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R_x

for your 70K-2 PTO



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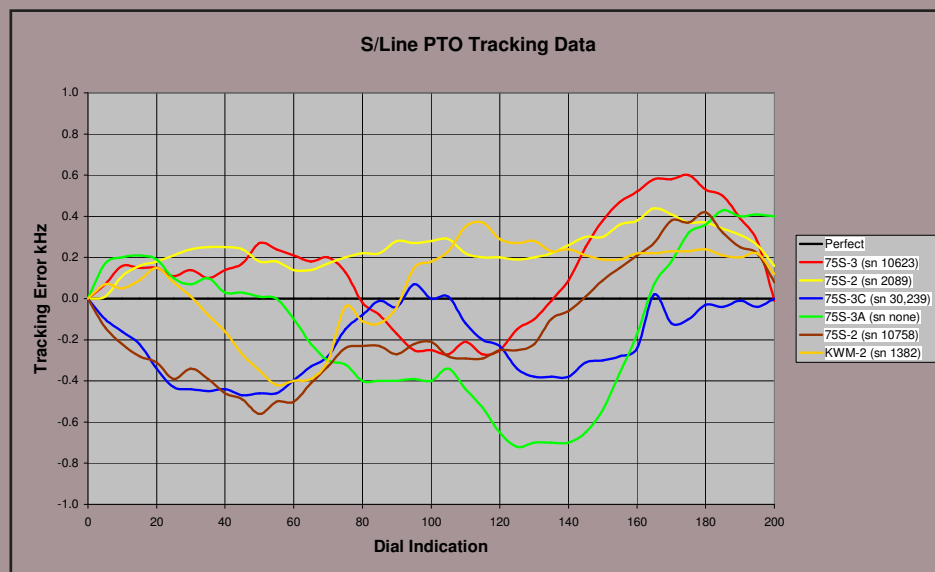
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In the News

- AWA Convention Great Success
- CCA to Elect Two Board Member
- Member Election Notice (p 16)
- Website Statistics Surge

http://www.wb4hfn.com/COLLINS/UserArticles/PTO_Servicing/70K2-PTO_Service.htm



From the Editors' Desk

by Bill Carns, N7OTQ & Don Jackson, W5QN

It constantly amazes me when I use my 40s and 50s Collins rigs, that they are as reliable as they are and that they are pushing 70 plus years old in some cases. I guess I have been very lucky, but I am rarely bothered with capacitor issues and mostly just have to pay attention to the contacts and relays in those aging beauties. I have a number of rigs that never have had any significant maintenance.

At the heart (physically and functionally) of most of these rigs is a PTO that drives the performance that we have come to love. In their wildest vision, I do not think the engineers at Collins would have ever expected them to be, in many cases, performing at or close to specification some 60 or 70 years after they were manufactured and calibrated at the factory.

Recently, and periodically over the years, there have been threads on the reflector and requests for information or help regarding PTO performance and maintenance. I thought it would be appropriate to batch up a couple of real good PTO articles that have been written by two of our significant contributors, Rod Blocksom, K0DAS, and Dick Weber, K5IU. I think you will find these two writings very helpful in understanding what to expect from your PTO some 60 years after it was manufactured - and also how to get the most out of what you have. I do hope that someone that has some good experience at overhauling PTOs (I do not) will step up and, the next time they do

one, take some good illuminating photos and write us a tutorial on how they should be maintained or restored.

Now to change the subject.... Recently, Jim Stitzinger, WA3CEX, had an opportunity to visit with Warren Bruene, W5OLY, at his residence in Richardson, Texas. Warren still loves to talk Collins and talk about the times when he worked there and contributed so much to communications RF technology and to our pleasure operating his beautiful designs.

Warren pulled out a batch of paperwork that he had been saving and gave a copy to Jim. This paperwork was quite a find. Put together in the mid-60s (we do not know exactly when), it provides a perspective on when different models of Collins Radio equipment went into production and when it stopped production.

It is a 7 page document that lists models from the early 30s through 1965 and was apparently done by the then emerging Kinoplex Microwave (multiplexing) group to demonstrate the development of related communications technology. As such, they have jumped over many models and they apparently did not always have an accurate source of production period data, because we have found obvious errors in a few of the data points. All of that being said, this is such a rare insight into the production period for the various models that are listed that we thought the data should be put on the website for critique. In return for this data, I am going to propose a two stage process. I have carefully con-

verted the original bar chart format to an Excel spreadsheet. This is what will be put up on the site. As soon as this goes to print, I will start a second version and add as many "forgotten" models as I can. **The Signal** published an article on the "Early Days" at Collins Radio and this included a list of equipment and its introduction date. These two documents will be merged and updated from data that we have here, data that Rod Blocksom has in his surveys, and listings from various significant historical websites. Then - here is your homework assignment for this quarter - data that you all can provide will be added to the mix.

Many of you have a history of working with, or working for, Collins Radio. Many of you will be able to tell us right away where there are errors in what has been presented in the "First Draft", and tell us production run dates for even one or two models. We need that new data. By the time we merge the several perspectives that are now available, and take your new contribution and add that, we should have something really significant. At that point in time, we will publish a final document which will be inserted with one of our quarterly issues. In the meantime, this data that we now have represents a very good perspective that was published by Collins.

Bill Carns, Editor
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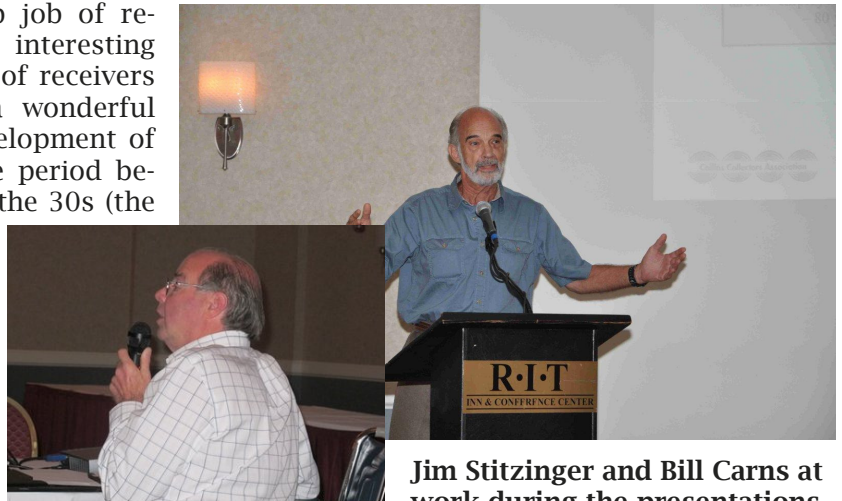
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American Wireless Association Conference & CCA Participation Report

As many of you know, this past August (running from the 20th through the weekend), the Antique Wireless Association (AWA) held their annual conference in Rochester New York. This was a particularly interesting conference for us because the AWA is a very effective and well run organization and they had chosen Collins Radio as their conference "Theme" and had invited the Collins Collectors Association to participate. We accepted and many of you saw that announcement in the last *Signal Magazine*. As president, I was invited to talk at their Thursday night theme dinner and the CCA also presented two forums centered on Collins Radio receivers.

