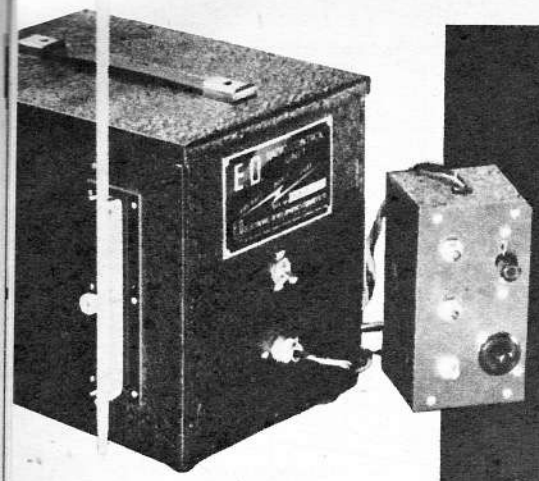
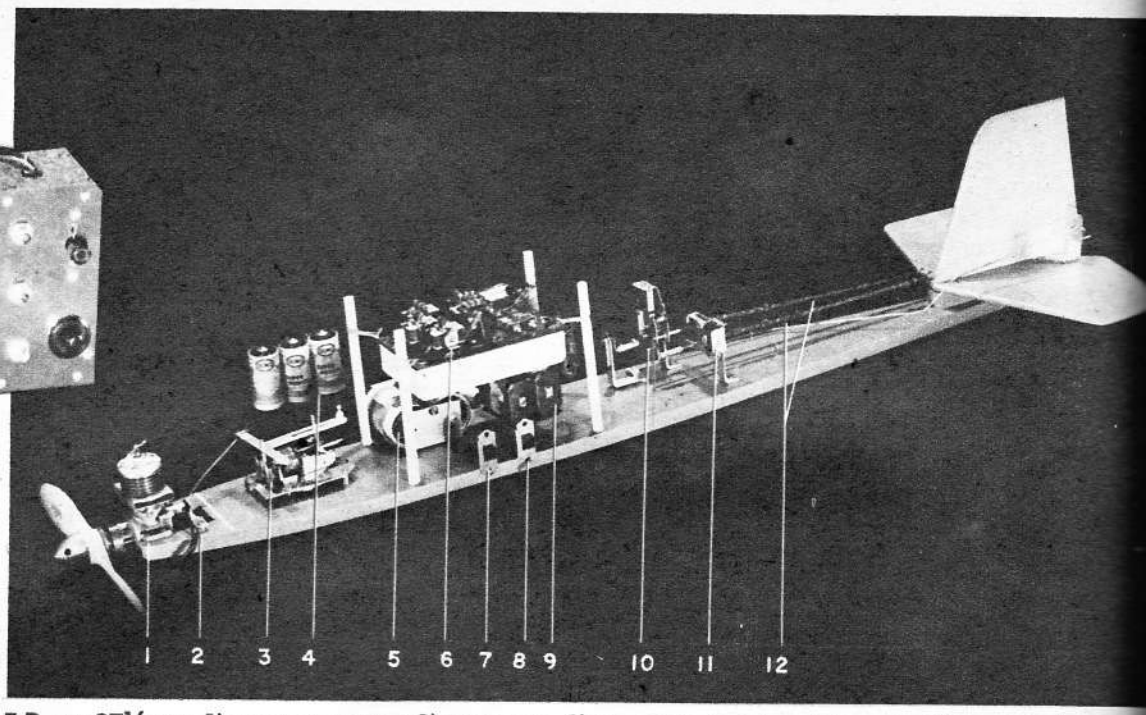


POLK'S
E.D.

