

Aero Vodochody

For the US manufacturer named **Aero**, see [Aero \(US aircraft manufacturer\)](#).

Aero Vodochody (commonly referred to as **Aero**, ([Vodochody](#) is location) is a [Czech](#) (and [Czechoslovak](#)) [aircraft](#) company notable for producing the [L-29 Delfin](#), [L-39 Albatros](#) and the [L-159 Alca](#).

After the [fall of socialism](#) in Czechoslovakia ([1989](#)) and in the rest of Eastern Europe, the company lost its main market in jet trainers. The sales of military aircraft declined in the early [1990s](#) in Eastern Europe as well as in the NATO countries where the entry of a new producer was obviously difficult. Aero collaborated several years with Boeing but this did not help it to compete on international market. Thus the Czech government bought Boeing out. [As of 2005](#) its situation of the company looks bleak.

Pre-war designs:

- [Aero A.1](#)
- [Aero A.10](#)
- [Aero A.11](#)
- [Aero A.12](#)
- [Aero A.14](#)
- [Aero A.17](#)
- [Aero A.18](#)
- [Aero A.19](#)
- [Aero A.20](#)
- [Aero A.21](#)
- [Aero A.25](#)
- [Aero A.22](#)
- [Aero A.23](#)
- [Aero A.24](#)
- [Aero A.26](#)
- [Aero A.29](#)
- [Aero A.30](#)
- [Aero A.32](#)
- [Aero A.100](#)
- Aero MB.200 ([Bloch MB.200](#))
- [Aero A.204](#)
- [Aero A.300](#)

Post-war designs:

- [Aero 45](#)
- [Aero L-60 Brigadyr](#)
- [Aero L-29 Delfin](#)
- [Aero L-39 Albatros](#)
- [Aero L-159 Alca](#)

Aérospatiale



The Aérospatiale Corvette first flew in 1970 and went into service in 1974. Forty were built.

Aérospatiale was a French [aerospace manufacturer](#) that primarily built both civilian and military [aircraft](#) and [rockets](#).

The company was created in [1970](#) from the state-owned companies [Sud Aviation](#), [Nord Aviation](#) and *Société d'études et de réalisation d'engins balistiques* (SÉREB).

In [1992](#), [DaimlerBenz Aerospace AG](#) ([DASA](#)) and Aérospatiale combined their helicopter divisions to form the [Eurocopter Group](#).

In [1999](#), Aérospatiale merged with [Matra Haute Technologie](#) to form the [Aérospatiale-Matra](#) company. This division manufactures missiles as part of the [MBDA](#) consortium.

On [July 10, 2000](#), Aérospatiale-Matra merged with other European companies to form [EADS](#).

[\[edit\]](#)

Products

- [Airbus](#) Transport
- [Alouette helicopter](#)
- [Arabsat satellite](#)
- [Ariane rocket](#)
- [ATR 42](#) and [ATR 72](#) turboprop airliners (with [Alenia](#))
- [ATSF](#) (unrealised)
- [Caravelle](#) Transport
- [Concorde](#) Transport
- [Corvette](#) Transport
- [Dauphin helicopter](#)
- [Epsilon](#) Trainer
- [Exocet missile](#)
- [Gazelle helicopter](#)
- [Hermes Spaceplane](#) (unrealized)
- [Lama helicopter](#)
- [Magister](#) Trainer/Attack
- [Puma helicopter](#)
- [Spacebus 300 satellite](#)
- [Zephyr](#) Naval Trainer/Attack

AgustaWestland



AgustaWestland is a [helicopter](#) design and manufacturing company based in [Italy](#) and the [United Kingdom](#). It was formed in July [2000](#) when [Finmeccanica S.p.A.](#) and [GKN plc](#) agreed to merge their respective helicopter subsidiaries ([Agusta](#) and [GKN-Westland Helicopters](#)) to form AgustaWestland. Finmeccanica and GKN each held a 50% share in AgustaWestland.

On [May 26, 2004](#) GKN confirmed that it would sell its share to its partner for £1.06Bn. AgustaWestland is now a fully owned subsidiary of [Finmeccanica](#) of Italy.

Products

- [EH101](#)
- [US101](#) Version designed for US
- [A139](#) (formerly the AB139, a 50% joint venture with Bell)
- Former Agusta products:
 - [A101G](#)
 - [A106](#)
 - [A109](#)
 - [A119 Koala](#)
 - [A129 Mangusta](#)
- Joint ventures:
 - [NH90](#) (32% share)
 - [BA609](#) (50% share)
- Licensed production:
 - [AB212](#)

External links

- [AgustaWestland Official Website](#)
- [AgustaWestland section](#) of helis.com Helicopter History site

Bell Helicopter Textron



Bell Helicopter Textron (or **Bell** for short) is an [American helicopter](#) and [tiltrotor](#) manufacturer headquartered in [Fort Worth, Texas](#). Bell manufactures military helicopter and tiltrotor products in the

United States (primarily in and around Fort Worth as well as in [Amarillo, Texas](#)) and commercial rotorcraft products in Mirabel, Quebec, Canada.

