Hughes Aircraft Company was a major aerospace and defense company founded by Howard Hughes. The group was based near Ballona Creek, in Culver City, California, USA, on the Pacific Coast.

Hughes Aircraft was acquired by General Motors in 1985. GM sold off the aerospace and defense operations during the late 1990s; Hughes Aircraft was sold to Raytheon in 1997 and the Hughes Research Laboratories became jointly owned by Boeing, GM, and Raytheon. Hughes Space and Communications Company was purchased by Boeing in 2000 and renamed Boeing Satellite Development Center. GM sold the remainder of Hughes Electronics to News Corporation which renamed the company DirecTV Group.

History

Hughes H-4 Hercules “Spruce Goose”
In 1932, Howard Hughes Jr., formed Hughes Aircraft Company as a division of the Hughes Tool Company. In 1935 Hughes, with his trusted friend and aviation engineer Glenn Odekirk, built the H-1 Racer, which included every streamlining concept then known, including retractable landing gear, a fully enclosed cockpit, and the first use of recessed rivets. The H-1 captured a number of speed records during the next few years, and made Hughes a household name.

During World War II the company designed and built several prototype aircraft including the famous Hughes H-4 Hercules, better known as the "Spruce Goose". However the plant was used primarily as a branch plant for the construction of other company's designs. At the start of the war Hughes Aircraft had only four full-time employees — by the end the number was 80,000.

Post World War II

Hughes Aircraft was one of many aerospace and defense companies which flourished in Southern California during and after World War II and was at one time the largest employer in the area.

By the summer of 1947, certain politicians had become concerned about Hughes' mismanagement of the Spruce Goose and the XF-11 photo reconnaissance plane project. They formed a special committee to investigate Hughes, but when he successfully tested both planes and then turned them over to the military, they no longer had a target to attack. Despite a highly critical committee report, Hughes was cleared.

In 1948 Hughes created a new division of the company, the Aerospace Group. Two Hughes engineers, Simon Ramo and Dean Wooldridge, had new ideas on the packaging of electronics to make complete fire control systems. Their MA-1 system combined signals from the aircraft's radar with an analog computer to automatically guide the interceptor aircraft into the proper position for firing missiles. At the same time other teams were working with the newly formed US Air Force on air-to-air missiles, delivering the AIM-4 Falcon, then known as the F-98. The MA-1/Falcon package, with several upgrades, was the primary interceptor weapon system in the US for many years, lasting into the 1980s. Ramo and Wooldridge, having failed to reach an agreement with Howard Hughes regarding management problems, resigned in September 1953. They founded the Ramo-Wooldridge Corporation, later to join Thompson Products to form TRW, another aerospace company and a major competitor to Hughes Aircraft.
Howard Hughes donated Hughes Aircraft to the newly formed Howard Hughes Medical Institute in 1953 allegedly as a way of avoiding taxes on its huge income.[3] The next year, L.A. "Pat" Hyland was hired as vice president and general manager of Hughes Aircraft;[1] he would ultimately become company president and CEO after Howard Hughes’ death in 1976.

Under Hyland’s guidance, the Aerospace Group continued to diversify and become massively profitable, and became a primary focus of the company. The company developed radar systems, electro-optical systems, the first working laser, aircraft computer systems, missile systems, ion-propulsion engines (for space travel), and many other advanced technologies. The Electronic Properties Information Center (EPIC)[4] of the United States was hosted at the Hughes Culver City library in the 1970s. EPIC published the multi-volume Handbook of Electronic Materials as public documents.

Nobel Laureates Richard Feynman and Murray Gell-Mann had Hughes connections: Feynman would hold weekly seminars at Hughes Research Laboratories; Gell-Mann shared an office with Malcolm Currie, later a Chairman of the Board and Chief Executive Officer at Hughes Aircraft. Greg Jarvis and Ronald McNair, two of the astronauts on the last flight of the Space Shuttle Challenger were Hughes alumni.

