

Dayton Hamvention 2004

by Tony Sokol, W9JXN

Dayton 2004 is rapidly approaching, and hopefully by now most of us have made plans to attend. This year's Dayton CCA activities include a hospitality suite each night at the Holiday Inn Fairborn. Our featured Friday evening banquet speaker this year is Lawrence Robinson, who is an avionics engineer with Rockwell Collins. Lawrence's presentation is centered on the B-29 Superfortress radio position and its role in the final raids on Japan.

In addition to the Awards Banquet on Friday, the CCA will be sponsoring a booth at the Hamvention, providing a great opportunity to enjoy the camaraderie of our fellow members. There will be items for sale at the booth, including CCA caps, CDs, and other Collins-related goodies.

This year we will also have on display the special edition CCA Vibroplex that can be ordered from the nearby Vibroplex booth. Serial number CCA-001 will be raffled off at the banquet, along with other exciting prizes.

Reservations for the banquet can be made by sending \$35 per attendee along with your name, call, and meal preference (chicken or beef) to: Collins Collectors Association, P.O. Box 354, Phoenix, MD 21131.

Special room rates of \$99 per night are available to CCA members at the Holiday Inn Fairborn. Reservations can be made directly by calling (937) 426-7800. Be sure to tell them that you are a CCA member to get the special \$99 / night rate. For more information check out our website at www.collinsradio.org.

We will have the flea market dance cards available at the hospitality rooms and at the CCA booth #459. Don't miss out on the fun!

Collins 32S-3 Chirp

by Rüdiger Unbehaun, DJ4QE

Recently I had to repair an interesting failure which could affect other users of the Collins 32S-3 transmitter.

My QSO partner informed me that some of my CW characters had a chirp, especially at the beginning of a new transmission sequence. I initially suspected a thermal effect and didn't pay more attention. When I monitored my own signal on a receiver some days later, I noticed that the chirp occurred after the click of the transmit/receive relay. This relay applies voltage to the HF crystal oscillator and the VFO in the transmit mode. The voltage is stabilized by an OA2 gas discharge voltage regulator tube. The chirp was caused by delayed ignition of this regulator. The beginning of a CW sequence was transmitted with an unregulated voltage. When the OA2 started to operate after a few seconds, the signal was stable and without chirp. Mystery solved!


I replaced the OA2 with another one, but the chirp didn't change significantly. After a few days, I bought five other OA2s and tried to select the regulator with the shortest ignition time. The result was disappointing. All the tubes exhibited varying degrees of delayed ignition. My next idea was to solve the problem with a semiconductor solution, replacing the OA2 with a Zener diode or a transistor regulator. Because my transmitter was in original condition, I didn't wish to modify it in this way.

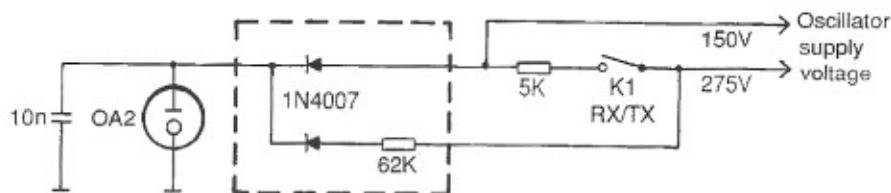
After some weeks, the question came up: Why didn't the Collins engineers notice this effect during the development of the

transmitter? I thought of my early years in the development of Telefunken Tube Division and I remembered that the gas discharge regulators were filled with an additive of low radioactive gas which generates ions to support quick ignition. One of the people who had worked in the production line of voltage regulators told me that in some types of regulators Krypton 85 was used.

This gas has a decay rate to half activity of about 10 years. Production of the OA2 ended sometime in the 1960s, so the activity of the gas additive has, by now, degraded to 1/16 its original level. This answered the remaining questions.

The simplest solution of the ignition difficulties was to keep the regulator operating even during the receive phase of the S-Line, avoiding on/off operation of the gas discharge regulator. The technical solution is shown in the accompanying diagram. Two diodes (1N4007) are connected to the socket of the OA2. One diode keeps the VFO and HF oscillator voltage at the potential of the regulator tube. This function is, the serial diode excepted, as originally designed. The second diode is connected via a resistor of 62 kΩ to the unswitched supply voltage of 275 V. When the transmit/receive relay opens, this path keeps the OA2 operating on low current level. The first diode prevents feeding the voltage to the oscillator. The value of the resistor (62 kΩ) is not critical. It is designed for 2 mA current. If the current is too low, the gas discharge regulator becomes negative impedance and low frequency oscillation may occur.

This modification solves the chirp problem totally and I think it is acceptable even for an old 32S-3. 



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