

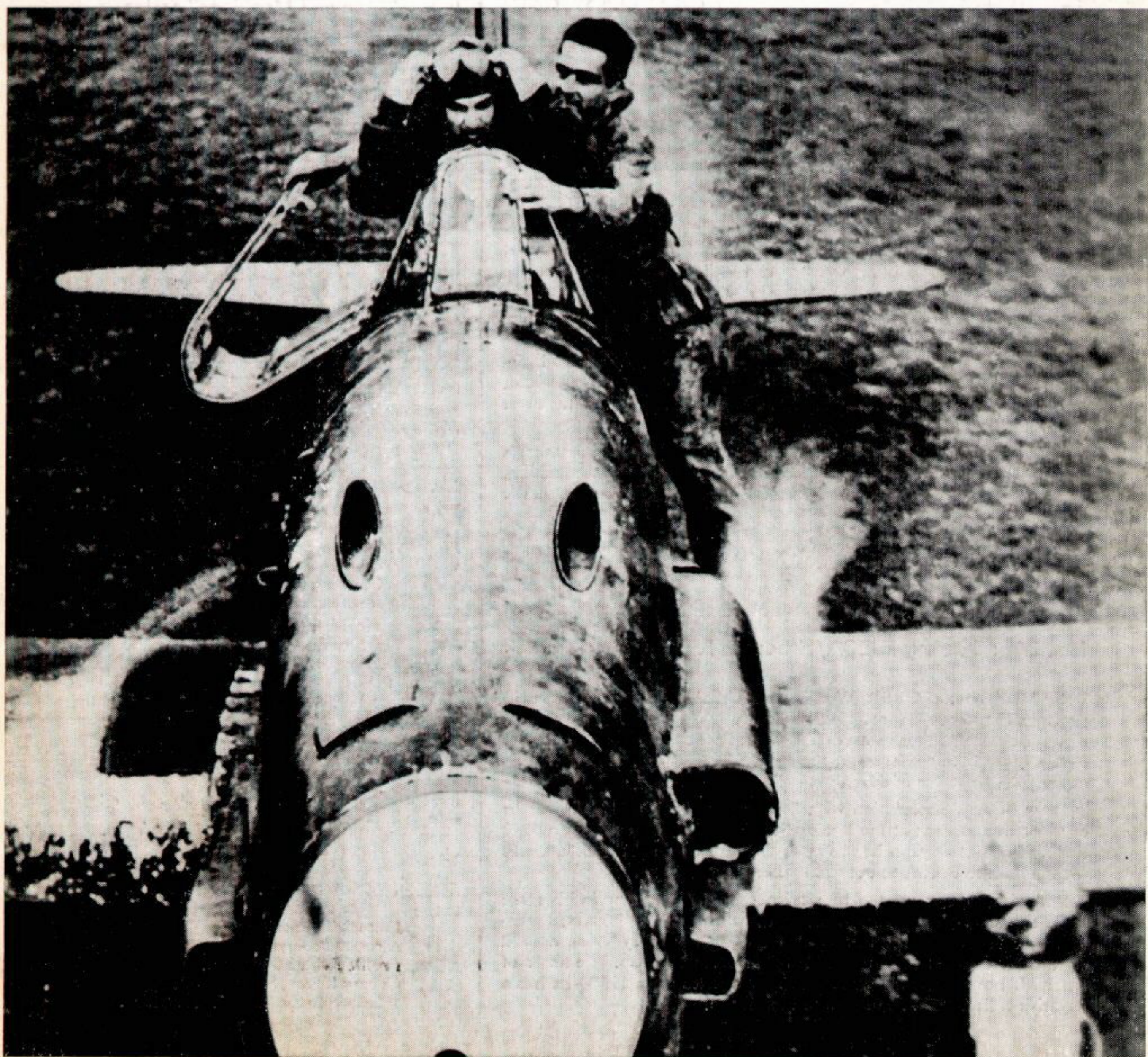
AIRCRAFT

PROFILE

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Caproni Reggiane Re 2001 Falco II,
Re 2002 Ariete & Re 2005 Sagittario

by John F. Brindley





The photo-reconnaissance version of the Caproni Reggiane Re 2001. Note the leading-edge camera housings.

(Photo: Museo Aeronautico Caproni di Taliedo)

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When Italy entered World War Two on Monday June 10, 1940, some Italians anticipated a quick and relatively easy victory. Others, more thoughtful, however, were extremely concerned that the country's industrial capacity would prove incapable of supporting the strain of a prolonged conflict. This ultimately proved to be the case. The Reggiane Re 2001 *Falco II* (Hawk II), Re 2002 *Ariete* (Ram) and Re 2005 *Sagittario* (Sagittarius) provide a graphic illustration of the fact that, in total war, quality rarely carries weight unless combined with a suitable quantity. All three of these aircraft were excellent but none of them was produced in sufficiently large numbers to influence the course of the war in the air over North Africa and Italy.

The *Officine Meccaniche Italiane S.p.A.*, of Reggio Emilia, was initially an Italian state-controlled industrial enterprise. The company first became involved in the aviation industry during World War One, when it produced Caproni bombers under licence. Popularly known as "Reggiane", the company was taken over by

the Caproni Group at the end of 1935 and the new owner decided that it should resume activity in the aviation field.

First of all, Reggiane was given an order to build 24 Piaggio P.32 *bis* two-motor bombers; in the event, only two were actually produced because the contract was cancelled in April 1938. Reggiane was also responsible for the development of the Caproni Ca 405 *Procellaria* (Petrel), a derivative of the P.32 *bis* intended first as a bomber, then for long-range air races. Two Ca 405s were to have been built for the 1937 Istres-Damascus-Paris race, which was won by a Savoia-Marchetti SM 79C (see *Profile No. 89*), but neither was ready in time. One was built and the other abandoned when 50 per cent complete. Reggiane was also involved in licence-production of the Savoia-Marchetti SM 79, building over 400 between 1937 and 1943.

The first original design of the Reggiane company was the Re 2000 *Falco I* (Hawk I) single-seat fighter (see *Profile No. 123*), designed by Roberto G. Longhi and



The Caproni Reggiane Re 2000 Falco I, direct predecessor of the Re 2001 and the subject of Profile No. 123. This is the prototype (serial MM408).
(Photo: via the author)

Antonio Alessio. The Re 2000 was not produced in large numbers for the Italian Royal Air Force (*Regia Aeronautica*), although it was exported to Sweden and built under licence in Hungary. In addition, only the objections of the Germans, and Italy's entry into the war, prevented 300 Falco Is being delivered to Great Britain.

