

## MARCYTONE R/C EQUIPMENT STARTS WITH SINGLE TONE THEN TAKES MORE CHANNELS

■ For some months Ace Radio Control (Higginville, Mo.) has been selling various versions of the MarcyTone audio equipment. (The name comes from experimenter Marcy Inkman.) Ace has kits for versions ranging from single up to six channel; you can purchase the single tone equipment, later add more channels as you wish.

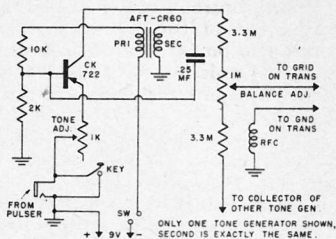
When it was first announced, the MarcyTone transmitter and receiver were not "simultaneous"—that is, you could only operate one tone at a time. Now the equipment is made more versatile . . . the audio oscillator in the transmitter having been converted to a two-stage amplifier. A dual tone generator in a small additional case is available, too. Going a step farther, Ace can also supply a kit for matching Twin-Simul pulser, so that the user may have the advantages of dual simultaneous proportional control.

Taking the units one at a time, let's look first at the transmitter. As with most Ace kits, the transmitter is contained in an anodized aluminum case, natural finish with blue lettering. A single 3A5 serves as both halves of a stable MOPA, with crystal oscillator at half of the output frequency. The other half is a doubler. The outfit will tune to any of the six R/C spot frequencies depending upon the crystal used. A small pilot lamp acts as a monitor for tuning up and as a check on RF output; if you don't see any light your signal is awfully weak or non-existent!

The original MarcyTone transmitter used a second 3A5 as a multi-vibrator modulator; the Twin-Simul version has the same tube, but connected as noted above. It is therefore necessary to have an external modulator, and so we come to the next unit in the chain, the Marcy Twin-Simul Tone Generator.

Housed in a small case of the same anodized aluminum, this unit can be utilized as a control box for operating multi-escapements or Multi-Servos in your model. As the name implies, you can get one or both tones at will. There are two separate transistor oscillators in

**MarcyTone Twin-Simul Receiver is seen at top of page. Directly above is circuit for one of the Tone Generators.**

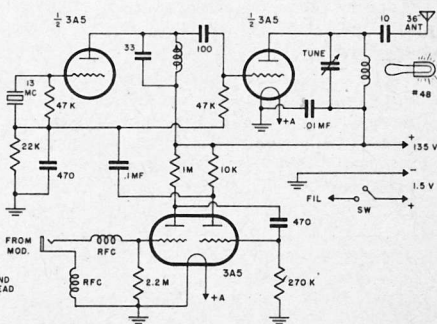


the box, two "pots" for setting the AF tone, two keying buttons for controlling them. There is also a balance pot, which enables the modeler to set the tone levels so they will give the same relay current in the receiver. A small 9-volt battery powers this unit.

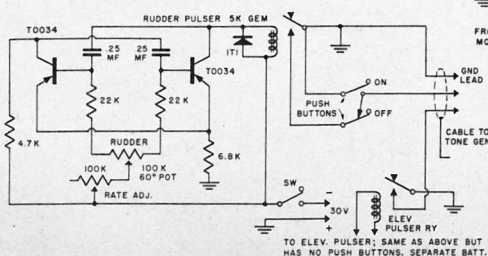
Going along to the end of the transmitter chain, we encounter the Marcy Twin-Simul Pulser; as its name implies there are two separate transistor pulsers in the box, each controlled by one pot on the "stick." Use of top grade Allen-Bradley 60-degree pots means that a very simple mounting may be used, devoid of gears or other complications. The pulser has no stick centering arrangements, but those who prefer centering can easily add their own. The pulser has its own power supply in the form of a 30-volt battery for each of the two oscillators, and there are separate rate pots. Two buttons are provided to turn the rudder pulser off or on, as might be required for various auxiliary control systems. The pulser plugs into the tone generator, which in turn plugs into the transmitter. Those who expect to use the outfit in its entirety may wish to fasten the tone generator right to the transmitter case.

