

AMERICAN FIAT

THE STORY OF A RARE
FIAT G-46 AND ITS OPERATION
IN THE UNITED STATES.

BY HOWARD LEVY

Frank Marici, M.D., a private pilot, spent several of his vacations in Italy toward the end of the '60s and early '70s. Being an aviation enthusiast, he found his way to the local airports. At Padova, in northeastern Italy, he came across a Fiat F-46-3B, a retractable-gear, two-seat military trainer,

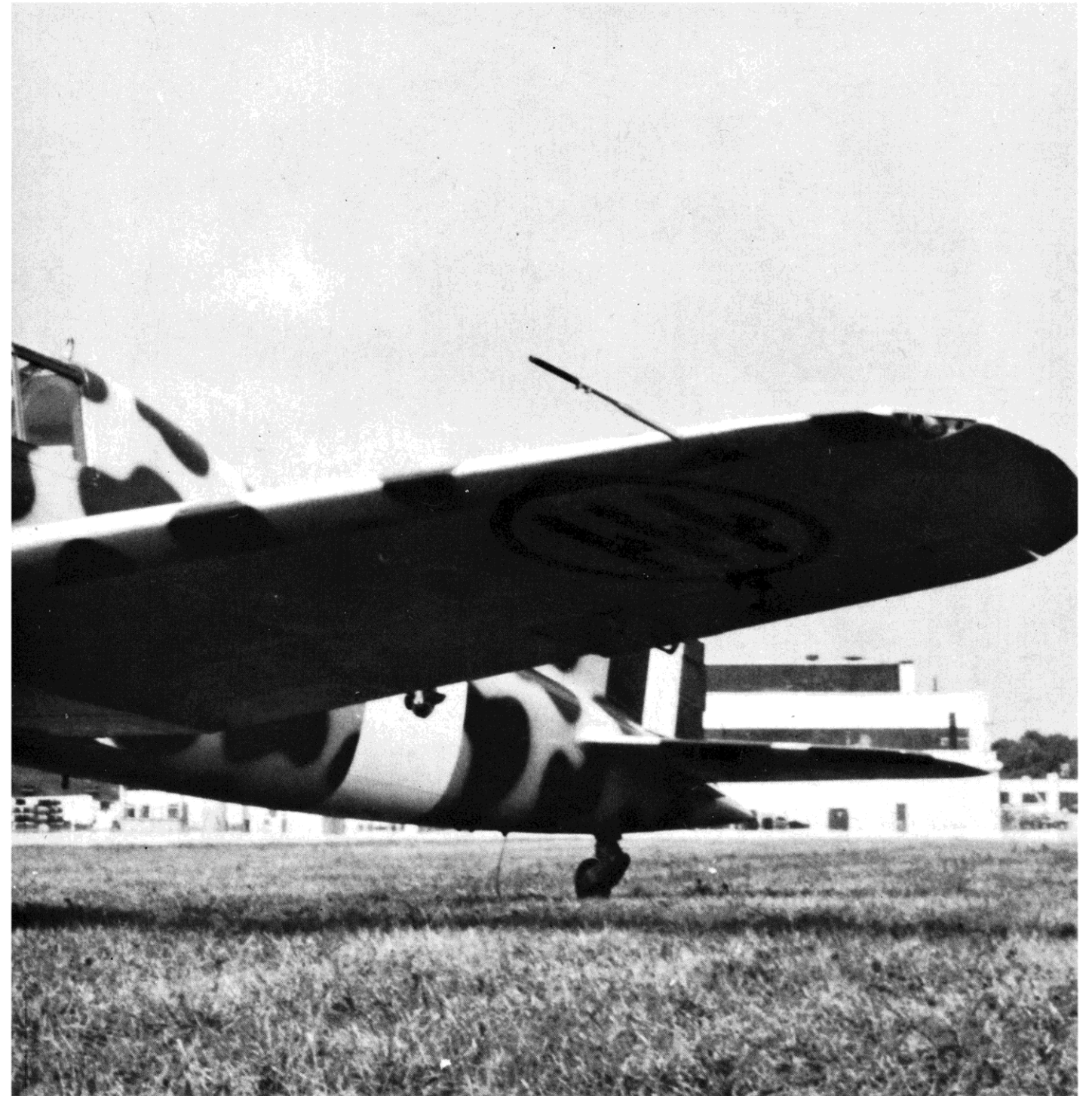
and it was love at first sight.