Karl Bowman, W4CHX, did a bang-up job of researching and presenting some very interesting facts and history on the 51S-1 family of receivers and Jim Stitzinger, WA3CEX, gave a wonderful more general presentation on the development of receivers at Collins. Jim's covered the period between the first announced receiver in the 30s (the 51F-1) and up through the more modern 9000 series of SDR receivers. Jim also did a recap of his restoration of the TSC-60 shelter that he schlepped to Dallas for us last year. This included the HF-80 receivers that were built into this shelter. The CCA owes both Karl and Jim a big Thank You for coming and doing such a great job.



Jim Stitzinger and Bill Carns at work during the presentations

My talk covered the early days at Collins starting from Arthur's childhood experiments and going up to WW 2. It was intended not to be all-encompassing as far as equipment or history went, but rather to paint a picture of the dynamics of this significant and evolving company at a important time in America's history.

In addition, Barney Wooters, AWA member and past Collins employee at Collins Radio in Dallas, gave a touching perspective on the last days of Collins Radio before the Rockwell merger.

We are working on a way to get our presentations, all of which were done in MS Office Power Point, up on the CCA website so you all can have access to them for use as a presentation (if you have the opportunity to represent the CCA) or for information research.

All of the talks were very well received and we were all surprised by the level of interest in Collins Radio. The AWA is predominantly focused on the very early (1910s and 20s) communications and broadcast history and equipment, but there is significant interest in Collins - especially in the time period that my dinner talk covered.

There was also a flea market that started on Thursday and ran through Saturday morning. On one hand it was strange walking through the flea market and seeing an entirely different type of equipment and parts/literature, but then I started to see the overlap with the very early days at Collins.

More importantly, the AWA has a very strong management model and a well done museum, and it gave us food for thought as to the future course of the CCA as we get larger and stronger. I am sure you will see more on that thought in years to come. Suffice to say, that the interaction between the CCA management present and the AWA management gave rise to some good possibilities.

American Wireless Association Conference & CCA Participation Report (Cont'd)

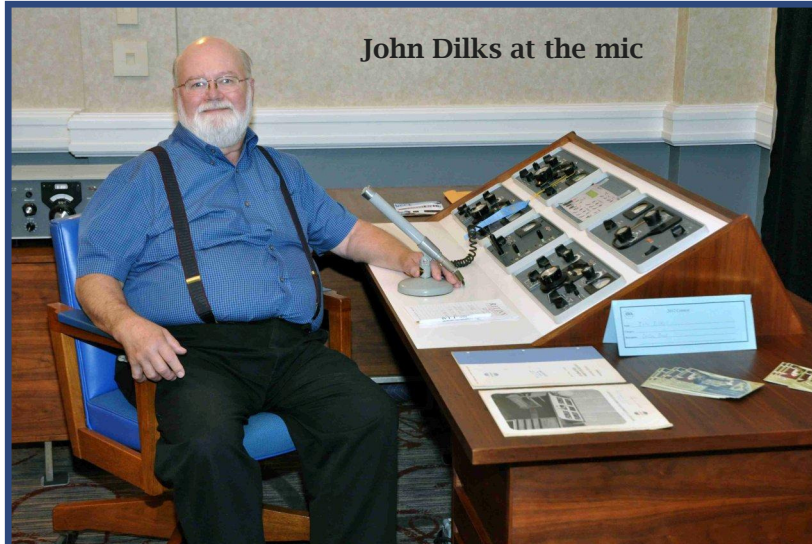


In a future issue of the *Signal* we will be presenting a short article about the AWA written by the Deputy Director, Bob Hobday (N2EVG) and we will be writing an article that will appear in the *AWA Journal* and present the CCA to the AWA membership at large. The cooperation has started.

I certainly want to thank Roy Wildermuth, W2IT, Bob Hobday, AWA Deputy Director and Bruce Roloson, Museum Curator for the AWA, for their hospitality and support as we participated in this very well run event. I also need to mention the support that we got from the event hotel. We stayed at, and the event was held at, the RIT Inn in Rochester. This is the first time I have ever felt compelled to do this, but that hotel is HIGHLY recommended if you are in the area. The food, the staff, the facility - and their support - were all first class. We needed to get some kind of antenna up in the air for our Collins Desk that John Dilks provided and the hotel not only allowed us to do that, but provided two significant maintenance staff people who designed mounts for masts, climbed onto a two level roof, allowed us on the roof, and drilled holes in their building so we could put up what turned out to be a killer antenna. First contacts were with Poland and London England.



American Wireless Association Conference & CCA Participation Report



John Dilks at the mic



First Place

Thanks John for bringing your prize so we could all share.

A TD-1 on the roof gave him a big signal and Poland and London went in the log early.



Best in Show

Speaking of John Dilks - John, as I said - and even with a very bad injured back - disassembled his prized actual Collins Radio manufactured S-Line desk, loaded it and the equipment into a large trailer, drove to western New York, unloaded and set it all up at the event and provided some of the operation time support. Then, of course this all had to be reversed. John, **Thank You** so much for doing that and it made the entire experience truly memorable. For those of you that don't know, John writes a column about the older equipment and days of Amateur Radio for the *ARRL QST Magazine*. I should mention that John's Collins Desk won First Prize in its class during the judging of displays and then - no surprise - won "Best In Show".

Following the Forums and talks, on Saturday morning, there was an auction of older literature, parts/tubes and equipment and we did not go home empty handed. Food for another article followed me home thanks to Karl Bowman who had driven from North Carolina and carried my newly acquired Collins 10K (at least we think it is a K) RF deck out of either a 150C or 30FXB..... and, by the way, do you all remember the "Mystery" RF deck that was on the cover of the *Signal Magazine* in the Q3, 2010 issue that had the article on the early equipment of Collins Radio? Well, the mystery is almost solved. My new acquisition is almost identical to Jim's mystery radio and further research has determined that we probably have the 10K RF deck from the 150C and or 30FXB - and maybe also the 300B.

