

EMR TELEMETRY HISTORY 1941 TO DATE



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Electro-Mechanical Research, inc.

SARASOTA DIVISION 

ELECTRO-MECHANICAL RESEARCH, INC.

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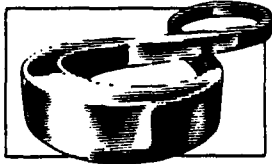
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WHO WE ARE

Our History

Loral Fairchild Corp. has at least ~~three~~^{four} beginnings: in New York City in 1919 as the Fairchild Aerial Camera Corporation; in Archbald, Pennsylvania in 1951 as Daystrom Military Electronics; and in Houston, Texas in 1941 as Electro-Mechanical Research, Inc., **AND OUR MOST RECENT ADDITIONS FOR AEROSPACE, Vought Systems, AND IBM FEDERAL.**

Sound confusing? It is and it isn't. If one were to focus exclusively on places, dates and names, then it's easy to get lost in the web of acquisitions, offshoots and subsidiaries that have become Loral Fairchild Corp. But if one were to consider what made these various companies outstanding in their field -- technological leadership and innovation -- then it makes perfect sense that they should today find themselves under one corporate roof.

Historically, what each of the three groups within Loral Fairchild Corp. has in common is a prior affiliation with Schlumberger, Ltd., an international conglomerate. Loral Data Systems had the longest affiliation, dating back to its beginnings in 1941 as a Schlumberger subsidiary known as Electro-Mechanical Research, Inc. (EMR). EMR was founded to apply geophysical sounding techniques to the development of specialized equipment for military applications. During World War II, EMR developed a variety of land and underwater mine detectors for the armed forces and conducted pioneering work in infrared detections.

EMR continued to develop military instrumentation after it opened its Ridgefield, Connecticut facility in 1946, and it entered the telemetry field in 1948. Following a move to Sarasota, Florida in 1957, EMR expanded its product line to include PCM and PAM multiplexing-encoding/demodulation, FM multiplexing/demultiplexing, RF transmission, and television-photometry applications. This expansion was accompanied by the successful development of new techniques in several product lines.

Instrumentation tape products were added to the business in 1978 when Schlumberger moved its Sangamo product line to Sarasota, at which time EMR became the Data Systems Division of Sangamo Weston. In 1981, with the addition of cockpit voice recorders and digital flight data recorders from Fairchild Aviation Recorders, Data Systems Division became part of Schlumberger's Fairchild Weston Systems Inc.

Loral Control Systems began in 1951 as Daystrom Military Electronics. It was known as Weston Controls, a subsidiary of Daystrom, Inc., by the time it was acquired in 1962 by Schlumberger. Subsequently, Weston was integrated into other Schlumberger units engaged in measurement and control product activities, becoming part of Fairchild Weston Systems Inc.

Loral Fairchild Systems has the longest history of the three Loral Fairchild Corp. units, but the shortest affiliation with Schlumberger. The Company dates back to 1919, when Sherman Mills Fairchild founded the Fairchild Aerial Camera Corporation to manufacture a between-the-lens shutter mechanism he invented. The mechanism made aerial photography possible for the first time.

The aerial camera and other electronics-oriented segments of the business continued to grow. By 1944 -- when the Company was renamed Fairchild Camera and Instrument Corporation -- 90% of the aerial cameras used by the Allied forces in World War II were designed and manufactured by Fairchild Camera.

In 1957, Fairchild Camera took a giant step into the future -- and into what was to become a lucrative new line of business -- when it sponsored a group of young scientists and engineers involved in solid-state electronics. The group had developed a method of mass-producing silicon diffused transistors and other semiconductor devices. All it needed was capital. Fairchild supplied it, and thus Fairchild Semiconductor was born. Fairchild Semiconductor spawned much of today's semiconductor industry as it developed patented processes in every field of semiconductor technology. By the mid-1970s, Fairchild was the third largest United States supplier of semiconductors.

The Fairchild Camera and Instrument Corporation was purchased by Schlumberger in 1979. Fairchild continued its original camera operation and expanded its technology base into a variety of aerospace- and defense-related areas. Following a 1982 reorganization, the Company's name was changed to Fairchild Weston Systems Inc.

In 1989, Fairchild Weston Systems Inc.'s three defense electronics units were acquired by Loral Corporation and became known as Loral Fairchild Corp. These three units continue today as independent divisions within Loral Fairchild Corp., providing products and systems as part of a larger group of companies that serve the aerospace and defense markets worldwide. Through all these changes, one basic characteristic remains: technological leadership and innovation.

Our Divisions

Loral Fairchild Corp. has organized its product lines into three divisions.


