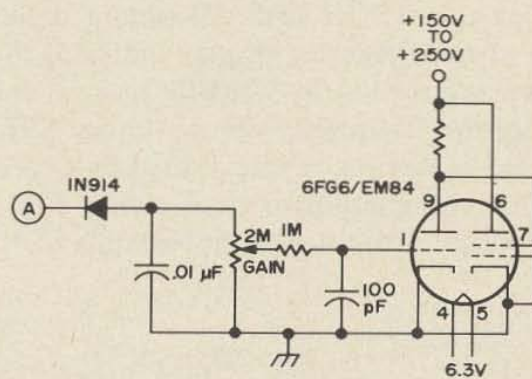


Tuning Indicators for SSTV Monitors

For several years I have been experimenting with SSTV and have realized that there is a need for a device to aid in tuning the SSTV signal to provide the correct audio output tones from an SSB receiver. I've developed and tested tuning indicators for SSTV monitors in both solid-state and tube-type designs. The type used with tube model monitors incorporates a 6FG6 light bar indicator, and a light emitting diode (LED) is used with solid-state designed monitors.

Solid-state and tube-type SSTV monitors equipped with tuning indicators are shown in the photograph of Fig. 1. The monitor on the left is a tube-type based on the design by MacDonald (QST, March 1964). The light-bar tuning indicator is located just below the CRT screen. The monitor on the right of the photograph is a solid-state, magnetically deflected design

based on a circuit by Make Tallent W6MXV. The LED tuning indicator is installed just below the vertical reset push-button.



Tube-Type Tuning Indicator

The signal diode on the indicator input (point A of the schematic diagram) should

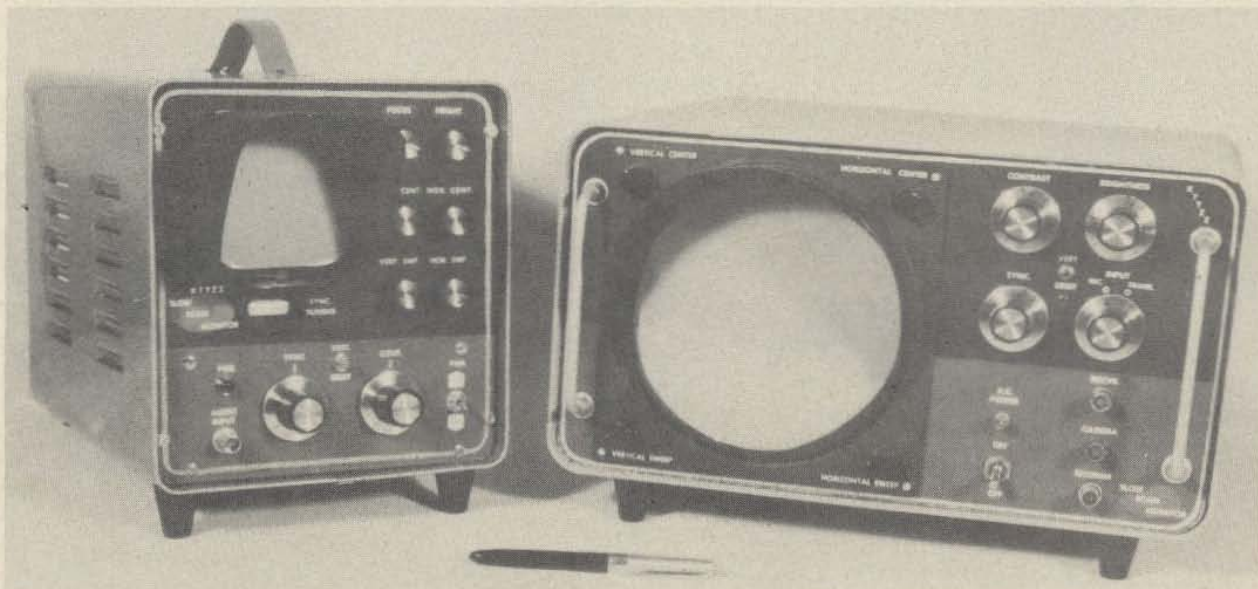


Fig. 1. Tuning indicators for SSTV monitors.