Bottom line, what a great time - more food for thought - the start of a new closer relationship between our two organizations and I hope that you all will consider what is offered by the AWA and support them as well as the CCA.

CCA

Service Line - R_X for your S-Line PTO by Rod Blocksome and Dick Weber



Editor's Note: The Service Line this month is a compilation of three pieces that, together, address many of the questions regarding the performance, servicing and assembly of the S-Line 70K-2 PTO and its dial components. Rod Blocksome has written a nice evaluation of what we should expect from our, in some cases, 60 year old PTOs. Dick Weber, K5IU, has contributed his perspective on making the PTO more stable, and I have paraphrased the essential components

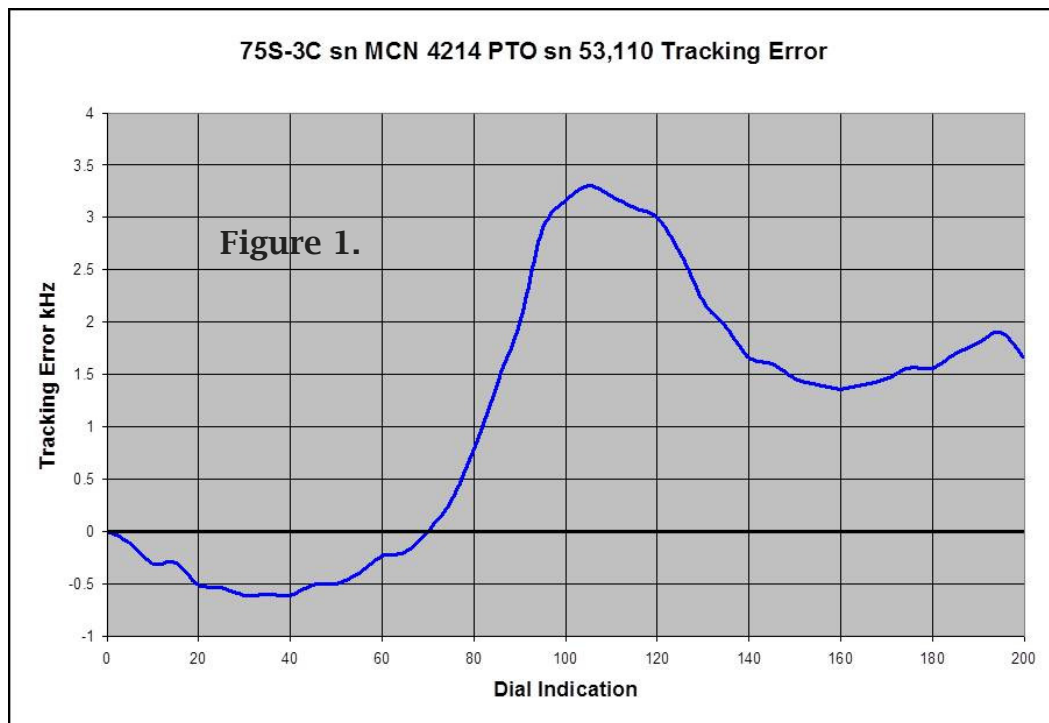
of SB1011 for the S-Line which addresses how to remove, disassemble and replace and align an S-Line PTO and dial assembly. The entire SB1011 is available on the CCA website by clicking on the [PTO Service and Specifications](#) link on the home page. Thanks again to Rod and Dick for their contributions.

Service Line I - Frequency Tracking Accuracy of the 70K-2 PTO by Rod Blocksome

Today some of the Collins S-Line equipment has been around for 60-years. We have all experienced the lifetime of many components such as electrolytic capacitors, tubes, and assorted other parts in these radios. A few winters ago, I wondered how the frequency accuracy of the ubiquitous 70K-2 PTO was holding up in this ageing process. The instruction books state that the frequency accuracy of the dial reading is within 1 kHz. I have a very accurate frequency counter, so I set about measuring the PTO frequency at every 5 kHz dial division and then calculating the error. I measured my late model 75S-3C sn MCN4214. The results are shown in Figure 1. I was horrified. I used this receiver as an IF for my weak signal transverters on 50 through 1296 MHz. Thus it was always down on the low end of the dial.

My next thought "This can't be normal - something's wrong with the PTO". Nothing was amiss inside and I had a spare PTO, so I installed it and set the original PTO aside for future surgery.

But just what could one expect from these PTOs? Do they typically still meet spec after all these years? I had to find out. So, one at a time, I put different radios on the bench and tediously meas-



Service Line I - 70K-2 Tracking Accuracy (Cont'd)

ure each one. The results were gratifying, in that they do meet the specification. Several pieces were well within the specification as they showed a maximum error of ± 0.5 kHz. The plots for six of my rigs are shown in Figure 2.

During the measurements, I found that the “end spread” on my 312B-5 PTO was not set correctly. I was pleased to note, after setting the “end spread” per the procedure in the instruction manual, the tracking error was reduced to well within specification as shown in Figure 3.

One tip in making these measurements: If your frequency counter does not present a 50-ohm load to the PTO output, you will need to put a 6 to 10 dB attenuator in the line. Otherwise, the reactive load varies with frequency and “pulls” the PTO thereby introducing an error in your data.