It seems that all the G-46s were about to be grounded and, in fact, some were already so. Basically all of the G-46s in Italy were ordered by and built for the Italian Air Force and, having completed their stint of military duty, were then turned over to Aero Clubs in various parts of the country.

Italian regulations are such that Italian-built aircraft are set with a prescribed

fatigue life and, once that is reached, the craft are grounded. They cannot be overhauled and licensed as is done in other countries. During his various meanderings in Italy, Frank had made friends with a number of high-ranking Italian Air Force officers, and he turned to them for aid in acquiring one of the G-46s.

The approval required about two years, but a G-46 was finally boxed and shipped to New York. Assembly and FAA



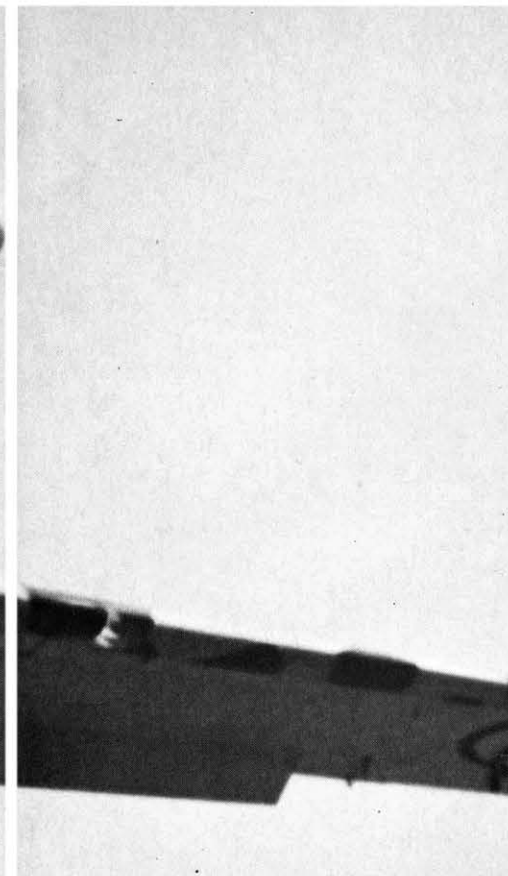


The G-46 was the first aircraft produced in quantity by Fiat after World War Two.



The Fiat was powered with a 205-hp Alfa Romeo engine swinging a two-bladed propeller. Another version used a 248-hp Gypsy Queen 30 with a fixed-pitch propeller.

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The G-46 was the first time that Italy had used an all-metal training aircraft.

wherever possible, U.S. components were substituted, although there were still further problems because of the metric vs. linear systems. Radio problems, binding brakes, and prop oil leaks were situations which had to be cleared up, but finally, Frank was able to fly his G-46.

During the past two years, Frank Marici has attended a number of fly-ins on the East Coast, and has even flown out to the annual EAA-Oshkosh get-together. Needless to say, his G-46 has been an eye-catcher at all times. Unfortunately, the call of his patients has caused Frank to cancel a number of planned trips with N46FM (no explanation required for that registration).

But let us digress from the present for a while. Fiat was born in 1899 as Fabbrica Italiana Automobili Torino, and has become one of the biggest industrial groups in Europe, manufacturing products for land, sea and air. Its first aviation engines were produced in 1908, and its first airplane, a license-built Farman 5B, was turned out in 1914. Since then, Fiat has produced about 165 fighter, trainer, bomber, transport and sport designs, most of which were off the Fiat drawing boards, plus over 55 engine types.

The G-46 was the first single-engine aircraft designed and mass-produced by Fiat after WWII. It was conceived in 1946 to meet Italian Air Force requirements for an intermediate trainer, and it was the first time that a small Italian trainer was to incorporate an all-metal structure. The first prototype, designated the G-46-1B, began its flight testing in the summer of

1947. A number of different versions were produced between 1948 and 1952. A total of 150 G-46s were constructed for the Italian Air Force, but the Argentine Air Force took delivery of 70 G-46-2Bs between 1948 and 1950, while the Syrian Air Force also acquired a "considerable" number of the 2B version as well. The Austrian Air Force likewise purchased a number of G-46s.

