DASSAULT'S FALCON JET – 50 YEARS OF FLYING HIGH

On May 4, 2013, Dassault Falcon Jet celebrates the 50th anniversary of the first flight of the original Falcon Jet, one of the most popular and successful business jets in the world, which had very humble beginnings....

By Henry M. Holden

AS A schoolboy in Paris, Marcel-Ferdinand Bloch witnessed the Wright brothers' first aircraft making a low pass over the city and then circle the Eiffel Tower. That flight so fascinated the young man that he went on to attend the Ecole Supérieure de l'Aéronautique, France's first school for aeronautical engineering.

He later established a factory in a converted garage, and convinced his father-in-law to finance his small aeronautical business.

During World War I Bloch developed a variable pitch propeller for the Spad fighter which gave French pilots the ability to outmanoeuvre their German adversaries. The Spad propeller made a great deal of money for Bloch who, after the war, went into housing construction.

Dassault Aviation was established in 1929 but only began to manufacture aircraft again in the early 1930s when French military contracts were once more available. In 1932 he effectively re-launched his business with a Medevac aircraft. The prototype MB 80 was a low wing monoplane had a top speed of about 120 mph, and its maximum altitude attainable was 20 000 feet.

The French army air corps purchased 20 aircraft and put a French-manufactured engine on the production aircraft, which it called the MB-81.

The MB-81 supported troops in Morocco and Syria, landing on small fields at high altitudes to take the wounded to safety. The patient was tucked away in a compartment between the pilot and the engine, where the pilot could keep an eye on his charge.

In 1936, when the Socialist-Communist "Popular Front" government came to power,

Top: *The Falcon 2000LX has the obvious blood-lines of its distant relative the Falcon 20.*
Above: *French officials of Dassault Aviation pose in front of the Dassault-Breguet Mystère 20 s/n 1.*
Below: *In Dassault's MB 81, the patient was tucked away in an compartment between the pilot and the engine, where the pilot could keep an eye on his charge.* (Dassault Aviation photos.)

Two corporate Falcon 20s, the rear belonged to the Continental Can Company and the jet in the foreground belonged to the Nabisco Company. (Author's Collection)

Bloch's aircraft factories were nationalised by the Société Nationale de Constructions Aéronautiques de Sud-Ouest, one of six state-controlled aeronautic factories. Bloch was retained as a civil servant and invested the money he received for his company in a variety of North American securities.

After the Popular Front fell from power, Bloch founded a new aircraft company which later produced the Bloch 150 fighter. The airplane was unsuitable for production, but after major modifications it flew as the MB-155, but not for France as, by this time, Germany had invaded France.

After the German invasion at the outset of World War II Marcel Bloch, a Jew, was asked to build aircraft for the German war effort as an "honorary Aryan." Bloch refused to collaborate and was forced into hiding. He was later arrested and jailed. Eight months before the war ended he was deported to the Buchenwald concentration camp where he remained until the area was liberated by American forces in May 1945.

After World War II, his company was re-established, but named Marcel Dassault, the *nom de guerre* of his brother who was a member of the French resistance, and he renewed his aviation business.

By 1951 Dassault had began production of the Ouragan (Hurricane) jet fighter. When production of the Ouragan ended in 1953, the company had built 441 copies. In 1954, Dassault introduced its next jet, the Mystère. Designed as a subsonic fighter, the Mystère was the first European jet to break the sound barrier in level flight. From this jet would evolve the Falcon.

Marcel Dassault remembered the value its MB 81 air ambulance had with saving lives and he had a vision that a new and improved air ambulance was somewhere in his future. The US Federal Aviation Administration (FAA) had rigorous rules governing air ambulance operations. In its overview of air ambulance operations, the FAA said: "Helicopter air ambulance operations have complexities not found in airplane ambulance operations." Simply put, a fixed-wing air ambulance with a qualified crew and its long legs, fuel-efficiency, and reliability had a place in medevac operations, and Marcel Dassault recognised this.

THE FALCON JET IS BORN

Against the advice of several advisers, Marcel Dassault ordered the development of the Mystère into a small business jet/medevac. Dassault gave the go-ahead for production of an eight or ten seat executive jet or military liaison aircraft in December 1961.

The first Falcon Jet was born on the pages of a notebook belonging to Paul Déplante, engineering director of Dassault's plant in Bordeaux-Mérignac. In November 1961, Déplante drew a simple ink sketch, a cutaway of an aircraft cabin, with two rear-mounted engines.

Two years later, in April 1963, the Dassault-Breguet Mystère 20 s/n 1 rolled off the production line. The Mystère 20 was a low-wing monoplane with two rear-mounted Pratt & Whitney JT12A-8 engines. The prototype, registered F-WLKB, first flew on the May 4, 1963 at Bordeaux-Merignac.

It was the first Falcon introduced to America. Charles Lindbergh who, at the time, was an adviser for Pan American Airways (*aka* Pan Am) called the airline's chairman, Juan Trippe, and said: "I found our bird." The same aircraft later piloted by famous French aviator, Jacqueline Aurio, broke a speed record in 1965.

