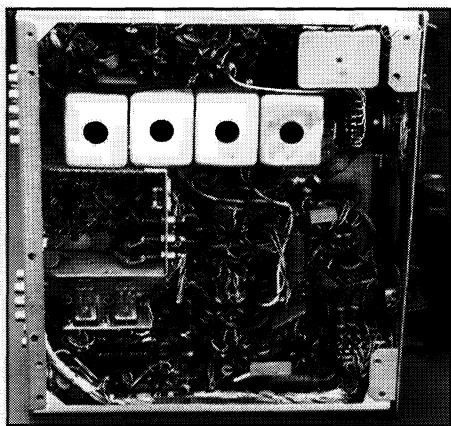


Keeping the KWM-2 Receive and Transmit on the Same Frequency

by John Fuhrman, KOLFA



The very popular KWM-2/2A - bottom view

It may or may not be well known that the KWM-2/2A has a slight frequency shift from receive to transmit (RX to TX). Depending upon the PTO and power supply, this frequency shift can be from 50 Hz to 100 Hz. It is easily measured by plugging a counter into the External VFO RCA jack, J18, on the rear panel.

The frequency shift is due to the PTO B+ voltage changing about 15 volts from RX to TX. The PTO B+ is supplied via a resistive divider made up of R73 (15K 2 Watt) and R131 (33K 2 Watt). R73 is connected to pin 2 of J17, External VFO Power, and parts turret E60, position A. R131 is connected from parts turret E60, position A, to chassis ground.

For parts locations please refer to SB-7 (reissue), page 7, which can be downloaded from the CCA web site. The frequency shift can be virtually eliminated by making the following modification:

In this issue...

| | |
|-------------------------------------|---|
| Keep the KWM-2/2A on Frequency | 1 |
| Survey and Analysis Results | 2 |
| CCA First Wednesday AM Night | 2 |
| Amateur Radio Fair in Italy | 3 |
| Editor's Operating Desk | 4 |
| CCA Net Theme Weeks | 4 |
| In the Shack | 4 |
| At The Mic | 4 |

1. Remove R73 and replace it with a 22k 2 Watt metal oxide resistor. Use sleeving on the leads.

2. Remove R131 and replace it with a 150 volt 1 Watt Zener diode (NTE-5100A). Use sleeving on the leads. The banded end should be connected to parts turret E60, position A.

3. Remove the white/red wire connected to parts turret E60, position A, that goes to the PTO.

4. Install a 470 ohm 1/2 Watt metal film resistor in series from Position A to the end of the white/red wire to the PTO. The 470 Ohm

resistor can be "hidden" inside a short length of sleeving or small diameter PVC tubing.

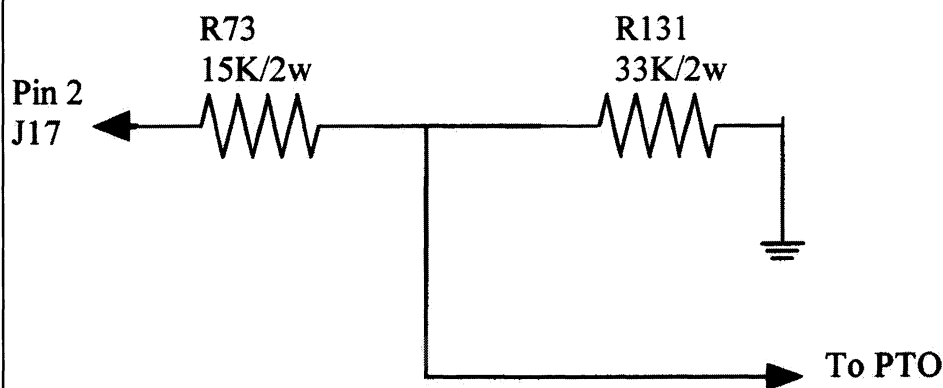
This completes the modification. The frequency shift from RX to TX will be reduced to about 2-3 Hz. Do not omit the 470 Ohm resistor. It is needed to decouple the Zener diode from the PTO plate and screen.

Now the NCS will stop telling you to "get on the net frequency."

