

My History Includes ABCCC & Communications Programs

By Larry Debelak

Background

In 1986, the St Paul Division had reached \$1B in revenue and had eight plants in the area. Burroughs did a hostile take-over of Sperry using the overfunded pension plan and started to sell assets, as was the takeover wave in the 1980's. They proceeded to shut down our facilities and turn the Marketing funds into profit. Ultimately, our local division revenues slid from \$1B to \$300M, and our pension fund received no new funds for 5 Years. For this reason, many folks took early retirement and many others were laid off. The immediate impact on me was that the Underseas Sales Staff was reduced from five to one. In reaction, the Marketing VP [Jim 'Rapp' Rapinac] strategy was that we needed to go after "bigger bales of hay". He came up with the concept of a Program Director to pursue large procurements. I was named the first Program Director and went after the Naval Airship Program (NAP) to do all of the electronics and flight control for Goodyear Aerospace. We won and successfully completed the Contract Definition Phase [Jim Erhardt], but the NAP program got all tangled up in the Ill Wind Scandal and was terminated. USAF Lt General Melvin F. Chubb Jr. initiated ABCCC Streamlined Acquisition. Rapp then asked me to evaluate a new Air Force Program at Hanscom AFB called ABCCC (Airborne Battlefield Communications and Control Center). Harry Fager who worked with ABCCC and AWACS before he retired from the USAF and Ole Olson were pursuing the solicitation at Hanscom AFB with John Nygaard. Harry Fager noticed the ABCCC III offering in the Commerce Business Daily. The CBD response date was past, but a nice letter from them got us included to be one of 37 respondents. As the Acquisition Program Director, we won one of the Contract Definition (CD) contracts [against TRW]. We "clobbered" TRW in the competitive CD phase with a rapid prototype; demonstrating 80% of the requirements in a full-scale mockup we built in building C at Corporate Square. We then submitted the CD Phase B Specifications and what the customer later called "the largest 30 page proposal". Marketing (John Nygaard) produced an ABCCC Product Brochure and ABCCC C-130E/Capsule scale model and in 1987, we won that competitive fixed price program. In 1988, I was named Program Manager of the year and went to the Unisys "Club" at Scottsdale. I also received a Unisys Excellence Award in 1994.

This was the first Electronic Systems Center (ESC) Hanscom AFB implementation of the DOD Streamlined Acquisition Process. This process was the solution to the "\$500 Hammer". As such, the budget was meager compared to comparable ESC Boeing AWACS procurements. The process was to have the contractor bid a B Specification Solution to the USAF A Specification, test/certify that we met both A Spec and B Spec requirements, provide the contractor the latitude to manage, provide the solution and hold them accountable with a three year performance warrantee. The best examples to illustrate our innovative solutions are the color display monitors and Battle Staff crew seats that came in at 10% of the cost of comparable AWACS items. We used high volume production Recaro race car/emergency vehicle seats, designed and built a Mil Spec Base and had a Lear Jet retrofit company in Texas FAA certify the combination free. A Win-Win for all! I developed a



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comprehensive brief to work with the local DCASMA and define this Win-Win process, as they were the USAF local acceptance agency (DCAS Dave Rugg). I managed the ABCCC program and provided logistics (Jim Wikoff) and turnkey support (Andy Vitale) to the 42nd ACCS Squadron for the entire life cycle of this \$100M program until the Squadron was closed in 2003. This C-130 based system was delivered in August 1990 and served with distinction in Iraq, Bosnia and Kosovo. Lauren Cady leveraged an IRAD effort to propose and win a Hanscom ESC program to develop an Advanced Planning System (APS) to Mission Plan and generate Air Tasking Orders (ATO). This replaced the Manual ATO's that ABCCC parsed and fed into our Mission Planner to prepare mission data. This program evolved to the TBMCS procurement. Lauren and his team bid the effort along with an IBM heritage group out of Colorado Springs. Both were competitive so the Air Force asked the new LORAL management whom they wanted to lead. An easy choice as the Colorado Springs group had a lower overhead cost. APS became the core of the TBMCS system. (ABCCC Contract Experience Summary for Period of Performance January 1987-May 1995) TBMCS served with distinction in IRAQ and subsequent conflicts.

