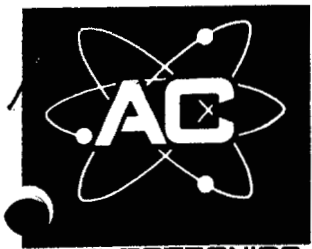


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PUBLIC RELATIONS DEPARTMENT
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AC ELECTRONICS DIVISION OF GENERAL MOTORS CORPORATION MILWAUKEE, WISCONSIN 53201

NEWS

FOR RELEASE

AC'S ROLE IN THE AEROSPACE INDUSTRY

In less than two decades since its organization, AC Electronics Division of General Motors has become a leader in the aerospace industry.

Currently building the spacecraft guidance and navigation systems for the Apollo moon-landing program, AC Electronics also produces inertial guidance and navigation systems for space launch rockets, ballistic missiles, ships, and military and commercial aircraft.

AC's other products include fire control systems for military tanks, digital computers, precision gyroscopes and accelerometers, and ordnance fuzes and components.

Recently, the Boeing Company selected AC Electronics to provide an inertial navigation system for its giant 747 airliner. This AC-designed unit is the first inertial navigation system to be made an integral part of a standard commercial aircraft, establishing AC as the pioneer in a new commercial transportation market, based directly on its work in military and space technology.

This navigation system will provide fully-automatic, highly accurate, all-weather navigation for the new Boeing airliner, which will go into airline service in 1969, and carry up to 490 passengers or 100 tons of cargo. Airlines are also expected to install inertial navigation systems in their current model jet aircraft used on overseas routes.

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For the Apollo program, AC is prime contractor to the National Aeronautics and Space Administration for the spacecraft guidance and navigation system for both the Command and Lunar Module spacecraft. America's first team of three astronauts will rely on this system to guide them to the moon and back.

For the Air Force, AC is prime contractor for the inertial guidance systems for the Titan II, America's most powerful intercontinental ballistic missile, and for the Titan III, the giant standardized space booster which is the Air Force's "workhorse" launch vehicle for various military space programs.

For the Army, AC makes electric control components for tanks such as the M551 General Sheridan armed reconnaissance vehicle, and recently began producing ordnance fuzes for use with various bombs and artillery shells and rockets.

AC'S WORK FOR FUTURE PROGRAMS

AC Electronics has also been selected by several national defense and space agencies to carry out advanced research, engineering, and to build and test prototype models of guidance and control systems for future applications.

For the Army, AC is working on development of a high performance fire control system for the new Main Battle Tank, a joint effort of the United States and the Federal Republic of Germany. General Motors Corporation is the U. S.' prime industrial contractor for the program.

Under an Air Force contract, AC has begun prototype development work on the SABRE (for Self-Aligning Boost and Re-Entry) inertial guidance system, a next-generation guidance system for intercontinental missiles with capability of actively guiding and maneuvering a missile through reentry and all the way to its target, rather than only into a ballistic trajectory as do current systems.

For the Navy, AC is developing prototype models of the SSCNS (for Ship's Self-contained Navigation System), a precision navigation system with potential application in a wide variety of surface ships and submarines.

For the Air Force, AC is developing and flight testing advanced inertial navigation techniques for use in strategic bombers of the future.

The National Aeronautics and Space Administration has awarded assignments to AC for developing guidance and navigation concepts and techniques for post-Apollo moon exploration and inter-planetary missions.

AC'S TECHNOLOGICAL DEVELOPMENTS

Developments of AC Electronics' research and development program are fundamental factors in the Division's aerospace leadership today. One is the family of MAGIC computers, beginning in 1962 with MAGIC I, the first general purpose airborne digital computer to use molecular electronic components. The fabrication of MAGIC II in 1964 gave AC production capability for a complete inertial guidance system. Previously, computers had been provided for AC guidance systems by subcontractors. Current models of the MAGIC computer are being applied to several advanced inertial guidance and electronic control systems under development by AC.

A second key development is AC's Carousel family of advanced inertial navigation systems. These units, which employ a unique concept for rotating the gimbaled platform at the heart of the system to achieve greater accuracy, are being applied to advanced systems under development at AC.

Another fundamental factor in AC's technological leadership is the capability to develop and produce the precision inertial sensors -- gyroscopes and accelerometers -- which are the vital heart of an inertial navigation system. Ranging from AC's initial research model gyro built in 1954, which weighed 25 pounds, to the latest production model AC651 gyro weighing only half a pound, AC has developed and produced over 10,000 ultra high precision gyros and accelerometers.

A new family of inertial sensors specifically designed to withstand the severe thermal environment and provide the fast reaction time and high performance demanded for aircraft applications has been successfully developed by AC and is being applied in several new navigation systems being developed.

AC'S PIONEERING IN INERTIAL GUIDANCE

AC Electronics has enjoyed success in the inertial guidance field since entering the technological field pioneered by the work of Dr. C. Stark Draper of the Massachusetts Institute of Technology Instrumentation Laboratory.

Inertial guidance and navigation employs accelerometers mounted on a gyroscopically-stabilized platform to measure changes in speed and direction with extreme precision. This information is fed to an on-board computer which

accomplishes guidance and navigation calculations and initiates necessary steering corrections. The system is entirely self-contained; it does not require commands or directions from outside its vehicle. It needs only to be told in advance its starting point and its destination.

Thus, once an inertially-guided missile is launched, its guidance cannot be jammed or diverted. The inertial system controls the entire flight and payload release according to its pre-programmed flight plan.

Over a decade ago, AC developed a Stellar Inertial Bombing system for the Air Force. Intended as a navigational aid for manned aircraft, this system established the feasibility of long-range, all-inertial guidance for the first time, and also established AC Electronics as a leader in aerospace technology.

In 1956, AC was selected by the Air Force to develop and produce an inertial guidance system for the Thor intermediate range ballistic missile (IRBM).

One year after the Thor contract was awarded to AC, the first Thor was fired from Cape Kennedy. This program -- one of the most reliable missile systems the United States has ever had -- established AC's reputation as a leader in the then-new missile guidance technology.

Following the Thor success, the Air Force called upon AC Electronics in 1959 to provide the guidance system for the Titan II ICBM. Ultimately, the Titan program, too, brought special recognition to AC Electronics from the Pentagon.

Another early military application of AC's guidance system was in the Mace, the Air Force's first successful inertially-guided air-breathing missile,

AC has also produced high precision gyroscopes and accelerometers for Polaris, the missile deployed in the Navy's atomic submarines and the Air Force's Minuteman ICBM, now operational in underground silos in the U. S.

AC Electronics has also pioneered in development of space guidance systems. In 1962, AC was awarded a contract by the Air Force to adapt its Titan II guidance system for use in the Titan III military space booster. In recent research and development flights, AC-guided Titan III-C boosters have completed some of the most complex missions ever accomplished, including the placing in orbit of a network of communications satellites which now provides a dependable world-wide communications network for the military.

In 1963, AC Electronics was selected by NASA as a prime contractor for building the guidance and navigation system for the Apollo spacecraft.

In the aircraft field, AC was designated by the Air Force in 1960 to integrate various subsystems to provide an updated bombing-navigation system for the Strategic Air Command's B-52 C&D bombers. These aircraft are being used in the Vietnam conflict. The program, officially called the AN/ASQ 48 Bombing Navigation System, provided the huge jet bombers with several modes of operation together with capability for air-to-surface missile tie-in and high-speed low-level flight.