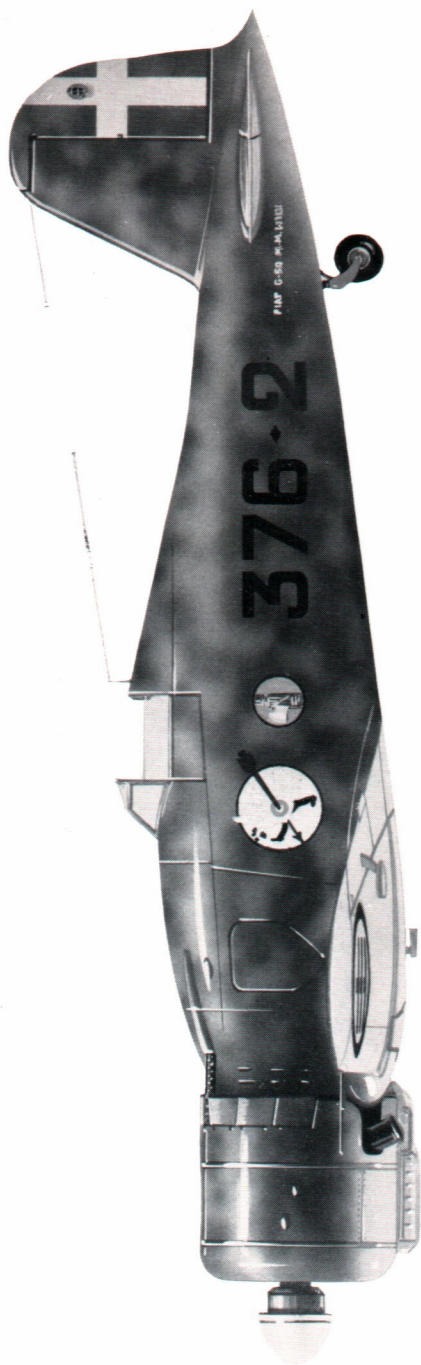


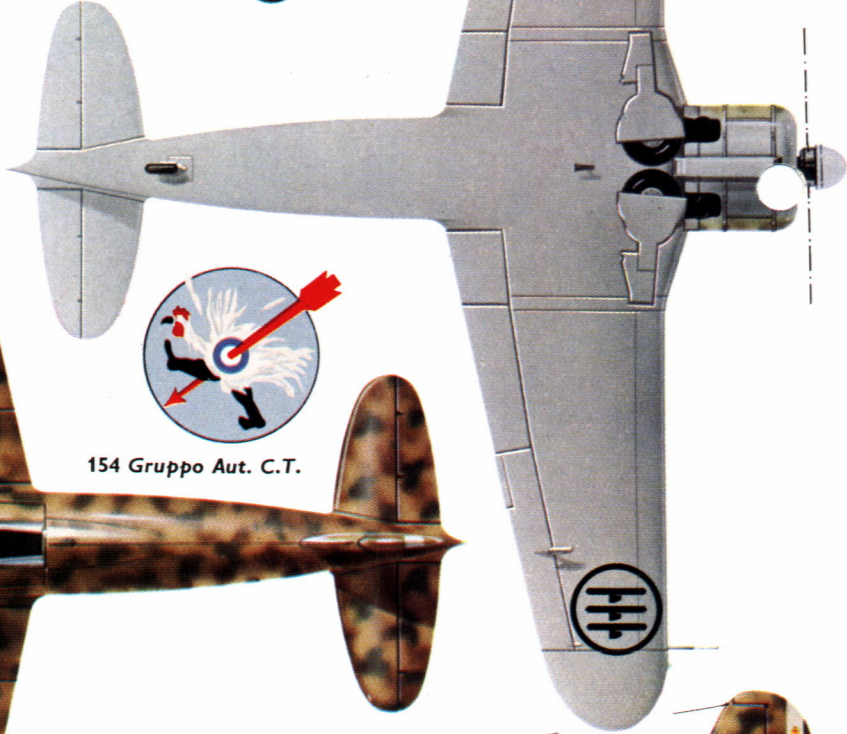
PROFILE PUBLICATIONS

The Fiat G.50

NUMBER

188





154 Gruppo Aut. C.T.



Fiat G.50bis of 376 Squadriglia, 154 Gruppo Autonomo C.T., Regia Aeronautica; Berat, Greece, November 1940.



Fiat G.50 of Gruppo Sperimentale da Caccia; Spain, winter 1938/39.



Fin insignia.

56 Stormo C.T.



Wing insignia.



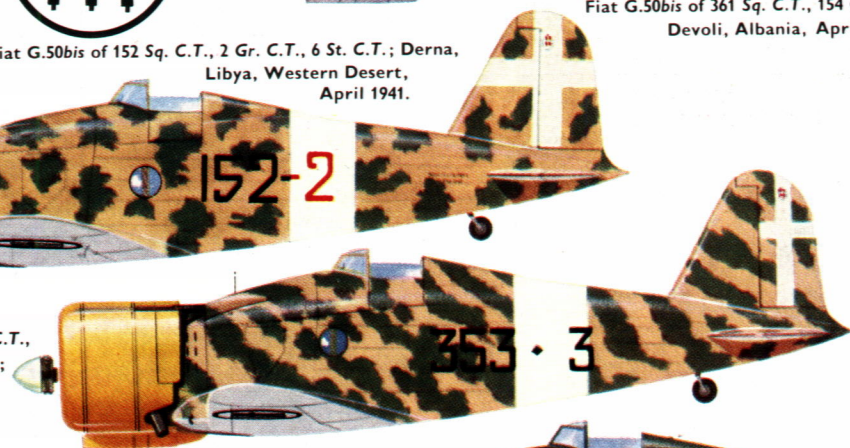
Fuselage insignia.



Fiat G.50bis of 152 Sq. C.T., 2 Gr. C.T., 6 St. C.T.; Derna, Libya, Western Desert, April 1941.



Fiat G.50bis of 361 Sq. C.T., 154 Gruppo Autonomo C.T.; Devoli, Albania, April 1941.



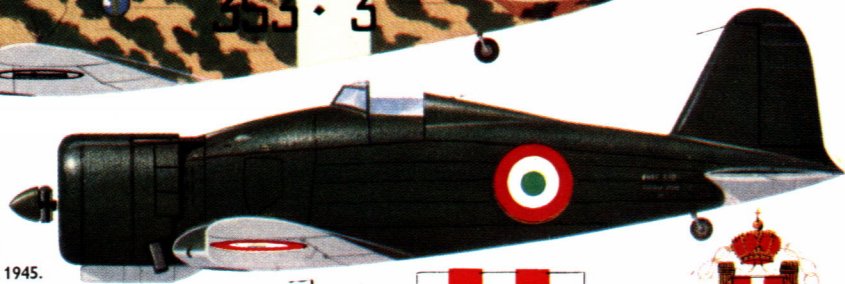
Fuselage fascias.

Fiat G.50bis of 353 Sq. C.T., 20 Gr. C.T., 51 St. C.T.; Martuba, Libya, Western Desert, November 1941.