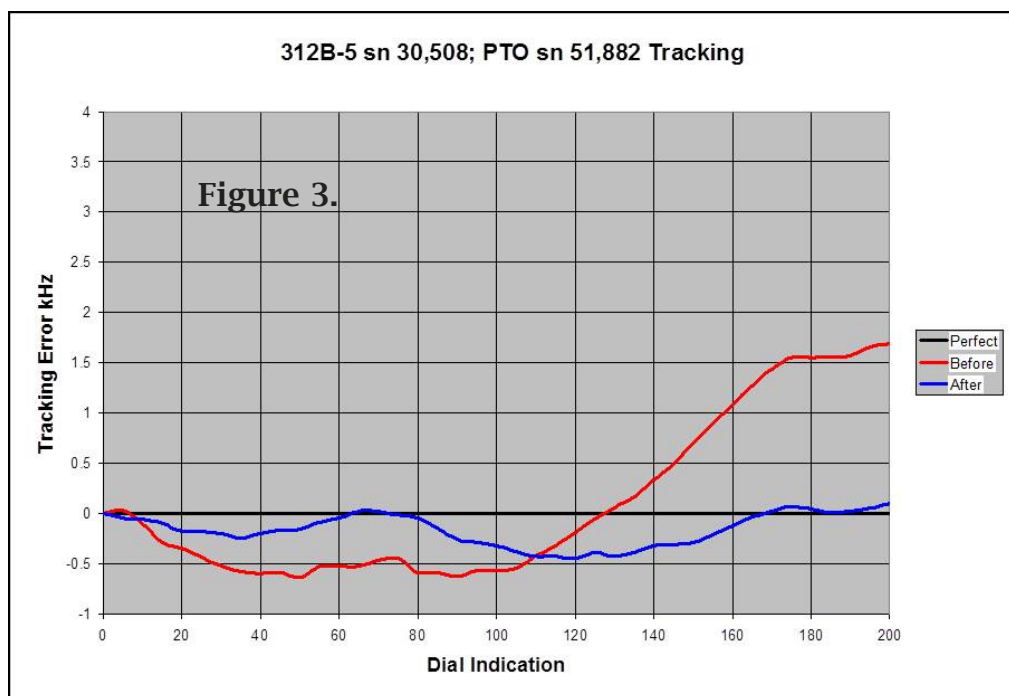
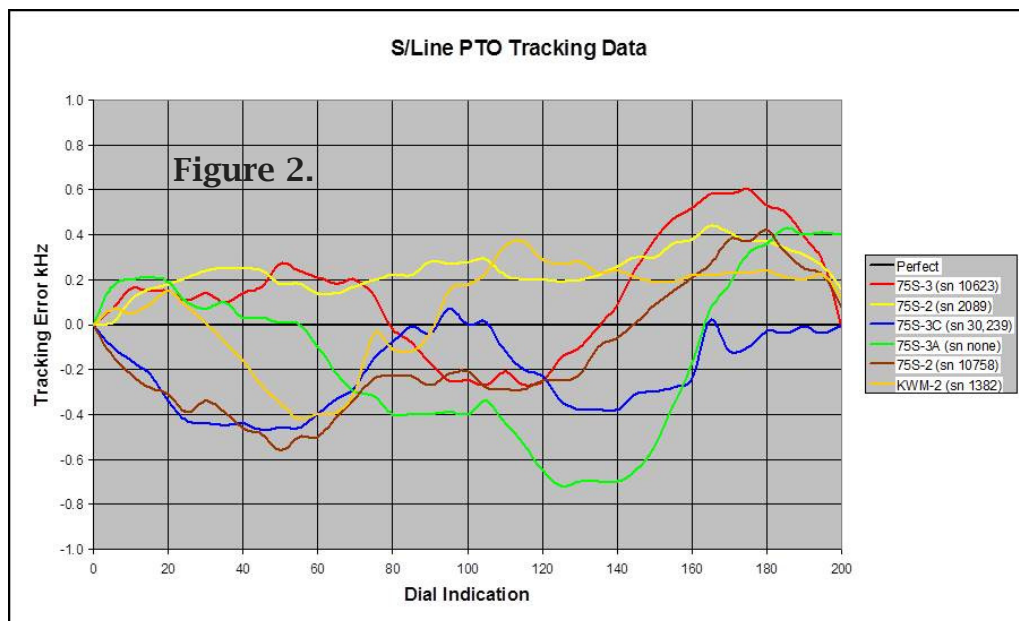
I hope this information proves useful as you repair and restore S/Line equipment.

Author Information:

Rod Blocksme, K0DAS is retired from a career with Collins Radio in Cedar Rapids, Iowa where, among other responsibilities, he was Project Lead on a number of the HF-80 family members including the HF-8023 Solid State 1 kW PA. In addition, he is passionate about the Collins history that we all love, and many of his writings deal with past anecdotes and the history of equipment and the company.

He is also a collector of Collins and past curator of the Rockwell Collins company museum. You are always welcome back Rod.

CCA



Service Line II - Taming 70K-2 PTO Frequency Shift vs. Voltage by Dick Weber, K5IU

Over the years I've read a number of posts on the CCA reflector and other places commenting on the PTO frequency shift in KWM-2s when going from receive to transmit. This shift has been stated to be in the 30-150 Hz range as a result of the B+ to the 6AU6 PTO tube dropping about 25-30 Volts. This was fixed in later KWM-2s with the addition of a Zener voltage regulator, which is also a common modification made by owners to these rigs that were built without this feature.

I don't own a KWM-2, but I do have several S-Lines. In my case I do CW only working DX. I became curious about their PTO frequency shifts when going from receive to transmit as quite often I use them in transceive using the receiver PTO. In actuality I wasn't concerned about my 32S-3As or 75S-Cs, but my 75S-3A as the 3A's PTO B+ is not regulated - while it is in the other rigs.

In the process of looking at the PTO shift in my 75S-3A, I encountered an issue during testing that took a while to resolve due to the seemingly bizarre behavior of a 6AU6 discussed later. Once resolved, testing took a more normal course. When done, I had characterized the PTO's frequency variations with line voltage variations, found there can be differences in the way PTO tubes behave, and incorporated a Zener diode regulator that essentially eliminated PTO frequency variations as the line voltage changed.

The first test I did was to see how much the line voltage in my radio room dropped as my 32S-3A was keyed to full output as compared to it being in standby while all other equipment was on. In my radio room there are two 115 lines - one is the original line into the room and the other is a dedicated line. The worst line drop was measured to be 2.4 Volts for the original line and 2.1 Volts for the dedicated line with both being in the 120-124 Volt range. In addition, I've seen about 2 Volts of line voltage variation from time-to-time. From this I assumed a worst-case line voltage variation of 5 Volts for assessing the PTO frequency shift in my 75S-3A, which was built in early 1961. I've serviced the PTO, but have neither rebuilt it nor replaced any of its original parts.

