Grumman

The **Grumman Aircraft Engineering Corporation**, later **Grumman Aerospace Corporation**, was a leading producer of military and civilian <u>aircraft</u> of the 20th century. Founded in 1929 by <u>Leroy</u> <u>Grumman</u> with <u>Jake Swirbul</u> and <u>William Schwendler</u>, its independent existence ended in a 1994 merger with the <u>Northrop</u> Corporation to form <u>Northrop Grumman</u>.

History

Leroy Grumman and others worked for the <u>Loening Aircraft Engineering Corporation</u> in the 1920s, but when it was bought by <u>Keystone Aircraft Corporation</u> and the operations moved from <u>New York City</u> to <u>Pennsylvania</u>, Grumman and his partners (Edmund Ward Poor, William Schwendler, <u>Jake Swirbul</u>, and Clint Towl) started their own company in an old Cox-Klemin Aircraft Co. factory in <u>Baldwin</u> on <u>Long Island, NY</u>.

The company filed as a business on <u>5 December 1929</u>, and opened its doors <u>2 January 1930</u>. Keeping busy by welding aluminum tubing for truck frames, the company eagerly pursued contracts with the <u>US Navy</u>. Grumman designed the first practical floats with a retractable landing gear for the Navy, and this launched Grumman into the aviation market. The first Grumman aircraft was also for the Navy, the <u>Grumman FF-1</u>, a <u>biplane</u> with retractable <u>landing gear</u>. This was followed by a number of other successful designs. As the company grew, it moved to <u>Valley Stream</u>, <u>New York</u>, then <u>Farmingdale</u>, <u>New York</u>, finally ending up at <u>Bethpage</u>, <u>New York</u>, all located on Long Island as well. The airport in Bethpage has closed and was converted to residential areas. For much of the Cold War period Grumman was the largest single corporate employer on Long Island. Grumman's products were considered so reliable and ruggedly built that the company was often referred to as the "**Grumman Iron Works**."

During <u>World War II</u>, Grumman became famous for its Navy <u>fighter aircraft</u>, <u>F4F Wildcat</u> and <u>F6F</u> <u>Hellcat</u>, and for its <u>torpedo bomber</u> <u>TBF Avenger</u>. Grumman's first <u>jet plane</u>, the <u>F9F Panther</u>, became operational in 1949, but the company's big postwar successes came in the 1960s with the <u>A-</u> <u>6 Intruder</u> and in the 1970s with the <u>F-14 Tomcat</u>.

Grumman were also the chief contractor on the <u>Apollo Lunar Module</u> that landed men on the moon. They received the contract on <u>7 November 1962</u>, and ultimately built 13 lunar modules (LMs). As the Apollo program neared its end, Grumman was one of the chief competitors for the contract to design and build the <u>Space Shuttle</u>, but lost to <u>Rockwell International</u>.

Meanwhile, in 1969, the company changed its name to **Grumman Aerospace Corporation**, and in 1978 it sold the Grumman-American Division to <u>Gulfstream Aerospace</u>. Grumman built the Grumman Long Life Vehicle (<u>LLV</u>), a light transport mail truck designed for and used by the <u>United States Postal</u> <u>Service</u>. The LLV entered service in 1986.

The end of the Cold War at the beginning of the 1990s and the ensuing reduced need for defense spending led to a wave of mergers as aerospace companies shrank; in 1994 Grumman merged with Northrop to form <u>Northrop Grumman</u>.

Grumman aircraft by type and relative date



An <u>F-14A Tomcat</u> of <u>VF-84 Jolly Rogers</u>, in the old color scheme from the beginning of its service.



An A-6E Intruder flying over Spain during Exercise Matador.



TBF Avenger





Apollo Spacecraft: Apollo Lunar Module Diagram.

- The Cats
 - o F4F Wildcat
 - F6F Hellcat
 - F7F Tigercat
 - F8F Bearcat
 - F9F Panther
 - F9F/F-9 Cougar
 - XF10F Jaguar
 - F11F/F-11 Tiger
 - F-14 Tomcat