Hughes Space and Communications Company

See also: Boeing Satellite Development Center

Hughes Space and Communications Company was formed as a subsidiary of Hughes Aircraft in 1961 following the merger of the company’s Space and Communications Group and the Hughes Space Systems Division.[3] This division built the world's first geosynchronous communications satellite, Syncom, in 1963 and followed it closely with the first geosynchronous weather satellite, ATS-1, in 1966. Later that year their Surveyor 1 made the first soft landing on the Moon as part of the lead-up to the moon landings in Project Apollo. Hughes also built Pioneer Venus in 1978, which performed the first extensive radar mapping of Venus, and the Galileo probe that flew to Jupiter in the 1990s.[2] The company built nearly 40 percent of the satellites in service worldwide in 2000. [citation needed]

Hughes Helicopter Business

Main article: Hughes Helicopters

In 1947, Howard Hughes redirected Hughes Aircraft’s efforts from airplanes to helicopters. The effort began in earnest in 1948 when helicopter manufacturer Kellett Aircraft Co. sold their latest design to Hughes for production. The H-17 Sky Crane first flew in October 1952, but was commercially unsuccessful. In 1955, Howard Hughes split the helicopter production unit from the Hughes Aircraft Company, and reconstituted it with Hughes Tool Company calling it Hughes Tool Company’s Aircraft Division. The Aircraft Division had a focus on the production of light helicopters, mainly the Hughes 300 and the OH-6 Cayuse/Hughes 500.

Howard Hughes Medical Institute sells Hughes Aircraft Company

Hughes left no will and following his death in 1976 there were numerous claims to his estate. A Hughes executive and a Hughes lawyer claimed they had the right to set up an "executive committee" to take over the running of the HHMI and its Hughes Aircraft subsidiary. The Attorney General of Delaware Richard R. Wier challenged this and filed suit in 1978. Charles M. Oberly continued the action when he became attorney general in 1983. Oberly stated he wished to see an independent
In January 1984 Judge Grover C. Brown ruled that the Chancery Court should appoint the trustees because Hughes had not left a succession plan. Brown asked for the both the executive committee and the attorney general’s office to submit a list of recommendations that he could approve. Brown approved a list in April 1984. In January 1985 the new board of trustees of the HHMI announced they would sell Hughes Aircraft either by private sale or public stock offering.

**Hughes Electronics Corporation**

Hughes logo, adopted after its new owner General Motors

Display of a Hughes satellite inside the Space Shuttle Explorer.

On June 5, 1985 General Motors was announced as the winner of a secretive five month, sealed-bid auction. Other bidders included Ford Motor Company and Boeing. The purchase was completed on December 20, 1985 for an estimated $5.2 billion, $2.7 billion in cash and the rest in 50 million shares of GM Class H stock.

On December 31, 1985 General Motors merged Hughes Aircraft with its Delco Electronics unit to form Hughes Electronics Corporation, an independent subsidiary. The group then consisted of: Delco Electronics Corporation, Hughes Aircraft Company, Hughes Space and Communications Company, Hughes Network Systems, and DirecTV.

In August of 1992 Hughes Aircraft completed its purchase of General Dynamics’ missile businesses for $450 million. This brought the Tomahawk Cruise Missile, Advanced Cruise Missile, Standard missile, Stinger missile, the Phalanx Close-in weapon system and the Rolling Airframe Missile into Hughes' portfolio.

In 1994 Hughes Electronics introduced DirecTV, the world's first high-powered DBS service. In 1995 Hughes Electronic's Hughes Space and Communications division became the largest supplier of commercial satellites. Also in 1995 the group purchased Magnavox Electronic Systems from the Carlyle Group. In 1996 Hughes Electronics and PanAmSat agree to merge their fixed satellite services into a new publicly held company, also called PanAmSat with Hughes Electronics as majority shareholder.
In 1997 GM transferred Delco Electronics to its Delphi Automotive Systems business. Late in the year Hughes Aircraft was demerged and sold to Raytheon for $9.5 billion.[19] The remaining companies remained under the Hughes Electronics name and within GM.