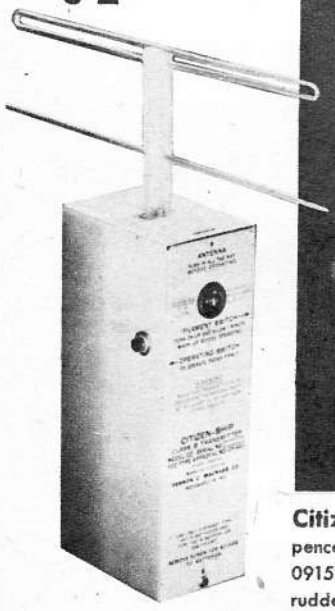


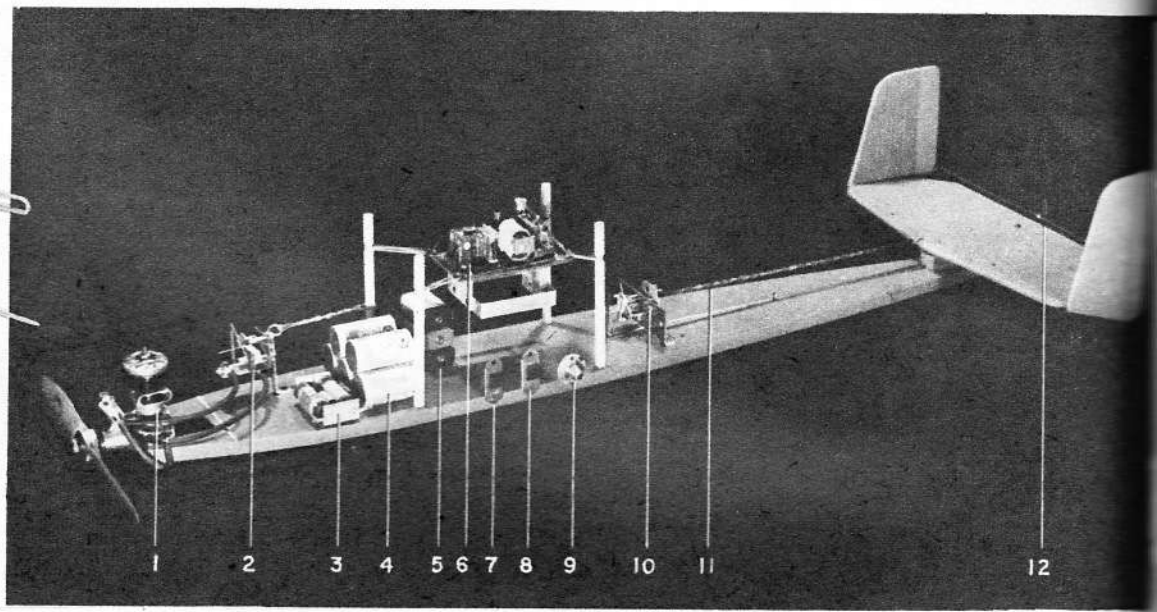
E.D. on 27¼ mc: 1) E.D. .15 cu. in. diesel; **2)** throttle vane; **3)** E.D. clockwork escapement for engine; **4)** 3 med. Bond 101 batts in series for motor escap.; **5)** two large Bond 102 cells in parallel in holder for fil. A; **6)** E.D. reed receiver MK IV; **7 & 8)** S.P.S.T. switches; **9)** 2 med. B batts in series, Olin 0918· **10)** E.D. Mk III esc. for elevator with Citizen-Ship bellcrank; **11)** E.D. Mk III esc. for rudder; **12)** escapement rubber. Inset shows the E.D. Mk IV transmitter with attached antenna and separate control box. Batteries used here are 3 Olin 6210 B in series for 135 volts and 2 Olin 4816 A in series for 3 volts. Wiring has been omitted in the interests of clarity in all these set-ups. This is for a big plane since receiver is fairly heavy.

MANUAL OF RADIO CONTROL:

Planning Your R/C Set-up

MACNABB'S
C-Z





Citizen-Ship on 465 mc: 1) K&B .19 engine with dual needle valve; **2)** Bonner motor control escapement; **3)** 2 pencells in series for escapement; **4)** five medium cells in series for A, Olin 101's; **5)** three 22 volt batts in series for B, Olin 0915's; **6)** Macnabb receiver; **7 and 8)** S.P.S.T. switches; **9)** meter jack; **10)** Bonner compound escapement for twin rudders; **11)** escapement rubber; **12)** escapement linkage. Inset is Macnabb transmitter with attached antenna. Batteries used are 2 Olin 1710's for 67½ volts B; one Olin 4914 for 6 volts A. The Citizen-Ship transmitter is self-contained with its own little beam antenna on top and is always hand-held. Twin rudders give same amount of turn under power as in glide.

