

## Report from Paris by Laurent Rosenfeld

### Patriot, engineer, entrepreneur

*"In order to fly well, an aircraft first has to be beautiful." — Marcel Dassault.*

On April 18, French aeronautical engineer and entrepreneur Marcel Dassault died, at the age of 94—a figure one might have labeled, based on his last years, as an eccentric billionaire who sometimes used his fortune in odd ways. Yet, Marcel Dassault could be seen as the most important European innovator in aircraft design and construction in the last 40 years. To cite only one plane which made him world-famous, his Mirage-III has been one of the most successful jet fighters of the recent period.

Dassault was an engineering genius, a bold entrepreneur, and a staunch French patriot. His work, for 60 years, has been a locomotive for European and world aeronautical progress, and remains an example for future generations.

Born in 1892 in Paris, Marcel Bloch (his real name), was the son of a Jewish doctor who had left Alsace after the Prussians annexed that province in the wake of the Franco-Prussian War of 1870. After graduating as an electrical engineer, Bloch became intrigued by airplanes in World War I. In 1916, he designed a new model of propellor, the Helice-Eclair, fitted for two aircraft of the period, the Caudron-G3 and the Farman F-40. He then designed a two-seat fighter interceptor, the SEA-4, of which 1,000 were ordered by the French army in December 1917. With the end of World War I, however, that order was canceled, forcing Marcel Bloch to end his career as a aeronautical engineer for about 20 years.

In the 1930s, however, he came

back to what was to make him famous: designing and building aircraft. The creation of an Air Ministry induced him to sell his estate to build another aircraft company. He thus created one of the first commercial twin-engine planes, as well as other models. The Popular Front in 1936 nationalized his company, but he stayed on as an "adviser," and designed several fighter-interceptors, the Bloch-150, Bloch-200, and Bloch-220, which had some success in the first phase of World War II, and a public transportation quadrimotor, the Languedoc-161. The latter's prototype was ready just before the French defeat in 1940. When Bloch refused to deliver the plans to the Luftwaffe and to collaborate with Nazi Germany's engineers, he was deported to Buchenwald.

Surviving the death camp, Bloch converted to Catholicism just after the Liberation and assumed the name he had carried in his episodic Resistance activities, Dassault, and created a new company with that name. While the German aeronautical engineers, earlier the best in Europe and perhaps in the world, were either forbidden to work on armaments or went to work for the United States or the Soviet Union, he became the man of European aeronautical progress. He designed the first European jet-engine aircraft after the war, the Ouragan, which flew at Mach 0.75 (1949). Soon after, he built the Mystère IV, the first European aircraft ever to pass the sound barrier; the United States bought 240 of them in 1954, and to offered them to the French Army (as part of

the "offshore agreements" of the Marshall Plan, to aid the rebirth of European industry).

By 1956, he had become powerful enough to build entirely at his own risk the Mirage-III, the first interceptor able to fly at (and above) Mach 2. Another novelty of the Mirage-III was its delta wings—a design copied by all major aircraft makers because of its flying qualities at supersonic speeds. More than 1,400 of these planes were sold in more than 30 countries. On a Mirage-III, Jacqueline Auriol, the French President's daughter, became the first woman to pass the sound barrier; she later set a record of 2,738 km/h, which held for more than 20 years. The French strategic bomber, the Mirage-IV, is derived from the same basic design.

Dassault designed many other aircraft whose names are still making news—the Jaguar (in collaboration with the British), the Etendard and the Super-Etendard aero-naval fighter-bombers, the Dassault-Breguet-Atlantique reconnaissance plane, the Alpha-Jet training plane, and several civilian airplanes: the Mystère-20, the Falcon, and the Mercure.

Close to 1,000 of the Mirage F1 (derived from the first European vertical take-off aircraft, the Balzac) have been sold. Today, the Mirage 2000, although not matching planes like the F-16, remains one of the top three fighters in the world. After disagreement between various countries in Europe (especially France and Great Britain), Dassault has offered the Rafale fighter, whose first prototype is due to fly in May. Even though his company was nationalized for the second time by the Mitterrand regime in 1981-82, Dassault took up a new challenge: he designed the Hermes project of hypersonic space glider, a kind of mini-shuttle that France wants to build with its European partners.