TEN-TEC Model 318 "No Relay" Modification

The **Ten-Tec Model 318 Amp Control Box** is a handy gadget for use with the Ten-Tec Eagle transceiver.

Its two primary purposes are to enable keying of older amplifiers which use something other than 12vdc for switching its T/R relay, and to add Semi-BK delay (post dit delay) to the switching of the amplifier's T/R relay.

The box functions just fine "as is", except that the relay, which keys with every dit or dah is very noisy and drives me crazy during longer periods of operation. THIS RELAY HAD TO GO!

The relay was removed and the box's own Q3 transistor was used as an open collector switch for the amplifier's T/R relay. This functions great with +12vdc keying up to a couple hundred mA. My amplifier's T/R relay runs on +13.8v @ 90 mA, so keying it without the relay is no problem.

Disadvantage: In the unlikely event that I should ever acquire a very old amplifier which uses a different voltage for switching, it won't work. No problem, I'll just put the relay back in.

After making the modification, the amp's T/R relay failed to key. Q3 was switching but not completely, having a residual voltage of 3.6v instead of 0.6. Apparently the heavier switching requirement required more base current. I achieved this by reducing the value of R2 from 33K to 22K. I implemented this simply by soldering a 68K resistor in parallel to R2. Now it switches OK.

A second modification was also made to the box to isolate Pin-8 of the two 8-Pin Accessory Jacks. Pin-8 is the transceiver's Amp Key Line. The output of the Eagle's open collector switch connects to one of these. I connect the AMP Key Line of my external Keyer to the other one.

My external Keyer has the feature to add additional pre-dit delay. I add 10mS to the Eagle's own 17mS, giving me a total of 27mS pre-dit delay. This allows a bit more time for my amplifier's old [slow] open-frame relay to switch before applying RF power in CW. The only problem is this only keys the amp during CW, not in SSB or Tune. The keyer's open collector switch connects to Pin-8 of one of the accessory jacks. A direct connection to the transceiver's Pin-8 was also needed to key the amp in SSB and Tune modes.

Although I could have simply connected the two open collector circuits in parallel, I prefer to isolate them with diodes. I cut the solder runs between Pin-8 of each jack and their connection to the Collector of Q2, and then inserted a 1N4007 diode in each line (see modified schematic).

A **third modification** was made to the timing of the delay circuit. I found the 2 second delay (max) to be longer than I would ever need, and the adjustment near the other end of the potentiometer to be a bit too sensitive. I added a 10K resistor in parallel to the potentiometer, which reduced the maximum delay to just over one second, while giving me more bandspread at the low end.

Now my Model 318 works just as I want it to in all modes, and completely silent.

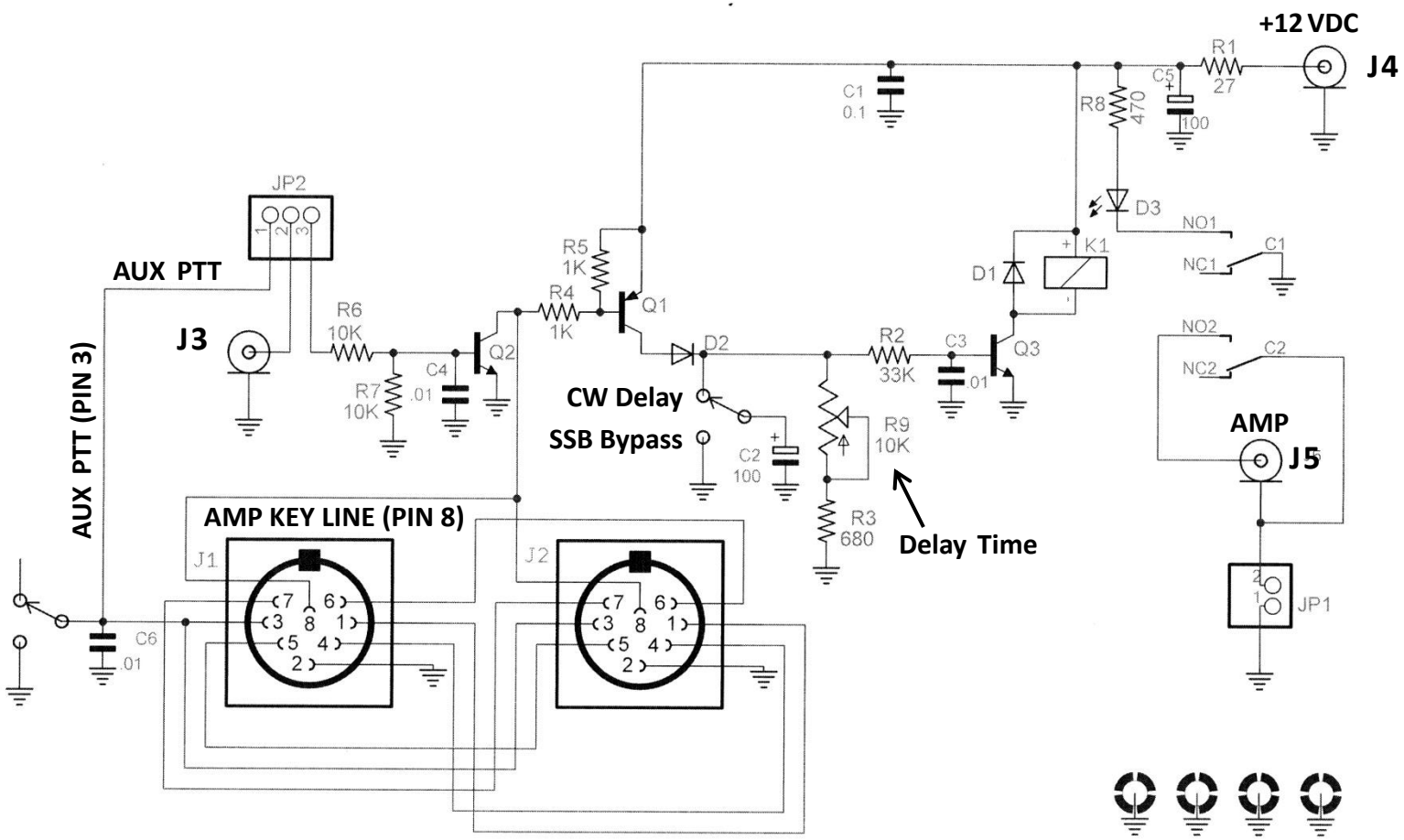
Standard

JP2

J3 = AUX PTT (Default), for EXT Straight Key or Computer

J3 = EXT 'PLUS' PTT, for EXT controlling the switching of AMP with a positive voltage

318 AMPLIFIER INTERFACE SCHEMATIC



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J3 = AUX PTT (Default), for EXT Straight Key or Computer

JP2

J3 = EXT 'PLUS' PTT, for EXT controlling the switching of AMP with a positive voltage

Modified

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