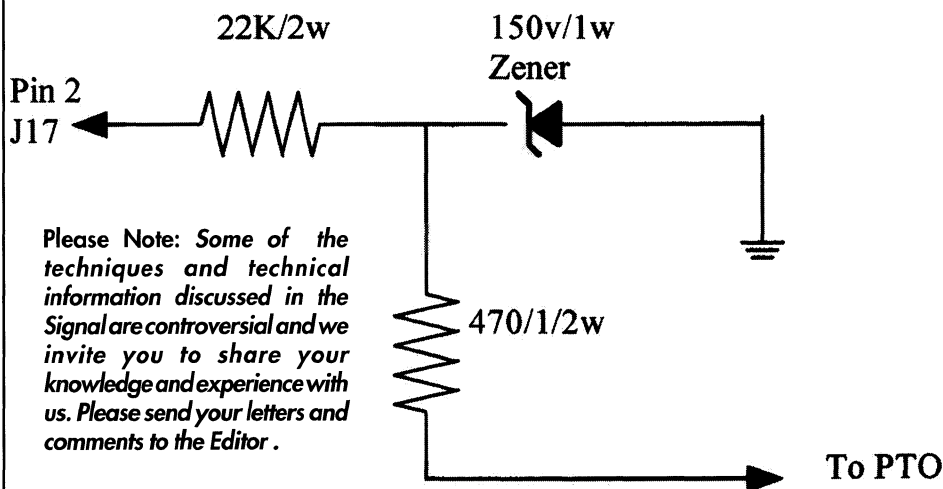
Parts List

22k 2 Watt metal oxide resistor
150 volt / 1 Watt Zener diode, NTE-5100A
470 ohm / 1/2 Watt metal film resistor

Before Modification



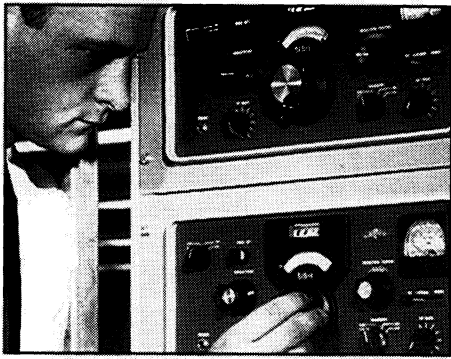
After Modification



Please Note: Some of the techniques and technical information discussed in the Signal are controversial and we invite you to share your knowledge and experience with us. Please send your letters and comments to the Editor.

Survey and Analysis Results: The Collins 51S-1, 55G-1, and 312B-3

by Rod Blocksme, KODAS e-mail: rkblocks@plutonium.net



The Collins 51S-1 Receiver

51S-1 Receiver

Here are the results of the survey and analysis on the 51S-1 series receiver. Based on the survey results and other incidental bits of information, a model of serial numbers for each year of production was constructed. The model is not perfect and new information may cause revision to the model.

1. The production year is the Collins Fiscal Year which started Sept 1 of the previous calendar year and ran through Aug 31. For example, FY1960 ran from Sept 1, 1959 through Aug 31, 1960. In 1974, it was changed to run from Oct 1 to Sep 31.

2. The 51S-1 series receivers consist of several different types and within each type there are minor variations denoted by a difference in the last three digits of the Top Level Collins Part Number. Some also have military nomenclature as shown.

51S-1, 522-2245-xxx, cabinet, AC PS, (R1122/GR)

51S-1A, 522-2546-xxx, cabinet, DC PS, (R1433/UR)

51S-1B, 522-3857-xxx, cabinet, DC PS, Mil connectors, (USAF but no mil nomenclature assigned)

51S-1BF, 522-3850-xxx, rack mtg, DC PS, Mil connectors

51S-1F, 522-2498-xxx, rack mtg, AC PS, (R1156/GR & R1156A/GR)

51S-1AF, 522-3156-xxx, rack mtg, DC PS,

3. In general the serial numbers were not "scrambled" on the 51S-1, however, there are strong indications in the data that around 1975 some 124 51S-1's were assigned early serial numbers that were likely used for other types (e.g. 51S-1F). The reason is unknown. Other than this instance, the serial numbers are sequential without regard for specific type number until 1975 when different serial number blocks were used. Production ran to about 1982, but no data has been found for units produced after 1979, so I'm estimating 600 units for 1980 and beyond.