- Fighter aircraft
 - o Grumman FF
 - o Grumman F2F
 - o Grumman F3F
 - XF5F Skyrocket
 - o Grumman XP-50
- Attack
 - o AF Guardian
 - o <u>A-6 Intruder</u>
- Bomber
 - o TBF Avenger
- Amphibious
 - o <u>JF Duck</u>
 - o J2F Duck
 - <u>G-21 Goose</u> some modified as Super or Turbo Goose
 - o G-44 Widgeon
 - o HU-16 Albatross (Coast Guard UF-1/UF-2, Navy U-16, Civilian G-111)
 - o G-73 Mallard
- Other
 - o <u>C-1 Trader</u>
 - o <u>E-1 Tracer</u>
 - o S-2 Tracker
 - E-2 Hawkeye
 - <u>C-2 Greyhound</u>
 - OV-1 Mohawk
 - <u>EA-6B Prowler</u>
 - o Grumman X-29A
- Space
 - o Apollo Lunar Module
- Civilian
 - o Grumman Gulfstream I
 - o Grumman Gulfstream II
 - o <u>Grumman American AA-1</u> (1971-76)
 - o Grumman American AA-1B Trainer (1971-76)
 - o Grumman American AA-5 Traveler (1972-75)
 - o Grumman American AA-5A Cheetah (1976-79)
 - o Grumman American AA-5B Tiger (1975-79)
- Other
 - o Grumman Olson used to build aluminum truck bodies, known as a stepvan

Leroy Grumman

Leroy Randle Grumman (January 4, 1895 - October 4, 1982) was an American industrialist and aeronautical engineer.

Born in <u>Long Island, New York</u>, he demonstrated an early interest in aviation. As a teenager, Grumman predicted that "the final perfection of the airplane will be one of the greatest triumphs that man has gained over matter."

Early life

After graduating from Huntington High School, Grumman went on to receive a degree in engineering from <u>Cornell University</u> in 1916. Serving as an Ensign in the <u>US Naval Reserve</u>, he took advanced flight training in <u>Pensacola</u>, <u>Florida</u>, and eventually became a flight instructor. Later the Navy sent Grumman to the <u>Massachusetts Institute of Technology</u> to study the brand-new discipline of <u>aeronautical engineering</u>.

Work

In 1919 the Navy sent Grumman to Loening Aircraft Engineering Corporation in New York City to supervise the firm's construction of 50 monoplanes under contract with the Navy. The company was so impressed with Grumman that they hired him as general manager in 1920, a position he held until the company was sold in 1929 to Keystone Aircraft. Keystone closed the NYC factory and moved operations to Bristol, Pennsylvania. However, Grumman and fellow Loening employees Leon "Jake" Swirbul, and Bill Schwendler decided that, rather than move, they would quit and form their own company.

Grumman Company

Grumman mortgaged his house and Swirbul's mother borrowed \$6,000 to set up <u>Grumman</u> Aeronautical Engineering Co. Because both Grumman and Swirbul had grown up on <u>Long Island</u> and liked the region, they decided to locate the company there. They set-up shop with \$64,325 in capital on <u>January 2</u>, <u>1930</u> in an abandoned auto showroom-garage in Baldwin that had once been the Cox-Klemin Aircraft Co. factory. The new company repaired damaged Loening amphibians, built aluminum pontoons, and produced aluminum truck bodies until receiving its first Navy production contract for a two-seater biplane. As the company expanded they moved to bigger quarters – to <u>Valley Stream</u> in 1931, <u>Farmingdale</u> in 1932, and finally <u>Bethpage</u> in 1937.

WWII

On the eve of World War II the struggling company was hardly an industrial giant – in 1939 Grumman still managed to protect all of its property with the services of a single security guard. However, the next year brought significant change as the war in Europe prompted France and Britain to order F4F Wildcats, the 330-mph fighter planes that Grumman had first flown in 1937. Employment exploded from 700 in 1939 to 25,500 in 1943, as Grumman became the primary source for Navy fighter planes, first with the Wildcat and then with the F6F Hellcat. They also produced the largest single-engine aircraft of World War II, the TBF Avenger torpedo bomber.

At the peak of production in March <u>1945</u>, Grumman built a record 664 aircraft in one month, setting production records that have never been equaled. During <u>World War II</u> Grumman aircraft dominated U.S. Naval Aviation Forces and were responsible for 2/3 of all Japanese aircraft destroyed.

Post-war

Like its competitors, Grumman experienced severe post-war downsizing, dropping to 5,000 employees immediately after the cessation of hostilities. However, Leroy Grumman retained as many veteran employees as possible and successfully guided the company into finding new markets for new products. Among these was civilian airplanes, such as the Agcat <u>crop-dusting</u> biplane and the <u>Gulfstream</u> executive airplane. While continuing its tradition of aircraft production for Naval aviation, Grumman also began a space program that culminated in the Grumman design and production of the <u>Apollo program's Lunar Excursion Module</u> (LEM) that landed astronauts on the moon in 1969.