Finland.

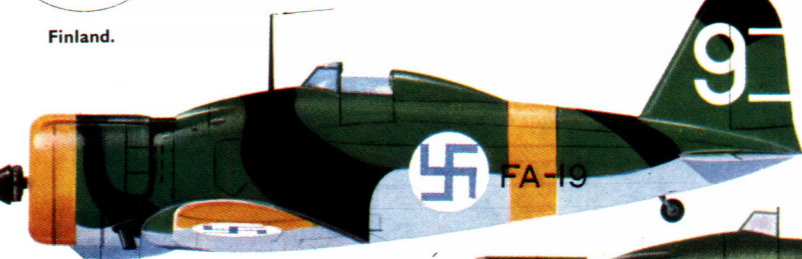
Fiat G.50bis of Italian Co-Belligerent Air Force, 1945.



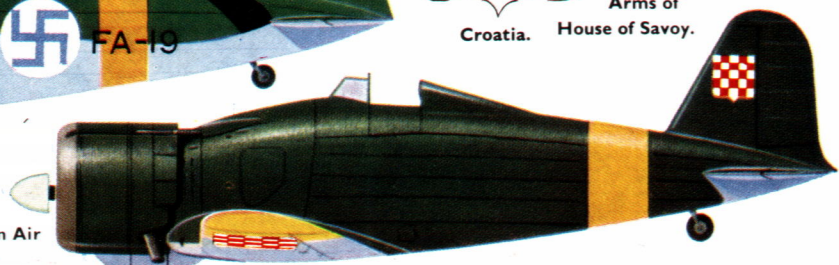
Rudder insignia, Coat of Arms of House of Savoia.



Croatia.



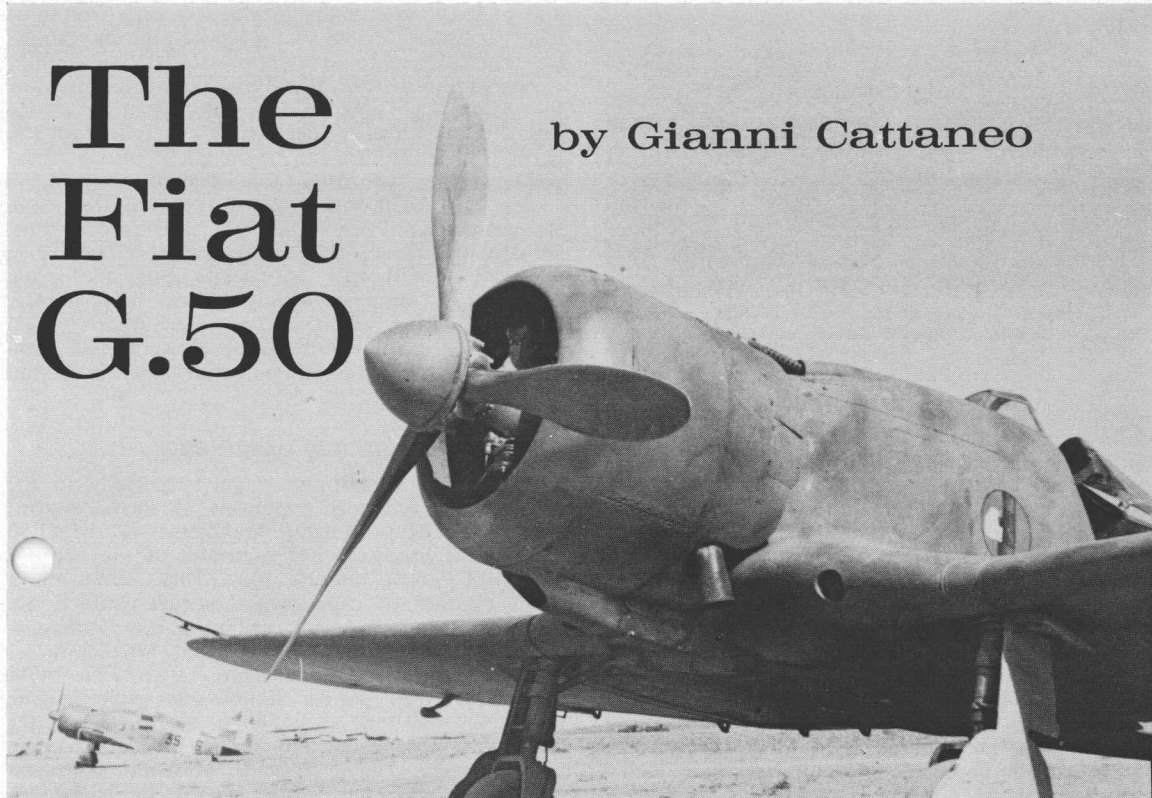
Fiat G.50 of HleLv 26, Finnish Air Force; Continuation War, 1941.



Fiat G.50bis of Croatian Air Force, summer 1941.

The Fiat G.50

by Gianni Cattaneo



A Fiat G.50 of the Regia Aeronautica's 351° Squadriglia C.T., 155° Gruppo Autonomo C.T. (351st Land-Based Fighter Squadron, 155th Autonomous Land-Based Fighter Group) photographed on Misurata airfield in Libya during January 1941.

(Photo: the author)

The design and construction of the prototype Fiat G.50 in 1936 marked an interesting stage in the development of this Italian company. Fiat had long relied on the design formula developed by their Chief Designer, Ing. C. Rosatelli, but the G.50 marked the arrival of a new technician, the young Ing. G. Gabrielli. Although Rosatelli designs had evolved from the mixed-construction biplane to the all-metal monoplane (e.g. the B.R.20 bomber), the advent of Ing. Gabrielli demonstrated the acquisition of a new designing and manufacturing mentality by the company.

Although a contemporary of the Hurricane, Spitfire and Bf 109, the Fiat G.50 did not offer the same advanced characteristics and lacked the built-in development potential of the other designs. At the time of its appearance, however, the G.50 was the best and most modern fighter in Italy. The new fighter, christened "Freccia" (arrow), was in fact the first all-metal monoplane with retractable undercarriage and constant-speed propeller to be evaluated by the Italian Air Force. The G.50 was developed to a 1936 specification for an interceptor fighter which also produced the superior Macchi C.200 and the less successful Caproni F.5 (limited series production), I.M.A.M. Ro.51 and A.U.T. 18 (neither entered production).

