



Completed WAG Dual Proportional transmitter is shown left. In photo below is MOPA section with many of the "five percent" parts. In addition to these units kit components include the receiver (which is encased in an aluminum can with epoxi resin fiberglass base) and control box.

RADIO CONTROL EQUIPMENT REVUE

Ace Radio Offers Doc Good's Two Tone Pulse Width in Kit Form

■ Marketing of kits for the "WAG-TTPW" transmitter and receiver (first published by the originator, Dr. Walter A. Good, in the Jan.-Feb.-March 1957 *American Modeler*) represents something of a departure in this field. The manufacturer, Ace Radio Control, has worked in close cooperation with the equipment designer. The kits contain no changes, "improvements" or modifications except where expressly approved by Dr. Good. In a few cases parts substitutions had to be made for procurement reasons, but not until they were checked and approved by the designer.

"WAG," of course, stands for Doc Good's initials; "TTPW" means "Two Tone Pulse Width." It's for dual-proportional multi-control use.

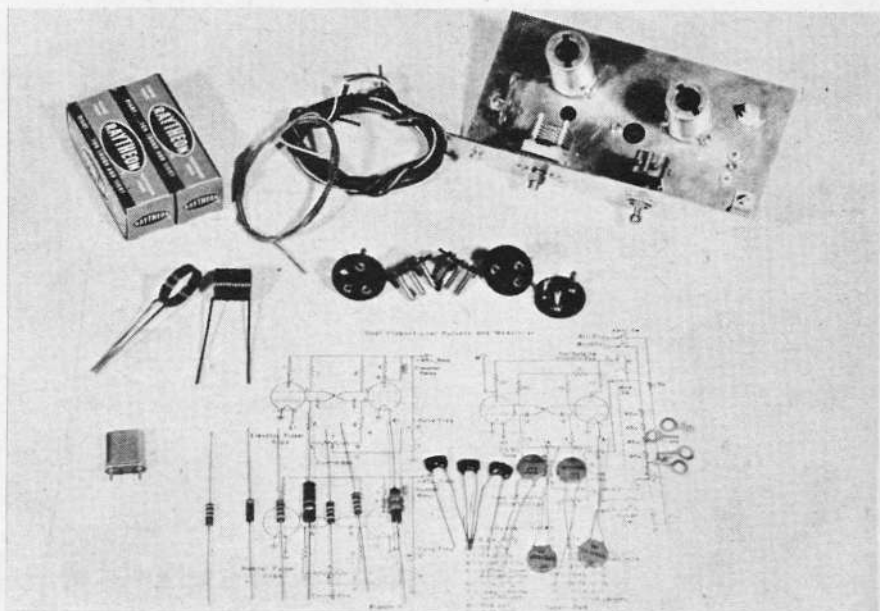
Parts are top quality; no substitutions have been made to use lower cost components or surplus parts. The kit is better than was the project design in the matter of simplicity and ease of construction. In place of the geared-control potentiometers (which work fine but are difficult for the average modeler to make), Ace obtained special 60° controls: these make possible an ultra-

simple control box. These "pots" give the full 1-meg control variation in 60° shaft movement, instead of the usual 270°. Thus no gearing so the box machinery is reduced to two pots, simple brackets and a control stick. The pots, top grade Allen-Bradley units, will be sold separately for those who want to make other types of proportional boxes; they are available from Ace in 1-meg and 100,000-ohm values.

The transmitter is housed in a blue hammertone finish case of heavy gauge steel. Parts that fasten to the two chassis (one for RF circuits, another for pulsers and modulator) are pre-mounted, need only be wired. Antenna insulators are mounted on the side of the case.

Some parts of the circuit are a bit "fussy"; for example, certain components of the pulsers are furnished pre-tested in matched pairs. Further evidence of quality: pulser relays are two new-stock Sigma 4F's, in the pulser and modulator circuits pots are locking-type Allen-Bradley.

Case has ample room for large size batteries; it offers a firm base for the antenna and good ground capacity for



efficient transmission of the signal. Plugs, sockets and cable are provided to connect control box and wiring to batteries.

Receiver base plates are fiberglass, both completely drilled (a timesaver considering the 85 holes). RF tuning coil and choke like the RF coils in the transmitter come finished. Kit contains 3 Jaico relays and five tubes. Resistors are 5% tolerance where so needed.

Reprints of the original three articles are furnished, also other material from *American Modeler* including ideas for control boxes, proportional equipment test meter, systems for using Mighty Midget motors as control servos, plus an FCC license application.

You have a choice of 27 $\frac{1}{4}$ or 50 mc versions; prices are the same. *Basic* kits for receiver, RF chassis and pulser-modulator chassis include all parts except relays and tubes (for transmitter, no case). *Deluxe* kits have everything needed . . . for xmtr, a punched, silk-screened case.

Kit prices are less than the total individual parts. Ace will service these kits and build up kits on special order; ready-built equipment to be ground-checked for range and correct operation.

Since they required extensive space previously we are not reprinting the circuits here, nor the usual specification paragraphs. Transmitter chassis mounts in a case 8 x 10 x 10" deep; brass handle on top. Side-mounted antenna is 5-section, 27" collapsed, 9 $\frac{1}{2}$ ' extended. Blue hammertone finish is 4 x 4 x 2"; control stick and "panic button" projecting from top. On transmitter front panel are the on-off switches for RF unit, pulsers and modulator, also elevator and rudder rate adjustments, P.A. tuning, control-cable socket.

This equipment is not for the beginner; while the kits make it possible for a novice to build the units, they are best suited to the purchaser with considerable R/C flying under his belt, plus working knowledge of electronics and radio control equipment.