Late in life

In <u>1966</u> Leroy Grumman retired as Chairman of the Board of Grumman Aircraft Co., although he remained as a Director until 1972. He continued to visit the company's facilities until his health began to fail in the early 1980s. He continued to live on <u>Long Island</u> in <u>Manhasset</u> where he died on <u>October</u> <u>4</u>, <u>1982</u>, aged 87.

Although he received many honors during his lifetime, one of the most recent was awarded posthumously in 2001 when Newsday announced that Leroy R. Grumman had won the "Long Islander of the Century" competition in the aviation category, beating national aviation hero <u>Charles</u> <u>Lindbergh</u>

Loening Aircraft Engineering

Loening Aircraft Engineering Corporation was founded 1917 by <u>Grover Loening</u> and produced early aircraft and amphibious aircraft from 1917 through 1933. When it merged with <u>Keystone Aircraft</u> <u>Corporation</u> in 1928, some of its engineers left to form <u>Grumman</u>.

History

- 1917: Loening Aeronautical Engineering Co, 31 St at East River, New York NY.
- 1928: Merged with <u>Keystone Aircraft Corporation</u> as Loening Aeronautical Div.
- 1929: Loening Aeronautical Engineering Co, Garden City NY.
- 1933: Ended operations.

Aircraft Models



Loening OA-1A

• Grover Loening (around 1911 - 1913)

• The world's first monoplane flying boat.

(Later models appear under Keystone Aircraft Corporation)

Many Loening flying boats were similar in appearance to the <u>Grumman Duck</u> - single large float under the fuselage.

External links

- Loening
- Loening OA-1A in USAF Museum

Jake Swirbul

Leon A. "Jake" "The Bullfrog" Swirbul (<u>March 18</u>, <u>1898</u> – <u>June 28</u>, <u>1960</u>), was an aviation pioneer and co-founder of <u>Grumman Aircraft Engineering Corporation</u>.

He was born in the Yorkville section of <u>Manhattan</u>. His family moved to <u>Long Island</u> when he was a child. He grew up in <u>Sag Harbor</u> and graduated from <u>Pierson High School</u>. He attended <u>Cornell</u> <u>University</u> until <u>1917</u> when he left school to enlist in the <u>U.S. Marine Corps</u>.

Jake Swirbul and Leroy Grumman met in <u>1924</u> at Loening Aeronautical Engineering Co. in <u>New York</u> <u>City</u>, one of the many small aircraft firms that sprang up after <u>World War I</u>. When the firm's Manhattan factory was closed after its sale to <u>Keystone Aircraft</u> in <u>1929</u>, Swirbul and Grumman decided to form their own company. Grumman mortgaged his house to contribute \$16,875, and Swirbul contributed \$8,125. Two other Loening employees, <u>Bill Schwendler</u> and <u>Ed Poor</u>, contributed a little and former <u>Wall Street</u> banker <u>E. Clinton Towl</u> made up the fifth employee of Grumman Aircraft Engineering Corporation, formed January 2, <u>1930</u>.

Swirbul's unique, personable and intimate management style is credited as being the perfect compliment to Grumman's engineering skill. The two men formed a close business partnership that fostered growth, managing to keep the company alive during the <u>Great Depression</u>. As <u>World War II</u> approached, Swirbul's contacts in the <u>US Navy</u> kept Grumman's production lines running, and his <u>scalable</u> management style is credited with Grumman's ability to ramp up production faster than any other company when war broke out and to maintain higher profit margins than any other aircraft company throughout the war. In 1944, the Navy asked Grumman to slow production to 500 airplanes a month even though Swirbul said he could build 700 a month. In March, 1945, Grumman built a record 664 aircraft. When peace broke out, Swirbul effectively scaled down Grumman's operations so quickly that the company was the only American aviation company to post a profit in <u>1946</u>.

Jake Swirbul died of <u>pneumonia</u> while ill with <u>colon cancer</u> on June 28, <u>1960</u> shortly after Grumman began work on the <u>Gemini program</u> and one month after the roll-out ceremony for the <u>A-6 Intruder</u>. His funeral was attended by thousands of Grumman employees - a testament of how well he was loved at the company.

The Swirbul Library at Adelphi University is named in his honor