One area where the Italian aircraft industry was weak, from a technical viewpoint, was in the development of liquid-cooled aero-engines. During the summer of 1939, the Italian Aeronautics Ministry received evaluation samples of the German Daimler-Benz DB 601 A liquid-cooled, 12-cylinder, inverted-Vee inline engine rated at 1,175 h.p.

This coincided with the evaluation of the prototype Re 2000 at Guidonia – the Italian Aeronautics Ministry test centre. Reggiane was asked to redesign the Re 2000 to accept the German engine. Longhi and his team of designers concentrated on reworking the fuselage to take the slimmer DB 601 A, the major change being a reduction in its cross-section, although the opportunity was taken to reduce structural weight as much as possible. The wings and tail unit of the Re 2000 were retained, despite the fact that the wing design – incorporating integral fuel tanks – had been the one feature of the *Falco I* to draw criticism from Aeronautics Ministry technical experts.

A prototype of the new design, which had been given the designation Re 2001 *Falco II* (Hawk II), was rolled out at Reggiane's Reggio Emilia factory on July 10, 1940 and made its first flight a few days later, piloted by Lieutenant Colonel Piero Scapinelli*. Following initial company tests, the Re 2001 prototype (with the Italian Air Force serial MM409) was flown to Guidonia on August 9, 1940 for official evaluation. Manoeuvrability proved to be excellent and the aircraft achieved a maximum speed of 350 m.p.h. at 18,045 ft (563 km/h. at 5,500 m.).

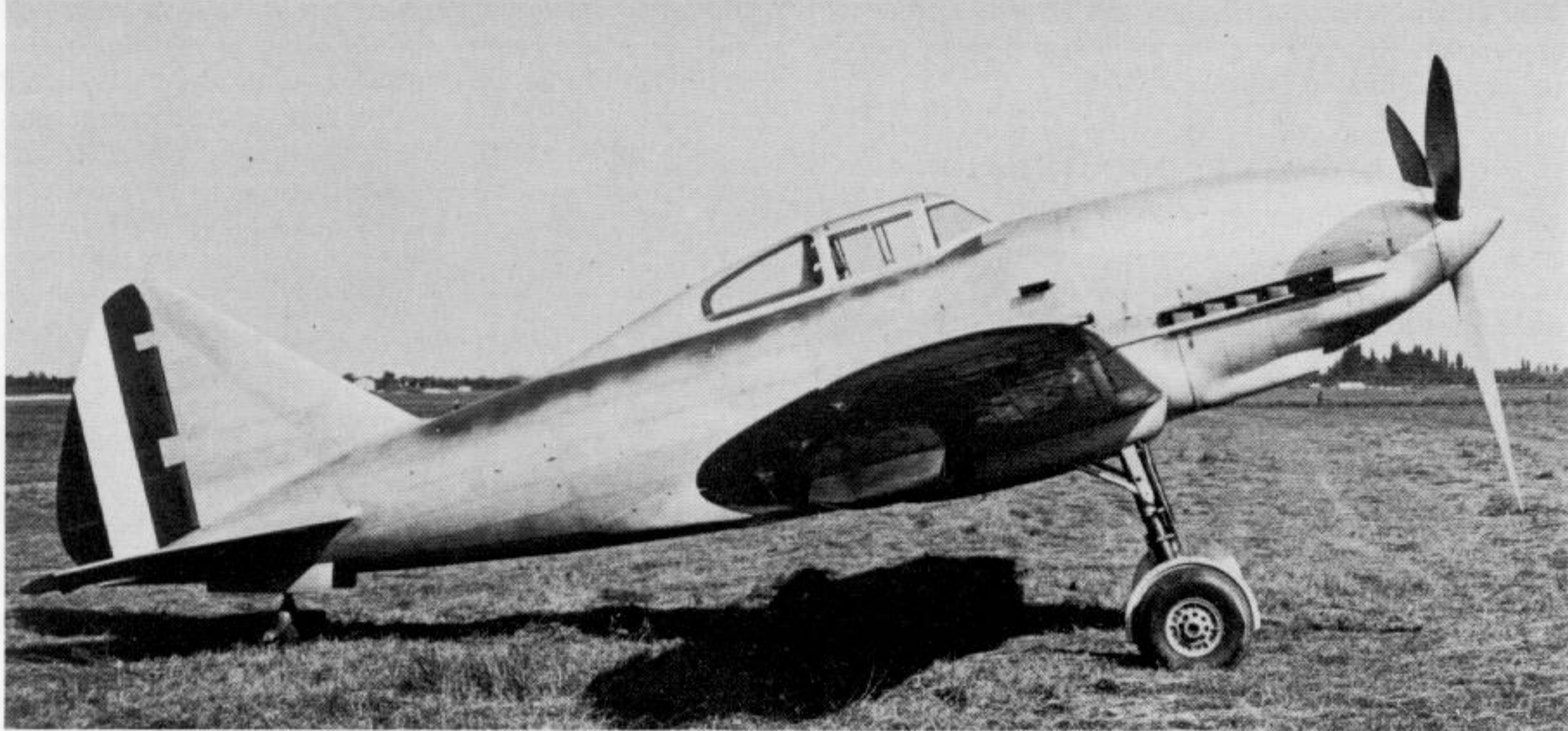
The Aeronautics Ministry asked Reggiane to redesign the Re 2001's wing, the new structure to be retrofitted to the first prototype and also installed on a second prototype. Other minor changes were required, notably to the rear of the cockpit canopy – the transparencies giving way to a solid fairing with scallops cut out to permit some aft vision, the substitution of a fixed tail-wheel for the original retractable unit, and the addition of two wing-mounted 7.7-mm. Breda-SAFAT machine-guns with 600 rounds each plus two 12.7-mm. Breda-SAFAT machine-guns with 350 rounds each in the engine's upper cowling.

The new wing was a three-spar affair with armoured fuel tanks, replacing the five-spar design with integral tankage which had drawn the disapproval of the Ministry's technicians. The first prototype was modified in November 1940 and the second was completed shortly afterwards (with the serial MM408 – the same as was carried by the prototype Re 2000). The second prototype crashed on March 14, 1941, following a propeller malfunction, killing Piero Scapinelli when he attempted a forced landing.