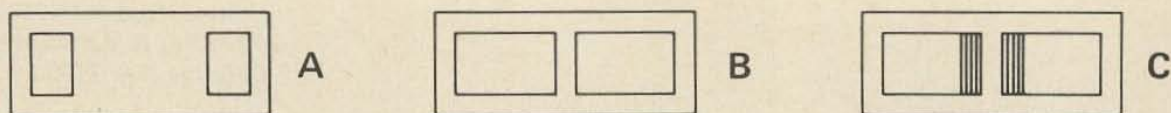


Fig. 2. Tuning indicator displays. The no-signal state is shown in A. B shows presence of a steady 1.2 kHz signal; C is a 15 Hz flickering to indicate that the SYNC signal is in tune.

be connected to the high side of the SYNC gain control (R1 of the MacDonald circuit). High voltage for the indicator is taken from the same voltage as that supplied for the 12AX7 limiter. With a 1200 Hz test signal connected to the input of the monitor, of sufficient level to fully saturate the limiters, the gain control on the tuning indicator is adjusted until the two light bars in the display tube almost close. When a 1200 Hz SSTV SYNC signal is being received, the display on the 6FG6 tube will flicker at a 15 Hz rate. Maximum deflection of the flickering display indicates that carrier reinsertion by the SSB receiver is at the proper frequency for optimum SSTV picture reception. Typical displays as seen on the tuning indicator are shown in Fig. 2.

Figures 3 and 4 are photographs of the

tube-type monitor showing the installation of the light-bar SSTV tuning indicator. The small circuit board just below the base of the tuning indicator tube is used to mount the gain control, bypass capacitor and rectifier. The remainder of the components are mounted on the tube socket.

LED Tuning Indicator

The components for this circuit were mounted on the plug-in circuit card containing the limiter and FM detector circuits. The 88 mH toroid and associated parts for the tuning indicator circuit are shown in the photograph of Fig. 5. When the circuit assembly is finished, power is applied to the circuit and a 1200 Hz test signal is connected to the input at point B