Bell formerly produced airplanes as [Bell Aircraft Corporation](#), including the famous [Bell X-1](#), which, piloted by [Chuck Yeager](#), was the first aircraft to fly faster than the speed of sound in level flight. It is a unit of the [conglomerate Textron](#), which purchased Bell Aerospace in 1960.

Bell Helicopter has a close association with [AgustaWestland](#). The partnership dates back to separate manufacturing and technology agreements with [Agusta](#) and [Westland](#). When the two European firms merged, the partnerships were retained, with the exception of the AB139, which is now known as the A139.

Product list



Bell 206B JetRanger III



Bell 412

Helicopters

Commercial

- [47](#)
- [206](#) (Currently in production)
- [210](#)
- [212](#)
- [214](#)
- [222](#)
- [407](#) (Currently in production)
- [412](#) (Currently in production)
- [427](#)

- [429](#) (Announced February 2005)
- [430](#) (Currently in production)

Military

- [UH-1 Iroquois](#) (or Huey)
- [UH-1F](#), [Air Force](#) variant of UH-1
- [AH-1 Cobra](#) (or HueyCobra)
- [AgustaWestland A139](#) (formerly 50/50 as the Bell/Agusta AB139, now 100% [AgustaWestland](#))
- [ARH](#)

Tiltrotors

- [V-22 Osprey](#) (with [Boeing IDS](#))
- [Bell/Agusta BA609](#) (with AgustaWestland)
- [Eagle Eye](#)

External links

- [Official site.](#)
- [Bell Timeline at the Helicopter History Site](#)
- [Photos and videos of Bell helicopters](#)
- [Patents owned by Bell Helicopter Textron.](#) *US Patent & Trademark Office.* URL accessed on [December 5, 2005](#).

Boeing Helicopters



Boeing Vertol CH-47 Chinook

Boeing Helicopters is a US aircraft manufacturer, part of [Boeing Integrated Defense Systems](#).

It was created as **Boeing Vertol** when the [Piasecki Helicopter](#) company of Morton, Pa. was acquired by [Boeing](#) in [1960](#). The company was responsible for the design and production of the [CH-46 Sea Knight](#) and the [CH-47 Chinook](#).

The factory is in [Ridley](#) Township, [Pennsylvania](#), a suburb of [Philadelphia](#).

As a [defense conversion](#) project in the mid 1970s, Boeing Vertol built the [US Standard Light Rail Vehicle](#) (popularly called the **Boeing LRV**), an attempt at a standardized [light rail](#) vehicle promoted by the [Urban Mass Transit Administration](#) purchased by transit systems in [Boston](#) and [San Francisco](#). As a new design from a company with no previous experience in building rail transit equipment, the Boeing LRVs were considered expensive and unreliable; they were nicknamed "Boeing Bathtubs" for their off-white [fiberglass](#) interiors which darkened after exposure to sunlight. As a result of these problems, no other transit systems were willing to order the LRV, and the product was quickly dropped. Prior to the LRV, Boeing Vertol also constructed the 2400 series [Chicago 'L'](#) cars for the [Chicago Transit Authority](#) and the [Morgantown Personal Rapid Transit](#) system for [West Virginia University](#).

It adopted its current name in [1987](#). When Boeing acquired [McDonnell Douglas](#), the former [Mesa, Arizona](#) operations of [Hughes Helicopters](#) were merged into Boeing Helicopters.

Boeing Vertol products

- [CH-46 Sea Knight](#)
- [UH-46 Sea Knight](#)
- [CH-47 Chinook](#)
- [V-22 Osprey](#)
- [CH-21 Shawnee](#)
- [AH-64 Apache](#)
- [United States Standard Light Rail Vehicle](#)

Hiller Aircraft

Hiller Aircraft Company was founded by [Stanley Hiller](#) in 1942 to develop helicopters. It was renamed **Hiller Helicopters** in 1948, and purchased by [Fairchild](#) in 1964. It was involved in the development of a number of prototype helicopters. Stanley Hiller repurchased the company in 1973.

A partial list of Hiller aircraft:

- [Hiller X-44](#)
- [Hiller UH-12](#) also known as the [OH-23](#)
- [Hiller X-18](#)
- [Hiller Flying Platform](#)

Stanley Hiller donated money and a number of aircraft to form an the [Hiller Aviation Museum](#) in [San Carlos, California](#), which opened in 1998.

Kamov



Kamov projects, 1999

[Nikolai Il'yich Kamov](#) started building his first rotor-winged aircraft in 1929, together with [N. K. Skrzhinskii](#). Up to the [1940s](#), they created more [autogyros](#), including the A-7-3, the only armed one in the world that saw (limited) combat action.

Since then, the Kamov bureau (design office prefix **Ka**) has specialised in compact [helicopters](#) of [coaxial-rotor](#) design, suitable for naval service and high-speed operations.

Kamov is merging with [Mil](#) and [Rostvertol](#) to form [Oboronprom Corp.](#) in [2006](#). The Kamov brand name will be retained, though the new company will drop overlapping product lines.