The graph in **Figure 1** shows the measured PTO frequency variation as a function of line voltage using four JAN 6AU6WC tubes. The line voltage was varied using a variac and digital voltmeter while the frequency counter in an HP8640B was used to measure the PTO frequency. In these plots the frequency

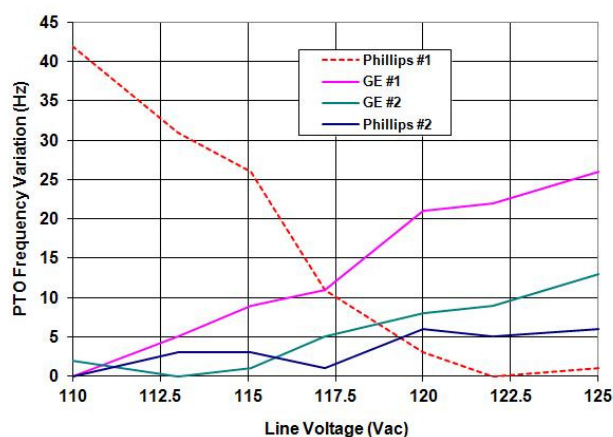


Figure #1 - 75S-3A PTO Frequency Change vs. Function of Line Voltage

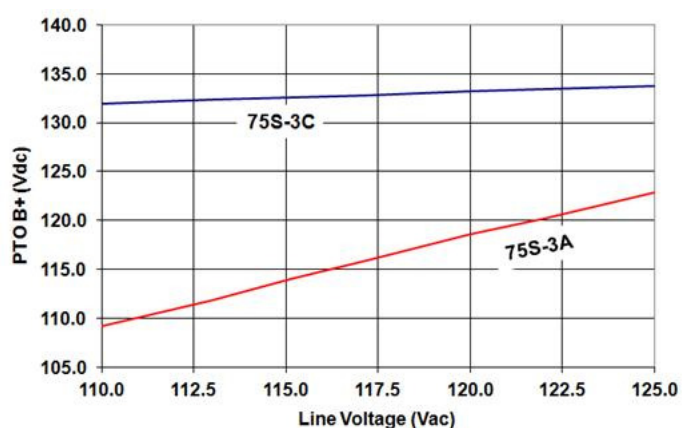


Figure 2 - 75S-3A and 75S-3C PTO B+ Voltages as a Function of Line Voltage (Tube Side of R68)

Service Line II - Taming the 70K-2 PTO by Dick Weber, K5IU

variation shown is relative to the lowest frequency measured during the test for each individual tube. Measurements were taken after the rig warmed-up for an hour with each new tube warming up for an additional 30 minutes after being quickly swapped in place of the prior tube under test.

From **Figure 1** you can see there are noticeable differences in the PTO frequency variations for the four tubes as the line voltage was varied. The Phillips #1 tube with a 5 Volt line voltage swing resulted in a worst case PTO variation of about 23 Hz. For the three other tubes the worst variation over a 5 Volt line voltage swing was 12 Hz. What is interesting is the two Phillips tubes are brand new JAN tubes that were in the same sleeve when I bought them. They have the same date code and lot number. Similarly, the two GE tubes are new JAN tubes that were in the same sleeve when I bought them. Here too they are the same date code and lot number. Based on the above test data, you should expect different tubes to behave differently. I've done testing with only four tubes, which is not a very large sample. So I don't know how common it is for tubes to behave so differently or if worse variations are possible.

As part of further testing, I measured the B+ on the tube side of R68 as the line voltage was varied to my 75S-3A. I also did this for one of my 75S-3Cs. The results are shown in **Figure 2**, which shows the zener voltage regulator in the 75S-3C is doing its job.

At this time you need to decide if the ranges of PTO frequency variations are acceptable when using the 75S-3/3A's PTO during transceive operation. As a means to perhaps help you become paranoid about this issue, I measured the PTO frequency variation for the same 75S-3C mentioned above as a function of line voltage. The plot in **Figure 3** shows the variation is about 2 Hz over a line voltage swing from 110 to 125 Volts. After this, I decided to build a Zener diode regulator to stabilize the B+ going to the PTO in my 75S-3A.

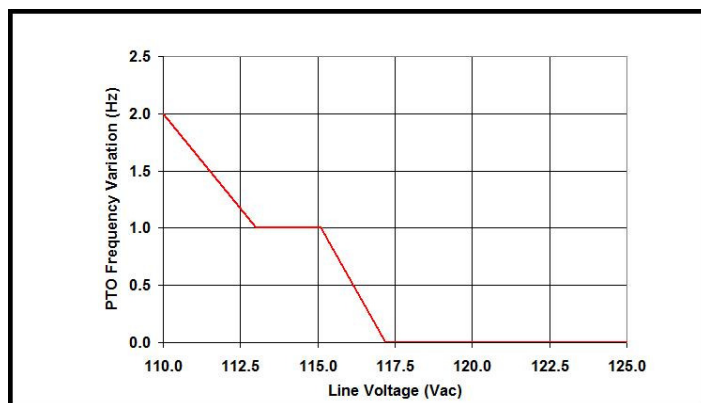


Figure 3 - 75S-3C PTO Frequency Variation as a Function of Line Voltage

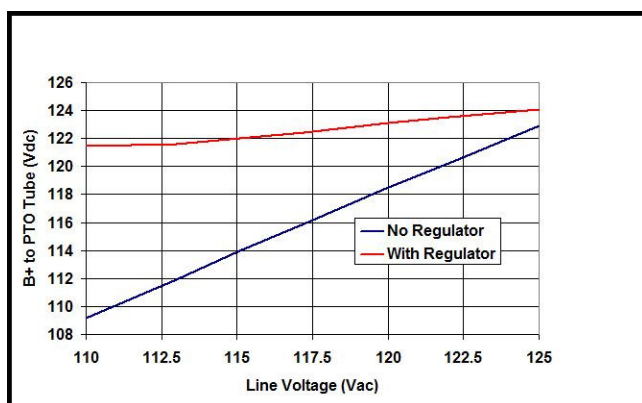


Figure 4 - 75S-3C PTO B+ With and Without Regulator

There were two steps to installing a zener regulator in my 75S-3A. The first step was to build a 120 Volt regulator outboard of the rig to be sure it was regulating the B+ as intended and that the PTO's frequency variation as a function of line voltage improved. The second step was to figure out the implementation of the regulator and where to mount it. But first I'm going to cover the resulting improvement with the 120 Volt regulator installed. Then I'll discuss the regulator circuit and installation.

Service Line II - Taming the 70K-2 PTO by Dick Weber, K5IU

Figure 4 shows the B+ fed directly to the PTO in my 75S3-3A with and without the regulator installed. Over a line voltage range of 110-125 Volts, the B+ to the PTO went from a 13.7 Volt swing without the regulator to 2.6 Volts with the regulator.

Over a 5 Volt line voltage swing, the B+ goes from a spread of 4.2 Volts without the regulator to a worst case of about 1 Volt with the regulator. Although the regulator is working, the real test is its effect on the PTO's frequency variation.