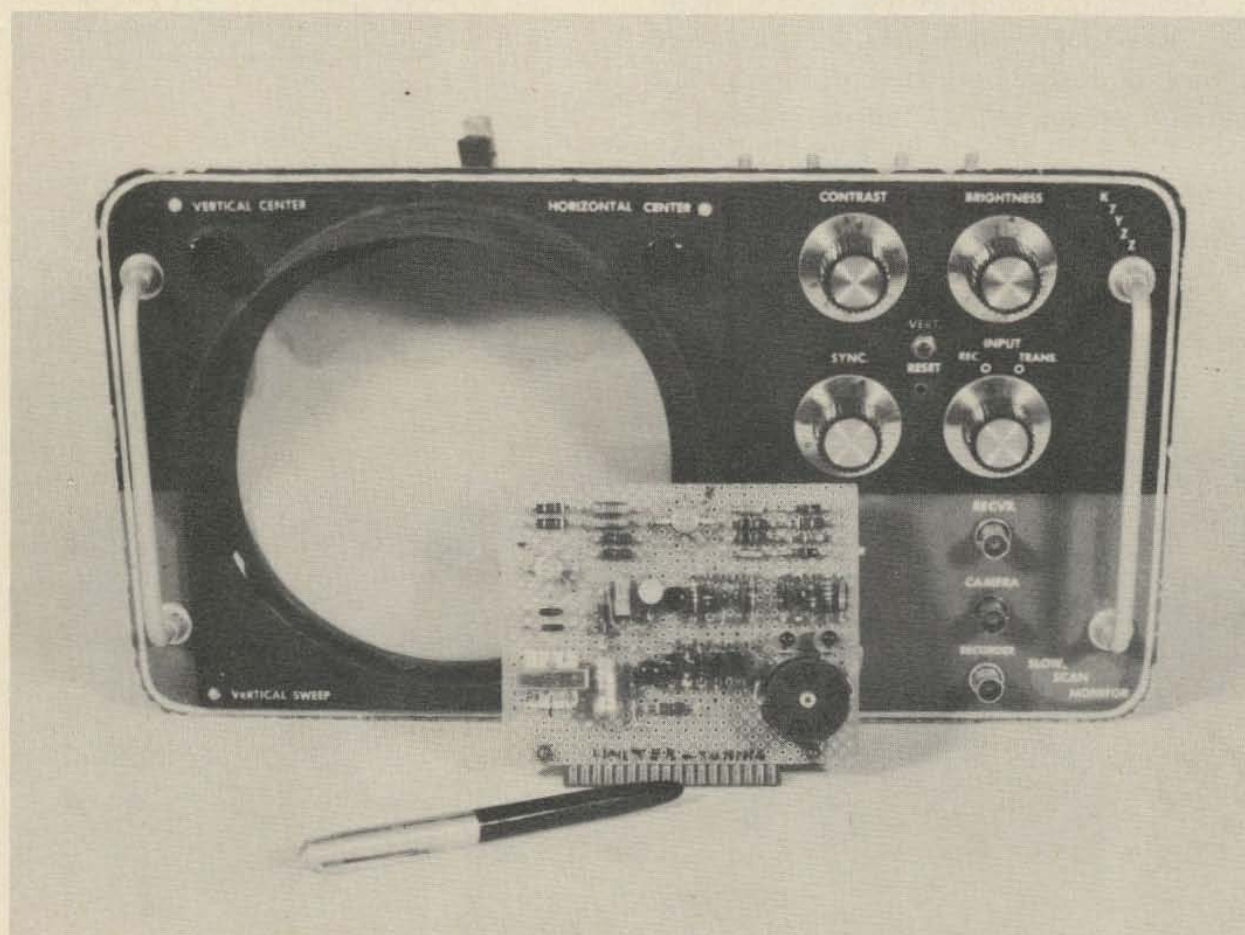


Fig. 3. Tuning indicators for SSTV monitors.