Kamov designs - The name designations (beginning with H) belong to [NATO](#).

Date	Model	Comments
September 25, 1929	KaSkr-I Gyrocraft	The first Soviet autogyro, designed by Kamov and Skrzhinskii. Based on Cierva models.
1934	A-7	An autogyro primarily used for observation duties.
1944	Ka-8 Vertolet	With his first true helicopter, Kamov introduced the coaxial scheme that the bureau still uses. The Ka-8 was a single-seat helicopter with a 27 hp motorcycle engine, boosted to 45 hp by using alcohol for fuel. The rotor blades were made of reinforced wood. Three units built.
September 1949	Ka-10 Hat	The Hat was an improved Ka-8 with a 55 hp Ivchenko engine that can reach 90 km/h. The twin - tail was introduced in the Ka-10M. 12 units built.
1952	Ka-15 Hen	A two-seat multi-purpose helicopter designed primarily for the Soviet Navy that became known outside the USSR in 1955. The civilian version was the Ka-15M. Engine: 1 Ivchenko of 225 hp Speed: 150 km/h Service Ceiling: 3050 m
1955	Ka-18 Hog	A Ka-15 with a large fuselage and a 280 hp Ivchenko AI-14VF engine. Could carry 4 passengers.

		200 units built (approx.)
1960	Ka-20 Harp	First seen in the Soviet National Aviation Day of 1961, it was considered the Ka-25 prototype. Was very similar to the Ka-15 and Ka-18.
1960	Ka-22 Hoop Vintokryl	This convertiplane achieved several records but only one unit was produced. October 14, 1961 : The Ka-22 reaches 337 km/h on 100 km circuit
1965	Ka-25 Hormone	Ship-borne helicopter for the Soviet Navy. Near 500 built up to 1975 Ka-25BSh Hormone - A : ASW variant Ka-25OTH Hormone - B : Targeting variant for feeding guidance data to cruise missiles launched by surface warships and submarines Ka-25PS Hormone - C : SAR variant Ka-25K : Civilian Crane variant Rotor diameter: 15.74 m Length: 10 m Height: 5.37 m Weight: 4770 kg - Max: 7500 Engine: 2 Glushenkov GTD-3F of 900 hp Speed: Max: 220 km/h Range: 400 km Service Ceiling: 3500 m
1966	Ka-26 Hoodlum-A	A typical Kamov design, a multi-purpose helicopter widely used by Aeroflot and exported to several countries. More than 600 units built.
1969	V-50	An attack helicopter project with tandem rotors. Cancelled.
1978	Ka-27 Helix	Replacement for the Ka-25 Hormone. First spotted on an Udaloy class destroyer
1981	Ka-28 / Ka-32 Helix	Civilian derivative and export variants of the Ka-27
July 27, 1982	Ka-50 Hokum-A	Also known as V-80, Werewolf & Black Shark Ka-52 twin-seat Alligator Ka-40 Hokum export variants
1986	Ka-116 Hoodlum-B	Turbine engine development of the Ka-26
Middle of the 80s	V-100	A heavy attack helicopter project with a pusher propeller to exceed the speed of 400 km/h. It was to be armed with 3000 kg of bombs/rockets, two guns, and two anti-radar/anti-ship missiles. Not built.
1990	Ka-118	A NOTAR (No TAIL Rotor) development.
1993	Ka-128	A Ka-126 development with an added intermediate gearbox, and Bendix King avionics.
1998	Ka-60	Single main rotor operational helicopter by Kamov

1994	<u>Ka-62</u>	Single main rotor operational helicopter by Kamov
1994	<u>Ka-226</u>	Twin engine development of the Ka-126
90s	<u>Ka-37</u>	<p>An unmanned coaxial helicopter developed with <u>Daewoo</u> of <u>South Korea</u> initially designed for agricultural tasks.</p> <p>Performances are a max weight of 250 kg (50 payload), speed of 110km/h, and a flight duration about 45 minutes.</p>

External links

- [Official web site of Kamov company](#)
- [Kamov picture and video archives \(Private homepage\)](#)

Lockheed Corporation



The [Lockheed SR-71](#) was remarkably advanced for its time and remains unsurpassed in many areas of performance.



The [Lockheed U-2](#), which first flew in 1955, provided much needed intelligence on Soviet bloc countries.



The Lockheed [C-130 Hercules](#) serves as the primary tactical transport aircraft for military forces worldwide.



The [Lockheed Constellation](#) was developed during [World War II](#) and served as both a civilian airliner and a military transport.

Lockheed Corporation (originally Loughhead) was an aerospace company originally founded in [1912](#) which merged with [Martin Marietta](#) in [1995](#) to form [Lockheed Martin](#).

Origins

The **Alco Hydro-Aeroplane Company** was established in 1912 by the brothers [Allan](#) and [Malcolm Loughhead](#). This company was renamed the **Loughhead Aircraft Manufacturing Company** and located in [Santa Barbara, California](#).