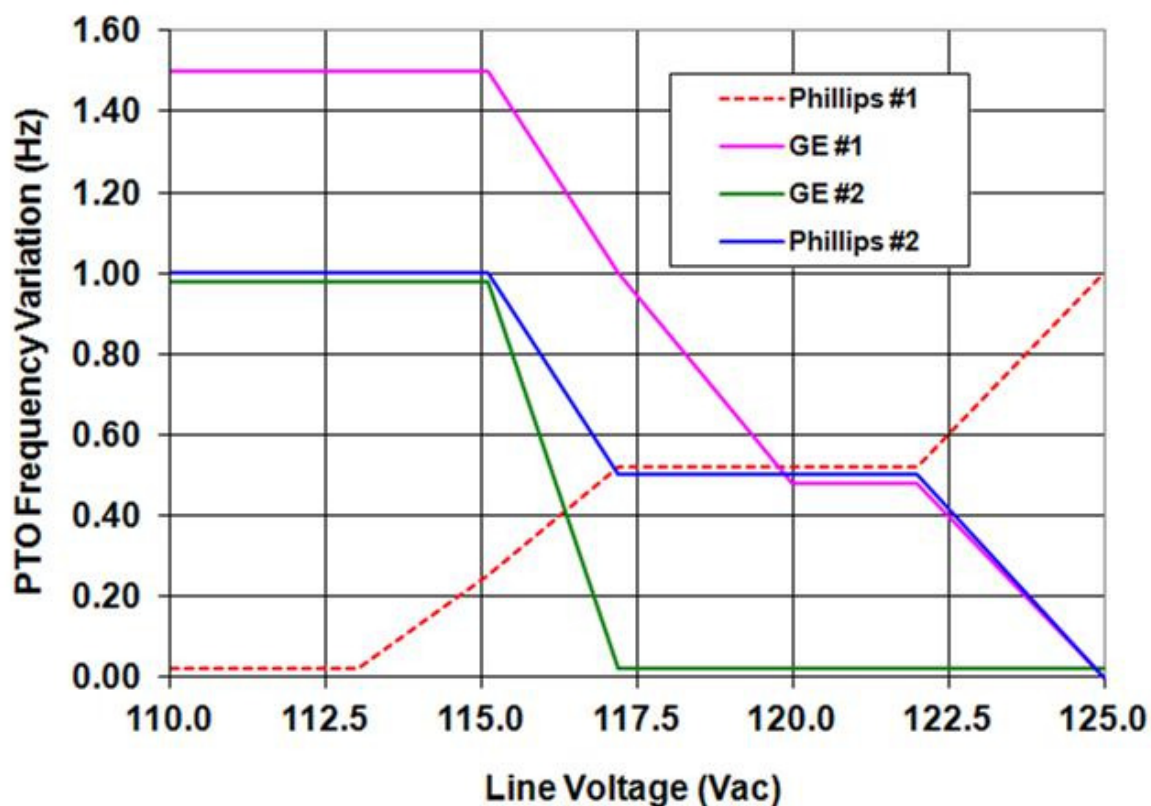


Figure 5 - 75S-3A PTO Frequency Variation as a Function of Line Voltage Using the Same PTO Tubes as in Figure 1 With the Zener Regulator Installed.

(Four runs each tube with data averaged & data artificially separated by 0.02 kHz where overlapped)

This is shown in **Figure 5**, which is made using the same four tubes used for **Figure 1** including the errant Phillips #1 tube.

Not considering the Phillips #1 tube, the improvement in PTO frequency variation was a bit of a surprise since I was expecting variations more in the 2-3 Hz range over the line voltage range of 110-125 Volts. There was another surprise. Prior to the installation of the regulator, the three similarly behaving tubes had an increasing PTO frequency with increasing B+. But after the regulator was installed, there was a decreasing PTO frequency with increasing B+. The Phillips #1 tube also did a flip-flop.

Since the regulator is running in the 122 Volt B+ range, I expected the Phillips #1 tube to appear to be "fixed" because its affect on PTO frequency variation is near zero to very slightly positive when operat-

Service Line II - Taming the 70K-2 PTO by Dick Weber, K5IU

ing in the 122 Volt B+ range. And it does appear so, but this brings up an interesting issue. If Phillips #1 tube's downward slope was shifted about 7-8 Volts to the right from that shown in **Figure 1**, there could have been a resulting variation more likely in the 15-23 Hz range without the regulator over a 5 Volt line voltage swing if the nominal line voltage was in the more likely 120 Volt range. This same line voltage swing would result in a regulator output variation of about 1-1.5Volts, which could give about a 4-6 Hz PTO frequency variation. Not as good as the variations seen with the three other tubes as shown in **Figure 5**, but realistically undetectable on the air.

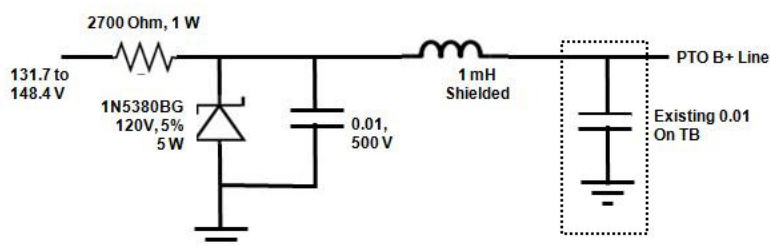
Are there 6AU6s are out there worse than my Phillips #1? Is the steepest part of their affect on PTO frequency variation shifted to the right 7-8 Volts as compared to that shown in **Figure 1**? If so, without a regulator a 5 Volt line voltage swing could give a PTO shift in the 20 Hz range. If you're not paranoid about the PTO frequency shift in your 75S-3/3A at this time, you might wonder whether or not you have a 6AU6 like my Phillips #1 ... or maybe a worse one. Regardless, I'm pleased with the results. Even errant tube Phillips #1 was tamed.

When considering the design of the regulator I measured the B+ at C59A, C59B, and at the tube side of R68 with a line voltage range of 110-125 Volts. On the 75S-3/3A schematic the voltage from C59B is labeled as 140 Volts and for C59A it's 130 Volts, which is fed to R68. The results of this test are shown in **Table 1**.