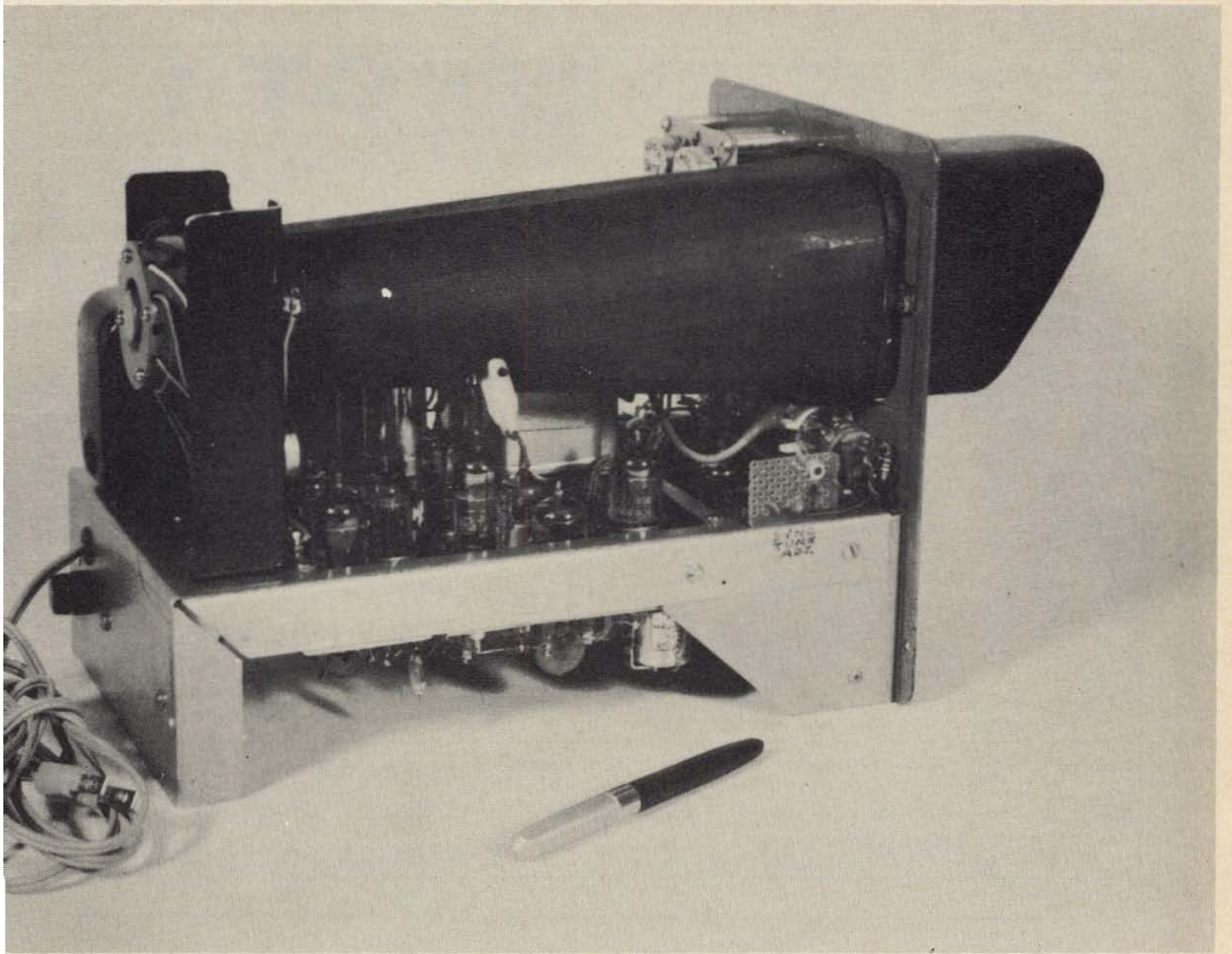


Fig. 5. Tuning indicators for SSTV monitors.