The 1B and 2B were basically similar, but for engine differences — the 1B had a 205-hp Alfa Romeo 115-1 bis, and variable-pitch prop; the 2B was powered with a 248-hp DH Gypsy Queen 30 with a fixed-pitch prop. The 2B also had some avionics and equipment changes, as well as a single 7.7-caliber machine gun and could also be fitted with skis.

FIAT G-46-3B SPECIFICATIONS

Factory data provided the following performance and weight figures for the prototype G-46-1B powered by a 205-hp Alfa Romeo 115-1 bis driving a two-bladed variable-pitch propeller:

Empty Weight	2200 pounds
Payload	704 pounds
Gross Weight	2904 pounds
Max Speed	189 mph
Ceiling	20,172 feet
Range	589 miles

For the G-46-3B, factory data called for:
Empty Weight 2321 pounds
Gross Weight 3036 pounds
Max Speed 193 mph

However, Frank comes up with the following data pertaining to his particular craft:

Empty Weight	2446 pounds
Gross Weight	3164 pounds
Cruise Speed	156 to 188 mph (eco/max) at 5000-6000 feet
Landing Speed (w/flaps)	95 mph
Max Speed	200 mph
Stall Speed	70 mph
Takeoff Run	820 feet
Landing (w/Flaps/Brakes)	492 feet
Rate of Climb	1300 fpm
Ceiling	21,000 feet
Range	560 miles
Wingspan	34.11 feet
Length	27.81 feet
Height	7.87 feet

The G-46-3 was turned out in both a single-seat A and two-seat B version, with systems additions to allow for a more complete training syllabus, including night flying. Powerplant was also the more powerful 225-hp Alfa Romeo 115-1 ter. The -3 versions were produced through 1951 and then replaced by the -4 in both A and B configurations. The later models differed only in some installations, and power was either the 1050- or 1051-built 225-hp AR 115-1 ter. The last of the series was the 5B, of which only one was built. Its only change was in the navigational and instrumentation gear.

Production of the G-46 series ceased in 1952, but the Air Force retained them in service through 1958. They then found their way into the Aero Clubs of Italy. As in most European countries, the government assists sport flying in the form of Aero Clubs, members of which are able to fly at a considerable savings in cost.

Our photo subject carries Fiat c/n 141, and was ex-IAF s/n 53091. At Frank's request, it was painted in Italy in the "sand-and-spinach" camouflage of aircraft of the Regia Aeronautica in North Africa during WWII. However, Italian law did not allow the painting of the Fascist insignia on the wings, so that was done upon the aircraft's arrival in the U.S. The Royal crest

is found on the rudder, as with WWII-era craft, and Frank added the insignia of the Aero Club of Padova to the fuselage as a tribute to their assistance with his project. The markings might not be completely authentic, but then, who's complaining.

As we've already mentioned, construction is all-metal, that is all-metal except for fabric-covered control surfaces. The wing is a box-type structure with two spars, stamped-out ribs, and metal covering with countersunk rivets. The outer wings are joined by bolts and have removable wingtips; ailerons are balanced; and the four segmented flaps have a continuous hinge.

The fuselage is a semi-monocoque structure forward, monocoque aft, and, as can be noted in the accompanying photos, is of elliptical section. The engine mount consists of two independent supports attached to the fuselage by four bolts. The tail group is made up of metal-covered box structures for the fixed sections, and the elevators and rudders have the fabric-over-metal framework. The tail components are bolted to the fuselage. The rudder and ailerons are cable-controlled, while the elevators are torque-tube actuated. The rudder has a ground-adjustable trim tab, and manual trim is provided in the left aileron and right elevator. The retractable landing gear moves inboard to retract into the wing leading edge at the roots. Each gear has two mechanical down locks, plus a hydraulic lock. A pumping lever is utilized to bring gear down in case of a system failure. Hydraulic disc brakes are fitted, consisting of three fixed and two rotating types. The fixed discs contain 80 pucks per wheel. Tailwheel is non-retractable, and main gear "Up" will automatically lock the tailwheel, should the pilot forget to do so. Forty-five gallons of fuel is carried — 20 gallons per wing, plus 5 in a surge tank under the seat. ●