In [1926](#), following the failure of Loughhead, Allan Loughhead formed the **Lockheed Aircraft Company** (The spelling was changed to match its phonetic pronunciation) in [Hollywood, California](#). In [1929](#) Lockheed sold out to [Detroit Aircraft](#).

The [Great Depression](#) ruined the aircraft market, and Detroit Aircraft went bankrupt. A group of investors headed by brothers Robert and Courtland Gross bought the company out of receivership in [1932](#). The syndicate bought the company for a mere \$40,000. Ironically, Allan Loughhead himself had planned to bid for his own company, but had raised "only" \$50,000, which he felt was too small a sum for a serious bid.

In [1934](#), [Robert E. Gross](#) was named chairman of the new company, the **Lockheed Corporation**, which was headquartered at the [airport](#) in [Burbank, California](#). The company remained there for many years before moving to [Calabasas, California](#).

In the 1930s, Lockheed spent \$139,400 to develop the [L-10 Electra](#), a small twin-engine transport. The company sold 40 in the first year of production. [Amelia Earheart](#) and her navigator, [Fred Noonan](#), flew this plane on their failed attempt to circumnavigate the world in [1937](#). The Electra also formed the basis for the [Hudson](#) bomber, which was supplied to both the British [Royal Air Force](#) and the United States military before and during [World War II](#). Its primary role was submarine hunting.

Production during World War II

At the beginning of [World War II](#), Lockheed — under the guidance of [Clarence \(Kelly\) Johnson](#), one of the best known American aircraft designers — answered a specification for an interceptor by submitting the [P-38 Lightning](#) fighter plane, a somewhat unorthodox twin-engine, [twin-boom](#) design. The P-38 was the only U.S. fighter design to be built for the entire duration of the war. It filled ground attack, air-to-air, and even strategic bombing roles in all theatres of the war. The P-38 was responsible for shooting down more Japanese aircraft than any other type during the war; it also

participated in the famous mission to kill Japanese [Admiral Isoroku Yamamoto](#), the mastermind of the [Pearl Harbor attack](#). Also under Johnson, Lockheed developed a larger, less-successful version of the P-38.

All told, Lockheed and its subsidiary [Vega](#) produced 19,278 aircraft during World War II, representing 6% of those produced in the war. This included 2,600 Venturas, 2,750 B-17 Flying Fortresses (built under license for Boeing), 2,900 Hudsons, and 9,000 Lightnings.^[1]

Post-war production

During World War II, Lockheed, in cooperation with [Trans-World Airlines](#) (TWA), had developed the L049 [Constellation](#), a radical new airliner capable of flying 43 passengers between [New York](#) and [London](#) at a speed of 300 mph in 13 hours. Once the Constellation (affectionately called "Connie") went into the production, the military received the first production models. After the war, the airlines received their original orders of Constellations. This gave Lockheed more than a year's head-start on the other aircraft manufacturers.

Lockheed produced a larger transport, the double-decked [R6V Constitution](#), which was intended to make the Constellation obsolete. However, the design proved underpowered, and only two prototypes were ever built.

Skunk Works

In [1943](#), Lockheed began, in secrecy, development of a new fighter at its Burbank facility, based on a jet project for which competitor [Bell Aircraft](#) did not have facilities. This fighter, the [P-80 Shooting Star](#), became the first American jet fighter to score a kill. It also recorded the first jet-to-jet aerial kill, downing a MiG-15 in Korea, although by this time the F-80 (as it came to be known in June 1948) was already considered obsolete.

Starting with the P-80, Lockheed's secret development work was done by its Advanced Development Division, more commonly known as the [Skunk Works](#). This organization has become famous and spawned many successful Lockheed designs, including the spy planes, [U-2](#) (late 1950s), [SR-71 Blackbird](#) (1962) and [F-117 Nighthawk](#) (1970s). The Skunk Works often created designs of amazing quality in a very short time and sometimes with limited resources. The generic term "skunk works" today implies a place where elite minds develop technological marvels.

Projects during the Cold War

In [1954](#), the [C-130 Hercules](#), a durable four-engined transport, flew for the first time. The type remains in production in 2006.

In 1956, Lockheed received a contract for the development of the [Polaris](#) Submarine Launched Ballistic Missile ([SLBM](#)), this would be followed by the Poseidon and Trident nuclear missiles.

In 1976, the Skunk Works began secret development of the [F-117 Stealth Fighter](#).

Other Lockheed designs included the [F-104 Starfighter](#) (late 1950's), the world's first Mach 2 fighter plane; [L-1011 TriStar wide-body](#) jet transport; and the [C-5 Galaxy](#) four-engined jet transport.

Japanese Lockheed Scandal

In 1976, Lockheed was involved in a major scandal involving the Japanese [Marubeni Corporation](#) and several high ranking members of Japanese political, business and [underworld](#) circles. Lockheed had hired underworld figure [Yoshio Kodama](#) as a consultant in order to influence Japanese airlines to purchase the [L-1011](#) aircraft instead of the competing [Douglas DC-10](#).