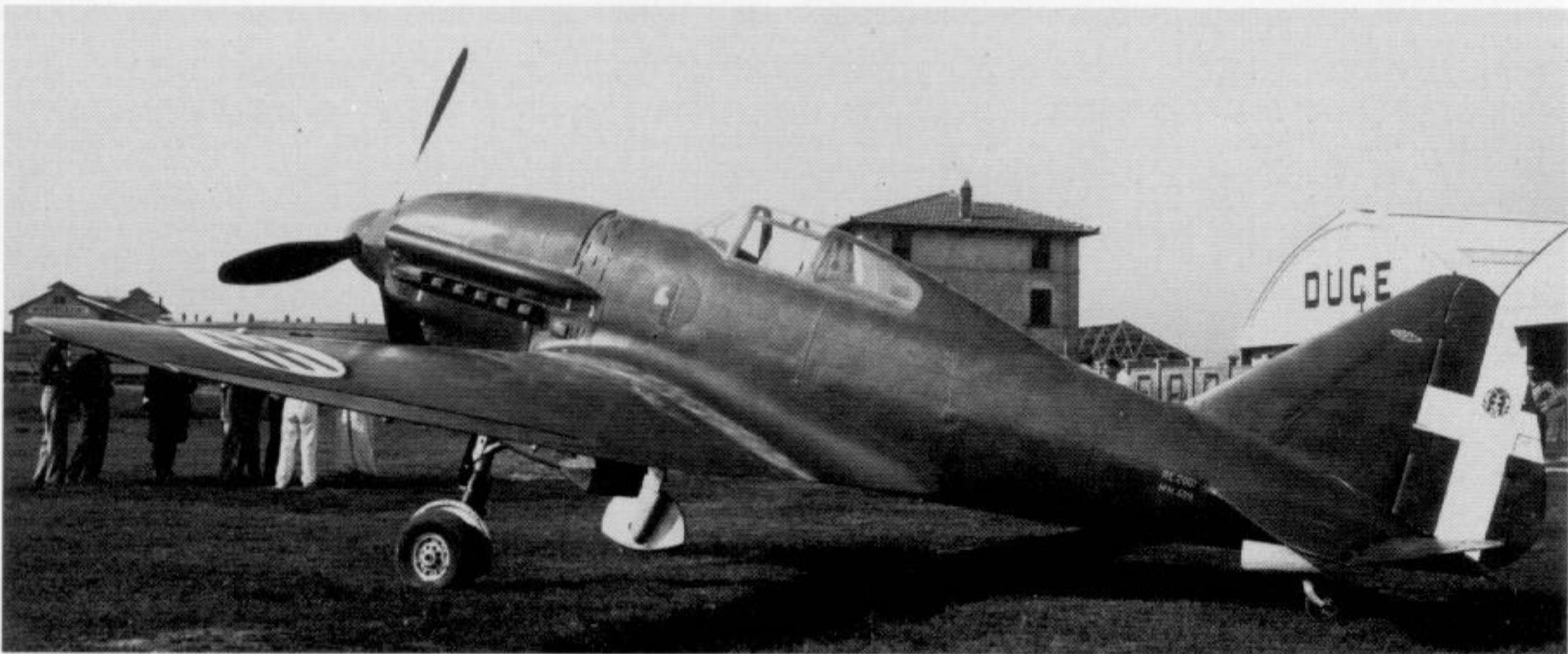
It had been intended to build a third prototype, featuring a further wing design, this incorporating leading-edge radiators buried inside the structure and avoiding the drag penalty of conventional underwing radiators. This aircraft was not built, but the new wing was fitted to the first prototype and the aircraft redesignated Re 2001 *bis*. The first flight of the Re 2001 *bis* was made in April 1941, with Captain Francesco Agello (of Schneider Trophy and World's Speed Record – M.C.72 – fame) as pilot, and the following August 7 it achieved a speed 373 m.p.h. at 19,685 ft. (600 km/h. at 6,000 m.).

Official trials were carried out at Guidonia during August 1941 but, despite being some 35-40 m.p.h. (56-64 km/h.) faster at altitude than the standard Re 2001, the wing was not adopted for production aircraft. However, the Re 2001 *bis* continued flight trials until the spring of 1942 and provided valuable data for the Reggiane Re

*Lieutenant Colonel Scapinelli, Count di Leguigno, was holder of the Italian Gold Medal for Aeronautical Valour and had won the 1933 Blériot Cup flying the Macchi M.C.72 seaplane. He was killed, as related here, in an Re 2001.