Line Voltage	C59B	C59A	R68 tube side	R68 Drop	R68 Current (A)
110.0	131.7	118.1	109.2	8.9	0.0019
113.0	135.1	120.8	111.9	8.9	0.0019
115.1	137.5	122.9	114.0	8.9	0.0019
117.2	139.6	124.9	115.9	9.0	0.0019
120.0	143.1	127.8	118.6	9.2	0.0020
122.0	145.2	129.6	120.2	9.4	0.0020
125.0	148.4	132.4	122.9	9.5	0.0020

Table 1 - Measured B+ Voltages at C59A, C59B, and Tubes Side of R68

In looking at the B+ fed to the PTO in a 75S-3B, 32S-3, and KWM-2 you'll find all get 130 Volts or more - while the 75S-3/3A gets a nominal B+ fed to its PTO (tube side of R68) of about 114 Volts. Based on this and the voltages in **Table 1**, I decided my regulator would put out 120 Volts. To do this, the decoupling provided by R68 of 4700 Ohms would be replaced by a 1 mH shielded choke, which eliminates the 9 Volt drop across R68 and provides 15,700 Ohms of decoupling. In addition, I decide to get the B+ from C59B, which ensures adequate voltage to hold-up a 120 Volt Zener regulator even if the line voltage dropped to 110 Volts. With 131.7 Volts minimum from C59B, a PTO draw of 2 mA, and a 120 Volt Zener, a simple regulator results as shown in **Figure 6**.



**Figure 6 - Zener Regulator
for 75S-3/3A PTO B+**

Service Line II - Taming the 70K-2 PTO by Dick Weber, K5IU

The regulator was built on a modified, vertical terminal strip mounted using one screw of the XTAL OSC OUTPUT (J1) jack along with a grounding lug. The Zener diode, 0.01 cap, and resistor were mounted to the terminal strip. The 1 mH shielded inductor was mounted at the terminal where the B+ line from the PTO secures. In addition, R68 was removed from the PTO terminal strip while the 0.01 cap to ground from the PTO B+ lead connection point was kept. The pictures in **Figure 7** show the modified, vertical terminal strip and shows it installed and wired in place. Next I will show where 140 Volts was tapped into and how the choke was secured to the PTO terminal strip.

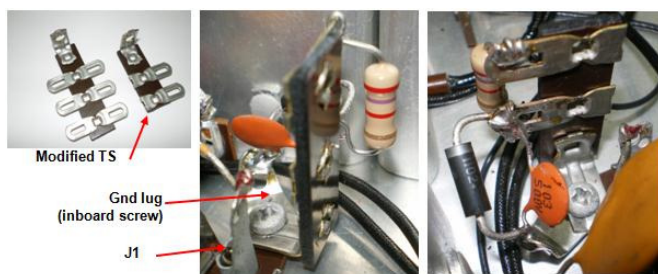


Figure 7 – Installed Zener Regulator Mounted on a Vertical Terminal Strip at J1

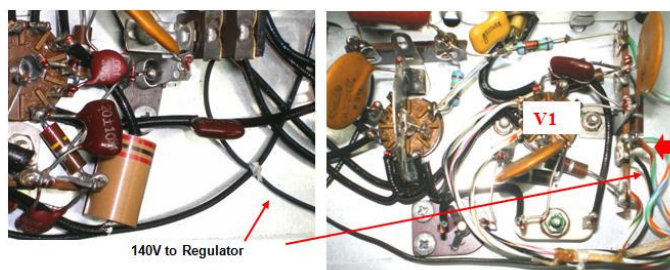


Figure 8 – 140 Volt Source and Line Routing

A readily available spot to get 140 Volts is the terminal strip just behind V1 – second lug from the right. This is shown in **Figure 8** along with how a #24 wire was routed to the top lug of the vertical terminal strip.

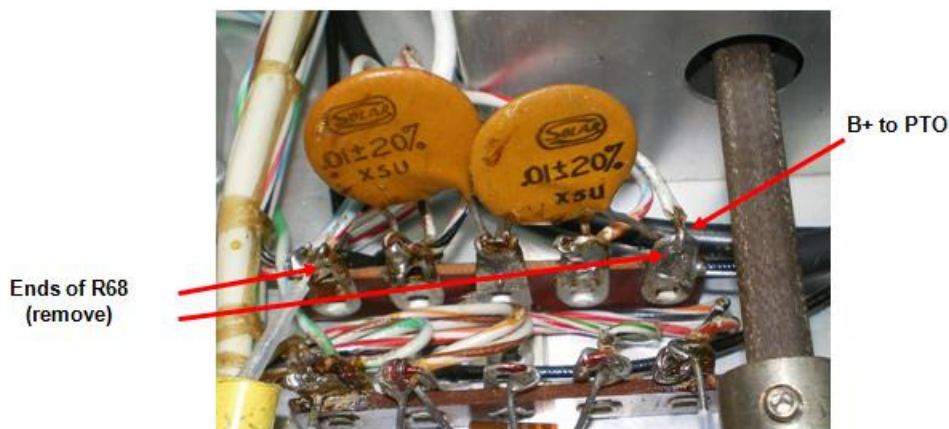


Figure 9 – PTO Leads Terminate in This Terminal Strip

The leads from the PTO go to the terminal strip shown in **Figure 9**. R68, which is normally mounted to this terminal strip between the two end lugs, was removed. The remaining task in this area was to connect the regulated B+ from the regulator to the right hand lug of the terminal strip. Since there is no unused lug nearby to mount the choke to and since the choke needs to be right at the terminal strip, a choke-lead assembly was used as shown in **Figure 10**. The choke was soldered to a #24 lead and covered with shrink tubing. The choke end of the assembly was soldered to the right lug of the terminal strip and the lead end was routed under the fiberglass shaft of the band switch to the regulator as shown in **Figure 10**.

Service Line II - Taming the 70K-2 PTO by Dick Weber, K5IU



Figure 10 – Choke Assembly and Routing

With the use of the inboard screw of J1 to hold the vertical terminal strip and the choke lead assembly, no alterations were made except for removing R68, which is easily replaced if you want to take out the regulator. The choke I used is made by API Delvan. Their part number is 1641R-105K. I bought it from Mouser - part number is 807-1641R-105K. The 120 Volt zener is a 1N5380BG - also bought from Mouser. Their part number is 863-1N5380BG.

If you look at the schematics for a 32S-3 and a later KWM-2, you will see the regulator circuit I used and the regulators in these rigs are similar in that they use a choke for decoupling. Both of these rigs use a 2 mH choke to decouple their regulators while the 75S-3B feeds regulated 140 Volts to its R68, also 4700 Ohms. At the low end is 4700 Ohms of decoupling for the 75S-3B, 15.7k Ohms of decoupling with my regulator, and, theoretically, about 31.4k Ohms of decoupling in the KWM-2 and 32S-3. How much decoupling is necessary?