All pots used for adjustments on the tone generators and pulsers have short knurled-end shafts. A neat touch is plastic covers which screw over the shafts to prevent them from being turned by error after they have been set.

At the other end of the radio link is the MarcyTone Twin-Simul receiver.



**Above, MarcyTone Twin-Simul Transmitter. At left, pulser circuit for Ace-Inkman rig.**



This will accept one or two audio tones to give very clean simultaneous operation. Heart of the audio selection system is the simple-to-make, light filters originated by Mr. Inkman. Each filter has a fairly high capacity in parallel with an AF choke, the latter being simple layer-wound jobs on low-cost ferrite cores. Each filter drives a transistor, which in turn takes care of one of the Gem relays. In the present setup there is no provision for motor control, but this could be added by one of the standard schemes, such as pulse omission or tone omission. Two pulse omission circuits could be employed, since each pulser in the transmitter has its own cutoff button.

The instruction sheets furnished with the units (any one of which may be purchased separately) are well illustrated, include a wire-by-wire sequence of connections, a parts list plus general testing and operating data.

**SPECIFICATIONS:** *MarcyTone Twin-Simul Transmitter.* For 27 mc operation with crystal control. One 3A5 as oscillator and doubler, another as two-stage AF amplifier. Doubler tuning available from front of case; oscillator tuning from inside. #48 pilot lamp for RF output indicator. Also on panel are on-off slide switch and jack for AF input. Overall size  $8\frac{1}{8}$  x  $5\frac{5}{8}$  x  $3\frac{1}{8}$ ". Antenna is 3' length of  $\frac{1}{8}$ " dia. rod. Total weight with batteries, 3-lb., 14-oz. Requires two  $67\frac{1}{2}$ -volt B batteries (Eveready 467 or equiv.) and one  $1\frac{1}{2}$ -volt A (Eveready 742 or equiv.); "A" drain about 450 ma, "B" drain 20 ma (same with or without modulation).

*Marcy Twin-Simul Tone Generators.* Includes two single-transistor AF oscillators, each with its own key (and a jack in parallel with each key) and tone control pot. There is also a balance pot and an on-off switch. Overall size  $4\frac{1}{8}$  sq. x 3" high, including projections on front. Weighs 13-oz. with battery. Requires single 9-volt battery (Eveready 216 or equiv.). Current drain with no tone going out is 1.4 ma; with one tone, 2.5 ma; with both tones, 3.5 ma.

*Marcy Twin-Simul Pulsers.* Includes two separate pulsers, each driving its own Gem relay and each using two transistors in multi-vibrator circuit. Control stick varies pulse length of each output; each has separate rate adjustment pot and an off button. Pulser case measures  $8\frac{1}{8}$  x  $4\frac{5}{8}$  x  $2\frac{5}{8}$ ", and weight with batteries is 19-oz. Cable ends in two plugs, which fit into tone generator box. Requires two 30-volt batteries (Eveready 413 or equiv.); each pulser draws about 2.2 ma from its own battery.

*MarcyTone Twin-Simul Receiver.* Single CK5672 for super-regen detector, two transistor AF amplifiers, two transistor relay stages. Single adjustment for tuning. Two closed circuit jacks allow monitoring each tone channel. Overall size of plastic case,  $3\frac{3}{4}$  x  $2\frac{5}{8}$  x 2". Receiver with case weighs 5-oz. Antenna length not critical—about 24". Requires  $1\frac{1}{2}$  volts at 50 ma for tube filament, 30 volts "B" supply. Idles with no signal at 4.5 ma; with CW this drops to 3 ma. Total current with one tone is  $7\frac{1}{2}$  ma, with two tones  $11\frac{1}{2}$  ma. Relay current about .1 to 5 ma. Receiver has rapid response as required for pulse operation.

**NEXT ISSUE!**

**Smith Miniplane 3-vue**