Hughes Space and Communications Company was purchased by Boeing in 2000 and became Boeing Satellite Development Center. In 2003 the remaining parts of Hughes Electronics: DirecTV, DirecTV Latin America, PanAmSat and Hughes Network Systems were purchased by NewsCorp from GM and renamed The DirecTV Group.

Hughes' Legacy

The amazing range of science and technology spawned by the workers at Hughes Aircraft never included medical applications, because the company was a property of the Howard Hughes Medical Institute, which exists to this day. This restriction was imposed to avoid even the appearance of a conflict of interest. Ironically, medical applications may well become Hughes’ greatest legacy.

Timeline

- **1932**: Howard Hughes formed Hughes Aircraft Company as a division of Hughes Tool Company.
- **1948**: Hughes formed the Aerospace Group within the company, divided into:
  - Hughes Space and Communications Group
  - Hughes Space Systems Division
- **1953**: The Howard Hughes Medical Institute (HHMI) was formed, and Hughes Aircraft reformed as a subsidiary of the foundation. The Internal Revenue Service unsuccessfully challenged its "charitable" status which made it tax-exempt.
- **1955**: Hughes formed its helicopter division, Aircraft Division
- **1960**: The first laser is produced at Hughes Research Laboratories, by Theodore Maiman
- **1961**: Hughes Space and Communications Company was formed, bringing together Hughes Space and Communications Group and the Hughes Space Systems Division and Hughes Research Laboratories completed its move to Malibu.
- **1972**: Hughes sold the tool division of Hughes Tool Company. His remaining interests were transferred to the newly formed holding company, the Summa Corporation. This included Toolco Aircraft and Hughes’ property and other businesses.
- **1976**: Toolco Aircraft became Hughes Helicopters
- **1976**: Howard Hughes dies at the age of 70, leaving no will
- **1984**: The Summa Corporation sold Hughes Helicopters to McDonnell Douglas for $500 million; it was soon renamed McDonnell Douglas Helicopters.
- **1984**: The Delaware Court of Chancery appointed eight trustees to the Howard Hughes Medical Institute; they decide to sell Hughes Aircraft.
- **1985**: The HHMI sold Hughes Aircraft to General Motors for $5.2 billion. This was merged with GM's Delco Electronics to form Hughes Electronics. This group then consisted of:
  - Delco Electronics Corporation
  - Hughes Aircraft Company
  - Hughes Space and Communications Company
  - Hughes Network Systems
  - DirecTV
- **1987**: Hughes Aircraft Company acquires M/A-COM Telecommunications, to form Hughes Network Systems
- **1994**: Hughes Electronics introduces DirecTV
- **1995**: Hughes Space and Communications Company became the world's biggest supplier of commercial satellites

1996: Hughes Electronics and PanAmSat agree to merge their fixed satellite services into a new publicly held company, also called PanAmSat with Hughes Electronics as majority shareholder.


1997: The aerospace and defense operations of Hughes Electronics (Hughes Aircraft) are merged with Raytheon; Raytheon also acquired one half of the Hughes Research Laboratories.

2000: Hughes Space and Communications Company remained independent until 2000, when it was purchased by Boeing and became Boeing Satellite Development Center. Boeing purchased one third of the Hughes Research Laboratories LLC which is now co-owned by Boeing, GM and Raytheon.

2003: The remaining parts of Hughes Electronics: DirecTV, DirecTV Latin America, PanAmSat and Hughes Network Systems were purchased by NewsCorp and renamed The DirecTV Group.

- SkyTerra Communications, Inc. completed its purchase of 100% controlling interest in Hughes Network Systems from the DirecTV Group in January 2006.

References