ABCCC EC-130E Design and Development

The 1987 to 1991 the ABCCC/USAF Integrated Product Teamwork got the job done!! As Unisys was taking its toll on the company, our team at Corporate Square was handling the challenge of developing and delivering the eight C-130E Capsules. This was the first Air Force program under the new Streamlined Acquisition, which called for a Fixed Price development and production in a short 3-year period with a Performance Warranty. In addition, the Unisys management forced a low-ball bid on the best and final against our strong objection so we faced a financial challenge. My chief engineer(Ole Olson) and I went through the phonebook and picked the best domain experts in the diverse disciplines of Subcontract Management, Logistics, Capsule design, Electronics, Mechanical and Aeronautical engineering. We also hired a Battle Manager from the squadron (Bob Chappellear) who completed two tours as a pilot in Viet Nam. He defined the human factors, flight safety and Complex Mission Software crew interfaces. At the peak of the effort, we had close to 100 of the best folks the division had to offer and 20 vendors. The baseline architecture from MATCALs provided the UYK-502 based Communications switch and the Color Touch Color display workstations, each with UYK-502 distributed processors on the SHINPADS data buss. Due to weight and center of gravity constraints, we had to position the majority of the electronics forward. We developed an Enhanced Display Generator chassis with embedded signal processing gate array card sets and firmware (Gish Devlaminck) and dual redundant UYK-44 embedded card sets with the SHINPADS fault tolerant data buss to meet the mission critical 100% availability. Custom built workstation keyboards and color monitors (Astronautics) with a specially designed Communications Control Panel (Jack Shaubert) enabled the Battle Staff to Communicate with intercoms and 4 radios simultaneously. The Redundant UYK-44 data base processors and four optical discs with real-time software and Hashing algorithms provided 2 sec response times. This allowed the Battle Staff to handle up to 100 Immediate Air Requests per hour. The uniquely designed (Leroy Olson) 50-foot paper honeycomb capsule (Nordam) and complex air conditioners with C-130E aircraft modifications (Gary Johnson) weighed in at 20,000 lbs, including growth for upgrades. This design effort pioneered



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the first application of Optical Discs, interactive Digital Mapping systems (Bob Chappelle), state of the art Battle Management software (Mike Doll), a powerful Display Generator, Color displays that could fly without degaussing and Communications interfaces to 23 Radios (31 with upgrades). The 3-year schedule included a 1 year qualification/ test program including of qualification in the environmental test chamber at McKinley labs in Florida (Al Medor). We held our breath as the first capsule was loaded aboard the EC-130E at the Minneapolis-St Paul Air Reserve Station at MSP-- IT FIT!-

The flight-testing was equally tense to validate that this 20,000-pound capsule with a Center of Gravity (CG) of +/- 2 degrees would stay in place during Angles and Dangles and interface with the aircraft systems. The final government flight test flew over the Iron Range to ensure that the Color Displays functioned without Degaussing. The Government signed off the first two systems and we got paid. The two newly minted EC-130E Capsules "stuffed" (Mark Bush) at our leased Eagan Warehouse were flight tested/delivered in August and completed OPEVAL just in time to be deployed and participate in the 15 January 15, 1991 start of Desert Storm.

ABCCC Operational Success in Desert Storm

The ABCCC Combat Mission Engineers who rode combat missions in Desert Storm were Fred Svenson [Software Engineer] and Jim Rossman [Field Engineer]. They were assigned Orbits on "Kill Boxes" to coordinate Attack Operations that destroyed the IRAQI forces. On one occasion when they were on board, an F-16 went down around Baghdad. The AC Commander made an impromptu decision to abort their orbit and fly to provide communications connectivity to rescue the pilot. This was a scenario that was repeated in Bosnia for the rescue of F-16 pilot Scott O' Grady and later the F-117 pilot, Matthew Borg. In addition to the missions, Svenson and Rossman were also in harm's way when they scrambled to shelters wearing gas masks as the SCUD missiles targeted the base. We talked to them daily via Satellite Phone to monitor the status of their personal safety as well as System's performance. The Systems performed 1500 Mission hours without a failure. DCASMA presented UNISYS with a product award for the ABCCC and MATCALs performance in Desert Storm. In addition, the ABCCC Program Office at ESC, Hanscom AFB was awarded the prestigious Procurement Program of the year for this successful first Streamlined Acquisition. In addition, there was a lot of press coverage including our participation in a joint news conference with the USAF and Unisys at the Washington Press Club. We also briefed the Saudi Embassy and initiated an intensive campaign to market the system and the advanced communication technology.