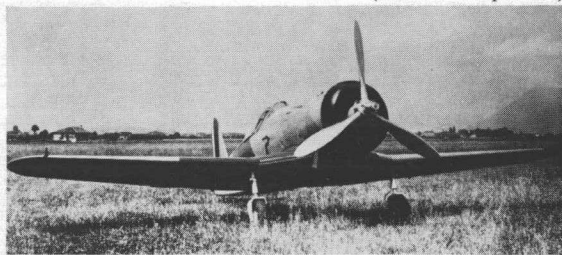
Construction of the prototype commenced in 1936 and the aircraft (military serial MM 334) first flew on 26th February 1937. It was the first aircraft designed to the Air Force specification to appear and, in view of its innovations, a protracted evaluation programme was undertaken. The G.50 proved to be very light

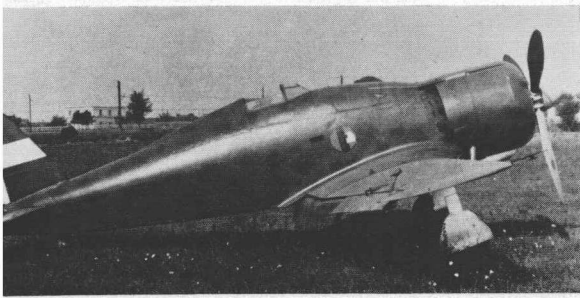
on the controls and extremely manoeuvrable for a monoplane, but two obvious faults were the limited power (840 h.p.) furnished by the bulky radial engine and the lack of firepower of the two 0.50 in. machine-guns which constituted the armament. The promise shown by the prototype warranted an initial order for 45 aircraft placed in the summer of 1937. The first machine was officially unveiled at the International Aeronautical Show, Milan, in October 1937.

Series production of the G.50 was entrusted to the C.M.A.S.A. company, (formed in 1922 at Marina di Pisa), which became a Fiat subsidiary in 1929. Previous activities of C.M.A.S.A. ranged from the licence-production of Dornier aircraft (Do E, Do F and Wal) and the building of modifications of basic Fiat designs (the I.C.R.20 seaplane and C.R. Asso

The Fiat G.50 prototype, MM 334, first flew on 26th February, 1937. It was the first all-metal monoplane with constant-speed propeller and retractable undercarriage to be evaluated by the Regia Aeronautica; and the type also marked the acquisition by Fiat of the young designer Gabrielli.

(Photo: G. Apostolo)





G.50 MM 5439, fresh from the factory of Fiat's subsidiary C.M.A.S.A., awaits delivery to the Regia Aeronautica. (Photo: Aeronautica Militare)

landplane versions of the basic C.R.20 fighter) to the production of original designs such as the MF 4, MF 5 (a developed Dornier *Wal*) and MF 10 flying-boats and the excellent R.S.14 reconnaissance floatplane which appeared in 1938 and gave useful service during the Second World War. Deliveries of the first G.50 series (serials commencing *MM 3570*) began in 1938 and twelve aircraft of this batch were hastily shipped to Spain for evaluation under true operational conditions.

The Fiats arrived in Spain in January 1939—too late to gain much operating experience under enemy fire (none were lost in action although only eleven remained when the Spanish Civil War ended). Little seems to have been learnt as nothing was done to increase the armament. The aircraft were incorporated into the *Gruppo Sperimentale da Caccia* (Experimental Fighter Group) and were at Escalona (in the Toledo sector) at the war's end; they were then handed over to Spanish pilots and operated for a while in Morocco.

Despite the inconclusive results of evaluation in Spain, a further 200 G.50 fighters were ordered. Meanwhile "Programme R" laid down Italian Air Ministry policy for the improvement, in quantitative and qualitative terms, of the *Regia Aeronautica*. Besides re-equipping three *Stormi* with the new C.200, it was intended to form one *Stormo* and one *Gruppo* with the G.50. The Macchi C.200 proved itself to be much superior to the G.50; however, it was not considered advisable to abandon G.50 production, despite the greater standardisation that total commitment to the C.200 would permit, as this would render all tooling for the G.50 useless

Forty-eight G.50's from the 20° Gruppo, 51° Stormo, formed part of the mixed strength of the new 56° Stormo based in Belgium to provide an Italian fighter presence during the Battle of Britain. There is no record of the aircraft ever having encountered British fighters; after two or three months most units returned to Italy, although 352° and 353° Squadriglie of the 20° Gruppo continued to fly surveillance missions until mid-April, 1941. A G.50, serial MM 5448, of the 352° Sq. is shown here being re-armed on Ursel airfield during October 1940.

(Photo: Aeronautica Militare)



and at least six months production time would be lost. (It was estimated that it would take six months for Fiat to prepare for possible C.200 production.)

An additional factor complicating the issue was that neither the G.50 or C.200 was cleared for service use. It was therefore decided to continue with the G.50 as a safety measure in the event of any unexpected trouble with the Macchi design.

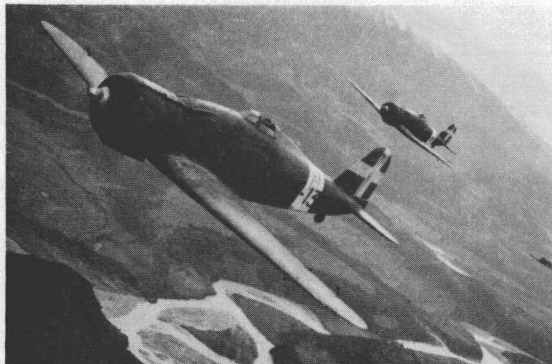
The Fiat G.50 was destined to serve the *Regia Aeronautica* until 1948 and fight over many fronts, some with other air forces, giving faithful service in all cases. Although not outstanding and often opposed by aircraft with superior performance, the G.50 was a robust and viceless aircraft which marked the introduction of new concepts and techniques, of design and manufacture, by the Italian aviation industry.

THE G.50 DESCRIBED

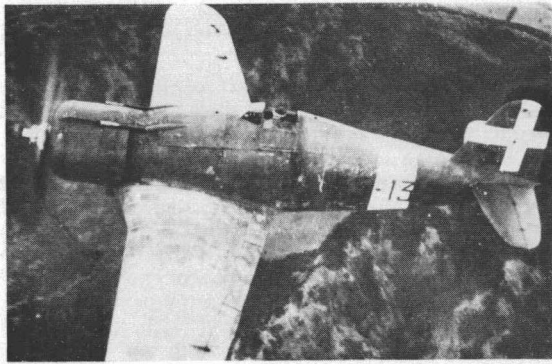
The following description refers specifically to the G.50 but is generally applicable to the developed G.50bis. (The production breakdown of the G.50 series is as follows:—245 examples of the original G.50, 421 G.50bis aircraft, 108 G.50B trainers and a small number of experimental variants which are described below, in a later section of this *Profile*.)

The Fiat G.50 was a single-seat interceptor of all-metal construction powered by a Fiat A.74 R.C.38 fourteen-cylinder double-row radial engine developing 840 h.p. at 12,500 ft. and 2,500 r.p.m.; the engine was geared and fitted with a mechanical supercharger. The three-blade, all-metal, constant-speed, variable-pitch propeller was of Hamilton-Fiat manufacture and 9 ft. 10 in. in diameter.