It was revealed that Lockheed had paid approximately \$1.8 million in bribes to the Japanese Prime Minister's office for aid in the matter. The resulting judicial process carried on for a decade, and led to the arrest of the powerful politician [Kakuei Tanaka](#), among others. In the United States, Lockheed chairman of the board [Daniel Haughton](#) resigned from his position.

Timeline



The logo of the Lockheed Corporation, ca. 1930.

- [1912](#): The **Alco Hydro-Aeroplane Company** established.
- [1916](#): Company renamed **Loughead Aircraft Manufacturing Company**.
- [1926](#): **Lockheed Aircraft Company** formed.
- [1929](#): Lockheed becomes a division of Detroit Aircraft.
- [1932](#): [Robert and Courtland Gross](#) take control of company after the bankruptcy of Detroit Aircraft. Company renamed **Lockheed Aircraft Corporation**, recognizing the company's reorganization under a board of directors.
- [1943](#): Lockheed's Skunk Works founded in Burbank, California.
- [1954](#): First flight of the C-130 Hercules.
- 1954: Maiden flight of the U-2.
- [1976](#): The Japanese [Lockheed Scandal](#).
- [1977](#): Company renamed **Lockheed Corporation**, to reflect non-aviation activities of the company.
- [1986](#): Acquires Sanders Associates electronics of [Nashua](#), [New Hampshire](#).
- [1991](#): Lockheed, [General Dynamics](#) and [Boeing](#) begin development of the F-22 Raptor.
- [1993](#): Acquires [General Dynamics'](#) [Fort Worth](#) aircraft division, builder of the [F-16 Fighting Falcon](#).
- [1995](#): Lockheed Corporation merges with [Martin Marietta](#) to form [Lockheed Martin](#).

Divisions

Lockheed's operations were divided between several groups and divisions, many of which continue to operate within Lockheed Martin.^[2]

Aeronautical Systems Group

- **Lockheed-California Company**, [Burbank, California](#).
- **Lockheed-Georgia Company**, [Marietta, Georgia](#).
- **Lockheed Advanced Aeronautics Company**, [Saugus, California](#).
- **Lockheed Aircraft Service Company**, [Ontario, California](#).
- **Lockheed Air Terminal, Inc.**, Burbank, California, now [Bob Hope Airport](#) and owned by the Burbank-Glendale-Pasadena Airport Authority.

Missiles, Space, and Electronics Systems Group

- **Lockheed Missiles & Space Company, Inc.**, [Sunnyvale, California](#).
- **Lockheed Space Operations Company**, [Titusville, Florida](#).
- **Lockheed Engineering and Management Services Company, Inc.**, [Houston, Texas](#).
- **Lockheed Electronics Company, Inc.**, [Plainfield, New Jersey](#).

Marine Systems Group

- **Lockheed Shipbuilding Company**, [Seattle, Washington](#).
- **Lockport Marine Company**, [Portland, Oregon](#).
- **Advanced Marine Systems**, [Santa Clara, California](#).

Information Systems Group

- **Datacom Systems Corporation**, [Teaneck, New Jersey](#).
- **CADAM Inc.**, Burbank, California.
- **Lockheed Data Plan, Inc.**, [Los Gatos, California](#).
- **DIALOG Information Services, Inc.**, [Palo Alto, California](#).
- **Metier Management Systems**, [London, England](#).
- **Integrated Systems and Solutions**, [Gaithersburg, MD](#).

Product list



Lockheed's most advanced airliner, the [L-1011 TriStar](#)



Lockheed Trident I missile, introduced in 1979. Followed by Trident II in 1990



Lockheed's advanced upper rocket stage, the [Agena](#).

Main article: [List of Lockheed aircraft](#)

A partial listing of aircraft and other vehicles produced by Lockheed.

Airliners and civil transports

- [Lockheed Vega](#)
- [Lockheed L-10 Electra](#)
- [Lockheed Model 12 Electra Junior](#)
- [Lockheed Model 14 Super Electra](#)
- [Lockheed Lodestar](#)
- [Lockheed Constellation](#), famous airliner

- [Lockheed Saturn](#)
- [L-188 Electra](#)
- [Lockheed JetStar](#), business jet
- [L-1011 TriStar](#), [wide-body](#) airliner

Military transports

- C-64/C-121, military transport version of the Constellation
- [Lockheed R6V Constitution](#), large transport aircraft
- [C-130 Hercules](#), medium combat transport ([AC-130 gunship](#)) ([other variants](#))
- [C-141 Starlifter](#), long-range jet transport
- [C-5 Galaxy](#), heavy transport

Fighters

- [P-38 Lightning](#), two-engine fighter
- [P-80 Shooting Star](#), the [United States Air Force's](#) first operational jet fighter
- [F-94 Starfire](#), all-weather fighter
- [F-104 Starfighter](#), multi-mission fighter, the "missile with a man in it"
- [F-117 Nighthawk](#), stealth fighter
- [F-22A Raptor](#), air superiority stealth fighter