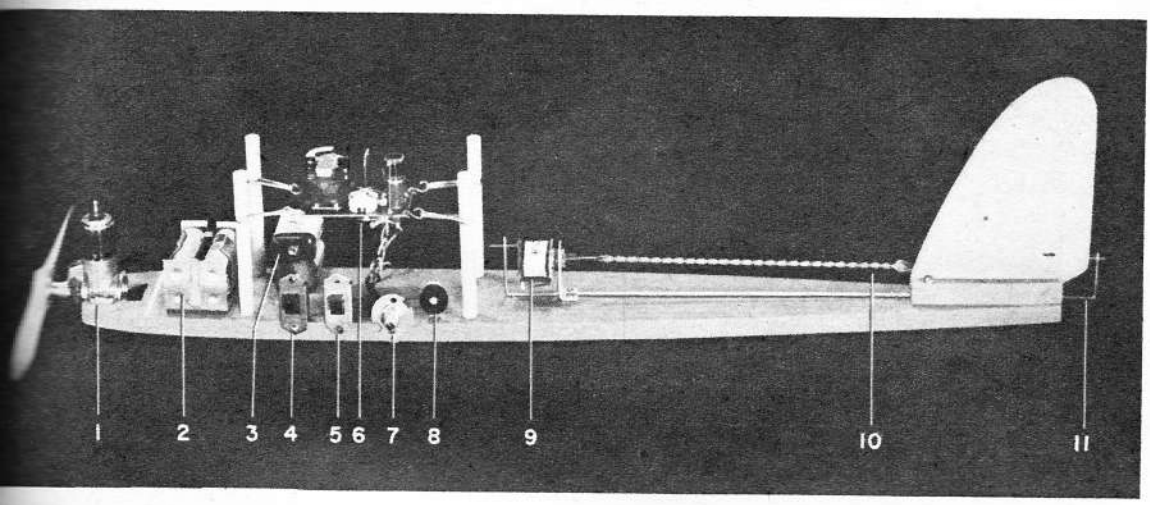
THE BUYER'S GUIDE

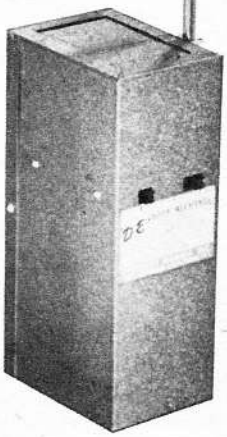
■ The old-timers in R/C know just where to go to purchase most anything they need, but newcomers are not so fortunate. Here are addresses of concerns supplying practically anything you may need in the R/C line.

Receivers and Transmitters: Ace Model Supply, 331 N. Elm St., Fairborn, Ohio—27¼ transmitter kit**, less case and ant. American Telasco Ltd., Huntington, N. Y.—E.C.C. transmitters, hard and gas tube receivers (both single tubers). Berkeley Model Supplies, West Hempstead, N. Y.—Super-Aerotrol trans. and rec. for 27¼*; DE-Aerotrol trans.** and rec.** for 50 mc. North American Model Products, 9802 Warwick Rd., Newport News, Va.—Control Research two-tube receiver for 27¼. Harry Geyer, 7401 Schoyer St., Pittsburgh 18, Pa.—Good Bros. trans. and rec. for 27¼ and 50. Vernon C. Macnabb Co., 909 Westfield Blvd. Indianapolis 20, Ind. — Citizen-Ship trans. and rec. for 465; 27¼ trans. and rec. Polk's Model Craft Hobbies, Inc., 314 Fifth Ave., New York City 1, N. Y. —E.D. three-channel tone control trans. and rec. for 27¼; E.D. gas tube rec. and Aristrol trans. for 27¼. Rockwood Radio Controls, Box 762, Walnut Creek, Calif.—1 to 5 channel tone control trans. and rec. Radio Control Headquarters, Belmar, N. J.—27¼ mc. trans. and rec.**; 50 mc. trans. and rec.** All American Model Motor Exchange, Box 885, Santa Monica, Calif.—various makes of R/C outfits.

Those concerns with an asterisk after the name offer their products in kit form as well as built up. With two asterisks, available in kit form only. Control Research, Box 9, Hampton, Va. can supply kits for 27¼ trans. and rec. described in 1952 A.T. Annual. Most of the concerns listed will convert their 50 mc. equipment to 27¼.