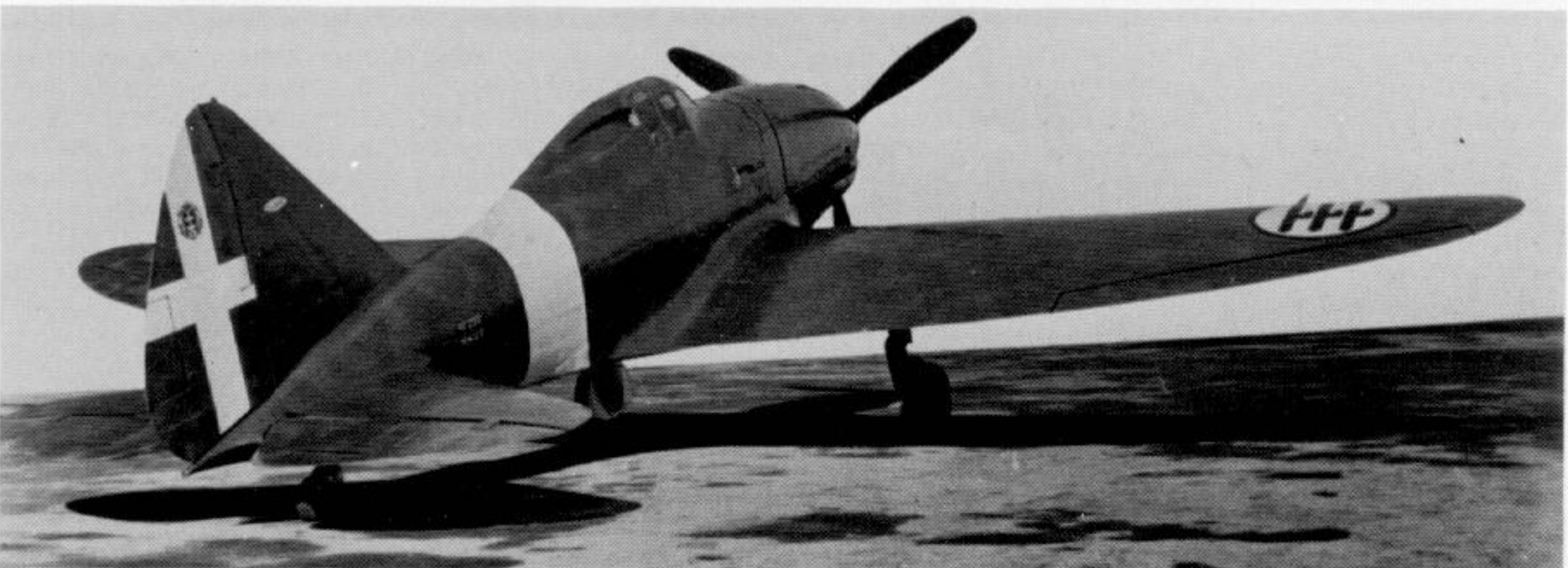


Seen at the time of its completion, the first prototype Re 2001 Falco II (serial MM409) initially carried tricolour (red-white-green) tail stripes: these were replaced by a white cross after Italy entered World War Two. Note the extensively glazed cockpit and the retractable tailwheel characteristic of this particular Re 2001, features not retained on production aircraft. (Photo: Museo Aeronautico Caproni di Taliedo)



The first Re 2001 at Guidonia for official evaluation during August 1940, painted dark-green and carrying the Regia Aeronautica's wartime tail marking - a white cross and the badge of the Italian royal house. (Photo: Museo Aeronautico Caproni di Taliedo)

The second prototype Caproni Reggiane Re 2001 (serial MM408), in which Lt. Col. Scapinelli lost his life on March 14, 1941. This aircraft incorporated features (revised cockpit canopy, fixed tailwheel, and so on) intended for the production version. (Photo: Museo Aeronautico Caproni di Taliedo)



2006 design. Subsequently, the aircraft was reconverted to standard Re 2001 configuration and delivered to the Italian Air Force in September 1942.

RE 2001 PRODUCTION

The considerable promise of the Re 2001 was rewarded soon after the prototype had been evaluated at Guidonia: on October 31, 1940, Reggiane received an order for 200 and Caproni's Taliedo and Predappio factories were to build 100 and 50 respectively under licence – the Predappio order later being increased to 100. These aircraft were to be powered by 1,175 h.p. Alfa Romeo RA 1000 RC 41-I engines – licence-built DB 601 As. The production aircraft incorporated all the modifications which had been tested on the first and second prototypes.

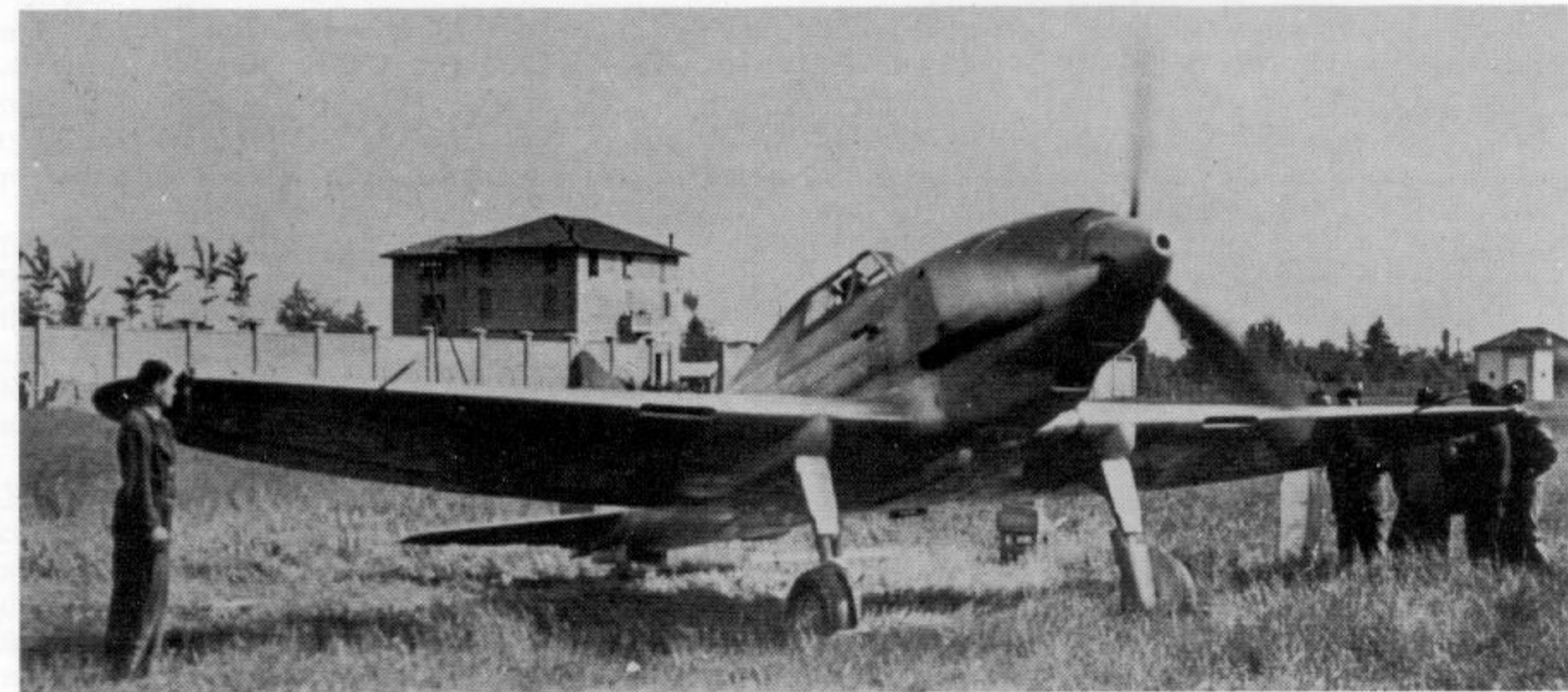
Shortly afterwards, in February 1941, a pre-production batch of 10 Re 2001s was ordered from Reggiane with the aim of accelerating service trials and preparations for the type's operational deployment. These were known as "zero series" aircraft: a full production list appears at the end of this *Profile*.