4. Very early units (about the first 100 units) sported a 5-fluted Megacycle knob and wide spaced lines around the Rejection Tuning

knob. These early radios also used the 70K-4 (two tubes) PTO.

5. There were a variety of meter faces scattered throughout the production history. No production change-over from one meter face to another is apparent in the data. Meter face colors reported include: White, Yellow or Amber, Brown, and Ruby Red.

6. The Collins Logo emblems run the gamut - Winged Emblem from start to fall 1969, Round Emblem transition (small RE with two small gray screws on either side) fall 1969, Small RE from fall 1969 until ????, Large RE through FY 1976, Rockwell Collins (terra cotta letters) to the end except for a few with blue letters from about 1980. So there you have it - a grand total of six different emblems to collect!

7. Other variations abound: Green front panels (FAA was reported to have these), Front panels labeled in Spanish, and (hold onto your hats) the G-133F Receiver from Ling-Temco-Vaughn (LTV) began life in the Collins factory as a 51S-1. It is unknown if these units carried serial numbers in the 51S-1 sequence or even how many were produced.

8. My best estimate of quantities of each type receiver produced are:

51S-1 - 7781

51S-1A - 300

51S-1B/BF - 655

51S-1F/AF - 3625

Total Receivers - 12,361

9. Here are the serial numbers and production location by fiscal year:

1961 - serial 1 to 4; CR/Anamosa

1962 - serial 5 to 353; CR/Anamosa

1963 - serial 354 to 965; CR/Anamosa

1964 - serial 966 to 1750; CR/Anamosa

1965 - serial 1751 to 2536; CR/Anamosa

1966 - serial 2537 to 3479; CR/Anamosa

1967 - serial 3480 to 4831; CR/Anamosa

1968 - serial 4832 to 5843; CR/Anamosa

1969 - serial 5844 to 6722; CR/Anamosa

1970 - serial 6723 to 7434; CR/Anamosa

1971 - serial 7435 to 8198; CR/Anamosa

1972 - serial 8199 to 8926; CR/Anamosa

1973 - serial 8927 to 9364; CR/Anamosa

1974 - serial 9365 to 10,375; CR/Anamosa

1975 - serial MCN12,000 to MCN12,224 plus about 124 "earlier numbers"; CR/Anamosa

1976 - serial 13,000D to 13,535D; Richardson, TX

1977 - serial C30,000 to C30,099; Toronto, Canada

1978 - serial C30,100 to C30,269; Toronto, Canada

1979 - serial T5001 to T5245; El Paso, TX

1980 - serial unknown, est. qty 200; Salt Lake City, UT

1981 - serial unknown, est. qty 200; Salt Lake City, UT

1982 - serial unknown, est. qty 200; Toronto, Canada

10. How many front panel colors can a 51S-1 come dressed in? Believe it or not - there were a total of six colors: dark gray, ICF gray, FAA gray-green, gray, green, and gray enamel. Only a few units probably used these variations. If it looks strange - don't repaint it - it just might be original!

11. The Collins engineer responsible for designing the 51S-1 was Ed Andrade, WODAN - The same fellow who earlier brought forth the Collins 51J-4 and the KWM-2! This month's issue of Shortwave Magazine from Britain contains a long glowing review of the Collins 51S-1 receiver.

55G-1 LF/MF Tuner and 312B-3 Speaker

Here are the results of the survey and analysis on the 55G-1 LF/MF Tuner and 312B-3 Speaker. Based on the survey results and other incidental bits of information, a model of serial numbers for each year of production was constructed. The model is not perfect and new information may cause revision to the model.

1. The production year is the Collins Fiscal year which started Sep 1 of the previous calendar year and ran through Aug 31. For example, FY1960 ran from Sep 1, 1959 through Aug 31, 1960. In 1974, it was changed to run from Oct 1 to Sep 30.