R/C Accessories: American Telasco—E.C.C. escapement and sensitive relay. Berkeley Model Supplies—low-cost test meters, dust-core coil, escapement, tubes, crystals, batteries. Bonner Specialties, 1607 S. Bundy Dr., Los Angeles 25—three types of escapements; self-neutralizing, compound, motor control. Control Research—tubes, meters, crystals, beep box, various small R/C components. Harry Geyer—Good Bros. four-arm escapement. K&B Mfg. Co., 224 E. Palmer Ave., Compton, Calif.—K&B .19 engine with twin needle valves for use with Bonner motor control escapement. Vernon Macnabb Co.—two- and four-arm escapements, R/C test meter, R/C bellcrank and rudder horn. Osborn Hobby Associates, 586 Osborn St., Brooklyn 12, N. Y.—Automatic R/C Switch for keying transmitter. Polk's—three types of E.D. escapements, clockwork, regular, compact; E.D. sensitive relays and tone control reed unit; Mills throttle for small engines; tubes, crystals, batteries (*Continued on page* 54)





SUPER AEROTROL

Aerotrol on 27¼ mc: 1) Herkimer Cub OK .099 engine; **2)** four pencells in holder, 2 in series for escapement, 2 in parallel for fil. A; **3)** two 22 volt B batts in series, Olin 0915's; **4 and 5)** two S.P.S.T. switches; **6)** Super Aerotrol receiver; **7)** meter jack; **8)** potentiometer; **9)** Super Aerotrol escapement; **10)** escapement rubber; **11)** linkage. In all three mock-ups we have shown the minimum number of switches required for convenient operation. The Super-Aerotrol transmitter is normally hand-held, since the antenna is only 5 feet long. The transmitter weighs about the same as the Citizen-Ship unit, or a bit over 3 pounds complete with batteries. All the equipment shown on these pages may be operated without taking any exam.

■ With the number of new R/C transmitters, receivers, and units of control equipment on the market expanding continually, the beginner in this field finds it harder and harder to make up his mind what he wants, or even to visualize the various control set-ups. To help him a bit, we have made three mock-ups of R/C plans, including all the radio elements, and the various surfaces that can be operated. Going a little further, we even put an engine on each, to show what may be considered representative. Note carefully that our selections of equipment, engines, and control surfaces are just three out of dozens that can be chosen.

The E.D. is a super de luxe type of set-up, that will do everything that can be done with any equipment now on the market. We show an E.D. audio tone receiver using tuned reeds, with three escapements. Rudder and elevator are moved by E.D. "current saver" escapements; the rudder is moved by a standard rocking type linkage, while something new is used on the elevator—a Citizen-Ship bellcrank. The control escapement for the E.D. .15 diesel is of the clockwork type; these are not very widely used for rudder, since the number of operations is limited to about 50. However, they are ideal for motor throttling, as this control is not used so much, and there is no rubber band to string through the fuselage. We show a simple vane over the intake tube, to slow down the engine.

The E.D. transmitter is fitted with a switch box allowing instant choice of any of the three control functions.

The sole 465 mc. unit on the market, the Citizen-Ship outfit is used in the second mock-up, and the twin rudders are moved by a Bonner Compound escapement. This gadget does not require sequence operation, as do other types of escapements—you get left or right as you push the button. It also has a pair of contacts that may be used to control a Bonner Motor escapement, which is seen just in back of the engine. For power, we have picked the K&B .19, since it (*Continued on page* 54)

Plan R/C Set-up

(*Continued from page 39*)

is available from the factory fitted with dual needle valves, especially to go with this escapement. The combination gives motor two-speed or motor cut-off at will.

The Citizen-Ship (often called Macnabb, after the maker) receiver requires more A battery power than most others, but is very easy on the B batt; the five series-connected medium cells shown will give long life.

For those who like the midget planes (though it will work equally well for big ships), you can use the Super-Aerotrol receiver on the 27¼ mc. band (no license band required here, or for 465 mc. band, but you can't build your own transmitter on the latter). A Super-Aerotrol escapement is linked to the rudder. This sort of set-up has been used with success on true

Half-A planes fitted with .049 engines, but the novice would be wise to use something a bit larger, and power it with an engine about the size of the .099 Cub we have employed here.

Note that a meter jack is included in this mock-up, as in the Citizen-Ship but in addition we have a potentiometer, a necessary accessory for gas tube receivers, of which this is a good example.