

## Maintaining the Q-37 Firefinder in Bosnia

Maintaining the AN/TPQ-37 Firefinder radar during 24-hour operations in Bosnia was a great experience for me as a 35M (Firefinder Radar Repairer). I was assigned to C/333 FA (Target Acquisition) Radar Section 5 and was responsible for the organizational and direct support maintenance of the radar system. But when I went to Bosnia in Operation Joint Endeavor, I had the opportunity to operate the radar and track targets, allowing me to better understand the system as a whole.

In the process of learning how the radar works, I learned how important the radar was for operations in Bosnia. I also learned how important organizational maintenance is to keep the system operational by preventing faults before they occur. In Bosnia, I implemented a few tricks to help prevent unnecessary down time and manage the varying maintenance schedule.

**Radar Knowledge.** But first, I had to *know* the radar—see it operate in the field and get to know how it performs—an advantage for a direct support repairer. For example, if while sitting in the shelter as an operator, I notice a fluctuation of shelter lights and blower motors as a transmitter fault occurs, I learned to check the generator immediately. Sometimes the generator settings will drift or vary, giving a false indication of a transmitter fault.

Also, by studying the test data printouts daily and paying attention to the values, I can see changes in the system compared to its normal values. This notice of changes has given me time to analyze data, determine the cause and ensure parts are on hand to correct the problem, preventing maintenance supply down time.

Because faults can occur without notice or obvious preliminary indicators, operating the system allows me to see the more subtle indicators. For example, as an operator, I've learned there should be clutter displayed on the B-scope. If there's no clutter visible, it's a good indication the system won't track targets. The only other way to detect that the system won't track targets is to run the shelter and trailer Fault Isolation Test, which is done during maintenance periods and when on-line faults occur. Normally, the A/D alignment is the cause of on-line fault messages.

One of the most important lessons I've learned is how critical it is to follow organizational-level maintenance procedures. *TM 11-5840-355-20-1 Organizational Maintenance Manual (Functional Description and Maintenance) for Radar Set AN/TPQ-37(V)* describes the radar's major functions, controls and indicators, troubleshooting procedures, alignments and preventive maintenance checks and services (PMCS). This manual has helped me isolate faults and kept me on track. While troubleshooting procedures may not always isolate the faults, they do help localize the fault to the appropriate area within the system.

PMCS can identify shortcomings before larger problems occur. For example, the coolant resistivity check performed daily ensures purification cartridges are changed before transmitter faults can occur. The availability of these cartridges is very important to the continuous operation of the system. Also, I recommend replacing the particulate filters in the cooler at the same time.

**Maintenance Tricks.** Learning the hard way, I've come up with a few tricks

to help reduce the amount of time the system is down.

Because the analog-to-digital conversion may drift at any time and alignment may have to be performed, I attach the alignment procedures to the inside of the signal processor door. This saves time—I don't have to locate the procedures in the manuals. In the PX, I bought an eyeglass repair kit with a small screwdriver that is perfect for alignment and can easily be kept in my BDU [battle dress uniform] shirt pocket. I also keep a clip lead needed to perform the alignment inside the door for fast and easy accessibility.

Another trick I've learned is to clean card pins and reseal suspected bad cards before replacing them. This quick procedure is very effective, saves time and keeps me from turning in otherwise perfectly good cards to the supply system.

One trick to help me manage maintenance time and track the radar's PMCS is to use a simple monthly calendar. As our maintenance periods vary from 30 minutes to two hours, I use the calendar to ensure PMCS items are performed on schedule or, at least, within a reasonable tolerance. By listing on the calendar PMCS item numbers completed daily, I can easily see which item numbers I need to complete for that week, month or quarter. This calendar acts as an easy reference for me to manage and plan the scheduled maintenance.

In almost a year in Bosnia, I learned a great deal about the Firefinder radar system—more than the schoolhouse could ever teach me. As a previous instructor and with my return to Fort Sill, Oklahoma, at the end of my deployment, I hope to pass on my knowledge and understanding to students. I believe this knowledge will help produce a more qualified, confident repairer for the Firefinder radar system.

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## “Air Fires” Edition—Bilenski’s Letters-to-Editor about USAF Articles Miss the Mark

As always, *Field Artillery* editions impress me with the tremendous advances of the US Army in general and Field Artillery in particular since my retirement some 14 years ago.

I read the May-June 1996 issue on “Air Fires” with immense pleasure. Major General [Randall L.] Rigby’s introductory remarks [“The FA and Air Attack Team”] in his “Registration

Points” feature were particularly important. The follow-on articles, especially those by Lieutenant Colonels [Ricky R.] Ales (USAF) and [H. Alleyne] Carter (USAF), each contained infor-