



Fig. 5—Vackar oscillator operates at 21 MHz and shifts frequency from human body heat when person stands 2 feet away.

A transistor Vackar

In June, we discussed a vacuum-tube Vackar oscillator used by a number of British hams. Figure 5 is a transistor Vackar oscillator used by G5BB for 21-MHz described in *RSGB Journal* (Now *Radio Communications*). Oscillator tank coil L1 and the buffer tank coil L2 consist of 19 and 23 turns, respectively, of No. 22 enameled wire on ¼-inch slug-tuned forms. The oscillator is coupled to an OC170 buffer amplifier by a 2-turn coil wound around the cold end of L1. The OC170 and AF114 are pnp junction germanium transistors similar to the 2N1177.

G5BB reported that the oscillator tank is extremely temperature sensitive. Heat from a human body 2 feet away causes a gradual frequency shift. Interesting design factors developed in the article are:

Enclose the oscillator and tank circuit in a heavy metal box to protect it against drafts and sudden changes in ambient temperature.

For maximum stability, select a transistor with a cutoff frequency at least ten times the operating frequency and operate it in Class A.

Use inductive coupling to the

following circuit. Capacitive coupling appears to have an adverse effect on frequency stability.