Soon it became very obvious that the quantity production orders were straining Reggiane's resources (and those of its suppliers) to the limit and that the

contracted delivery dates were not going to be respected. The size of the factory and the scope of the installations at Reggio Emilia were sufficient to produce the aircraft on order within a reasonable time, but a large proportion of the workforce recruited to enable the war effort's requirements to be met had no previous experience of the aircraft industry. In addition to the time involved in training employees, production of the Re 2001 was delayed by the slow rate of delivery of Alfa Romeo-built DB 601 A engines and by shortages of sheet metal duralumin.

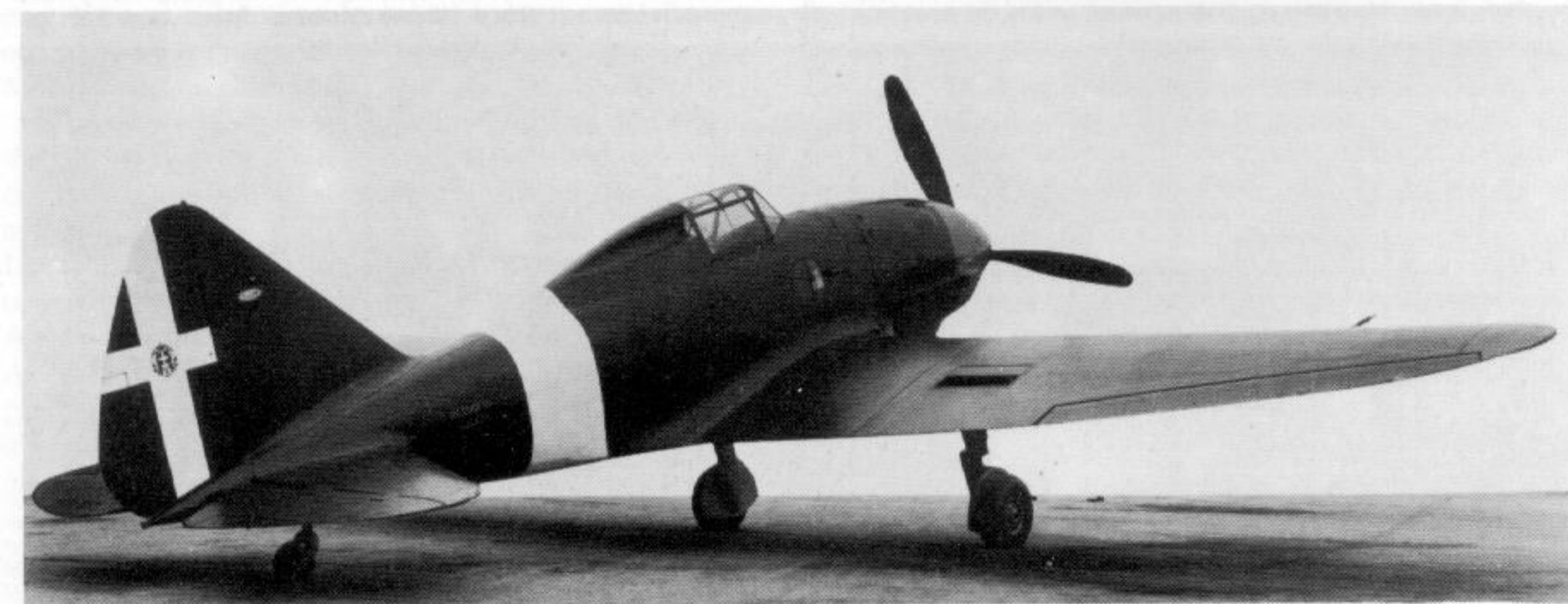
The first pre-production aircraft (serial MM8071) was delivered in May 1941 and the last in September. The first production example was also delivered in September 1941, by which time the production line had begun to get into its stride. Unfortunately, engine output never matched that of airframes and hampered the completion of Re 2001s throughout the type's production life.