2. Type numbers and top level Collins Part Numbers:

55G-1, 522-3982-xxx, cabinet mount

55G-1F, 777-1470-001, rack mount

312B-3, 522-1166-000

3. The 55G-1 is the low frequency tuner for 200 to 2000 kc for use with the 51S-1 receiver. It is generally thought to be a scarce item, however, the survey turned up 18 units including two 55G-1F models. The Collins logo emblems known to exist are the WE, RE, and R/C. The WE to RE change appears at about sn 470; and from RE to R/C at sn T5000. The serial numbers and production location by fiscal year are:

1974 and earlier - sn 1 to approx. sn 900, CR/Anamosa

1975 - sn MCN700 to approx. sn MCN800, CR/Anamosa

1976 - sn 1000D to approx. sn 1100D, Richardson, TX

1977, 1978 - sn Unknown, Toronto, Canada probably no production

1979 - sn T5000 to ~ sn T5030, El Paso, TX

1980 - sn Unknown, probably no production

Total production of 55G-1 Tuners is estimated at 1,130 units.


4. The 312B-3 Speaker is another seemingly scarce item for collectors. No component date codes have been obtained so it is impossible to determine the date of manufacture other than by the logo emblem. The serial numbers and year (by logo) are:

1969 and earlier (WE) - sn 1 to sn 1872 (or higher); CR/Anamosa

1970 thru 1976 (RE) - sn MCN1293 to sn MCN3600 (possibly as high as sn MCN4296) CR/Anamosa

1977 and later (R/C) - sn T5000 to T5303; Richardson, TX and Toronto, Canada and El Paso, TX

Total production of 312B-3 Speakers is estimated at 5,178 units.

5. If you do the math, we have 12,361 51S-1 Receivers but only 6,308 speakers (the 55G-1 has a speaker). So what were the other 6,053 receivers connected to - headphones and telephone lines? Well, there is another little known 51S-1 accessory called the 312C-1/2/3 Rack Mount Speakers. The 312C-1/2/3 had the full size S/Line trim ring on a 19 inch rack panel and behind the grill was 1, 2, or 3 individual speakers. Is anyone collecting these units? 

CCA First Wednesday AM Night

The CCA is now hosting a "First Wednesday" monthly AM Night. The purpose of the new AM Night is threefold. First it gives a specific date and time to fit into one's busy schedule. Second it gives one a reason to drag out that "Old Boatanchor" and fire it up on AM.

AM Night is not restricted to Collins gear. We want everything! Collins, National, Drake, Heathkit, etc...home brew, and anything else that will put out an AM signal! Third it's FUN listening to all the great AM signals! It gives you a chance to listen to almost every imaginable type of AM gear...DX-100's, 32V's, KW-1's...the list is almost endless.

We started CCA AM Night in November of 2000. In December we made a change to our format and changed to anchor stations in all four time zones.

Currently we are on 3880 kcs with the following times: at 07:30 EDT (2330 UTC) Eastern Anchor starts things off; at 08:00 CDT (0100 UTC) Eastern Anchor turns over to Midwest Anchor; at 08:30 MDT (0230 UTC) Midwest Anchor turns over to Mountain States Anchor; at 08:30 PDT (0330 UTC) Mountain States Anchor turns over to Western Anchor.

We are constantly trying to improve the CCA First Wednesday AM Night so the times/timeslots may change in the future. Check the CCA web site for the latest information. Stop by and join us for a fun filled evening of great sounding AM Signals. **73's de Larry WA9VRH**



Amateur Radio Fair in Italy

CCA member Bob (Roberto Leveratto) I1BAW helps organize a annual amateur radio fair in Italy and this year's event was held in the lovely city of Moncalvo. Bob says...."The fair was carried out on a beautiful day under the arcades of the 18th century of the castle of Moncalvo. The participation was good and there were some good bargains. For example, the U.S. Army version of the KWM-2A + 312B-5 + Battery power Supply (with its original "Manual Headquarters, Department of the Army" dated June 1964), some Collins R 390A URR, 51S-1 with 312B-3 external speaker; Hallicrafters Receivers (S20A, SX111, TH46 + SX146, S40); some types of "antique radio"; 6146W tubes; Drake TR4CW and Drake Line C; Swan transceiver for 160 mt. only; Racal radio receiver, many antenna tuners, Collins 312B-4, and many other radio accessories.

Between the visitors there were some OM from Switzerland, Hungary and France. At 11 o'clock we stopped for a minute of silence in memory of the victims of September 11th. We then had some QSOs on 40m in CW mode.