The semi-monocoque fuselage was based on four main longerons and seventeen formers while the engine mounting was a chrome-molybdenum steel tubular structure fixed to the fuselage with elastic supports. Large access doors were provided immediately aft of the powerplant on the fuselage sides to permit servicing and maintenance of the fuel tanks and armament installation. Two 12.7 mm. Breda-SAFAT machine-guns were housed on the top of the fuselage forward of the cockpit; the guns were synchronised to fire through the propeller arc; single or salvo firing was possible, and 150 rounds of ammunition were provided for each gun. The



Two views of aircraft of the 351° Sq. over Italy in January 1941. Autonomo during that month.



This squadron was transferred from the 20° to the 155° Gruppo (Photos: Reyes, Apostolo)

cockpit was provided with a pilot's seat adjustable in both height and inclination.

The first 45 aircraft only were provided with an enclosed cockpit comprising large transparencies and providing a good rearward view. Although the pilots did not actually object to the enclosed cockpit arrangement, they were not very enthusiastic and ultimately an open canopy was adopted, similar to that used on the C.200 and Caproni F.5. Various types of open canopies were tested on the fifth production aircraft (*MM 3574*) and an arrangement of hinged transparent side-flaps was finally standardised for the G.50 and G.50bis. A robust turn-over pylon was incorporated in the head-rest fairing of the open cockpit. At the rear the fuselage was closed by a load-carrying bulkhead, and the tubular structure supporting the empennages and the tailwheel (provided with a hydraulic shock-absorber) was connected to this bulkhead.

The wing was built up from three sections: a centre-section in steel-tube attached to the underside of the fuselage and two bilongeron outboard panels with a stressed-skin covering. The slotted flaps, in four sections, were hydraulically actuated; they were automatically retracted when a certain airspeed was exceeded. The statically and aerodynamically-balanced ailerons were of metal structure with fabric-covering.

Originally a Messier inwards-retracting main undercarriage gear was fitted, but this was later replaced by units of Magnaghi design. Retraction was hydraulically-operated with the jacks acting as load-carrying members, while lowering was done pneumatically with compressed air moving both actuators. Hydraulic shock-absorbers were incorporated in the telescopic legs. In the event of a failure of either the lowering or retraction systems, it was possible to operate the main gear manually and optical indicators were provided to inform the pilot as to whether it was functioning correctly or not. Pneumatically-operated brakes were provided, the system being fed by a small compressor also used for engine starting. Maximum fuel capacity was 68.5 Imp. Galls.; there were two wing tanks (each 10.1 Imp. Galls.), two main fuselage tanks (one 22.0 Imp. Galls. and the other 14.9 Imp. Galls.) and an auxiliary fuselage tank (11.4 Imp. Galls.).

The faired, non-retractable tailwheel castored (45° each side) and was fitted with an automatic centring device (at least the first 45 aircraft were provided with hydraulic tailwheel shock-absorbers). The tail unit was quite conventional in construction,

all-metal with fabric covering for the moveable surfaces.

Instruments and controls were grouped in three distinct panels in the front of the cockpit; the upper section carried the San Giorgio reflector sight, the navigation instruments, the temperature indicators, fuel system indicators and the engine instruments; the middle section, amongst others, the fire warning light, the ammunition round-counter, the oxygen control panel, the undercarriage position indicators and the compass; the lateral panel carried the compressed-air system indicator, the engine starter and the cowlings gills control. On the left side were placed the throttle, the hot air control of the carburettor, the fuel distributor, the altitude corrector and the radio switches and knobs. The oil was contained in a single tank, of about 8 Imp. Galls. capacity, placed on the front side of the firewall. The oil radiators were placed on the leading edge of the wing centre-section. The 12-volt electrical system was fed via two batteries placed under the floor of the cockpit while the medium-wave ARC 1 radio set was installed behind the pilot. The G.50 was equipped with a CO₂ fire extinguisher system and provision was made for the installation of an OMI FM62 camera-gun, which could be installed on the starboard wing at the intersection of the wing centre-section and the outer wing panel.

SERVICE AT HOME AND ABROAD

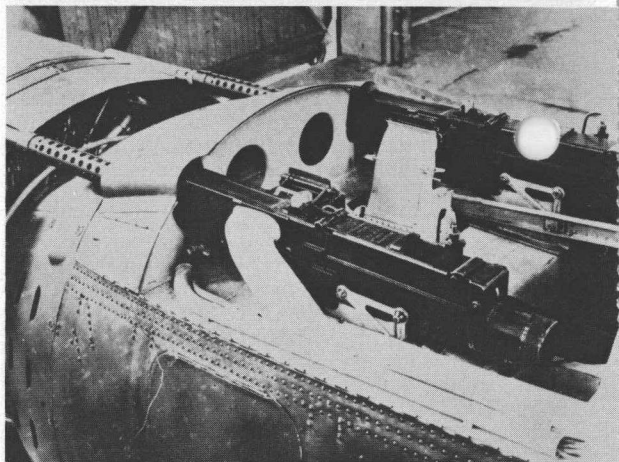
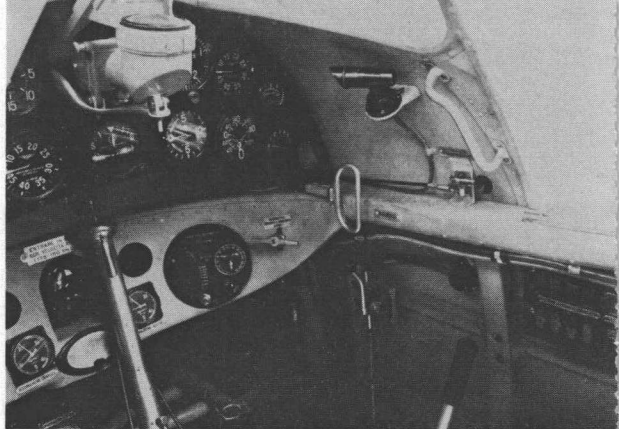
In November 1939, the G.50 was issued to some squadrons of the 51° *Stormo* (20° and 21° *Gruppi*), then in the process of formation, and participated in the various war games and exercises typical of the period. The famous emblem of the 51° *Stormo* (a black cat with green mice) resulted from an incident at this time. The old C.R.32 biplane fighters were often unable to intercept S.M.79 bombers of the 12° *Stormo B.T.* (green mice emblem), but the new G.50's of the 352° *Squadriglia* of the 51° *Stormo* had no trouble in this task; therefore a pilot of the fighter unit designed the emblem, sported by the 51° *Stormo* and later, after World War Two, by the 51° *Aerobrigata*. When Italy entered the War, in June 1940, there were 118 Fiat G.50's in service, 97 with operational units and 21 awaiting delivery or under repair. They equipped the 51° *Stormo* at Ciampino Sud (near Rome) and, in part along with the C.R.32, the 52° *Stormo* (22° and 24° *Gruppi*) at Pontedera, Tuscany, under the command of the 3° *Squadra Aerea*. The G.50's were used sporadically during the

first days of the war, aircraft of the 22° Gruppo escorting S.M.79's on some of their bombing missions against harbours and airfields in Corsica.