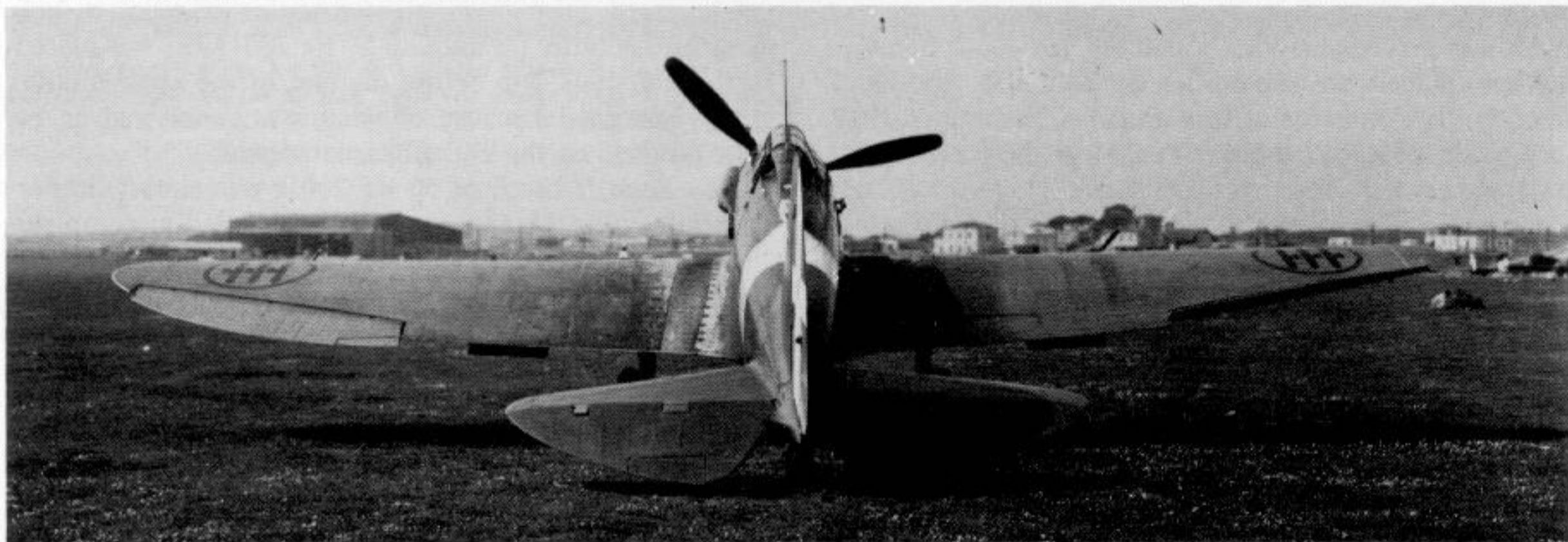
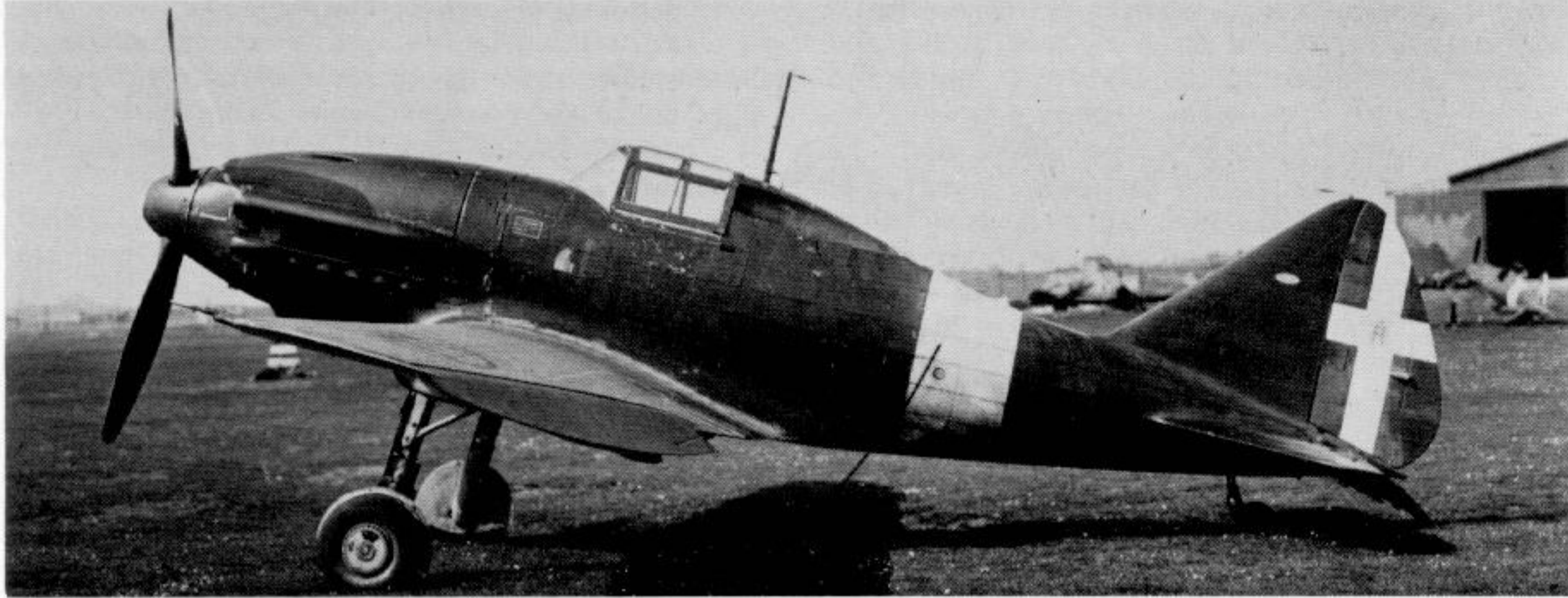
The Swedish Government approached the Caproni Group early in 1941 with a view to purchasing 100 Re 2001s and, in view of the engine problem, considered buying only the airframes from Italy and acquiring the engines direct from Daimler-Benz in Germany. A formal demand for the export of the airframes was made in July 1941 but the order never materialized.



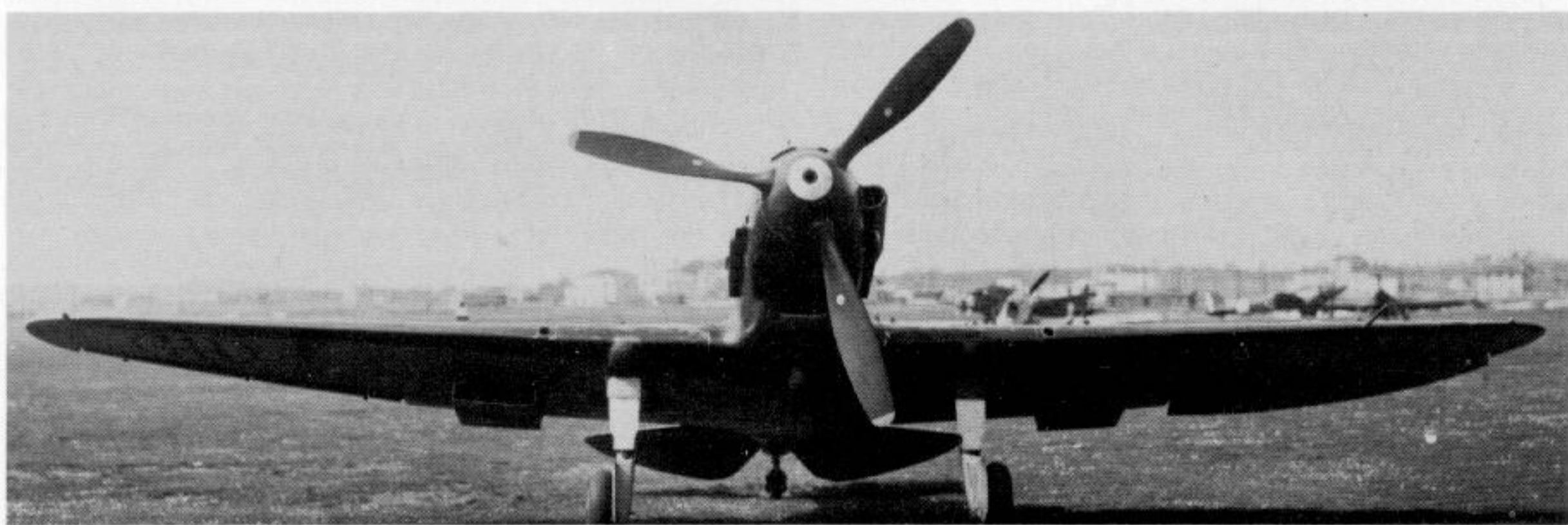
Two views of the Re 2001 bis – the first prototype modified to have internally-mounted wing radiators. The forward view (above) shows the leading-edge air inlets, while the view from the rear illustrates the radiator flap in the upper surface of the starboard wing.

