



The

Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

Broadcast Operations

Why Keeping Detailed Operating Logs Can Save the Day



By Gary Peterson

[April 2010] In recent years, deregulation has reduced the documentation required by station operators. In most cases, the station only needs a log for EAS activity, tower light checks, and not much more. There is no requirement even for regular transmitter parameter readings. However, as Gary Peterson explains, keeping detailed logs is more than a troubleshooting tool, it might prevent a fine.

PRESUMED GUILTY

Back in the 60s, our Top-40 AM received an Official Notice of Violation (NOV) from the FCC monitoring station in Grand Island, NE. This was one of those notices that came with a requirement for a written response in duplicate or triplicate within ten days.

The station had been cited for 100% negative modulation peaks of frequent recurrence, or something close to that wording. Apparently, one of the FCC's monitoring trucks had been in our area. Needless to say, the licensee/owner/GM was very upset.

As CE, the job of responding to the NOV fell into my lap.

HOW A GOOD LOG HELPS

First of all, I found it very difficult to believe that we had been over-modulating. I just have never been one to push things that close to the edge. Subsequently, I monitored the modulation for several hours with an oscilloscope rigged for a trapezoidal display. I never observed a single instance of carrier pinch-off. Our General Radio modulation monitor appeared to be reading correctly.

For whatever reason, I pulled the transmitter log for the date upon which the violation occurred. In the remarks section, at almost the same time that the notice of violation specified, the DJ/operator noted that a severe thunderstorm was in progress - and that the transmitter was hiccupping.

That rang a bell. During electrical storms, I have often observed that the johnny balls in the guy wires would flash over, producing an audible popping noise. The main transmitter was a Gates BC-5H. This particular rig had a VSWR protection circuit which would briefly interrupt the drive to the PA if the VSWR exceeded a preset value. This would tend to extinguish any arc that might have developed downstream from the transmitter output.

If fact, I remembered having heard the relay in the VSWR circuit chatter during storms, making a noise not unlike a telegraph sounder. Each time the protective relay operated, carrier pinch-off would certainly be observed.

A GOOD RESOLUTION

All of the above was included in my reply to the monitoring station. Within a couple of days, I received a telephone call from John McKinney, who was, the EIC. He was extremely cordial and thanked me for my explanation and told me that our Notice of Violation was rescinded. Furthermore, he told me that the field people were now instructed to avoid making AM modulation measurements when electrical storms were nearby.

Maybe, a dozen years ago, I bumped into Mr. McKinney (WØAP) on the amateur bands. By then, he was retired and we had a wonderful chat about his years with the Commission and the above mentioned over-modulation incident. Unfortunately, this gentleman is now a silent key.

Of course, not everything needs to be logged, but an intelligent approach to station operations clearly can result in benefits. The attention to detail by the DJ who took the time to note the weather conditions on the transmitter log turned a very stressful situation completely around. He received my praise in the presence of the licensee and the other employees - and I bought him a couple of beers and lunch.

BUILDING A USEFUL PAPER TRAIL

To this day, with the cooperation of management our operators continue to keep paper station logs and take meter readings at least once per shift. With hard disk based audio storage, they certainly have the time!

On each sheet there is a large section for remarks, and the announcers are encouraged to note any abnormalities. Our DJs often let me know about unusual trends before remote control limits - resulting in alarms - are crossed.

The log sheets for each station, in our five station cluster, are printed on different colors of paper. This serves the dual purpose of keeping them from getting lost in the paperwork shuffle (in spite of there being a clipboard provided for log sheets) and makes for quick sorting when they arrive in my mail slot. During our last FCC inspection, the field inspector requested meter readings from a couple of our operators. Because of the above regimen, this was performed quickly and competently.

MAINTENANCE LOGS, TOO

At each transmitter and translator site, I keep a log book. These log books are laboratory notebooks that I purchase at a local college book store. The pages are numbered and bound.

Each book contains a chronological, technical history of its site. This may include details on when antennas and their heights have been added to or removed from the tower, feed line lengths, utility meter readings, dates and hour meter readings for each PA tube change, remote meter calibrations, quarterly tower lighting equipment inspections, telco circuit numbers, transmitter problems and repairs, etc.

Without such a log book, a many stations such information tends to end up on scattered scraps of paper. My preference for the bound lab notebooks is that, over time, pages in three-ring binders tend to come loose if stick-on reinforcements are not used. Furthermore, many of the laboratory notebooks incorporate gridded paper, which is very useful for neatly entering tabular data or a graph. If the entries are in permanent ink, the data will be readily retrievable in twenty years.

Of course, in the computer age, it is possible to build an ongoing document or spreadsheet file that contains the complete history of a facility. And, with cut-and-paste, information can be extracted easily for specialized reports, to focus on one transmitter or another piece of equipment. To protect against catastrophic data loss via disk crash, the primary file should be printed and saved as you go, along with making regular backups.

Logs can be your friend, whether saving you from a fine, pinpointing potential problems, or just being more efficient in maintenance practices. Personally, I have lost count of the number of times that I have thought “Boy! I’m sure glad I wrote that down and was able to find it.” You, too, likely will find that a similar logging policy eventually will save your bacon a time or three.

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