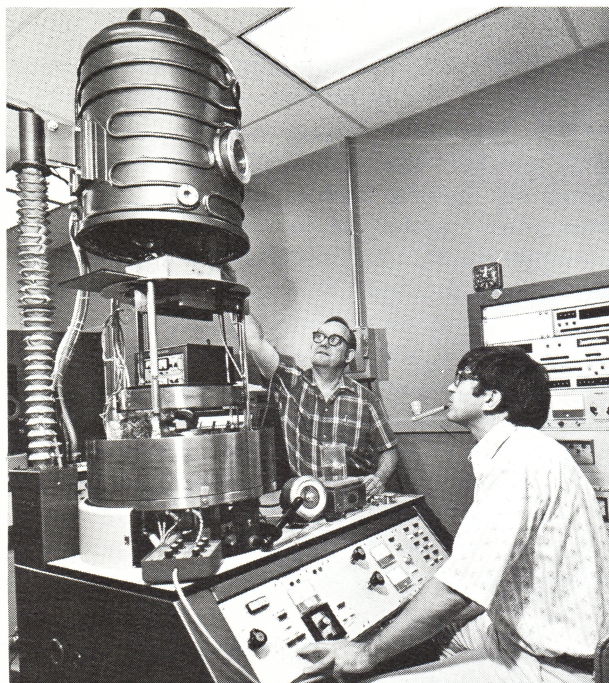


RESEARCH AND DEVELOPMENT

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LTV AEROSPACE
CORPORATION



NUCLEAR AND SPACE PHYSICS

The Nuclear and Space Physics personnel of Advanced Technology Center, Inc. (ATC) have developed several important capabilities. The Center is experienced in basic and applied studies of electron interactions with materials, development of radiation detection instruments and techniques for detector calibration, hypervelocity impact studies and the development of thin-film capacitor type micrometeoroid sensors, and qualification of radiation and meteoroid sensors for space flight with subsequent design, fabrication and flight of an experimental satellite bearing such sensors. The Center also has experience in radiation effects on electronic components, circuits, and sensors; neutron activation analysis using a Californium-252 isotope source; and neutron radiography in nondestructive evaluation of structures and materials.

Specialized facilities and instrumentation include: (1) 3-MeV Van de Graeff accelerator facility capable of

producing energetic beams of electrons, positive ions, neutrons, or simulated micrometeoroid particles, (2) 300-keV Cockcroft-Walton electron accelerator, (3) nuclear detection instrumentation with small computer, (4) neutron activation analysis laboratory containing 2.0 mg source of Californium-252, (5) neutron radiography facility, and (6) laboratory and instrumentation for fabrication and testing of thin-film capacitor meteoroid sensors.

ACOUSTICS

The acoustic's group of ATC has been involved with acoustics and electroacoustics R&D for about ten years. Recently, group personnel have developed noise-cancelling microphones under contract for use in military aircraft and in U.S. Navy undersea operations. A unique system for polarizing plastic-film electrets has been developed. This technique has been applied to the fabrication of miniature electret microphones. ATC has assembled one of the most complete acoustic test facilities in the United States. This includes anechoic and hyperbaric chambers, a variety of laboratory transducer standards, specialized calibration equipment, and a complete inventory of standard electronics instruments.

FLUID MECHANICS

Fluid Mechanics research programs at ATC are concerned with improving the performance of vehicles and systems due to flows of liquids and gases. Considerable effort is in progress to provide Short Takeoff and Landing capabilities for a variety of aircraft, with only minor additional engine requirements. These techniques incorporate a company-developed process of controlling the boundary layer flow over high lift wings. Analysis and testing of these wing configurations are done in specially designed laboratory facilities at ATC and in the extensive wind tunnel facilities of Vought Aeronautics Company. ATC is also continuing to study and develop methods for use of high molecular weight