PAN AM PARTNERSHIP

On December 1, 1972, executives from Pan Am and Dassault Aviation signed an agreement to form what is today the Dassault Falcon Jet Corporation, a wholly owned subsidiary of Dassault Aviation.

Under the influence of Pan Am, the aircraft was re-engined with two General Electric CF700 engines and some dimensions were increased. Pan Am signed a contract to distribute the Mystère 20 in the western hemisphere and ordered 40 aircraft with options on 120.

The re-engined aircraft first flew on July 10, 1964. The first production aircraft flew on January 1, 1965, and both French and American certification was awarded in June 1965. In 1966, the company re-designated the American-delivered aircraft as the Fan Jet Falcon, this later became the Falcon 20.

The partnership was formed to help accelerate expansion of the United States market, the world's largest, with Pan Am, the launch customer for the Falcon 20.

Lindbergh and Trippe launched Pan American Business Jets with the Falcon 20, and Fred Smith launched FedEx with a fleet of Falcons. The United States Coast Guard ushered in the age of jet powered search-and-rescue airplanes with the Falcon HU25.

Today, the Falcon 20 is used as a multi-use aircraft for the United States Coast Guard. It employs it as a maritime patrol, environmental protection, and surveillance aircraft, as a drug interdiction aircraft and, as the HU-25A Guardian, is equipped with Garrett AiResearch Garrett ATF3-6-2C engines. It has been used in more than 20 countries in civilian, medevac, and military roles.

Over 2 200 Falcons have been delivered with over 1 100 based in the United States, since Dassault began production in 1965.

Later evolutions of the Falcon 20 include the smaller Falcon 10, the larger 30-seat Falcon 30 (not developed) and Falcon 50, an improved three-engined development. A total of 473 Falcon 20s and 35 Falcon 200s were built by the time production ended in 1988.

The Dassault Mystère/Falcon 10, despite its numbering sequence, was actually developed after the Falcon 20, and although it is

sometimes considered as a scaled-down version of that aircraft, it was totally redesigned with a non-circular fuselage, a new wing with slotted flaps, a split passenger door and many simplified circuits compared with the Falcon 20. Production began in 1971 and ceased in 1989, but it remains a popular business jet on the used market.

In 2012, a Falcon 20 became the first civil jet to fly on 100% biofuel when it performed a test flight for Canada's National Research Council.

FALCON 50

Perhaps the most famous of the Falcon protégés is the Falcon 50. The prototype first flew in 1976.

The Dassault Falcon 50 is a super mid-sized, long-range corporate jet, featuring a three jet engine layout with an S-duct central engine. It has the same fuselage cross section and similar capacity as the earlier Falcon 20 twinjet, but is a completely new design that includes a more advanced wing design.

When it emerged as the production model it had its now-trademarked supercritical wings. It was the world's first civilian aircraft to fly with this wing design enabling it to go further, faster, and more efficiently than ever before. It should be no surprise that it quickly was adopted as an air ambulance.

Dassault developed a maritime surveillance and environmental protection version as the Guardian 50. The Falcon 50 was later replaced by the Falcon 50EX, the first of which flew in 1996. The Falcon 50EX features improved engines and other enhancements to give further range improvements to an already long-legged jet.

FAA Supplemental Type Certificate SA5858SW, held by Dassault Falcon Jet allows the installation of underwing pylons on the Falcon, Series D and Series E. This modification is commonly used to modify Falcon 20s to operate as special mission aircraft with under wing stores.

The improved Falcon 20 featured more advanced jet engines and other major improvements to increase range, capacity and comfort. The aircraft proved to be so popular that production did not end until 1988, being superseded by more advanced developments of the Falcon family.

Flagship of the Dassault Falcon fleet is the trijet Falcon 7X.

RESTORING S/N 1

Those of us who have an interest in aviation history have a serious concern. The history is physically disappearing.

For example, there is only one of the Boeing B-29 Superfortress flying and a few museum relics. The B-17, Spitfire, Messerschmitt, and hundreds more civilian and military aircraft have pretty much the same story, a few copies may be flying and others slowly rot away in outdoor museums.

Many consigned to indoor museums hold up a little better, but they are still for the most part consigned to a spot on the floor of the museum and forgotten about.

For years Mystère 20 s/n 1 had value as it flew the European skies, as long as it was flying and making money, it was important. But at some point, S/N 1 had to land. And that's when it disappeared.

The aircraft eventually reappeared in a place of honour in the well-known Musée de l' Air et de Espace at Le Bourget, outside Paris.

When a team of former Dassault employees and airline pilots called IT Mercure dedicated to preserving Dassault aircraft, found Mystère 20 s/n 1 in 2010, it was in horrible shape.

They set a goal of restoring the aircraft in time for its 50th anniversary, and they made it. It is back in its place of honour.They rescued the famous aircraft from the ravages of age, and gave back to the French people and the world a piece of history. →