I didn't do any testing to look at this, but there are a couple of things I wonder about. First, Collins used 4700 Ohms (R68) in the 75S-3 and 75S-3B. In the 75S-3B this appears to do the job based on the frequency variations shown in **Figure 3**. Second, in the KWM-2 and 32S-3 Collins used about six times the decoupling by using a 2 mH choke - L42 and L22 respectively. Collins could have used a physically smaller choke with less inductance, but they didn't. Further, the 32S-3 uses a 1 mH choke (L23) to feed regulated B+ also from the same regulator to its crystal oscillator.

So what? One of the modifications done by KWM-2 owners is to install a 150 Volt Zener with a 470 Ohms resistor for decoupling as shown in issue twenty four, fourth quarter 2001, of **The Signal**. From all accounts this works as advertised. What I wonder about is why the extremes in that amount of decoupling used - from 470 Ohms to 31.4k Ohms. Is there some minimum value that should not be gone below? Regardless, I feel comfortable using a 1 mH shielded choke and test data shows everything works as desired. -----CCA-----

Author Information: Dick Weber was first licensed in 1960. He works CW only using his S Lines. At one time he was a die hard CW DX contesteer including holding a world title for five years. He is now a casual DXer and a very active antenna experimenter and modeler. Dick has published numerous articles in QEX, CQ, Ham Radio, and Communications Quarterly covering the mechanical and electrical design of antennas. In addition, he has given numerous talks at Dayton, at Ham Com in Dallas, and at ham radio clubs in the Dallas area. While he is not enjoying using and working on his S Lines, Dick works for Raytheon where he holds the title Principal Engineering Fellow. He is a mechanical engineer holding BSME and MSME degrees. He has 32 US patents, has over a two hundred foreign patents, and has published articles in the professional literature. He is also a registered Professional Engineer.

In the Shack of John Van Egmond, KI6ZS

John Van Egmond, KI6ZS, has a real treat for all of you if you get a chance to visit. He has been assembling this wonderful display of Collins gear for over 20 years and his presentation of an operating collection is excellent.



Like many of us, it started with the acquisition of a KWM-2 and it was a slippery slide from there on. As you can see, his collection ranges across the amateur equipment and into the broadcast transmitter line with his 300J-2 (adapted to 75 meters) and his well laid out AM studio with a 75A-1 receiver and vintage (well most anyway) processing. His AM capability also includes a 32V-2 paired with a 75A-2.

His favorite piece of Collins - no surprise - is his 75A-4.

The SSB display and operation area includes his KWS-1 & 75A-4 desk with the matching speaker and uses a 180S-1 tuner. Very Nice!

In the S-Line, he continues his operating display with a range of S-Line gear including his beautiful 30S-1 and a 30L-1 tucked away in the shelf area.

John has been a ham now for almost 30 years (26 to be exact) and was first licensed in California as KB6ORZ in 1986. He received his Extra Class rating in 2000 and now operates as KI6ZS. He holds DXCC and WAC, as well as WAS.

He has been a member of the CCA since 1996 and is also an accredited VE.

Speaking of credits, John holds several degrees in Electrical Engineering and Systems Engineering and has worked in this area most of his career working mostly on military system design. He is a member of the IEEE - becoming a Senior Grade member in 1984 and a Life Senior Member in 1996 and serving on,



In the Shack of John Van Egmond, KI6ZS

and chairing, various committees. He is also a member of the NDIA, the IAE and was awarded the S.W. Gilfillan Award for Outstanding Professional Paper in 1985. Hmmmmmm - I think I smell a ***Signal*** article John.....



Classic 32V-2 paired with a 75A-2 on the left and a nice display of the KWM-2 sitting above a KWM-2A and a SM-3 Microphone

His other activities and hobbies include duplicate bridge, running, radio restoration and photography as well as traveling the US with his wife.



From the President - Election News



This has been another gratifying and fun quarter for your entire staff here. The AWA conference participation the third week of August went very well (see the enclosed story) and, at a very minimum, a new relationship has been formed between the AWA and the CCA. As we continue here to work on the quality of service, and the benefits to our membership, this new relationship will bear fruit - I am sure.

This quarter again went very quickly - not in small part due to the fact that circumstances delayed the writing of the Q3 column and magazine and now I have to get this issue ready for printing before I leave the country for a trip that I have scheduled to China. When you read this, I will already probably be back, or in the process of returning.

In spite of the rapid passing of this one month long 'quarter', we have again made significant strides in increasing the content of the website, and you will notice this continuing for the near future. The plan is for you to keep seeing progress for a long time to come. Our decision to change servers and platforms for the CCA website was a very good one and the improvement and update rate is now first class. Thank you again, Scott.

One of the changes that we just made was to split the FRLs into **Frequent Downloads** and **Frequent Requested Service Information**. There is always a plea on the reflector for putting the results of a request for info back on the reflector so that it is there for all to share and there later when someone searches the archives of the reflector on a particular subject. What we are going to do is take the dominant threads and let those guide us to batching up service or restoration subject data and presenting this on the website in one place. This will, in many cases, eliminate the need to search reflector archives or do searches on the website. The first subject (PTO Service) has started to flesh out - and it is also the feature subject of this quarters *Signal*.

Finally, in this issue, is the Notice of Upcoming Elections and the request for nominations. Please read this, and if you can participate by way of discussion with your peers, possibly submitting a nomination for one of the Board of Directors positions, or even considering running yourself, please do so. An organization is only as strong as its new blood.

That's it for now. Have a great quarter. Hold down the fort while I am trekking around Tibet, and I will hopefully talk with you all when I return. - - - Bill Carns, N7OTQ wcarns@austin.rr.com - - -

* Election Notice *

Elections will be held - and Ballots mailed - with the Q4 2012 issue of the *Signal Magazine*. Two Board of Directors positions are up for reelection - The ones held by Bill Carns, N7OTQ and Ron Freeman, K5MM. Ron is also our association Treasurer.

Nominations open October 15th and can be received by Jim Stitzinger, WA3CEX, along with an independent motion to second. We ask that these nominations and the related second be sent via email and not on the reflector. The CCA reflector is open and many non-CCA members are not interested in our business. Please see the CCA website for details on the nomination process, procedure and requirements.

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