The training schools pressed for a two-seat version of the G.50 to aid conversion of pupils to the type and C.M.A.S.A. were asked to undertake design of such a variant. Known as the G.50B, it first flew on 30th April 1940. The G.50B was a direct modification of the single-seater, a second cockpit with dual controls was added and the armament removed. The front cockpit was provided with an enclosed canopy and the rear cockpit with an open one. Production was immediately put in hand and a total of 108 G.50B's were produced, serials were from MM 3615 onwards. Most trainers served at the Fighter School of the *Regia Aeronautica*; only one survived the war and it gave faithful service until 1948 at the Fighter School, Lecce, as an intermediate trainer before pilots passed on to the Macchi C.205 and Spitfire. Maximum speed of the two-seater was 283 m.p.h., loaded weight 5,158 lb. and useful load 882 lb. The G.50B was a great success as its performance was sufficiently close to that of first-line aircraft to provide realistic training for pupil pilots and its introduction anticipated a trend that was to become widespread in the Air Forces of many countries.

For reasons of prestige and political opportunity, the Italian government sent a small force of fighters and bombers to participate in the German air offensive against the British Isles in the autumn of 1940. The Air Staff would have preferred to use the same force in other sectors where better results could be ensured, for the *Regia Aeronautica* contribution to the Battle of Britain was to prove unsuccessful. The chief reasons for this failure were the difficult weather conditions, the inadequacy of the aircraft for the task and the lack of preparation of the personnel. Besides the B.R. 20's of the 13° and 43° Stormi B.T., the new 56° Stormo C.T. was based at Maldegen (Belgium) comprising the 18° Gruppo C.T. with 50 C.R. 42's from the 3° Stormo and the 20° Gruppo C.T. with 48 G.50's from the 51° Stormo. The first action in which the G.50's took part was on 29th October 1940 when they acted as bomber escorts in an attack on Ramsgate; a similar mission against Great Yarmouth on 11th November was aborted because of prohibitive weather conditions. During the period mid-November 1940 to the end of January 1941 the Italian fighter units were relatively active flying surveillance missions over the English Channel and along the coast of Belgium and Holland, but there is no record of their having encountered hostile fighters. On 31st January 1941 most units of the Italian expeditionary corps returned to Italy although the 352° and 353° Squadriglie of the 20° Gruppo remained, initially at Maldegen and later at Desvres, until 15th April 1941, flying surveillance sorties between Dunkirk and Calais.

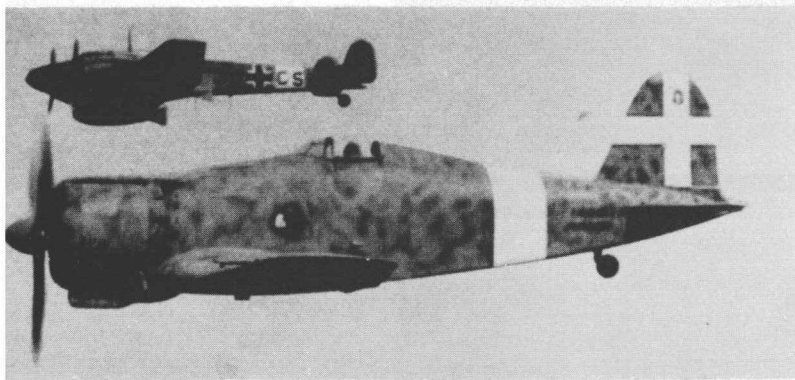
The Fiat G.50 obtained greater, if lesser-known success with a foreign air force—that of Finland. The Finnish government ordered 35 G.50's late in 1939, just before the Russian attack on Finland. An evaluation mission tested the type at Guidonia Experimental Centre and the acceptance pilot Lt. Tapani Harmaja reached 515 m.p.h. in a dive with no damage apart from a shattered windscreen, on 14th November 1939. The German authorities contrived



Details of (above) the fuselage gun installation of the G.50 and (below) the landing gear of the G.50 prototype.

(Photos: P. Vergnano via the author)





The quality of the original print showing this Messerschmitt Bf 110, supposedly of 8 Staffel, ZG 26 "Horst Wessel", combined with the absence of any unit code on the Fiat G.50bis, probably indicate that the dread hand of the wartime retoucher has been at work on this print. It is nevertheless interesting as an example of a mixed Axis formation, which were often encountered in the desert war.

(Photo: via R. Ward)

of the feeding links of the machine-guns. Incidentally, it is a little-known fact that a small number of Italian pilots volunteered to fight in Finland against

the Russians, one of them, Sgt. D. Manzocchi, being killed in action.

GREECE AND NORTH AFRICA

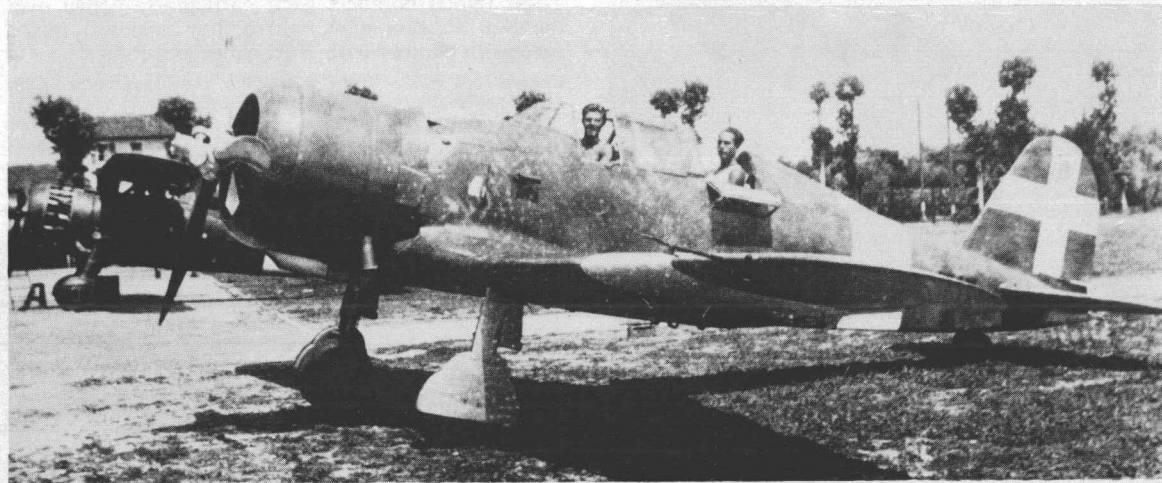
At the start of the Greek campaign, in October 1940, three units were equipped with G.50's for operations in the Balkans—the 24° Gruppo C.T. at Tirana and the 154° Gruppo C.T. at Berat in Albania and the 2° Gruppo C.T. in Southern Italy; 43 machines in Albania and 33 in Italy. Despite valiant resistance, the Greek Air Force was almost at the end of its powers and only the intervention of British forces in November 1940 prevented the early collapse of Greek resistance. Although the C.R.42 was superior to the Gladiator, the G.50 pilots learned that it was not advisable to try and dog-fight the R.A.F. biplane, but rather to exploit their superior speed. The G.50's were engaged in intensive fighting over Greece until February 1941 and the ferocity of the air battles gave rise to quite discordant claims regarding "kills". Two examples suffice; on 20th February 1941 Italian pilots claimed that 12 enemy aircraft were shot down by 22 G.50's without loss, while British reports for the same day record four Italian fighters as being shot down by six Hurricanes on their first sortie of the day. Later, on 28th February, Italian claims totalled 12, while the R.A.F. claimed 27 "kills" without loss, mostly by the newly arrived Hurricanes and a Gladiator squadron. Without detracting from the valour and aggressiveness of the pilots of both sides, these examples illustrate the difficulty of