Patrol and reconnaissance

- [Lockheed Hudson](#), maritime patrol/bomber
- [PV-1 Ventura](#) and [PV-2 Harpoon](#), Maritime patrol/bomber
- [P2V Neptune](#), maritime patrol
- [P-3 Orion](#), ASW patrol
- [U-2](#), reconnaissance (TR-1)
- [SR-71 Blackbird](#), reconnaissance ([A-12](#)) ([M-21](#)) ([YF-12](#))
- [S-3 Viking](#), patrol/attack

Helicopters

- [XH-51A](#), attack helicopter prototype
- [AH56A Cheyenne](#), experimental attack helicopter

Missiles

- [Polaris](#)
- [Poseidon](#)
- [Trident](#)

Space technology

- [X-7](#)
- [X-17](#)
- [Corona](#)
- [Agena](#)
- [Apollo Launch Escape System](#)

- [Hubble Space Telescope](#)

Sea vessels

- [Sea Shadow](#)

References

1. [↑] [TIME](#), [January 14, 1946](#).
2. [↑] Francillon, René J, *Lockheed Aircraft since 1913*. Naval Institute Press: Annapolis, 1987, pp. 47-49.

Further reading

- Boyne, Walter J., *Beyond the Horizons: The Lockheed Story*. St. Martin's Press: New York, 1998.

See also

- [Vega Aircraft Corporation](#)

External linksMesserschmitt



Messerschmitt is a famous [German aircraft](#) manufacturer, known primarily for its [World War II fighter aircraft](#), notably the [Bf 109](#) and [Me 262](#). The company survived in the post-war era, undergoing a number of mergers and evolving into **Messerschmitt-Bölkow-Blohm** before being bought by [DASA](#) in 1989.

Background

The Messerschmitt story begins with Professor [Willy Messerschmitt](#) joining the [Bayerische Flugzeugwerke](#) in [1927](#) and forming a design team. He promoted a concept he called "light weight construction" in which many typically separate load-bearing parts were merged into a single reinforced firewall, thereby saving weight and improving performance. The first true test of the concept was in the [Bf 108 Taifun](#) sports-plane, which would soon be setting all sorts of records. Based on this performance the company was invited to submit a design for the [Luftwaffe](#)'s 1935 fighter contest, winning it with the [Bf 109](#) based on the same construction methods.†

From this point on Messerschmitt became a favourite of the [Nazi](#) party, as much for his designs as his political abilities and the factory location in southern Germany away from the "clumping" of aviation firms on the northern coast. **Messerschmitt AG** was incorporated as a separate company on [July 11, 1938](#), with Willy Messerschmitt as chairman and managing director. The renaming of Bayerische Flugzeugwerke to Messerschmitt AG on that date, resulted in all future types being designated Me instead of Bf. Existing types, such as 109 and 110, retained their earlier designation in

official documents, although sometimes the newer designations were used as well. In practise, due the RLM naming system, all Messerschmitt aircraft from 108 to 163 are designated with Bf prefix, all afterwards as Me.

Wartime activity

During the war Messerschmitt became a major design supplier, their Bf 109 and [Bf 110](#) forming the vast majority of fighter strength for the first half of the war. Several other designs were also ordered, including the enormous [Me 321](#) *Gigant* transport glider, and its six-engined follow on, the [Me 323](#). However for the second half of the war, Messerschmitt turned almost entirely to [jet](#)-powered designs, producing the World's first operational jet fighter, the [Me 262](#) *Schwalbe* ("Swallow"). They also produced the [DFS](#)-designed [Me 163](#) *Komet*, the first, and only, [rocket](#)-powered design to enter service.

Messerschmitt had its share of poor designs as well; the [Me 210](#), designed as a follow-on to the 110, was a disaster that almost led to the forced dissolution of the company. The design problems were eventually addressed in the [Me 410](#) *Hornisse*, but only small numbers were built before all attention turned to the 262. Late in the war, Messerschmitt also worked on a heavy "[Amerikabomber](#)" design, the [Me 264](#), which flew in prototype form but was too late to see combat.

Post-war

After [WW2](#) the company was not allowed to produce aircraft. One alternative the company came up with was the three wheeled [motorcycle/bubble car](#) or Kabinenroller (cabinscooter) [KR175](#) / [KR200](#). According to an [urban legend](#), it was made with old aeroplane parts. This is not true but as it was designed by an aircraft engineer, [Fritz Fend](#), it is probably no coincidence it looks somewhat like an aeroplane. A well known appearance of this car is in [Terry Gilliam's](#) [Brazil](#), to great effect. The cars were actually made by Fend's own company in the Messerschmitt works at Regensburg and Willy Messerschmitt had very little to do with the vehicles other than ruling that they carried his name. Fend's aircraft influence certainly showed itself in his desire to achieve a light yet stiff frame with low wind resistance from the tandem seating with aerodynamic steel body. This resulted in a surprisingly high performance from 175 and later 200cc single cylinder two-stroke engines. Some would say that his ultimate achievement with the Kabinenroller was the four-wheeled TG500 or 'Tiger' with a twin cylinder 490cc engine capable of higher speeds and sports car handling. However, there is little doubt that the best developed and most successful was the three-wheeled KR200. Production of the KR200 ceased in 1964.