Growing the business

We wrote proposals and went to Saudi Arabia to brief the Head General of the RSAF. The RSAF General said we first needed to teach them air to ground operations before they would be ready for the technology. We entered into a multiyear FMS contract via the US government and set up an Air to Ground Operations School (AGOS) that included a final live field test with F-15s. An interesting side story is that when the 911 attack occurred, the Saudis told us "we are sorry the Jews did this to you". Fifteen of the nineteen hijackers were Saudis and nine of them came from the town where my



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instructor's compound was located, next to the F117 base. I subcontracted the housing and support to a Saudi national we used as an agent, and made many trips to Riyadh to brief the RSAF. We also made trips to Egypt and Turkey with Don Crook to market the technology.

Also during this time, my old Submarine customer asked me to brief his Admiral on this ABCCC Streamlined Acquisition process and technology with regards to designing the new SSNX platform. This resulted in a 2-year Joint R&D effort where we demonstrated a network based Communications system. That was successful so I submitted a \$3M proposal, which we won to develop a Rapid Prototype SSN Radio Room. This effort was transitioned to the C3 group and evolved to a contract with Electric Boat to develop the Virginia and Seawolf Class radio room. A surface variant was fielded on the Lockheed Littoral Combat Ship (LCS). In 2003, under contract to The Navy PMW 170, I was assigned as the Program Manager and Design agent to develop a Single Source Software baseline for the Trident Ohio Class SSGN/SSBN Common Submarine Radio Room (CSRR) that was retrofitted to the Virginia and Seawolf Classes.

I continued to market the Battle Management and Communications capability. The efforts included ABCCC P3I upgrades for JTIDS (Bob Dubrall), SINCGARS Cosite Mitigation, and annual Block Upgrades to the software (Craig Bennett). We developed an innovative solution for the VHF Cosite Mitigation system. Our Lead Communication Systems Engineer (John Pernic) came up with the concept of a Hybrid Filter/Canceler that was the first of its kind. During the selloff, I was on board on a Sunday as we orbited near Ft Ripley and completed the testing. With fuel running low and a major thunderstorm closing around us, we listened on the intercom as the cockpit crew managed the issues of icing, dodging T-storms and alternates landing sites. At one point, they lost discipline for a moment "look at that big SOB". The MSP controllers in an attempt to help the young crew momentarily opened the airport so we could sneak in. We landed in a downpour and soon learned that the "big SOB" was the tornado that destroyed the city of St Peter.

The successful Broadcast Intel Up-grade (BIS) (Bob Dubrall) was a 9-month response to a DOD Combat Mission Immediate Need Statement to provide fixes to the Scott O'Grady shoot down in the Bosnia. We Developed/Racked a new Multiprocessor computer & Satcom Broadcast Intel receiver, designed/mounted a Mil Spec Client PC with the first Flash Memory Hard Drive, ported the COTS Sun SPARC Government Intel Software, and integrated it with our JTIDS/Battle Management software. We tested, installed, and delivered the system ready for Combat to the Squadron at Davis Monthan. It was very rewarding as it resulted in the quick extraction of the Lockheed F-117 Stealth Fighter pilot near Belgrade. The ABCCC crew [same crew that escaped the St Peter Tornado] made it on the National Evening news.

I was also spearheading various C4I initiatives including the 747 Airborne Laser program. We teamed with Rockwell and I was the C4I Acquisition Director. We won the Demonstration Phase thus were well positioned with our Successful Communications Demonstration led by "an Enthused Dick 'Ole' Olson" to win the program when Boeing just bought out Rockwell and won by default. 'Ole' spent three months on the first Airborne Laser (ABL) Proposal, and the year 1996 on site for the ABL



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competition between Rockwell Collins [our team] and Boeing (the other team). Boeing bought Rockwell three months before the proposal was due, so you know who won [Boeing]. Hughes was the part of the Rockwell team. Lockheed Martin personnel [Laser Fire Control Subsystem] were part of the Boeing Team, which was about 1/3 of the award [significantly more than we would have gotten from being part of the Rockwell Team]. In 1998, a few years after being acquired by Loral along with most of our competitors [IBM, RCA, GE and Goodyear], Lockheed bought Loral and we joined the big league. We initiated an effort to cross deck the ABCCC capsules to the new C-130J. I briefed Pentagon officials working with a "Rent a General" consultant. Working with the Lockheed Washington lobbyist and the USAF, I was able to get the prime role with a \$5M budget in Congress for the Contract Definition Phase and Lockheed got 8 C-130Js designated from the first lot procurement. This all fell apart when the Senate Majority Leader Trent Lott(R) from Mississippi re-programmed them to the Weather Squadron at Biloxi and the Pennsylvania National Guard SOF. I learned a lot about how the Lobby Business works. The 1960 EC130E's Iron Horse was redeployed with the 71st Rescue Squadron at Moody. For a short while, I worked for Gen Tom McInerny who is now a Fox news contributor. Gen McInerny had developed the Streamlined Acquisition process for the Department of Defense. When he retired, he came to work in UNISYS Eagan in Program Management.

