

David Bohne - 1973 to 2011

INTRODUCTION¹

This biography contains a synopsis of the career of David Allen Bohne. David’s business career was spent entirely with Lockheed Martin and predecessor corporations. These corporations were Sperry Univac (1973-1986), Unisys (1986-1995), Loral (1995-1996) and Lockheed Martin (1996-2011). Through all these corporate name changes, David’s main work location remained the same, Eagan, MN. His 37 and ½ year career started and ended at the same facility in Eagan. There were, however, temporary assignments and extended remote work locations in Vallejo, CA; Camarillo, CA; Montreal, Canada; and San Diego, CA. David traveled extensively throughout the world to provide marketing and project support.



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WORK CHRONOLOGY

In August 1973, David went to work for Sperry Univac as a computer programmer at the Eagan, MN defense systems facility. His first project was developing computer programs for the CGN-38 Command and Control System (CCS) Simulation Program. From August 1974 to January 1976, David was on temporary assignment at Mare Island Naval Base in Vallejo, CA supporting the certification of the CGN-38 CCS operational program and its integration into the CGN-38 combat system. During the last half of this Vallejo assignment, he was the technical lead for the simulation system. This simulation program was a very complex state of the art computer system that simulated the equipment and systems that the CCS operational program interfaced with on the ship.

In 1976 David provided primary marketing and engineering efforts in pursuit of the Integrated Combat System Test Facility (ICSTF) Simulation System. The contract was awarded to Sperry as a sole source award based on the CGN-38 simulation program, and David was named the project engineer. The ICSTF was in San Diego, CA at the navy base and was designed to provide a permanent test facility for integrating the combat systems of all naval surface combatants. The initial software was developed in Eagan and the project was eventually transitioned to San Diego, where on-site Sperry personnel provided on-going software development and support.

¹ Formatted for the web by Lowell A. Benson, BEE UofMN 1966; UNIVAC 1960->Unisys 1994.

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This ICSTF simulation system evolved over the years, with Sperry (and successor companies) having a contract for over 25 years, with revenues of several millions of dollars.

In September 1977, David was named a program manager of the Iranian DDG-993 Command and Control Program. As a program manager he was responsible for the technical, cost and schedule performance of the assigned contracts as well as being the principal spokesperson to the customer. The DDG-993 contract was a foreign military sale, meaning the US Navy was the contracting and managing agent for the Iranian government. This DDG-993 project was a very large contract for Sperry, including the building of a very large test and crew training facility that simulated the look and feel of the shipboard Combat Information Center, development of all operational and simulation software, and training of Iranian officers, crew, and maintainers. More than 200 engineers were involved in this project at its height. There were several Iranian naval officers on-site in Eagan during the development efforts, as well as many US Navy representatives. David joined the project after it had been under contract for about 3 years, and there were several cost, schedule and contract problems that needed to be resolved. In 1979 after the Shah of Iran was overthrown, David worked with US Navy personnel to convert the Iranian system to a US Navy operational system that was eventually installed on four new destroyers deployed by the US Navy.

In 1981 David was named the program manager for Sperry Univac's portion of the Canadian Patrol Frigate (CPF) Contract Definition (CD) phase efforts. Sperry Systems Management in Great Neck, NY was the prime contractor; Sperry Univac had responsibility for all the software, computer systems and network systems. This was a competitive contract run by the Canadian Defense Forces, with the winner eventually delivering 20 fully functional naval frigates, with modern combat systems and shore support facilities. David led the team that defined the combat system, including the world's first distributed software naval combat system. After the Sperry team won in 1983, David was named the program director for the Univac portion of the contract; this included all software, computer and networking hardware, and program related Industrial Benefits offset programs. The initial value of this contract exceeded \$300 million in constant 1981 dollars. The initial Sperry prime contract (\$2B in constant 1981 dollars) was the largest single contract ever awarded to the Sperry Corporation. When the contract was awarded the Canadian admiral in charge told the Sperry CEO one of the two reasons for choosing Sperry was the Canadians 'wanted the combat system that Dave Bohne described to them.' Univac's portion of the contract was split between Eagan, MN, Winnipeg, Canada, and Montreal, Canada. Winnipeg had the computer and networking manufacturing responsibility, while Eagan and Montreal split the software development, test, and integration. At contract award time, there was no Univac presence in Montreal – the site was started from scratch under David's direction and responsibility; by 1986 the site had grown to 250 engineers.