Return to aviation

In [1968](#) Messerschmitt AG merged with [Bölkow](#), and one year later the aviation department of [Blohm + Voss](#) was added. The company then changed their name to Messerschmitt-Bölkow-Blohm. In [1989](#) it was taken over by [Daimler Benz Aerospace AG](#)

Aircraft

Model	Name	First flight	Remarks
Bf 108	<i>Taifun</i> (Typhoon)	1934	trainer & transport
Bf 109		September, 1935	fighter, bomber interceptor; later versions as Me 109
Bf 110		12 May, 1936	twin-engine heavy fighter, night fighter
Me 155		not built	high-altitude fighter, developed from Bf 109; not built, project transferred to Blohm und Voss as the Bv 155
Bf 161			heavy fighter; prototype
Bf 162	<i>Jaguar</i>	1937	<i>schnellbomber</i> (fast bomber) based on Bf 110
Bf 163			STOL reconnaissance aircraft; prototype built by Weserflug AG
Me 163	<i>Komet</i> (Comet)	early 1941	rocket-powered interceptor
Me 209		1 August, 1938	designed to break world air speed record; attempted fighter conversion failed
Me 209-II		1943	fighter; update to Bf 109, never produced
Me 210		September, 1939	twin-engine heavy fighter; also used for reconnaissance
Me 261	<i>Adolfine</i>	1941	designed as long-range record-setter; three built and used for reconnaissance
Me 262	<i>Schwalbe</i> (Swallow)	18 July, 1942	twin-engine fighter & attack aircraft; first operational jet-powered fighter
Me 236		never flown	rocket-powered interceptor; advanced development of Me 163
Me 264	<i>Amerika</i> (America)	23 December, 1942	strategic bomber, developed under Amerika Bomber program
Me 265		not built	attack aircraft, proposed
Me 309		July, 1942	fighter; advanced but underperforming design meant to replace Me 109
Me 310		not built	pressurized Me 210 development, proposed
Me 321		7 March, 1941	large transport glider
Me 323	<i>Gigant</i> (Giant)	Fall, 1941	large transport aircraft; powered development of Me 321
Me 328		Fall, 1943	pulsejet-powered selbstopfer or parasite fighter
Me 329			heavy fighter-bomber; unpowered glider only
Me 334			tailless fighter, similar to Me 163 (development abandoned)

<u>Me 409</u>	<i>Zwilling</i> (Twin)		heavy fighter; combined two Me 209 fuselages into one airframe, similar to the Me 109Z and Heinkel He 111Z (development abandoned)
<u>Me 410</u>	<i>Hornisse</i> (Hornet)	1943	twin-engine heavy fighter and fast bomber; development of Me 210
<u>Me 509</u>		not built	fighter, based on Me 309, with engine located behind cockpit as in P-39 Airacobra
<u>Me 510</u>		not built	twin-engine fighter-bomber; Me 410 derivative
<u>Me 600</u>	<i>Bussard</i> (Buzzard)		rare, provisional designation for Arthur Sack A.S.7V-1 (<i>disputed</i> — see <i>talk page</i>)
<u>Me 609</u>			heavy fighter; combined two Me 309 fuselages into one airframe, as with Me 109Z and Me 409 (development abandoned)
<u>P.1101</u>		not flown	prototype swing-wing jet interceptor; later inspired Bell X-5

[\[edit\]](#)

External links

- <http://www.military.cz/.../lampyridae/Lampyridae.htm>
- <http://forums.xplanefreeware.net/lofiversion/index.php/t2431.html>
- <http://www.messerschmitt.co.uk>

McDonnell Aircraft

The **McDonnell Aircraft Corporation** was an American [aerospace manufacturer](#), based near [St. Louis, Missouri](#). It was founded in [1939](#) by [James Smith McDonnell](#), and merged, with the [Douglas Aircraft Company](#), into [McDonnell Douglas](#) in [1967](#). Later the company was bought by [Boeing](#).

The advent of [World War II](#) was a major boost to the new company, from fifteen employees in 1939 the firm ended the war with over 5,000, a significant producer of aircraft parts.

McDonnell products include:

- [XP-67](#)
- [FH Phantom](#)
- [F2H Banshee](#)
- [XF-85 Goblin](#)
- [XF-88 Voodoo](#)
- [F3H Demon](#)
- [F-101 Voodoo](#)
- [F-4 Phantom II](#)
- [F-15 Eagle](#)
- [Mercury](#)

- [Gemini](#)

Phantom Origins

In 1952, **McDonnell's** Chief of Aerodynamics, [Dave Lewis](#), was appointed by CEO, [J.S. McDonnell](#), to be the company's Preliminary Design Manager. The first of its kind in the aerospace industry, the group had no specific target other than to learn and understand all of the rapid technical advances being made in aeronautics, structures and engines. It became clear that if the company wanted to be the best designer of combat airplanes, it would have to develop a real understanding of these new technologies, or before long, the company would find itself a fighter subcontractor.



