 30' from the transmitter. While a pal keys the transmitter, readjust the tuning screw for minimum plate current with signal "on."

Then, with signal "on," rotate the antenna trimmer slowly and note when the plate current starts to rise as you continue to turn. Back off the adjustment to just before the position where the rise began.

The only thing remaining to be done now is to carry the receiver away from the transmitter until you don't get that sharp "dip" with signal "on." At this point, a very slight adjustment of the tuning screw or antenna trimmer, or both, may be necessary for the final adjustment.

The lock nut on the tuning screw should be snugged up, but left loose enough for making small adjustments during the distance check. If you don't use a spring nut, the lock nut must be tightened before making the final distance check. If you tighten it afterwards, the setting may be changed, throwing the receiver out of tune.

The distance check need only be carried to a distance of about 1000' to 1200'. Satisfactory operation over this distance is enough to insure line-of-sight control in the air.

Pull out the meter and turn on the escapement, and check the entire rig before returning to the transmitter. Hold the fuselage away from your body, and over your head, to reduce the effects of body and ground capacity. Everything must work perfectly at this time—if something is wrong, repeat the above operations as necessary.

(Please turn to Page 44)

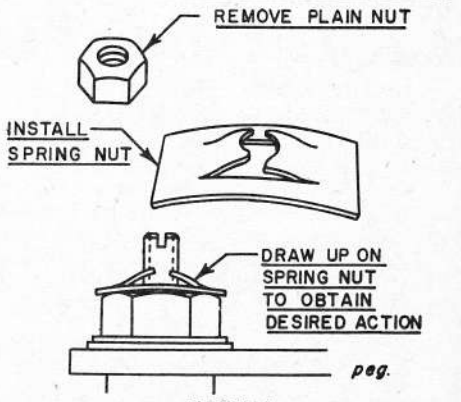
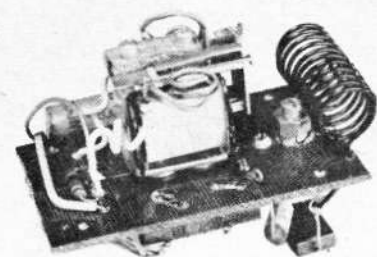


FIGURE 1

A spring nut can be substituted for the regular nut which is usually found on slug-tuned coils.

NEW "DELUXE MIDGET I" RADIO



STANDARD "MIDGET I" RADIO CONSISTS OF EXAMINATION FREE BAND TRANSMITTING RADIO, (27 MC CRYSTAL CONTROL BAND) A RECEIVER DESIGNED FOR X F G I TUBE OPERATION. THE RECEIVER WEIGH UNDER 3 1/2 OUNCES, AND A NEW TYPE SOLENOID PRINCIPAL OPERATION, ESCAPEMENT WHICH OPERATES BOTH RUDDER AND ELEVATORS & IS SELF NEUTRALIZING, USING NO SPRINGS NOR RUBBER FOR ITS POWER. MAY ALSO BE USED FOR BOAT OR AUTO CONTROL. OVER 2 YEARS OF ENGINEERING WORK HAVE BEEN PUT INTO ABOVE 3 UNITS. PRICE OF THE STANDARD UNIT INCLUDES A SIGMA 10,000 OHM COIL RELAY, WHICH ALONE IS WELL WORTH THE PRICE WE ASK FOR OUR SET OF PRE-FABRICATED PARTS AND OUR PLANS FOR ALL THREE UNITS. (RECEIVER SHOWN AT LEFT.)

SPECIAL INTRODUCTORY PRICE, RECEIVER TRANSMITTER AND ESCAPEMENT... \$6.98

NOW AVAILABLE NEW "DELUXE MIDGET I"

