TCRS Program

Trident Carry Onboard Reduction System

by Dale Suckstorff

INTRODUCTION

I, Lowell, found a .pdf file in my 'pending' folder. The third paragraph has four sets of initials, JG, DS, TH, and RP. Might the JG have been John Goettl? Could the TH have been Tom Harsh? Might the RP have been Rick Pliml? If you were part of the team, we welcome comments.

STORY

The TCRS was a small program in the early 1980's. The Trident Submarine Combat System recorded a multitude of parameters whenever it launched a weapon {sic. torpedo or missile}. The purpose of this extraction of parameters was so that, after a launch, the results could be studied and analyzed. Prior to the TCRS the data was recorded to the DEAC (OJ-172), and its tape-recording capabilities were limited. Also, there was no way to inspect the data on the boat, the tapes had to be returned to the lab for analysis.

Therefore, a program was needed that could record data faster, and to provide the means to look at the extracted data onboard. The system was to connect to the combat system, select parameters to record (provided by Trident), and report on the data. It had to be a portable system that could be carried onboard the submarine, required small storage space, and easily connected into the system. The AN/UYK-43 was not yet included in the Trident system and so AN/UYK-7s were the computing power for the Combat system. Sperry was awarded the contract to supply a TCRS system. (Disclaimer: I was the test lead on it and so design details may not be 100% correct).

The initial design was to use a PC and floppy disks as the recording design. The program manager was **JG**, the lead engineer on the project was **DS**, with **TH** the main software engineer and **RP** a software engineer. After some development, it was decided that Sperry would also test the system and the testing certification would be a 24-hour test. The test effort was assigned to my group and after reviewing the requirements for the system and certification, I decided I could do the effort. The test effort would be very repetitive and would need to last 24 hours. With computers now making cut and paste easy, a 24-hour test could quickly be put together with repetitive weapon launches.

The system development quickly ran into difficulties. The system with the floppy disk could not keep up. (Nothing could be slower than the recording capabilities of the DEAC, right)? After some head scratching, it was determined that the floppy disk approach was indeed slower and would not work.

The solution was a 10-inch reel Kennedy tape recorder to replace the disk approach. There were internal design disputes about capabilities, and the lead engineer became **TH**.

The only place the system could be checked out was at the TRIDENT lab at Navy Underseas System Center (NUSC) in Newport, RI. The TCRS program had low priority within TRIDENT, and thus, lab checkout and testing were assigned to evening and late-night hours. Debugging made slow progress, and there was little or no time for testing. It was interesting watching the debugging and trying to figure out if the repetitive test procedures would work, occasionally finding a few minutes to run a test. We spent more time helping with debug than any productive testing. Also, during debugging hours one of the engineers would frequently disappear. It turns out that he had wagers on several key basketball games and would go out to call someone to find out the scores.

A new hire (**DN**) was assigned to my group, and with the repetitive part of the procedures somewhat checked out, he was assigned the task combining it together in a 24-hour total certification test. After a trip to Newport with me to get introduced and attempt to get some testing accomplished, he had one more trip, but again debug took priority over testing and so the most continuous time allocated to testing was only about an hour. With pressure from the PM and the developers saying the program was ready, a 24-hour certification test was scheduled. I objected, stating that it was high risk doing a cert, when for the most part very little testing had been run. A dry run should have been scheduled by the program but was not. A formal Certification test was scheduled and would start at 8 AM running continuously for 24 hours. The whole team of six, along with a group of approximately ten observers were present for the start of the testing. **TH** and I (the test director) stayed for the whole test effort and at least one observer was present. The test steps were set up such that, as events were accomplished, they were signed off. Everything was passing and going smoothly during the certification. As the end of testing approached the number of interested personnel grew again.

At 23 hours and 37 minutes an event occurred that had never been tested or attempted. The 10-inch reel was full and needed to be replaced with a new reel. We had written procedures in the addendum to address what to do if this occurred, but it had never been tested. Our PM argued that we were far enough along and with no problems we should say the testing was completed and the system excepted. The Government was not in agreement with this approach. The PM directed me to stop the test and say the system was certified. As the test director, it was my call, and I did not like skipping the steps. After a positive glance from **TH**, I stated that we would continue to the end of the testing. The procedures to change the reel worked, and the system continued recording perfectly. The 24-hour certification was successfully completed.

The PM was displeased with **TH** and me; he basically wanted to see us removed from Sperry. After being up for more than 24 hours, **TH** and I went to our hotel planning to get some sleep.

Within an hour we were summoned to a 10 AM meeting to review the testing and the certification of the TCRS program. The meeting was payback from the PM for going against his directions. However, the government was incredibly happy with the program and our certification test. They specifically thanked us for taking steps that had never been run.

Years later, the Program Manager apologized to **TH** and me, and said that he had been wrong. There are several more personnel items/tidbits that were part of this small program and will not be included. I do not know if the TCRS program was ever deployed, as I have found no information on this program with Google searches.

EPILOGUE

References:

Legacy Anthology search for Trident yielded about two dozen hits, here are examples:

- https://vipclubmn.org/People9.html#Scholz, see 1969 paragraph.
- https://vipclubmn.org/People9.html#Spitzmueller
- https://vipclubmn.org/People9.html#Stephenson
- https://vipclubmn.org/People5.html#Manning , Ben mentions a port of TCRS!
- https://vipclubmn.org/People5.html#Overocker

Feedback:

If you can identify any of the initials in this paper, please submit them – else the project participants will remain anonymous.

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