The F4H-1, Prototype of the F-4 Phantom II.

There being no new aircraft competitions on the horizon, internal studies concluded that the Navy had the greatest need for a new and different aircraft type, an Attack Fighter. At the time, the Navy had a separate Fighter Branch and an Attack Branch, each having little contact or interest in the other. They lived in different worlds when it came to system or operational requirements. After many iterations and various "enemy capability" assumptions, an "unwanted" Attack Fighter was presented to the Navy. The McDonnell design called for two engines; with the primary air-to air armament being provided by the very new [Sparrow III missiles](#), semi-submerged in the fuselage. The air-to-ground armament was to be as many bombs as could be carried on stations that would be mounted under the wings and aft of the Sparrow stations on the fuselage. No guns were provided. It took two long years of hard work with the Bureau of Aeronautics and the Naval Air Warfare Division in the Pentagon. But the [F-4](#) was sold with pretty much the same configuration as was originally proposed. Lewis was made program manager on the [F-4](#) and took it all the way through development and sale to the Navy and Air Force. He ultimately became President and Chief Operating Officer in 1962. ^[1].

Mil Moscow Helicopter Plant

NHIndustries is a [helicopter](#) manufacturing company established in [1992](#) by [Eurocopter](#) of [France](#) and [Germany](#) , [Agusta](#) of [Italy](#) as well as [Stork Fokker Aerospace](#) of the [Netherlands](#).

The shares held by each of these companies in NHIndustries are:

- Eurocopter 62.5%
- Agusta: 32%
- Fokker: 5.5%

NHIndustries was specifically established to be the prime contractor for the design & development, industrialisation, production and logistic support of the [NHI NH90](#) series of helicopters.

External link

- [NHIndustries Official Website](#)

Mil (Миль) is the short name of the Soviet Russian [helicopter](#) producer **Mil Moscow Helicopter Plant** (design office prefix **Mi**), named after the constructor [Mikhail Mil](#). Mil participates in the [Euromil](#) joint venture with [Eurocopter](#).

Mil is merging with [Kamov](#) and [Rostvertol](#) to form [Oboronprom Corp.](#) in [2006](#). The Mil brand name will be retained, though the new company will drop overlapping product lines.

Types

- [Mil Mi-1](#) "Hare", 1948 - light multi purpose helicopter [\[1\]](#)
- [Mil Mi-2](#) "Hoplite", 1965 - light multi purpose helicopter [\[2\]](#)
- [Mil Mi-4](#) "Hound A", 1955 - transportation- and submarine-hunting-helicopter [\[3\]](#)
- [Mil Mi-6](#) "Hook", 1957 - heavy transportation helicopter [\[4\]](#)
- [Mil Mi-8](#) "Hip C", 1968 - multi purpose helicopter [\[5\]](#)
- [Mil Mi-10](#), crane helicopter [\[6\]](#)
- [Mil Mi-10K](#), crane helicopter [\[7\]](#)
- [Mil Mi-12](#) "Homer", also known as V-12, Prototypes only, world's largest helicopter, two rotors [\[8\]](#)
- [Mil Mi-14](#) PL "Haze A", 1978 - submarine-hunting-helicopter [\[9\]](#)
- [Mil Mi-17](#) T "Hip H", 1974 - transportation helicopter [\[10\]](#)
- [Mil Mi-18](#), prototypes only, [\[11\]](#)
- [Mil Mi-20](#), super light helicopter [\[12\]](#)
- [Mil Mi-22](#), planned only [\[13\]](#)
- [Mil Mi-24](#) W "Hind E", 1978 - heavy combat helicopter [\[14\]](#)
- [Mil Mi-25](#), export version of [Mi-24](#)
- [Mil Mi-26](#), World's heaviest helicopter [\[15\]](#)
- [Mil Mi-28](#), 1984 - combat helicopter [\[16\]](#)
- [Mil Mi-30](#), vertical take-off aircraft, planned only [\[17\]](#)
- [Mil Mi-32](#), super heavy helicopter, three rotors! [\[18\]](#)
- [Mil Mi-34](#), 1986 - light helicopter [\[19\]](#)
- [Mil Mi-35](#), export version of [Mi-24](#)
- [Mil Mi-36](#), planned only [\[20\]](#)
- [Mil Mi-38](#), 2000 - multi purpose helicopter [\[21\]](#)
- [Mil Mi-40](#), planned only [\[22\]](#)
- [Mil Mi-42](#), planned only [\[23\]](#)
- [Mil Mi-44](#), planned only [\[24\]](#)
- [Mil Mi-46](#), planned only [\[25\]](#)
- [Mil Mi-60](#), planned only [\[26\]](#)

See also: [List of military aircraft of the Soviet Union and the CIS](#)

External links

- [Official web site](#)
- <http://www.lufffahrtmuseum.com/htmd/dth/mil.htm>

- [The Creative Work of Mil Moscow Helicopter Plant.](#)