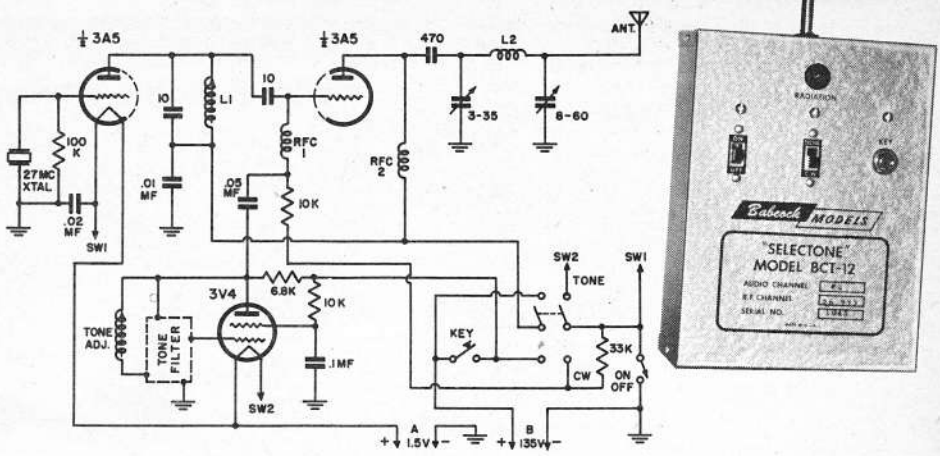


Babcock BCT-12 and BTR-12: Versatile

■ The Selectone system by Babcock Models (Newport Beach, Cal.) is a versatile one—both transmitter and receiver can be operated on a variety of frequencies, depending upon the particular audio filters installed in each. Furthermore, the two units may be changed to operate on the 50 mc band, if desired (they normally are supplied for 27 mc operation). And as an added bonus, the BCT-12 transmitter is fiitted with a switch to shift output from CW to tone, so it may be used with the Babcock RC-1 CW receiver, or other units of this type.

The transmitter is contained in a rugged steel case of moderate size. It uses a single dual triode tube as crystal oscillator and power amplifier, and a pentode tube for tone generator and modulator. The makers certify that the output frequency cannot be shifted outside F.C.C. specified tolerances by normal operation, servicing or adjustments, and that the output complies with all F.C.C. requirements as to over-modulation, harmonics. The crystal is soldered in place. Packed with the transmitter are the forms necessary to send in for your F.C.C. license.

The transmitter can be had with any of three tone filters, covering the output tone ranges of 700 to 1000 cycles, 1000 to 1700 and 1700 to 3200. Babcock dealers stock the filters, which may be installed very easily by the owner. Feature of the transmitter tone generating system is a "vernier" adjustment, by means of which the user may peak up the tone output to exactly match the filter in an individual receiver (the receiver filters are not adjustable). Peaking is done by adjustment of a core in an AF choke coil; this coil is not changed when the main filter unit is removed for replacement with one of a different range.

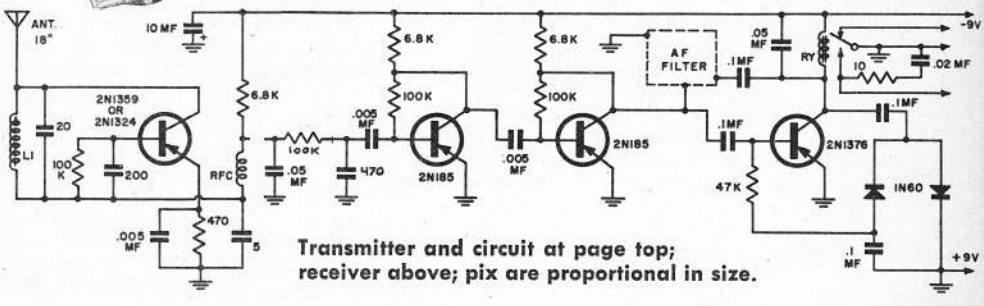
The transmitter is fitted with a so-called "pi coupler" on the output, by means of which a perfect match may be had with practically any length of antenna, to assure maximum output.

The lower end of the tone range of Selectone units has been set high enough so that minimum interference should be had from the tones used in most untuned AF outfits, or from the tones used in reed equipment. The large majority of tone transmitters have an output at less than 1000 cycles.

Transmitter operation on the amateur 50 mc band is possible by replacing the two RF coils and using a 50 mc crystal of the desired frequency. Babcock can supply the required coils at low cost. No condenser or other changes are required. 50 mc output will be a little lower than that at 27 mc, due to slightly less efficient operation of the RF tube at the higher frequency, but output should be ample for all R/C usse.

The BCT-12 has a potent RF output in the CW position, but as the instructions point out, you have to pay in the form of current drain on the B batteries, to get this. Information is included for a slight change in the circuit (which does not require any new parts, just a shift in a couple of leads); RF output will then be about the same on CW as in Tone operation; a panel switch could be installed to make this simple shift any time you desire. CW output should still be sufficient for most uses, in the "low power" position.

The BTR-12 receiver is a compact job in an aluminum two-piece case. With it are furnished a connector plug and socket, and clips to fit the 9 volt battery. Both relay contacts are brought out through the power cable, and one of these leads (the one normally used for escapement operation) is fitted with an arc suppressing circuit. If transmitter



Transmitter and circuit at page top; receiver above; pix are proportional in size.

and receiver are purchased as a pair, care sould be taken to make sure that the transmitter tone range will cover the filter fitted in the receiver. Tone channels are stamped on the front of both transmitter and receiver cases.

The BTR-12 can also be altered for 6 meter operation; you can obtain a kit from your dealer to do the job yourself, or it can be handled at the factory at somewhat higher cost. Also, as noted above, the AF filter can be changed; this is a simple replacement job, using tuned units of other frequencies, also available from Babcock dealers. The actual tone frequency is stamped on each receiver filter, while the transmitter filters are stamped with the tone *range*, which is covered my means of the variable adjustment we have mentioned.

Complete circuits are given in the instruction sheet for installation of the receiver in either a boat or a plane. In either case, bonding of escapement torque rods and similar sources of "electrical noise" is essential.

It has been found possible to operate two of these outfits on the 27 mc band, by using the two end RF spots, and different AF filters in the two outfits.

SPECIFICATIONS

Babcock BCT-12 27 mc Tone-CW transmitter: Single 3A5 tube as oscillator and RF amplifier, 3V4 tube to modulate with sine wave AF. Front of case has on-off switch, tone and CW switch and key button, also small lamp for tuning and RF output indidication. Case size, 3 x 5½ x 7⅝". 3 section antenna projects 24" above case top when collapsed, 4½' when pulled out to full length. Weight with all batteries and antenna, 5½ lb.

Battery Requirements: 1½ volts at 300 ma (tone) or at 200 ma (CW); Eveready 742 or equivalent. B supply, 135 volts (two Eveready 467 or equiv.). CW B current drain is zero with key up, 16 ma with it depressed. Tone curent drain, 12½ ma key up, 20 ma key down.

Babcock BTR-12 27 mc tone receiver: Circuit uses four transistors, tuned audio filter, Deans relay. Case size 2¼ x 2¼ x 1" and weight 2.5 oz. Single adjustment, for RF tuning; replace AF filters for change in AF tone response. Antenna length, 18" or so, not critical.

Battery Requirements: 9 volts; idling current about 3 ma; with proper tone tuned in, about 14 ma. Receiver can be tuned with meter in battery lead. Battery should be replaced when it measures less than 7½ volts with tone coming in.