NOW READY, A NEW "DELUXE MIDGET I", CONSISTS OF THE SAME HIGH POWER LONG RANGE TRANSMITTER AND SOLENOID PRINCIPAL ESCAPEMENT AS EXPLAINED ABOVE. THE RECEIVER IN THIS UNIT HOWEVER HAS BEEN CHANGED TWO WAYS IN ITS CIRCUIT (THE APPEARANCE OF THE RECEIVER HOWEVER IS SAME AS IN PHOTO ABOVE) WHICH GIVES SIMPLIER EASIER RELAY ADJUSTMENT UNDER ALL CONDITIONS. THE SAME 10,000 OHM SIGMA RELAY IS INCLUDED, AND WITH THE NEW COMPONENTS ADDED, OPERATES DEPENDABLY EVEN WHEN BATTERIES BECOME LOW ETC. WITHOUT CONTINUED RE-SETTING OR ADJUSTING. CONDENSERS, RESISTORS, ETC., & ALL PARTS IN GENERAL HAVE BEEN "HAND PICKED" GIVING A LIGHTER WEIGHT UNIT (ABOUT 3 OUNCES). "DELUXE" UNIT ESPECIALLY RECOMMENDED FOR BOAT OPERATION OR FOR EXTENDED LONG FLIGHT WORK WITH AIRCRAFT. OPERATES AUTOS EQUALLY AS WELL. THIS IS AN EXCELLENT BEGINNERS UNIT DUE TO ITS SIMPLIER, EASIER ADJUSTMENT.

"DELUXE RECEIVER TRANSMITTER AND ESCAPEMENT"..... \$9.98

SIGMA RELAY IS INCLUDED WITH BOTH STANDARD AND DELUXE KITS

FREE WITH OUR DIRECTORY - Secret is out, how do we sell Midget I at such low prices? How to obtain parts at reduced cost is answer. Our Supply Source Directory tells where to obtain parts low as 1/20th list. \$7.00 merchandise coupon free with directory. **Directory \$1.00**

PLANS FOR DELUXE MIDGET I - Regular \$2.98 plans, same as with kit, printed 4 sheets.

SPECIAL PLANS - ONLY 50c **SIGMA RELAYS - SPECIAL 2.98**

LATEST RADIO BOOK "RADIO CONTROL OF MODEL AIRCRAFT" - \$3.98

LATEST RADIO CATALOGUE, 25c—LISTS AND SHOWS PHOTOS OF PARTS AT 1/4 TO 1/2 THE PRICE YOU NORMALLY PAY. ALSO GIVES MORE DETAILED INFORMATION ON MIDGET I RADIOS, ETC. ALL ITEMS SHOWN ARE IN STOCK FOR QUICK DELIVERY. GIVES DETAILS ALSO ABOUT OUR DIRECTORY. **CATALOGUE 25c**,

SPECIAL 10 FT. TRANSMITTER AERIAL, ONLY..... \$1.00

X F G I TUBE \$3.50 3 A 4 TUBE \$1.00 3 A 5 TUBE \$1.35
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TRANSMITTER CASE 6" X 5" X 4" \$3.98 CASES HAVE BLACK CRACKLE FINISH.

SPECIAL SWITCH ASSORTMENT—10 ASSORTED SWITCHES, TOGGLE, PUSH BUTTON SLIDE TYPE, ETC. LIST VALUE ABOUT \$8.00, ALL 10 SWITCHES..... \$1.98

CHECK EACH ITEM YOU WISH TO ORDER ABOVE, PRINT YOUR NAME AND ADDRESS ON A SEPARATE SHEET OF PAPER WITH ABOVE ORDER, SEND REMITTANCE IN FULL.

RADIOMODELS, BOX 36, DEPT. FI BALTIMORE 6, MARYLAND

CHANNEL CHATTER

(Continued from Page 42)

MAINTENANCE: During the life of the gas tube, it will gradually "wear", and its characteristics will change slightly. After each flight, the plate current should be checked to see if it has lowered from the pre-take-off value. Usually, after a few flights, only a slight readjustment of the "pot" is all that is necessary to bring it back to the proper idling current.

If you find that, during any particular flight, the plate current has dropped considerably, it will be necessary to check your batteries. Check them under load (with the receiver turned on) to see if they are still up to par. Sometimes, after the receiver has been turned off for some time, when the set is turned on the plate current shows a normal value, but as the set is left on the current starts to drop. This is another indication of weak or dead batteries. If there is any doubt about the freshness of the batteries, replace them with new batteries before you attempt another flight.

When the tube has been used for some time, you may run into the condition of meter "wobble." This is where the plate current holds fairly steady, but the needle jumps or "wobbles." This can be corrected by increasing the capacity of the antenna trimmer until the meter needle holds still. Adjust the "pot" for 1.5 ma. and check for range again to see if this adjustment has possibly detuned the receiver. If the antenna trimmer cannot be adjusted to steady the meter needle, try a longer antenna.

If nothing helps steady the meter, the

tube is no longer safe for additional flying, and should be replaced.

