SINE-WAVE GENERATOR

I do a lot of audio work and build a good deal of the gear myself. I frequently have to send signals to tape machines and other devices and have been using a small square-wave generator. I would prefer to be able to send something a bit smoother so I'd like a simple circuit for generating a sine wave. It doesn't have to be perfect and size is more important than a classic waveshape. Can you help?—G. Fischer, Benjamin, NY

There are several different ways to do sine-wave generation, but all of them really produce "sine-like" waves.

If all you're interested in is something to produce signals that are a bit easier on the ears than the hard edges of a square wave, you can use the circuit shown in Fig. 2. Any op-amp can be used since the work is being done by the Twin-T network in the feedback loop. Use closely matched components in the Twin-T network, and feed the output of the op-amp to a high-impedance input.

The frequency of the signal can be gotten by plugging the component values into the formula $f = 1/(2\pi RC)$.

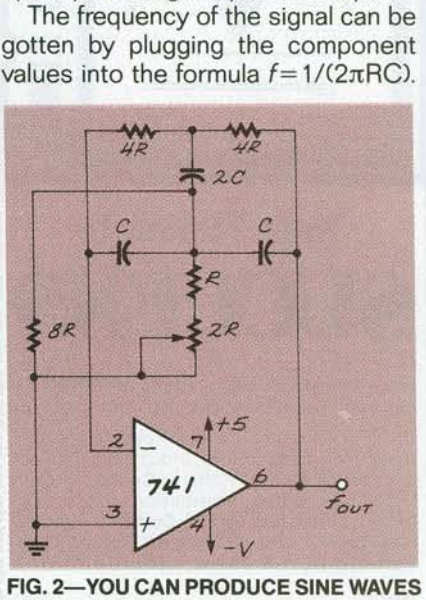

FIG. 2—YOU CAN PRODUCE SINE WAVES with this simple circuit.

Keep the resistor values between 1K and 10K, and use 0.01μf–1μF as the capacitor limits. It's also a good idea to build the circuit with a dual op-amp chip and use the second half as a buffer to avoid overloading the output of the generator. **R-E**