In 1986 David left the CPF project to lead the proposal efforts for the US Navy's CCS Mark 2 program. The CCS Mark 2 was a program to replace the combat systems on all US Navy attack submarines. Unisys Defense Systems, Eagan was one of the prime contractors competing for the contract. The procurement was delayed by the Navy for several months; during this time David led a proposal effort to win a competitive contract to manufacture SEM-D ceramic computer cards for US Navy submarine acoustic systems. The SEM-D contract was won with a substantial savings to the Navy over the previous supplier and provided a much superior, more reliable product. The contract included the establishment of a brand-new manufacturing line in St. Paul, MN.

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This contract was extended over several years, with substantial profit margins. In 1988 the CCS Mark 2 procurement came to fruition by the US Navy and David led Unisys' proposal efforts. This proposal was a massive undertaking with about 75 senior engineers plus several subcontractors contributing to the effort over a 6-month period. Unfortunately, Unisys lost the procurement – Unisys had the highest rated technical proposal and was in the cost window, but the corporation was banned from receiving new contracts when the award was being made because of illegal activities in an unrelated business area.

In 1989 David was named the lead for a new organization called Program Management Practices. This was a relatively small organization of 12 personnel that was tasked with finding more efficient ways of doing business and with helping troubled programs solve their cost, schedule, and technical problems. The organization also supplied start up assistance to new programs to ensure they had the proper cost and schedule planning. Many programs around the entire corporation were assisted during David's tenure. During this period David also was tasked to manage large proposal efforts around the Unisys Defense Systems Division.

David spent 6 months on-site at Unisys' Camarillo, CA office managing the proposal for a Saudi Arabian Air Defense System. This \$1B proposal was for a modern air defense system to protect the country against air attacks. This was a very large proposal effort - the Saudi's paid Unisys \$10M for the 6-month effort to create this proposal. Unisys had the highest rated technical approach with the lowest cost but lost due to the Saudi preferring a competitor's industrial benefits package.

David spent several months in Montreal, Canada managing a proposal for the Canadian Maritime Helicopter program. This contract involved the design, development, and manufacture of several helicopters and their mission systems that would be launched/recovered from naval ships to perform anti-submarine missions. Paramax (Unisys' Canadian subsidiary) won the \$2+B contract. Unfortunately, about 1 year after award the Canadians cancelled the contract for political reasons.

David wrote the management proposal for the AN/UYQ-70 Advanced Display System. This program, managed out of Eagan, MN eventually earned revenues of \$7B for Lockheed Martin and predecessor companies. The contract required the design and manufacture of several different naval shipboard display systems, computer complexes, and networking systems. All the systems had to be hardened for combat conditions, including extreme shock, water resistance, EMI, etc. The US Navy and several allies required this hardware to be utilized on all naval surface and subsurface combatants.

In 1993 David was named the lead for finding new, nontraditional businesses that Unisys Defense Systems, Eagan could attempt to enter as the traditional defense business was waning due to the end of the Cold War. After searching for potential businesses with the help of a small team, it was decided to pursue two businesses: Environmental Screening/Remediation and Precision Agriculture. Both emerging fields had technologies that were close to those we had been investing in for military applications. David was the program director for these efforts.

In September 1996, David was named an engineering director, a position he held until retirement in February 2011. An engineering director is assigned to a business area, and he is responsible for all cost, schedule, and technical performance of all engineering activities in that business area. The engineering director is responsible for the personnel management of his organization. He and his team also support all marketing activities within his area.

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David was assigned to the C4I, Maritime Surveillance, and Tactical Avionics business areas at various times during this period. At various periods he had responsibility for management of up to 600 engineers at a time.