At 12.30 some OM had a typical country lunch. After lunch, we had an exhibitor drawing for some CCA buttons and some boxes with six bottles of Italian wine. The fair continued throughout the afternoon until 5pm. Good bye until the next edition which will be held May 4th 2002." If you would like to participate in next years fair, please contact Bob I1BAW via his son Max (IW1FBR) email address at iw1fbr@tin.it. Photo L to R: I1POR Gianluigi; I1BAW Bob; HB9DPH Alessio; I1RRT Roberto



Join Us on the Air!



•Sunday 14.263 mHz
at 2000Z

•Tuesday 3805 kHz
at 8pm CST

•Thursday 3875 kHz
at 8pm CST

•Friday (West Coast) 3895 kHz
at 10pm CST

Sunday for Technical, Buy, Sell and Swap.
Tuesday, Thursday and Friday for Ragchew.

THE COLLINS VIDEO LIBRARY!

- The R-390A Addendum Video
 - The R-390A Video
 - The Collins Amateur Radio Equipment Video Spotter's Guide
 - The Collins 75A-4 Video
 - The Collins KWS-1 Video
 - The Collins KWM-2 Video
 - The Collins 75S-3 / 32S-3 Video
 - The Collins 30S-1 Video
 - The Collins 30L-1 Video
 - '91, '92 & '97 Dayton Videos
- also the PDC-1 kit that converts ANY average reading wattmeter to true PEAK READING even the Bird 43!

HI-RES Communications, Inc.



Voice & Fax (248) 391-6660

E-Mail: info@hi-rescom.com

Web Site: www.hi-rescom.com



Visit the CCA web site at:
www.collinsradio.org

The **Signal** is published quarterly by
The Collins Collectors Association
Copyright 2001, all rights reserved.

Sandy Meltzer, KW6KW, President
John Bess, WA5VVT, Vice-President
Gayle Lawson, K0FLY, Vice-President
Larry Saletzki, WA9VRH, Vice-President
Floyd Soo, W8RO, Vice-President
Ron Freeman, K5MM, Treasurer
Mike Stover, W9MWS, Mem. Secretary

The Signal

H Michael Crestohl, W1RC/VE2XZ, Editor
tel: 802-658-9554 w1rc@amsat.org

Sandy Meltzer, KW6KW, Production

The CCA is licensed by Rockwell Collins to
reproduce and disseminate Collins copyrighted
documents related to Collins amateur radio products.

The Collins Collectors Association

P. O. Box 10459

Phoenix, AZ 85064-0459

www.collinsradio.org

Editor's Operating Desk

by H Michael Crestohl, W1RC/VE2XZ


Editor, The CCA Signal

A lot has happened since the last issue of THE SIGNAL was sent out. For one thing the memories of September 11th are still very vivid; over 6,000 of our neighbors are dead; our countries are now at war with international terrorism and, unlike any other war in our history, we don't even know who the enemy is and where they are. Scary!

Amateur Radio has a major part to play in winning this effort. In WW-II we "hams" made a major difference. 40,000 of the 50,000 amateurs joined the military or worked in governmental or war-related service. That conflict was truly the first electronic war, and of all the technological developments, and there were many, it has been said with much authority that RADAR was what won it. You can bet your best KWM-2A that many of the guys who developed RADAR were hams?

In this war when terrorists attack us as they did on September 11th, telephones and cellular phones are the first thing to go. Don't think for one minute that the attacks on the World Trade Center and the Pentagon are one-time events. The only reliable communication we have in such times is Amateur Radio. Which means we have to get our act together and get organized and fast. Now is the time we get to pay back our fellow citizens and the powers-that-be for allowing us to access our priceless radio spectrum and use our incredible operating privileges that many of us have simply taken for granted as rightfully ours over the years and help preserve them for generations to come.

Operating, repairing and preserving our beloved Collins radios are very well and good but there is a much more important job at hand. It is the duty and responsibility of every radio amateur in the USA and Canada to make their stations and themselves available to the appropriate emergency response organizations in their locality, be it the Red Cross, Law Enforcement, the Military; whoever is the responsible emergency preparedness agency in your area. Contact your area's ARRL Section Manager or Emergency Coordinator and let them know what you have to offer in the way of equipment and skills. Hopefully they will never be needed but it's important to be prepared for anything these days. We never expected an enemy to attack the foremost symbol of the Capitalist system in our largest city and wreak such havoc but they did. We cannot understand it but we don't think like terrorists because we are a civilized nation. They are not - these people are pure evil and must be stopped. We must win this war and our communication resources and skills can help do it. I know there's a lot of technical expertise and talents in this club.