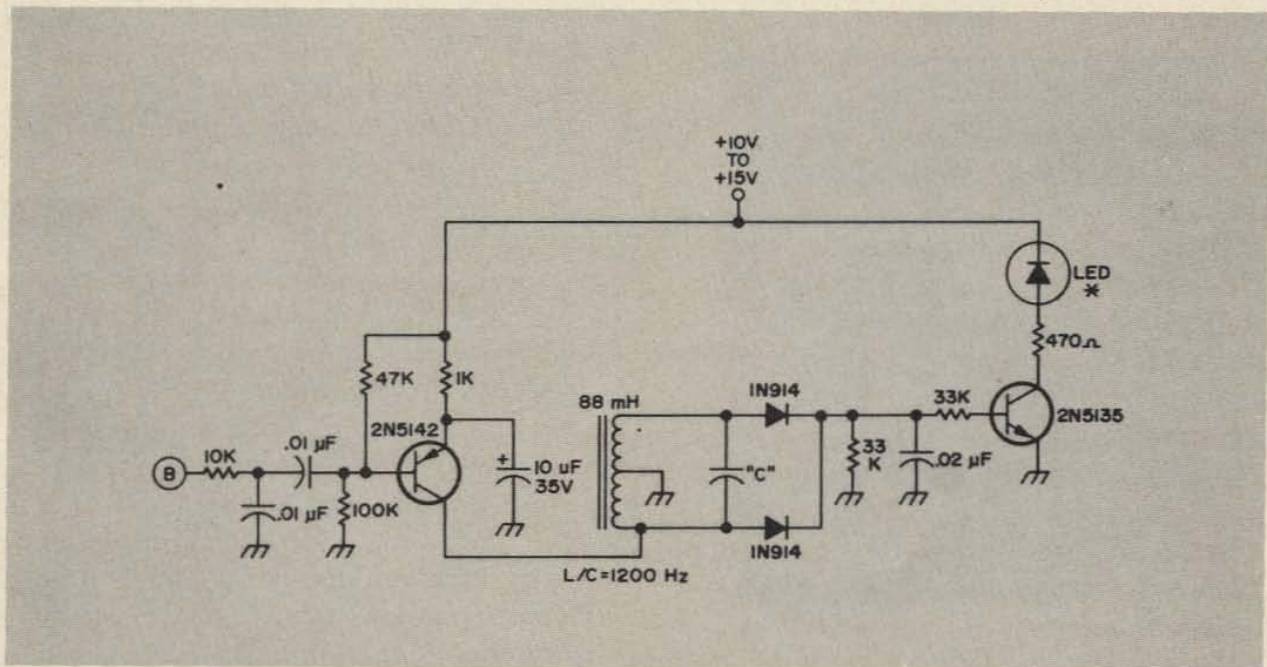


Fig. 6. SSTV LED tuning indicator for solid-state type monitors.

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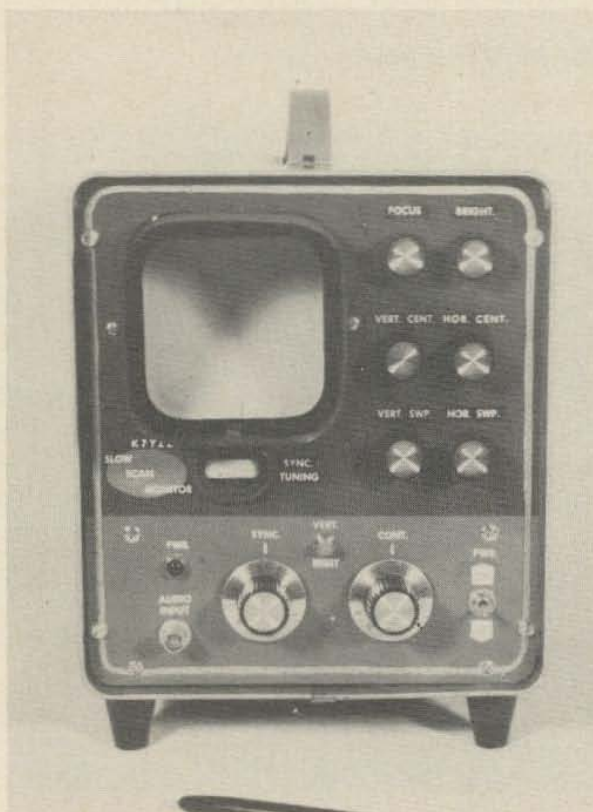


Fig. 4. Tuning indicators for SSTV monitors.

on the schematic (Fig. 6). The capacitor is selected to resonate the 88 mH inductor to 1200 Hz by monitoring the output voltage developed across the diode load resistor with a VTVM.

To install the LED tuning indicator in a solid-state monitor such as the model by W9LUO described in the March 1971 QST, connect input point B to the collector of transistor Q2. A 1200 Hz SSTV SYNC signal will cause the LED to flicker at the 15 Hz rate. The indicator will be dark if the SYNC signal is absent. When the receiver is mistuned to the point that SSTV video or noise is appearing in the tuning indicator, the LED will flicker at a random rate.

From a study of the schematic of the Model 70 Robot SSTV Monitor it looks like the input to the LED SSTV tuning indicator (point B) should be connected to pin number 6 of the integrated circuit U1 709C limiter.

.. K7YZZ ■