TECHNOLOGY AREAS

Environmental – Unisys led a team consisting of the US Air Force, US Army, Dakota Technologies Inc., and North Dakota State University in winning a contract from Defense Advanced Research Projects Agency (DARPA) to productize a technology called laser induced fluorescence to find hydro-carbon spills/contamination. The team developed and deployed the technology, including demonstrating/validating it to the Environmental Protection Agency (EPA). The tool was named ROST (Rapid Optical Screening Tool). Working with Unisys Corporate staff with experience in environmental remediation of Unisys facilities, Unisys Defense Systems, Eagan established a team to provide site assessments of hydro-carbon contamination as a service business. After Lockheed Martin purchased Loral in 1996, it was decided to sell the ROST systems and service business to Fugro International, an environmental assessment company.

Precision Agriculture – Working with several different large farm machinery manufacturers, Unisys learned of several technical obstacles that were prohibiting progress in precision farming. Unisys decided to attempt to develop products in these challenging areas that could be fitted on farm equipment. Basic research was done on several ideas, with patents granted in several areas:

Straightening Out GPS Readings – GPS at that time was purposely dithered by the military so that the public version was often off by several hundred feet. Unisys developed a product that would greatly reduce this dithering, allowing the more precise application of fertilizer and location within a farm field. We manufactured and sold these devices to a predecessor of John Deere.

Grain Harvesting Analysis – Determining the amount of grain that was being produced on a particular plot of ground was another solution we developed, attaching a device that measured the amount of grain coming through the harvester to our GPS devices.

Differentiating Weeds from Crops While Spraying Herbicide - We developed a method to image weeds and differentiate the weeds from desired crops so that a weed sprayer would only spray the weeds and not blanket spray. We developed a prototype and demonstrated it.

Agriculture Businesses Sold – As with the Environment related businesses, the Agriculture related businesses were sold off in 1996 when Lockheed Martin acquired Loral.

BUSINESS AREAS

Command, Control, Communications, Computers and Intelligence (C4I) – Programs managed under the C4I business area included Airborne Sovereignty Operations Center (ASOC) and derivative programs, Airborne Battle Command, Control, and Communications (ABCCC), and Theatre Battle Management Control System (TBMCS). David directed the engineering activities in this business area for about 4 years.

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ASOC – This program involved the design, development, deployment, and support for several air defense systems installed in several Eastern and Central European nations to support their participation in NATO defense of their country. This was a Foreign Military Sale (FMS) series of contracts, managed by the US Air Force. This series of contracts ran for over 20 years, with the first contract competitively won during David's management. Derivatives of this program were installed in Iraq.

ABCCC – This program involved the design, development, deployment, and support for an aircraft borne (C-130) system that provided real time command, control, and communications for the participants in air battles. This US Air Force system was very successfully used during several Mid-East conflicts.

TBMCS – This program involved the design and development of a system to preplan and schedule the assets needed to successfully perform an air campaign. The prime for this US Air Force contract was Lockheed Martin in Colorado Springs – Eagan had a subset of the program based on our previous experience with our Advanced Planning System (APS) project with the US Air Force.

C4I Marketing Activities – During David's engineering management of this business area, several large programs were aggressively pursued, including an air defense system for the original European NATO countries, an Australian air defense system, and a US Marine air defense system. Unfortunately, these programs were lost.

Foreign Military Sale of a Joint Forces Command Program – This very large (\$1+B) primarily software development program was marketed during David's management of this business area but awarded after he left for Maritime Surveillance. After this contract had been in place for about a year, David was assigned to take the engineering lead to manage this troubled program; David performed this in addition to his Maritime Surveillance assignment. This program was performed at the Lockheed Martin site in San Diego, CA. David's assignment lasted about 5 months, ending when the program was back on track.

Maritime Surveillance – Programs managed within the Maritime Surveillance business area included many different P-3 programs, S-3B programs, Deep Water Coast Guard programs, and Unmanned Aircraft Systems (UAS) programs. David directed the engineering activities in this business area for about 9 years.

