

## The “Winning” of CNCE

Harvey Taipale, Remington Rand UNIVAC 1966 to Lockheed Martin 2007

The CNCE (Communications Nodal Control Element) program was one of the oddest program “wins” I ever observed.

The project started in the late 1970’s to develop a collection of field-deployable electronic shelters for management of tactical battlefield communications. In those days, bandwidth was limited, and tactical communications networks were a hodge-podge of wired and radio links, all with multiple communication protocols. Establishing reliable links was complicated, and the US Air Force contracted with Martin Marietta Orlando to develop and deploy a computerized system to manage all these networks in the field. The program was called TCCF (Tactical Communications Control Facility) and the new equipment was to replace equipment supposedly captured from Germany in WWII.

We were Sperry Univac then, and won a subcontract to provide computer, display, memory, and interface equipment to Martin, all of which would be rack-mounted and integrated by Martin with all the other equipment in transportable shelters. There were different shelters, notable a planning shelter (CSPE) and a network interface shelter (CNCE).

{Editor’s note: In the early days of digital computers the Air Force, Army, and Navy usually did their own thing, i. e. the Naval Tactical Data System (NTDS) was already operating in the 70’s and linked with the Marine Tactical Data System (MTDS).}

The initial TCCF system design was not well defined, resulting in the award of cost type contracts and subcontracts. Sperry was responsible for providing a computer [modified AN/UYK-20 shown here], Cartridge Magnetic Tape unit (CMTU), Interface Data Bus Controller (DBC), and disk drive (DMU) in a single rack. In addition, a high-resolution data terminal with a light pen and printer were provided for integration into the Martin racks.



TCCF was a problem program. Changing requirements from the prime and technical issues in house and with our subcontractors caused cost overruns, schedule slips, and the program ended chewing up several program managers and project engineers. Not so jokingly, TCCF was tagged with the internal name: Things Christ Couldn’t Fix. Finally, everything was delivered, equipment worked well enough, the contract was completed, and everyone breathed a sigh of relief that it was over, and we wasted no time putting the project on the done pile.

So, imagine everyone’s surprise when five years later, Martin Marietta Orlando Aerospace (MMOA) literally popped in to announce that the Air Force had been testing the initial systems for the past 5 years, and now wanted to go into production! We had no ongoing contact with MMOA and had no team in place who had been supporting the program nor a team who was ready to respond.

This was generally a busy period for Eagan and all the “best” [aka project proven] people were fully booked. There was a mad scramble to put together a CNCE team largely based on who could be reassigned without jeopardizing existing programs. I don’t want to say that we went deep into the bench, but . . . let us say staffing this opportunity was a challenge. When the team was finally assembled, Clay Wagner was the Program Manager, Ed Loy was the Contracts person, Fred Conrad was the Quality lead, Brian Jivery, was the Subcontracts Manager, Gene Phillipson was the System Engineer, and I was the Project Engineer. Because this was to be an AN/UYK-20 based product, the decision was made to produce all the equipment in the Clearwater facility. Red Pethick became the Florida engineering liaison engineering. Harry Mavrelis, Woody Snow, Serge Pelamail, Marlin Swenson, and Gerry Shaw provided design and production technical support in Florida.

Martin and the Air Force had decided to only produce the CNCE shelter version, [hence the new program name] and integrate all other shelter functions into that unit. There were several challenges: the USAF had a list of hundreds of desired upgrades, changes, and deficiency corrections arising from their tests. The overall prime program plan was not solid in requirements, schedule, nor quantity. Martin's approach to deal with all the variables was to ask for another proposal. Dick Seaberg finally got tired of Martin's diddling, [there is an unverified story about him throwing the Martin Program Manager out of his office] and told them that they had one more shot, which ended up being the final proposal.

In addition to the technical challenges, Martin did their best to shift risk down to Sperry, of course without funding nor tasking definitions and line items. Their rather arrogant acquisition tactics became pretty apparent when they sent a “fact finding” team of thirty-some people to do a detailed review of the proposal that our hastily assembled team had generated, a bit like Goliath trying to intimidate David. They took so long finalizing the overall program that they were forced to give us a small start-up contract to preserve the Air Force’s schedule. We got a “long lead” contract, but more importantly we learned first-hand how Martin operated. We survived and figured out how to counter their tactics and methods and used that knowledge to prepare our final proposal. When the final negotiations were complete we ended up with an excellent contract.

While the CNCE program may have been a surprise, even more surprising was the Sperry team. This hastily assembled bunch quickly gelled into one of the best teams I have ever experienced. No superstars, just a bunch of good people, focused on an objective and trusting each other to pitch in wherever needed. Many teams I have seen have organizational or personality issues. There was none of that with this team; every issue was dealt with in a highly collegial and collaborative way. Martin often tried to be overpowering us, but our team was fully focused and effective in not letting them unfairly dominate. It may be a cliché in other places, but this was one of the times when the whole was really greater than the sum of the parts.

Of course, the Sperry CNCE program team got excellent support from all the line organizations. Clearwater decided that TCCF stood for “Things Clearwater Can Fix” and provided an outstanding effort across the board.

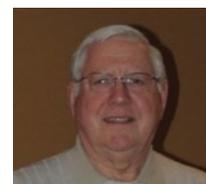
The Eagan engineering crew [John Antoniou, Don Dunlap, Al Olson, Marlin Swenson, Bob Ubelhour, Earl Vanderheiden, and George Temple], along with lots of functional support, addressed the Air Force testing, enhanced, and spruced up the equipment, and made it work reliably. Our subcontractors [Charles Theodore of DDC and Ken Fetty of DEI were key individuals] similarly responded well to meet the new program requirements. The Clearwater factory did an excellent job in meeting all production milestones, earning several delivery incentives. The entire team stepped up when there were problems to resolve, and there were many.

I always felt that one unsung hero of the program was Bob Ragsdale. Bob, a Sperry Program Manager, moved to Orlando as a liaison to Martin during the TCCF program. Bob grew up 20 miles north of Orlando, and when TCCF ended, he elected to stay in Florida and became a Martin employee. When CNCE happened, Bob once again became our liaison, only from the other direction. The Sperry and Martin cultures were radically different, I give Bob's ability to effectively bridge the two cultures a lot of the credit for our mutual success.

And a success it was – certainly performing was hard work, but we delivered about 70 systems, meeting every schedule and incentive payment, turned a formerly hostile customer into a happy one, made excellent margins and supported the system over the years with enhancements and upgrades.. Not bad for an accidental program and an accidental team.

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