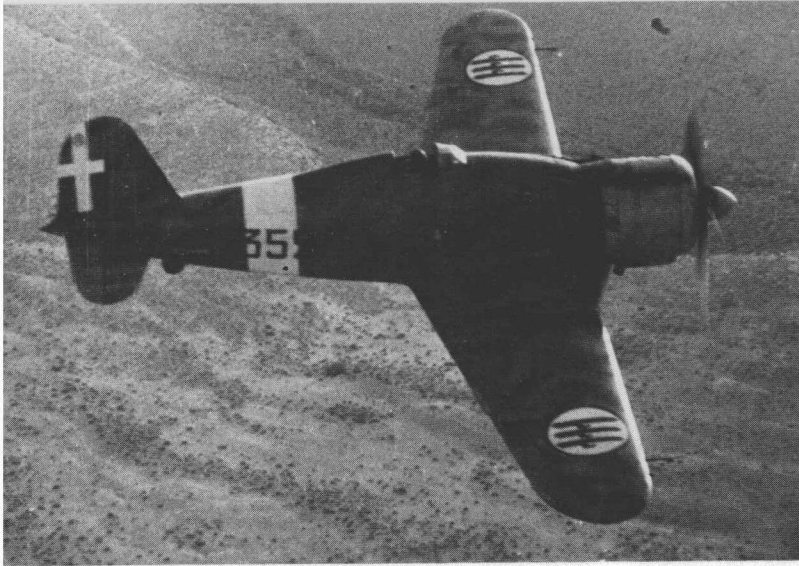
to delay the delivery of these aircraft to Finland and the first batch, of 14 aircraft, did not arrive until February 1940 (another 12 arrived in March). They immediately began to replace the Gloster Gladiators in service with HLeLv 26 but the squadron did not see any action before the Armistice in March. Initially the G.50's were painted olive-drab on the upper and side surfaces and pale grey underneath; their serials were FA-1 to 35 carried on the rear fuselage sides and underwing. Just before the Continuation War commenced in June 1941, the aircraft were repainted in a black and green scheme on the upper surfaces and pale blue underneath. The serials were carried only on the fuselage sides.

HLeLv 26, initially based at Utti, was actively engaged in the fighting around Lake Ladoga; the G.50 remained in first-line service until May 1944 but, not being designed to operate in very cold conditions, presented many maintenance problems. Other grounds for complaint were the meagre volume of fire from the two machine-guns and the limited range. The G.50 enjoyed some success before being replaced by the Brewster B-239 and relegated to training duties. Two aces, Oiva Tuominen (total 43 victories at the end of the war) and Olli Puhakka scored many of their victories while flying the type; eight other aces flew the G.50 in Finland. Flight Master Tuominen won the highest Finnish decoration, the Mannerheim Cross, while flying the G.50: on 17th August 1941 he shot down four Russian bombers in four minutes, only being forced to give up combat by the failure

A Fiat G.50B two-seat trainer, photographed at a Regia Aeronautica fighter school.

(Photo: Garello via the author)





The G.50bis was largely similar to the initial production series, but the differences included increased fuel capacity, improved pilot protection and a new radio installation. The type was mainly employed in Libya; and a machine of the 352° Sq., 20° Gr., 51° St. is shown here in flight over the characteristic scrub-dotted landscape of the Western Desert. (Photo: the author)

gathering historically accurate data, despite the good faith of the pilots.

The first G.50 unit to be withdrawn, the 2° Gruppo C.T. was withdrawn from Greece, prior to transfer to Libya, in December 1940, and the fighter units in Greece were progressively re-equipped with the Macchi C.200 which was much more suitable for combat with the opposing Hurricanes. From October 1940 to April 1941 Italian fighter strength in the Greek theatre and Southern Italy combined was as follows:—

November 1940—145 aircraft	} average servicability 85%
December 1940—162 aircraft	
January 1941—159 aircraft	
March 1941—212 aircraft	
April 1941—215 aircraft	

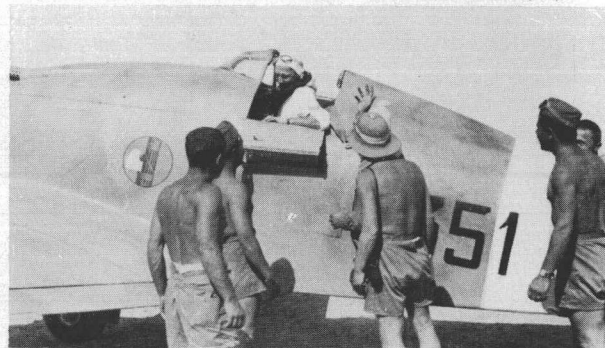
A mechanic working on the cowling of a G.50bis of the 152° Sq., 2° Gr., 6° St., based at Derna in Libya in April 1941. (Photo: the author)

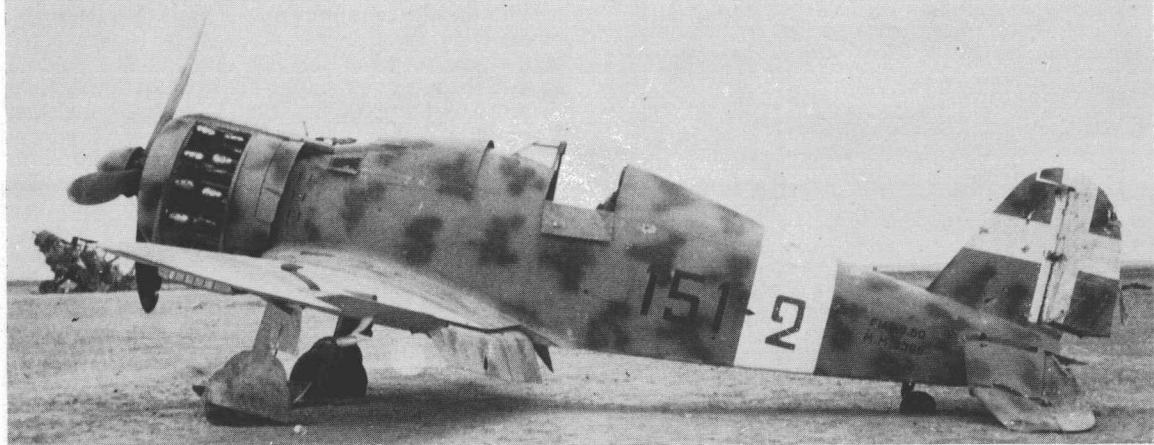


Until February 1941, Fiat G.50's constituted about 45% of this force.