We must put aside any differences we may have created internally and work together to do what we do so well - radio communications - anytime anywhere!!! Once we have prevailed there will be lots of time for our beloved Collins equipment. 

CCA Net Theme Weeks 2001-2002

Theme weeks include **Tuesday, Thursday and Friday** nets plus a special AM night in February. Sunday nets are excluded due to the volume of checkins.

1. **October 9, 11, and 12:** Shake n' howdy: Station/ham profile, first and/or favourite collins rig etc.

2. **November 6, 8, and 9:** S-lines including 30L-1s, 30S-1s and 51S-1s.

3. **November 27, 29, 30:** Station accessories: Speakers, consoles, tuners, watt meters, noise blankers, 312B-5s, phone patches, mobile gear, mics (anyone got a 399C-1?)

4. **December 18, 20, and 21:** KWM-2/2A including troubleshooting tips, Q&A etc.

5. **January 29, 31, Feb. 1:** "Goldust Twins" - KWS-1/75A-4

6. **Wednesday, February 20th** — added AM Night special: Pre-war AM rigs (4As, 20Bs, 150Bs etc), V series transmitters, Collins broadcast transmitters.

7. **February 19, 21, and 22:** History: Winged vs. Round, production runs, model differences etc. Serial numbers: highest, lowest, oddball for all collins amateur equipment.

8. **March 26, 28, and 29:** KWM-380s, HF-380s plus accessories.

9. **April 16, 18, 19:** A-line and J series receivers.

10. **May 7, 9, 10:** 390 /390A receivers, HF-80 series, unique equipment, prototypes etc.

Hope you'll drop by to check-in, make a contribution or just listen along.

Peter, VE3KWM
ve3kwm@rac.ca
Net Manager

Dean, KA6BGW
daprull@aol.com
Asst. Net Manager

CCA Technical Hot Line

501-751-6667

Sorry, no call-backs available!



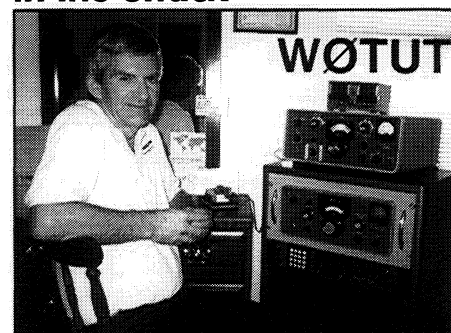
At the Mic with KW6KW

Sandy Meltzer
President, CCA

It's election time again and I encourage all members to vote. We are voting to fill two openings on the CCA Board of Directors. Membership on the CCA Board of Directors requires a major commitment of both time and energy. The Directors are responsible for the overall operations of the CCA including the planning of all CCA events, nets and forums, the care and feeding of the CCA web site, the publication of the Signal, and the recruitment of members to fill key positions such as Treasurer, Membership Secretary, etc.. Board members set the tone of the organization and set its course for the future. Please review the biographies of the nominated candidates carefully and cast your vote within the time allotted.

CCA Board Member and V.P. Floyd Soo W8RO has decided not to run for another term. I want to take this opportunity to thank Floyd for his many years of service to this organization. Floyd was one of our earliest members and he helped make the CCA the largest collectors organization in amateur radio. Floyd's innovative ideas help build the foundation of the CCA and his tireless efforts help implement many of the Collins forums we have today...including the Collins Reflector. Floyd will continue to be our Collins Reflector administrator and will make sure our moderators continue to do an excellent job of keeping the list focused on Collins Radio instead of "flaming" and the self-promotion of the few among us who believe the CCA was created for their own personal gain and financial benefit. Thanks Floyd for many jobs well done!!

In the Shack



Shirley "Joe" Prewitt, W0TUT

Joe only works CW, but says he makes an exception to check into the CCA's Sunday net. Joe says he has worked over 190 countries since Oct 1998 on CW using his "old" Collins equipment. Congratulations Joe!