A further 70K-2 PTO Repair Story

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In the spring of 2021, when Covid-19 had locked quite a number of the usual activities, I had contact with Wolfgang, DK7CY. He complained about the PTO inside his newly acquired RE 75S-3C, which showed an erratic tuning behavior.

When he had opened the PTO (#25847) for inspection it turned out that apparently someone had tried to repair the small spring lever on the PTO core. The tip of this spring travels in the groove of the spindle, and its spring action is needed for a smooth travel of the core in both directions.

Fig. 1 shows that this tip must have been broken off and been replaced with a small piece of metal and a blob of solder. For comparison, Fig. 2 shows the same situation with an undamaged core from another PTO.

It was easily verified that the spring was unstable and the core did not travel smoothly.

Fig. 1 damaged spring assembly at the PTO core

Fig. 2 undamaged spring assembly at another PTO core

The attempted repair had not been successful, but it revealed that it was indeed possible to solder the material of that little spring.

A piece of brass from an old relay was cut and carefully soldered to replace the missing tip. Fig. 3 shows the repaired core with its spindle.

Fig. 3 repaired spring assembly at the PTO core

After reassembly with a generous amount of lithium grease the PTO was run on a variable supply. And after further adjustment it produced the following values:

- Frequency ranging from 2.7095 MHz down to 2.4900 MHz
- Output voltage 6.5 Vpp at 150 V= and 75 Ω load
- Frequency dependence on supply voltage about 200 Hz / 100 V

When comparing these results with the typical values of other 70K-2 PTOs, the frequency dependence on supply voltage was more on the lower side and the overall stability from cold start to operating temperature was remarkably good.

The broken spring would have rendered this otherwise very stable PTO useless. So, this repair should enable a further and hopefully long-lasting performance.

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