The first prototype of an improved version, the G.50bis, was first flown on 9th September 1940. This model was similar to the original G.50, but featured increased fuel capacity, a new radio installation, a slightly modified fuselage profile, armour for the pilot's seat, small changes in the canopy design and a rudder of new design, with increased chord and reduced height. In all, 421 G.50bis aircraft were built by C.M.A.S.A. and Fiat-Aeritalia at Turin. Fiat built 344 machines (MM5933-6247 and MM8561-8591) while the remaining 77 were produced by C.M.A.S.A. Nine were supplied to Croatia, but it is doubtful if they were used in action. The G.50bis was mainly used in Libya, with the addition of anti-sand filters for the carburettor air intake and the oil radiators. The first G.50bis machines arrived in Libya late in December 1940 with the 358° Squadriglia, later absorbed into the 2° Gruppo (150° and 152° Squadriglie). They were followed in January 1941 by the 155° Gruppo C.T. The Fiats participated in the Italian retreat to Tripolitania and the re-conquest of Cyrenaica. During this period a number of G.50's were modified in the field as fighter-bombers, racks being installed underwing to accommodate small bombs. These fighter-bombers were particularly active over the Sidi Barrani area, where they achieved mixed success in combat with Hurricanes and P-40's.

Ground crew gather round a G.50bis; a sergeant-pilot of the 351° Squadriglia returns from a successful mission over Sollum. (Photo: Reyes)



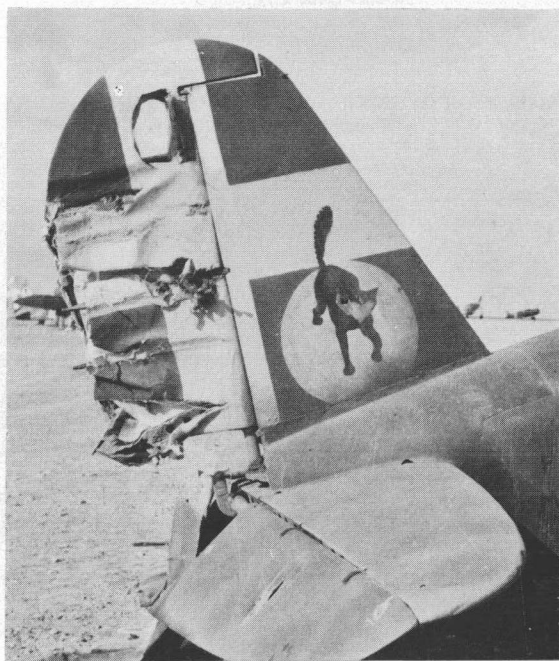


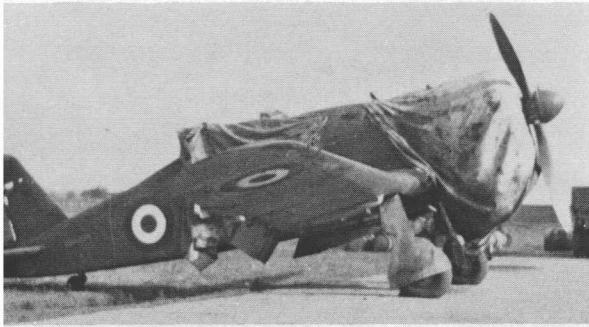
Damaged G.50bis aircraft of the 151° Sq., 20° Gr. 51° St. abandoned in the face of the Allied advances in Libya; and a crude representation of the 51° Stormo's famous insignia. (Photos: Imp. War Mus. CM 1990, CM 1988, CM 1987)

The arrival of more modern Italian fighters (the C.200 and later the C.202) permitted the withdrawal of the G.50bis from first-line service in North Africa, and in December 1941, the only unit in this theatre with the type was the 12° Gruppo C.T. based at Castelbenito (Tripoli). The number of G.50bis aircraft in Libya varied from 20 in February 1941 to a maximum of 80 in October and 35 in December. Similarly, the G.50bis was relegated to second-line and local-defence duties in other theatres, as in Sardinia (24° Gruppo C.T.), in Greece (151° Gruppo C.T.) and in the Aegean (154° Gruppo C.T.). The last batches of aircraft equipped the 158° and 159° Gruppi Assalto in 1943 pending the introduction of the Re.2000. Among the last actions of the G.50bis were those fought by the 368° Squadriglia around Sfax in Tunisia and the desperate missions flown against the Allied landings in Sicily where Fiats of the Gruppi Assalto (attack units) attacked landing craft south of Augusta Bay. On the date of the Armistice only 48 G.50's remained (17 were serviceable), distributed as follows:—

Italy: 19 a/c at Lonate Pozzolo with the 50° Stormo Assalto.

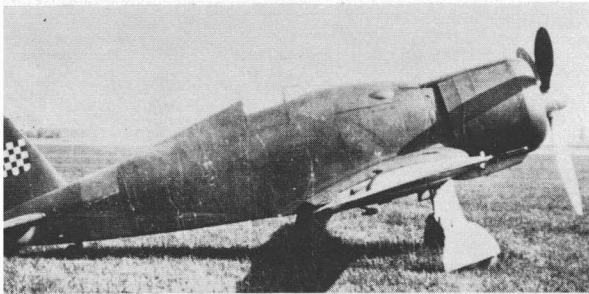
Corsica: 1 a/c at Ajaccio with the 160° Gruppo C.T.





One of the few serviceable G.50's remaining by the time of the Italian Armistice, seen in the markings of the Co-Belligerent Air Force. This was probably a G.50bis, late of the 50° Stormo Assalto based at Lonate Pozzolo.

(Photo: Fred C. Dickey Jr.)



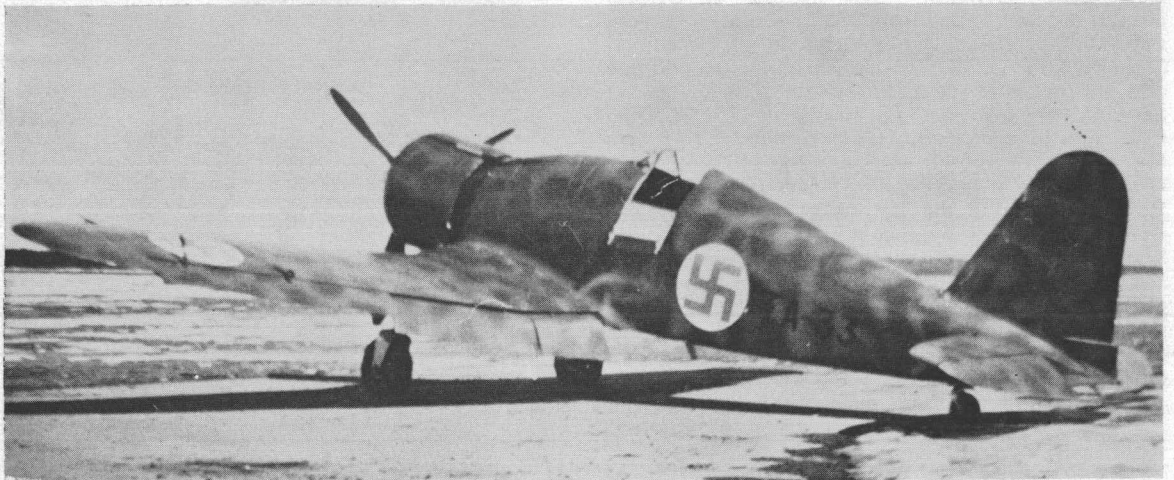
One of the nine G.50bis aircraft supplied to the Croatian Air Force. It is unlikely that they ever saw combat action.