(Photos: Museo Aeronautico Caproni di Taliedo)





Round-the-clock views of the seventh pre-production Caproni Reggiane Re 2001 Falco II (Serial MM8077), showing the main features of the design. (Photos: Italian Air Force)



A direct consequence of the dearth of engines was a cut-back in orders for the Re 2001. Between July and October 1941, the contracts placed with Breda and Caproni's Taliedo factory were cancelled, while the Reggiane and Caproni-Predappio contracts were reduced to cover 100 and 10 aircraft respectively. The production rate was also slowed and, by the end of 1941, only the 10 pre-production Re 2001s and 27 production examples had been delivered to the Italian Air Force.

Reggiane had meanwhile been scouting around for an alternative powerplant for the *Falco II*. Only one replacement, the Isotta-Fraschini *Delta* RC 16/48 liquid-cooled, 12-cylinder, inverted-Vee inline rated at 840 h.p. at 17,390 ft. (5.300 m.), was actually tested, the resulting aircraft being known as the Re 2001 *Delta*. A prototype of this version (serial MM9920) was completed at Taliedo during the summer of 1942, making its first flight on September 12 of that year. This event was preceded by an option for 100 Re 2001 *Delta* fighters, placed on September 8, 1942. The prototype went to Guidonia for official trials in November 1942. Its performance was inferior to that of the standard Re 2001; maximum speed was 325 m.p.h. at 18,373 ft. (523 km/h. at 5.600 m.), and 10 min. 30 sec. were required to climb to 19,685 ft. (6.000 m.).

The Re 2001 *Delta* was destroyed on January 27, 1943 when the engine caught fire during climbing trials; the pilot bailed out safely. Shortly after, the option for 100 production examples was cancelled.

The Re 2001 order-book had meanwhile undergone further changes since the original cut-back to 110 examples. In December 1941, the Aeronautics Ministry had ordered that a certain number of the 100 being built by Reggiane should be modified for other duties than pure interception. Fifty-three aircraft were involved: 39 were to become fighter-bombers by the addition of a ventral rack for a 250-kg. (550-lb.) bomb; two were to be equipped for catapult launching trials, with a view to producing a navalized variant; and 12 were to be fitted with arrester-hooks for use as land-based trainers for the navalized Re 2001. (The Italians had developed an interest in aircraft-carriers and planned to convert two merchant ships to this configuration: the *Aquila* was nearly complete at the time of the Armistice in September 1943; work on the second, the *Sparviero*, never started.)

Three of the 39 fighter-bombers, which were designated Re 2001 CB (*Caccia-Bombardiere* = Fighter Bomber), were assigned to special trials uses. One was equipped to carry a 1,410-lb. (640-kg.) special bomb or torpedo and was fitted with a system of linked propeller pitch/throttle control. This latter device was tested in September 1942 by a Guidonia pilot; the aircraft was put into a dive at 19,685 ft. (6.000 m.) and a 70° angle maintained down to 6,560 ft. (2.000 m.), achieving a speed of 590 m.p.h. (950 km/h.) in the process. The pitch/throttle linkage worked well, engine revs not exceeding the maximum permissible number, although the cockpit Plexiglas disintegrated. Another Re 2001 CB was used to test a special ventral dive-bombing rack developed at the Furbara Experimental Range. Tests in October 1942 were highly successful; direct hits with 550-lb. bombs were scored in 15 out of 20 attacks on a target ship made by diving at 60° from a height of 16,400 ft. (5.000 m.) and pulling out at 3,280 ft. (1.000 m.).

While on the subject of bombs – although not related

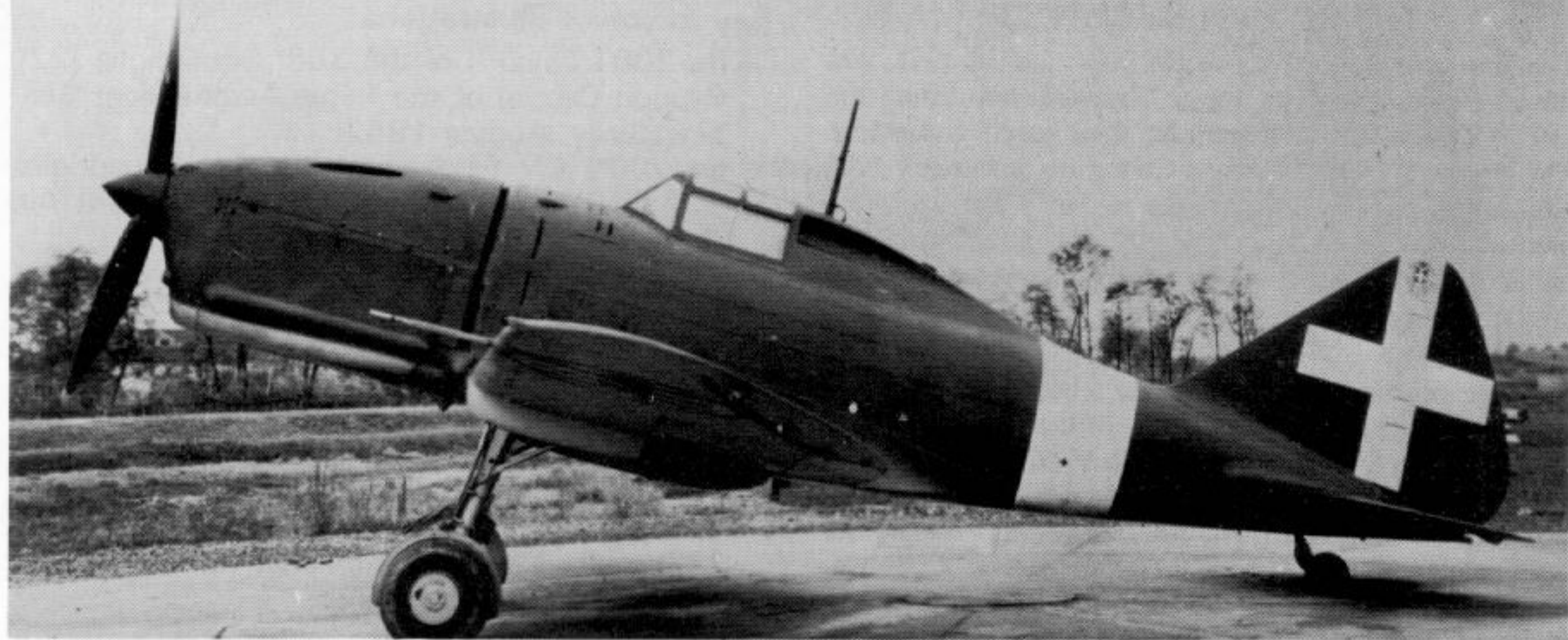
to the CB-version – one of the pre-production aircraft was used to test a liquid-oxygen bomb at Furbara. A demonstration of this device was made to Mussolini and other Italian Government dignitaries in March 1943. The bomb failed to explode and was subsequently abandoned.

