



G. Gabrielli

Giuseppe Gabrielli

1903-1987

By Nicholas J. Hoff

One of the greatest airplane designers of Italy, Giuseppe Gabrielli died in his adopted home town of Turin in northern Italy on November 29, 1987. Born on February 26, 1903, in Caltanissetta, Sicily, Gabrielli was a southerner, but he moved north to study aeronautical engineering under Professor Panetti at the Polytechnic Institute of Turin. Except for short periods of time, he remained in this great industrial town for the remainder of his life, designing airplanes at Fiat and teaching airplane design at the Polytechnic.

From the Polytechnic Institute of Turin he went to the Technical University of Aachen in Germany to continue his studies under the direction of Professor Theodore von Kármán; the warm friendship that developed between the two outstanding men lasted until the death of von Kármán in 1963. The Polytechnic of Turin conferred on Gabrielli the diploma in mechanical engineering in 1925, and the University of Aachen the doctorate in aeronautics in 1926.

In 1927 Gabrielli was appointed instructor of aircraft design at the Polytechnic Institute of Turin and was promoted to full professor in 1949. He remained there until the retirement age of seventy, teaching and doing research; one measure of his academic activities is 150 technical papers published.

Almost simultaneously with the beginning of his academic

career, Gabrielli received an industrial appointment, becoming assistant to Chief Designer Giovanni Pegna at the Piaggio Company in Genova. His assignment was the development of metal airplane structures; he had studied these in Aachen and they were also being adopted in the United States at that time. But Gabrielli did not give up his teaching; although he was living in Genova, he commuted one day a week to Turin to give his course at the Polytechnic.

The first great success of the young engineer was the redesign of the Savoia-Marchetti S.M.S. 55 flying boat in aluminum alloy; the original wood S 55 became famous when several squadrons of it crossed the Atlantic in formation under the command of General Italo Balbo in the 1930s. Gabrielli's metal structure had an ultimate load factor of 9 against the 7 of the original wood structure, yet it was 1,168 pounds lighter.

This achievement caught the eye of Giovanni Agnelli, the almost legendary founder-director of Fiat, the largest industrial concern of Italy. In 1931 he appointed the twenty-eight-year-old Gabrielli manager of a new department of the company. In this department Gabrielli developed a total of 142 airplanes of which 63 were manufactured and 17 mass-produced. Among them were the G 50 of 1939, the first Italian aluminum alloy monocoque monoplane fighter; its successor, the outstanding G 55 of 1943, which reached a high speed of 385 miles per hour but appeared too late to have an influence on World War II; the G 80 of 1951, the first Italian jet fighter; and the G 91, which won the North Atlantic Treaty Organization (NATO) fighter competition of 1957.

When in a reorganization of the Italian airplane industry Fiat gave up the manufacture of aircraft, Gabrielli continued his work for the company practically until the end of his life as chairman of the board of Fiat Aviazione, a builder of airplane engines in Turin.

Gabrielli was very much involved in the activities of national and international organizations in aeronautics. He

was Italian delegate to the Advisory Group for Aeronautical Research and Development of NATO; member of the International Council of the Aeronautical Sciences (Paris); president of the Association Internationale des Constructeurs de Matériel Aérospatial (Paris); member of various committees of the National Research Council (Rome); vice-president of the Italian Navigation Institute; corresponding member of the Deutsche Akademie de Luftfahrtforschung and of the International Academy of Astronautics (Paris); honorary fellow of the Royal Aeronautical Society (London), and honorary member of the Société des Ingénieurs de l'Automobile (Paris) and of the Association Française des Ingénieurs et Techniciens de l'Aéronautique et de l'Espace (Paris). He held membership in the American Institute of Aeronautics and Astronautics and the Deutsche Gesellschaft für Luft-und Raumfahrt. Gabrielli was corresponding member of the Deutsche Akademie der Luftfahrtforschung, member of the Flight Safety Foundation (New York), member of the board of directors of the Aerospace Industry Association (Rome), and member of the Daniel Guggenheim Medal Board of Award.

Gabrielli was elected a foreign associate of the U.S. National Academy of Engineering (NAE) in 1983.

Among the major honors bestowed on Gabrielli were the Ludwig Prandtl Ring, the highest honor in aerodynamics in Germany; the knighthood of the Légion d'Honneur (France); and the knighthood of the Grand Cross of the Order of Merit of the Republic of Italy.

Gabrielli is survived by Lydia, his wife of fifty-one years. Through her he was a member of the most famous family of Italian aeronautical engineers, as his father-in-law was General Arturo Crocco, who had published papers on the theory of flight and built airships before World War I, and his brother-in-law was Luigi Crocco, a great expert on aerodynamics and rocket propulsion. Luigi was a foreign associate of the NAE, and his biography was published on page 101 of Volume 3 of these *Memorial Tributes*.