(Photo: G. Apostolo)

- Albania: 7 a/c at Tirana with the 376° Squadriglia C.T.
- 5 a/c at Tirana with the 392° Squadriglia C.T.
- Greece: 3 a/c at Araxos with the 385° Squadriglia C.T.
- Aegean: 13 a/c at Rhodes with the 154° Gruppo C.T.

FA-33, one of the 35 Fiat G.50's supplied to Finland, in early (delivery ?) colour scheme, the Finnish swastika being marked on the original Italian "sand-and-spinach" camouflage.

(Photo: Eino Rita)



With the aim of improving the basic characteristics of the G.50, the C.M.A.S.A. company experimented with some reworked versions that did not proceed beyond the prototype stage. The first was the G.50ter powered by the 1,000 h.p. Fiat A.76 engine and first flying on 17th July 1941. However the development of this engine was abandoned before the aircraft's first flight and the G.50ter was still-born. On 25th August 1941 the G.50V made its first flight; this variant featured a completely new forward fuselage section and was powered by a Daimler-Benz DB 601 in-line engine. This experimental aircraft was intended as a first step towards the construction of the G.52, then on the drawing-board, but this was superseded by the more promising G.55.

The last variant developed was the Fiat G.50bis/A two-seat fighter-bomber which made its first flight on 3rd October 1942. The wingspan was increased by about 4 ft. 6 in. by the insertion of rectangular sections between the wing centre-section and each outer panel, each one carrying a 0.5 in. machine-gun with 250 rounds and racks for a 330 lb. bomb. This version was intended as a carrier fighter-bomber aboard the "Aquila", an aircraft-carrier then being built, at the end an arrester-hook was installed. The Armistice stopped any further development of the Italian aircraft-carrier programme and the Fiat G.50bis/A was likewise abandoned.

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FIAT G.50 SPECIFICATION

(Data from Technical Manual C.A.381 of the "Ministero dell'Aeronautica" applicable to the Series 2 of C.M.A.S.A., issued 25th May 1940.)

Powerplant: One Fiat A.74 R.C.38 fourteen-cylinder double-row radial rated at 840 h.p. at 2,500 r.p.m. at 12,500 ft. Hamilton-Fiat three-blade variable-pitch (26 -44 30') constant-speed propeller.

Dimensions: Wingspan 36.056 ft. Length 25.590 ft. Height 10.761 ft. Wing area 196.440 sq. ft.

Weights: Empty 4,328 lb. Useful load 968 lb. Maximum take-off 5,296 lb. Wing loading 26.626 lb./sq. ft.

Fuel Capacity: Total 68.632 Imp. Galls.

Performance: Maximum speed, 248.55 m.p.h. at sea-level; 264.08 m.p.h. at 6,560 ft.; 285.83 m.p.h. at 13,123 ft.; 293.90 m.p.h. at 19,685 ft. Minimum speed 76.42 m.p.h. Climb time, 50 sec. to 3,280 ft.; 3 min. 10 sec. to 9,845 ft.; 4 min. 38 sec. to 13,123 ft.; 7 min. 30 sec. to 19,685 ft. Take-off run 656 ft. Landing run 935 ft. Service ceiling 35,270 ft. Duration 1 hour at 16,404 ft. Limiting load factor 14.



FA-19, of the Finnish fighter squadron HLeLv 26, in Continuation War colours. Based at Utti when hostilities re-opened, the unit saw much combat around Lake Ladoga, and the G.50's remained in service until May 1944. Several Finnish aces made their names while flying the type, despite its basic unsuitability for the prevailing conditions. (Photo: Eino Ritala)

**UNITS OF THE "REGIA AERONAUTICA"
EQUIPPED WITH THE FIAT G.50 AND G.50bis
1940-43**

Gruppo	Stormo	Squadriglie	Representative date and location
2° C.T.	6°	150°-152°-358°	December 1940— Derna (Libya)
12° C.T.	Aut.	159°-160°-165°	January 1942— Castelbenito (Libya)
20° C.T.	56°	351°-352°-353°	November 1940— Ursel (Belgium)
20° C.T.	51°	151°-352°-353°	November 1941— Martuba (Libya)
21° C.T.	51°	354°-355°-356°	December 1940— Capodichino (Italy)
22° C.T.	52°	357°-358°-359°	December 1940— Ciampino (Italy)
24° C.T.	52°	361°-362°	November 1940— Tirana (Albania)
151° C.T.	53°	366°-367°-368°	February 1942— Greece
154° C.T.	Aut.	361°-376°-395°	April 1941— Devoli (Albania)
155° C.T.	Aut.	351°-360°-378°	January 1941— Misurata (Libya)
161° C.T.	Aut.	162°-163°-164°	November 1941— Rhodes
158° Ass.	50°	236°-387°-388°	July 1943— Osoppo (Italy)
159° Ass.	50°	389°-390°-391°	July 1943— Pistoia (Italy)

(Aut. = Autonomo; these autonomous groups were not attached to a Stormo.)

352° Squadriglia G.50bis fighters over Libya in late 1941.

FIAT G.50 PRODUCTION

Model	Serial	Quantity	Remarks
G.50	MM 334	1	Prototype
G.50	from MM 3570	245	Built by C.M.A.S.A.; including 35 for Finland
G.50bis	MM 5933-6247	314	Built by Fiat-Aeritalia; including 9 for Croatia
G.50bis	MM 8561-8591	30	Built by Fiat-Aeritalia
G.50bis	—	77	Built by C.M.A.S.A.
G.50ter	—	1	Built by C.M.A.S.A.
G.50B	from MM 3615	108	Built by C.M.A.S.A.
G.50V	—	1	Built by C.M.A.S.A.
G.50bis/A	—	1	Built by C.M.A.S.A.

COMPARISON OF OTHER G.50 VARIANTS

	G.50bis	G.50ter	G.50B	G.50V	G.50bis /A
Wingspan, ft. ...	36-056	36-056	36-056	36-056	40-612
Length, ft. ...	27-166	—	27-166	28-455	27-166
Maximum wt., lb. ...	5,505	—	5,158	6,380	7,359
Empty wt., lb. ...	4,631	—	4,268	5,139	5,110
Max. speed, m.p.h. ...	302	329	283	360	263

(Photo: via G. Apolloni)