In 2000, Dave Offerman and Joe Pobiell landed a CD Phase Contract with Newport News to design a state of the art Communications system for the CVN-77 Aircraft carrier that was to be the first of a new CVNX class. As acting Director of Communications and Air Defense, I also was the Program Manager. Upon successfully completing the effort and submitting our proposal, the budget to build the carrier ballooned and the Navy made the decision to build another CVN-76. We also tried to market our Communications System to our competitor, Boeing, for the Boeing E4B Airborne Command Post and NATO AWACS. We positioned to win NATO AWACS through our Winnipeg Canada group but got torpedoed by our own management with a bad bid. In addition, I had a competitive win and managed the B-2 Link 16 Security Guard, successfully delivering 16 systems before the program transferred to the TACAV BU to pursue the B-2 Mission Computer Upgrade. This was a fun experience to be involved with this Stealth program and I was able to sit in the Co Pilot seat of a B-2. We completed all Saudi JAOS Course development and transitioned the program to LMMES.

We completed the ABCCC Talon Gunfighter Gateway (BMC4I Integration of Broadcast Intell with L16 and SADL gateways) and Mapping system upgrades. We also completed the Program Closeout as the ABCCC Squadron was decommissioned in 2002. Lockheed MS2 formed the Comms and Network Systems Business Unit (C&NS). In 2003, the C&NS unit was elevated to a Major Market segment and GM Rick Udicious assigned his Marketing VP (Wendy Underwood) to lead the group. I was assigned as the C&NS Market Segment Product Manager, Program Manager for the SSBN/SSGN/Seawolf/Virginia Common Submarine Radio Room (CSRR) and pursuit of Major Exterior Communications Systems Programs including AMF JTRS. We were on the Lockheed Sanders team for the DARPA Airborne Communications Node that was a precursor R&D effort to AMF JTRS. I assembled an industry team for the Maritime JTRS program that led by my SPAWAR San Diego

customer. That team was the basis for the AMF JTRS when it became a Joint USAF/Navy program headed by my ABCCC customer at Hanscom AFB. In spite of that, the program lead was transferred to an IBM legacy group in Virginia. We ended up with major roles in Communications Management, Manufacturing, and Logistics. Because of the CSRR success, I had great relationships with the Submarine Customers and the Communications domain knowledge.

I was designated to lead the Lockheed Corporate Red Team Review for the Submarine Underwater Communications proposal. LM had just acquired the small company Sippican who had the lead. My skills as a Certified LM21 Green Belt, Certified level 2 PM and Level 2 Capture Manager were well received and my team coached them into a win!! At the Corporate Proposal Reviews I got a lot of pushback by Corporate VP's—actually getting telephone calls to pressure me to change my recommendations. I held my own but was aware of the political fallout risk. After the submitting the proposal, I expressed this sensitivity with the LM Business Segment CFO. He simply said, "Why do you think we picked you!" Under Lockheed, I received a LM NE&SS Tactical Systems Special Recognition award in 2003 and an AMF JTRS Business Capture Award when we won the JTRS program over Boeing in 2008.

Epilogue

I'm proud of what the Underseas and ABCCC teams and I had accomplished over the decades! After 43 years at Lockheed Martin and our heritage companies, at the age of 68 it was time to join the first Friday luncheon with the retirees of the Original GEEK Squad!! *Larry*



Lunch with the Original GEEK Squad, left to right are Phil Phipps, Larry Debelak, Don Arnold, Lowell Benson, Jack Ross, Bill Roos, Manny Block, Larry Scott, and Paul Hove.

{Editor's note: if it is still live, browse to <http://formerspook.blogspot.com/2015/03/serenade-to-iron-horse.html?m=1> – this is the retirement of a 1962 Lockheed airplane, an ABCCC veteran.}