improved tuning on 160 meters with the T-4X transmitters

When using either a T-4XB or T-4XC transmitter below 1850 kHz, a true dip could never be obtained and loading was difficult, even when using a 50-ohm dummy load. Through discussions with other Drake owners, I found that this frustrating problem was shared by other T-4X-series transmitter owners. Being curious about this strange behaviour, we called Drake only to find that their low-end cutoff frequency is 1840 kHz. With this news, we decided to optimize the output network for the 1800-1850 kHz band, since that's all we have in New England. The modifications are almost trivial, requiring only two capacitors in the output network and a third for the driver tank circuit, but the results are excellent. The transmitter can be loaded and controlled on the low end of 160 just the same as on any other band.

As shown in **fig. 3**, the modification to the output network requires the addition of a capacitor on each side of the pi network. The part numbers in parentheses apply to the T-4XC; the others, to the T-4XB. Using the pictorials provided in the Drake manual, locate S4H and C65 (C86). Add a 120-pF, 2000-volt capacitor in parallel with C65 (C86). Next, locate C67 (C89), an 865-pF capacitor on S4G, and add a 680-pF capacitor in parallel.

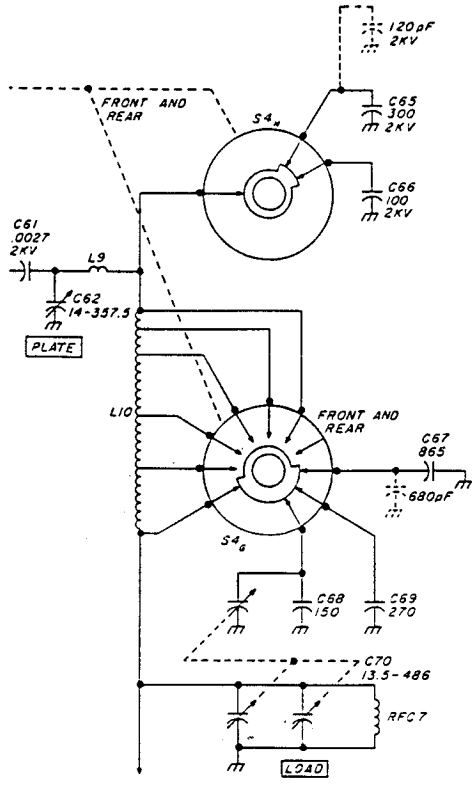

fig. 2. Schematic diagram of the changes made to the pi network to enable it to cover the low end of 160 meters. The numbers in parentheses refer to the components in the T4XC. The first designation is for the T4XB.

In addition to the output pi network, the driver tank circuit also required padding, since the driver control had to be rotated fully counterclockwise. This modification is depicted in **fig. 4**. A 36-pF capacitor was connected in parallel with C39 (C54), located on the rear of S4F.

With the implementation of these simple and inexpensive modifications, our Drake transmitters will load very nicely in the 1800-1840 kHz region, with the driver control showing a nice peak rather than being fully against the stop.

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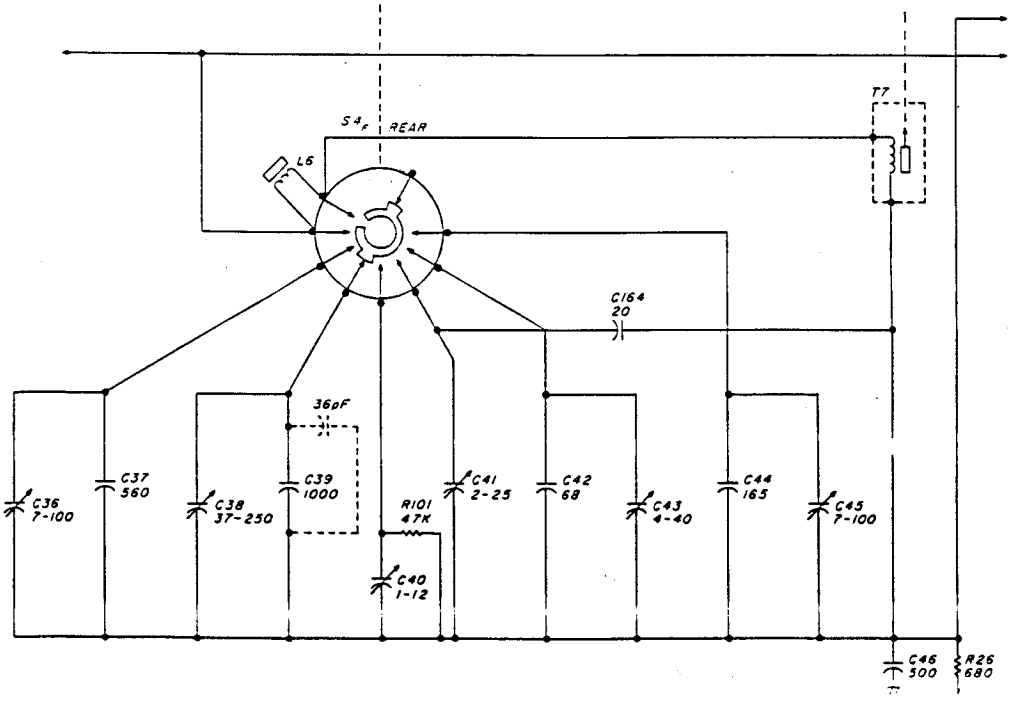

fig. 3. Changes made to the driver network for low end coverage of 160 meters.