- Loral Data Systems
- Loral Control Systems
- Loral Fairchild Systems

Loral Data Systems

Loral Data Systems produces three product lines: Telemetry Products/Systems, Signal Processing Systems, and Recorders.

Telemetry Products/Systems. The telemetry product line has units that perform a wide array of telemetry data processing activities, including signal conditioning, encoding, multiplexing, decoding, synchronization, data reduction A/D conversion, D/A conversion, and other preprocessing activities for both digital and analog data.

On a systems level, Loral provides task-oriented integration of EMR products, custom and standard software, and computer subsystem processing, display, storage, and workstation capabilities. Our systems are customer-specific configurations of our products for high-speed data handling, compression, collection, storage, processing, display, and other signal processing tasks.



These telemetry products and systems are utilized in the space program, weather and other satellite programs, missile launch programs, astronomy research programs, windshear/microburst detection systems, aircraft development and test programs, nuclear programs and energy research programs.

Signal Processing Systems. This product line is on the leading edge of new signal processing technology development and has established a record of technical excellence in the development of advanced signal processing techniques and products.

Recorders. This product line provides a diversified line of recorder products, digital flight recorders, cockpit voice recorders, and multi-tract instrumentation recorders. This complete line of recorders employs the latest in technological advances.

Loral Data Systems is the world leader in manufacturing and installing both digital flight recorders and cockpit voice recorders. Often referred to as "black boxes" (they are actually orange), they are used in most commercial aircraft throughout the world.

It is these boxes that investigative authorities seek at aviation accident sites to determine causes so that subsequent corrective measures can be taken. By meeting the technical challenges of flight recorders, we have made a major contribution towards the development of safer air travel throughout the world.

In addition, Loral Data Systems has a build-to-print capability that addresses the U.S. Government's high volume second-source programs.

Loral Control Systems

Loral Control Systems is a high-technology company that primarily designs and manufactures instruments and controls for naval vessels, armament fuzing systems, ECM expendables, target detection devices, air launched practice rounds, and measurement systems.

Instruments/Control Systems. This group finds its market in the design and development of high technology control systems for the Navy Nuclear Program. Loral Control Systems enjoys leadership positions in nuclear instrumentations, rod control equipment, rod positioning instrumentation, and nuclear detector equipment. This equipment is hosted on most Navy nuclear platforms with our designs playing an important role in the future of the nuclear Navy.

ECM Expendables. The Expendable Electronics Countermeasure System (ECM) is a low cost, gun rugged, broadband barrage transmitter capable of disrupting enemy radio communication.

FMU-124 Air to Ground Fuze System. This program involves high volume manufacturing of electro-mechanical devices. Engineering activities include quality, test, and manufacturing.

Laser Guided Training Round. This is an engineering development program for the Department of the Navy. It involves missile systems engineering and laser based technology. The LGTR will provide real time tactical practice hardware for Navy pilots.

Target Detection Devices. These devices are used for the Chaparral Missile which utilizes microwave technology to detect its target.

Measurement Systems. Loral Control Systems also manufactures instrumentation equipment for the metals industry (steel, aluminum, copper, brass, etc.). This computerized non-contact equipment measures the thickness and profile of flat rolled products on-line and in real time, and utilizes x-rays or radioactive isotopes. The latest in both analog and digital technology is employed, as well as sophisticated software techniques, to achieve high measurement accuracies.

Loral Fairchild Systems

Loral Fairchild Systems produces five product lines: Aerial Reconnaissance and Surveillance Systems, Tactical and Space Video Systems, Electronic Countermeasure Equipment, Automated Test Equipment and Imaging Sensors.

Aerial Reconnaissance and Surveillance Systems. This product line pioneered the transition from film to electro-optics and now leads in total turnkey systems. Used on both manned and unmanned platforms, these systems integrate airborne imaging and data links with recorders and ground control and exploitation systems capable of operating day and night in near real time. We aid in video data analysis and image enhancement by using state-of-the-art imaging and control systems.

Tactical and Space Video Systems. This product line has developed militarized electro-optical systems for real time day and night operations in aircraft, combat vehicles, missiles and space vehicles. Using imaging sensors, the systems cover the visible, near-infrared and mid-infrared spectrum.

Electronic Countermeasure Equipment. This product line develops turnkey communications electronic warfare systems in HF, VHF and UHF bands. These systems incorporate the latest Electronic Support Measure (ESM) technology in automatic direction finding and signal processing for emitter location and identification.

Automated Test Equipment. This product line covers general purpose testing of weapons system avionics to complex testing of highly sophisticated radars. Automated equipment provides rapid, error-free transfer of mission-related data to and from weapons systems.

Imaging Sensors. This product line designs, manufactures and tests visible and infrared Charge Coupled Devices (CCD) and cameras for military and commercial applications.