

The Lewis 10- by 10-foot supersonic wind tunnel was completed in 1955 as part of the nationwide unitary wind tunnel plan. It was used to test turbojet and ramjet engine systems, but was then modified after NASA was established to do work on rocket systems that included the investigation of the vehicle base heating problem which results when multiple engines are clustered together, such as is the case in our Saturn rockets. During recent years that facility has been modified again to provide the capability to simulate conditions that would be experienced in a supersonic aircraft so that engine and engine inlet configuration matching problems can be investigated for the supersonic transport.

The engine propeller research building was built in 1942 and was the first operational facility at the Lewis Research Center. It was used for a reciprocating engine testing, for turbojet engine testing, and is now used for electric propulsion research.

At the Langley Research Center, which is our oldest installation, having been established in 1918, many facilities have been converted to meet new needs.

The fan drive system of the full-scale wind tunnel at Langley was modified so that accurate control was possible through the tunnel speed range required for vertical and short takeoff landing research and low-speed flying quality studies of high-speed aircraft designs.

Changing research needs prompted the phasing out of the gust tunnel and the conversion of the available space to an urgently needed noise research laboratory. The aircraft loads calibration laboratory is a large laboratory building which has undergone several conversions to meet changing research needs; it now houses such simulation equipment as LOLA (Lunar Orbit Letdown and Approach simulator), zero gravity simulation water tank, a tactical effectiveness simulator, and visual simulator for a foot control maneuvering unit.

The Jet Propulsion Laboratory moved from the development of jet assisted takeoff (JATO) equipment for aircraft to other projects involving rocket and jet propulsion technology. Emphasis was changed to the development of reliable liquid and solid fuel propellants, guidance systems, tracking devices, and telemetry.

In conjunction with the Army Ballistic Missile Agency, JPL had a major responsibility for this country's first satellite, Explorer spacecraft. From this background JPL has developed to its present role of responsibility for such major NASA projects as Surveyor, Ranger, and Mariner. JPL's special capabilities are also being applied to solve specific problems of the Department of Defense.

Certain capabilities of the Signal Corps laboratory at Fort Monmouth, that were brought into the Goddard Space Flight Center in 1959, had carried out one of the four upper atmosphere sounding rocket programs in the United States through the 1950's. They designed and developed Vanguard II, a cloud cover experiment, and the first meteorological satellite, which was launched in 1959.

This group, in NASA, formed the nucleus of the organization that managed TIROS, Nimbus, and the atmosphere Explorers, a total of 14 successful satellites.

This group of men became one of the strongest groups of meteorological and atmospheric scientists in the world, in particular pioneering the use of infrared technique to measure the earth's atmosphere and surface and in studying the structure of the atmosphere.