When the set responds to a signal, but the plate current does not return to the idling value, a slight increase in antenna trimmer capacity may be necessary. Do not increase antenna trimmer capacity too much, because the signal "on" dip is affected by this adjustment.

Minimum plate current for safe operation is 1.3 ma., but this is only for very short flights. In the event that the current can't be brought up, even with fresh batteries, replace the tube before you get into any trouble. Or, see if using a higher voltage B battery, such as 67 1/2 volts, does the trick. Naturally, a distance check is necessary.

Remember that any adjustment requires a thorough check to make sure that everything is working right. Don't get lazy when it comes to these checks—it will take you a lot more time and effort to build a new ship to replace a fly-away or a crack-up!

THE MAIL BAG

● Joseph Amico of 287 Lisbon Ave., Buffalo, N. Y., writes to tell us about his R/C activities. He's been flying a Live Wire trainer and a Super Buccaneer, and both of these planes are equipped with Mac-Nabb radio units.

Joe also asks for plans for the Four Winds, the ship that was pictured in the February 1953 FLYING MODELS. We're sorry Joe, but not enough requests for these plans were received to warrant printing up plans. We recommend that you try the Royal Rudder-Bug, plans of which are available now at 75c from FLYING MODELS, 215 Fourth Ave., N. Y. 3, N. Y.

R/C EQUIPMENT NEWS

● In our last issue, we covered almost all of the highlights of R/C for 1953. Unfortunately, some had to be left out, due to lack of sufficient information. One of these items is Babcock Radio Engineering's radio equipment. We found the preliminary details so interesting that we decided to get more information before writing about it. That data has just arrived, so we are breaking in here at press time to report on it.

This new equipment works on a principle which is comparatively new to lots of R/C fans here in the U.S. The transmitter carrier wave is "on" all the time, and becomes tone modulated when the key switch is pressed. The receiver picks up the signal, and when the audio tone is received, the relay tube is triggered from 0 to 6 ma., which closes the relay points. This set is designed to operate with any escapement now on the market.

We have also learned that the Babcock Company will soon make available a 3-channel audio-tone set for multiple-control operation. This set will feature matched bandpass filters for transmitter modulation and receiver tone selection. New sealed relays will eliminate all exposed contacts and their problems.

● Available shortly will be a new "Electra" R/C plane by JASCO (N.Y.C.)—a high-wing cabin model built on an "A-frame" structure. It can be powered with anything down to a small McCoy diesel and the cabin should be adequate for any receiver on the market. Kit price will be about \$4.50.

● Just released by R/C MODELS CO. (N.Y.C.) is a small 5:1 pocket escapement winder selling for \$1.25. Also available are pneumatic wheels for R/C ships, mounted on one-piece aluminum hubs and guaranteed to stay on and take up to 50 pounds of bounce. 3 1/2" wheels, weighing 3 ounces, sell for \$3.50 a pair—other sizes will soon be available.

● GYRO ELECTRONICS (N.Y.C.) now offers a new 27 1/4 mc. R/C transmitter with a choice of three different power supplies. Featured is a built-in meter and neon tuning light. Plate current is tuned to resonance and the antenna is loaded using the light to indicate power output.

● RICHARD L. BRANSTNER (Birmingham, Mich.) is producing three servo motors: a multi-channel rudder servo (\$21.00) and elevator servo (\$18.00); and a four-position single-channel servo (\$12.00) for use with a barrel carburetor to obtain three-speed engine control. The barrel-type carburetor (\$10.00 including installation) must be factory-installed on your engine.

● PHILMORE MFG. CO. (N.Y.C.) offers a number of kits for 27 1/4 mc.: two transmitters (one a hand-held design) at \$33.50 and \$26.00 less batteries; a gas-tube (RK-61 or XFG-1) receiver at \$26.50 less batteries; and a completely assembled escapement at \$5.50. Complete details appear in their catalog No. 154.

All plane and boat model radio-control enthusiasts are cordially invited to drop us a line. Let us know what type of equipment you have, how it works, what's going on in your vicinity in the way of radio-control activities, etc., etc. Also, if you have any problems in connection with radio-control, shoot them along to us—we'll do our best to solve them! But please don't ask us to make up special circuits for you, we just haven't got the time. Write today to: R/C Channel Chatter, Phil Greenberg, c/o FLYING MODELS, 215 Fourth Ave., N. Y. 3, N. Y.