P-3 – There were several very large contracts related to P-3 aircraft, including ones for the US Navy, Australian Air Force, Netherlands, Norway, Portugal, Germany, Taiwan, Pakistan, and Japan. All these programs involved designing, developing, manufacturing, installing, and supporting combat mission system hardware and software for installation onboard the aircraft. Most of these contracts involved very large software developments. Lockheed Martin, Eagan was the prime contractor for all but the Australian contracts. Some of the contracts were direct while others were FMS. The mission of these systems was to detect enemy forces from the air using sophisticated on-board radars, sonars, magnetic detectors, and communications detection equipment, then engage the enemy with on-board air to surface missiles, bombs, and torpedoes. The P-3 was a land-based platform designed to spend a long mission over the open oceans.

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Multi-Mission Maritime Aircraft (MMA) – Lockheed Martin, Marietta was the prime for this pursuit of a follow-on to the P3 platform and mission. There initially was a CD phase contract to define the program requirements and to demonstrate potential technologies to be included in the prime contract. David led the corporation's proposal for the CD phase efforts in Marietta. After we won the CD phase, Eagan's role was to define the on-board combat system. Unfortunately, Lockheed ultimately lost the prime contract because the US Navy wanted a different air platform than the one Lockheed proposed.

S-3B – These contracts were for design, development, manufacture, installation, and support of combat mission systems installed on US Navy S-3B aircraft. The S-3B combat mission was like that for the P-3, except the aircraft was carrier based; the sensors and weapons on the two aircraft were also different. These S-3B contracts had large software development efforts as well as developments of onboard computers.

Deep Water – Lockheed Martin, Morristown was the prime contractor for a very large contract to supply several different aircraft and ships to the US Coast Guard. Lockheed Martin, Eagan was tasked with providing combat mission systems for two of those platforms: Lockheed Martin C-130J and CASA HC-144. Eagan's role was to design, develop, manufacture, and install the on-board mission systems. The mission of these aircraft was to provide the full range of coast guard duties from border/coastal surveillance to fishery protection to drug enforcement.

Desert Hawk UAS – This contract with the British Army was for a small, hand launched UAS providing local area reconnaissance and base perimeter protection. Made of a lightweight material, it is capable of rough landings without major damage and is driven by a pusher quiet propeller. Equipped with three cameras, it can transmit real time video to a small laptop carried by the operators. Lockheed Martin, Eagan was the prime contractor.

Broad Area Maritime Surveillance (BAMS) – Lockheed Martin, Eagan was the prime contractor for this program pursuit. There was a one-year government funded Contract Definition (CD) phase to work with the US Navy to help define the program requirements and to demonstrate technologies. General Atomic was our subcontractor for the aircraft. BAMS is a US Navy program to provide air surveillance of the oceans of the world using long endurance, unmanned aircraft controlled from ground stations thousands of miles away. After the successful CD phase, there was a very large proposal effort to pull together a proposal for the prime contract: a 25,000-page proposal was produced in Eagan. David was put on special assignment to lead the technical efforts full time during the lead up and execution of the proposal. Our proposal was for over \$7B and was the lowest cost of the three competitors. The US Navy rated our technical proposal as superior. Unfortunately, Lockheed lost because the government red flagged our offering because of the past performance of our major subcontractor.

Tactical Systems – This business area was responsible for the design, development, manufacture, and support of core processing capabilities of fighter aircraft, including the F-35 and F-16. Lockheed Martin, Ft. Worth was prime contractor for the aircraft – Eagan was a subcontractor. The F-35, also known as the Joint Strike Fighter (JSF), is the premier air superiority fighter for all US military services and several allies.

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The core processor supports all the aircraft's mission systems and is extremely rugged in design. Eagan also designed, developed, and manufactured a state-of-the-art networking system that is installed on the aircraft. David directed this engineering area for about 18 months.

Publications – During David's career he authored many thousands of pages of technical documents, formal proposals, marketing materials, etc. Most of these materials were provided to the US military or allied militaries. Most of these materials are the equivalent in quality to publications available in commercial books.

EDUCATION

David was raised in Sauk Centre, MN, graduating from Sauk Centre High School in 1965. He attended the University of Minnesota, Morris from 1965-1969, receiving a BA with a double major in math and physics. He attended the University of Minnesota, Twin Cities Graduate School from 1969-1973, earning a Master of Science degree in math, leaving school a dissertation short of a PhD. While in Graduate School, he was a teaching assistant, teaching math and physics classes at the University.