The two aircraft for catapult trials and the 12 land-based trainers for the navalized version were built but since the carriers were never commissioned the effort was rather academic. However, such was the initial interest, that 50 Re 2001 OR (known as batch “*Serie II*”) shipboard fighters were ordered on April 1, 1942. The OR-version differed from land-based variants only in being equipped for catapult launches and with an arrester-hook. There was to be no wing-folding mechanism for stowage aboard ship, the aircraft carrier's storage space being effectively increased by the expedient of slinging the Re 2001s from the roofs of the below-deck hangars. An order for another 50 Re 2001 ORs was placed on June 1, 1942 but, before the end of the same month, it was cancelled because of what was considered to be slow progress on the aircraft-carrier *Aquila*.

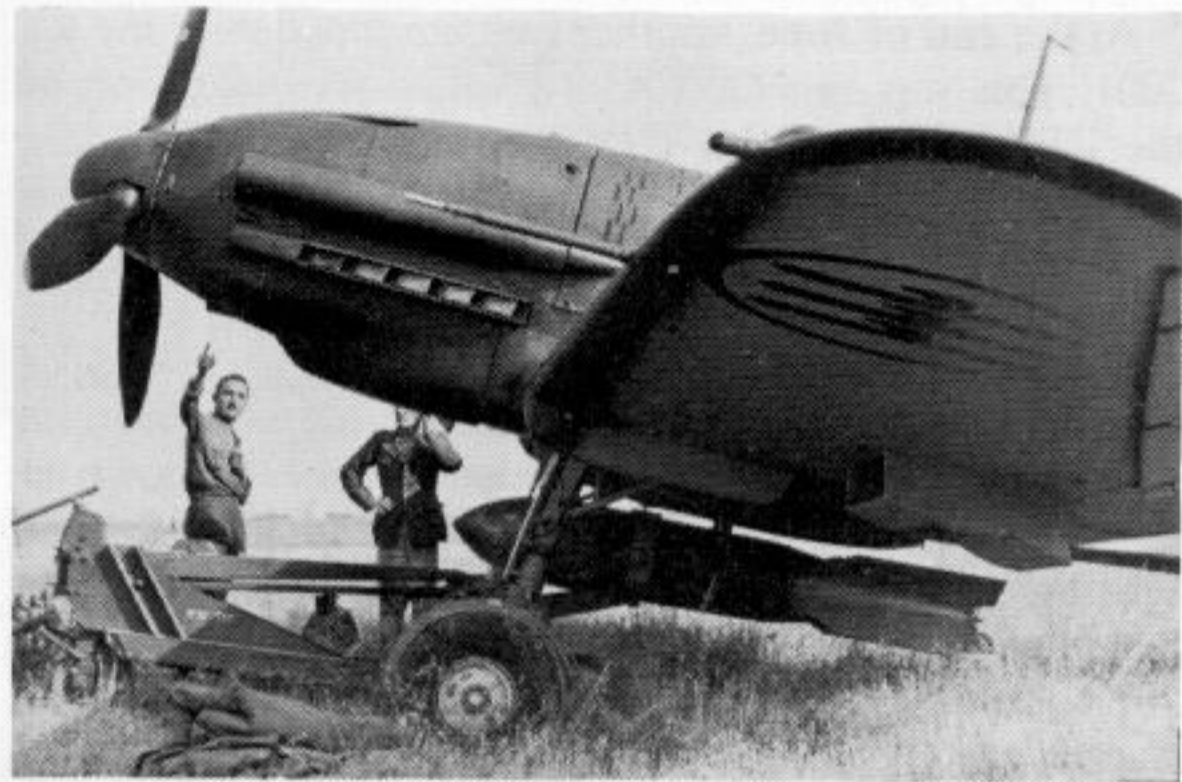
The *Serie II* batch of 50 Re 2001s was already under construction at this time and it was decided to complete the aircraft as Re 2001 CN (*Caccia Notturmo*) night-fighters. The CN-version was fitted with exhaust flame-dampers and a gondola-mounted 20-mm. Mauser cannon with 60 rounds under each wing – the wing-mounted 7.7-mm. machine-guns fitted to other variants were deleted. In June 1942, a further 30 Re 2001 CN night-fighters were ordered, these being the *Serie III* batch. Fifty more, *Serie IV*, were ordered in September 1942, although only 34 of these were actually completed before the Armistice caused the halting of Re 2001 production the following year. In March and April 1943, another 120 Re 2001 CNs were ordered from Reggiane, but none were completed. Finally, it is worth noting that the 10 aircraft ordered from Caproni-Predappio were completed as night-fighters.

Three experimental versions of the Re 2001 warrant mention before proceeding to coverage of the type's operational career. A small number of Re 2001s were fitted with a camera installation in the leading-edge of each wing (one vertical and one horizontal camera) outboard of the main undercarriage legs. No special designation was allotted to the photo-reconnaissance version. It does not appear to have been used operationally. A *Serie IV* aircraft was modified, as the Re 2001G, to carry a torpedo beneath the fuselage. Its career seems to have been brief: completed in the early summer of 1943, the Re 2001G was delivered to the Torpedo Aircraft School at Gorizia and is reported to have been destroyed at the time of the Armistice. Another *Serie IV* Re 2001 was modified as an anti-tank aircraft, having underwing bomb racks in addition to the two 20-mm. cannon in gondolas normally fitted to the CN-variant. This variant was designated Re 2001H and, like the Re 2001G, its development was ended by the Armistice.

The Armistice of September 8, 1943 also meant the end of Reggiane Re 2001 *Falco II* production after 237 had been built, including prototypes and pre-production aircraft. As a precaution against shortage of light alloys, a version embodying a considerable amount of wood in its construction was being designed at the time of the Armistice. It was then abandoned.

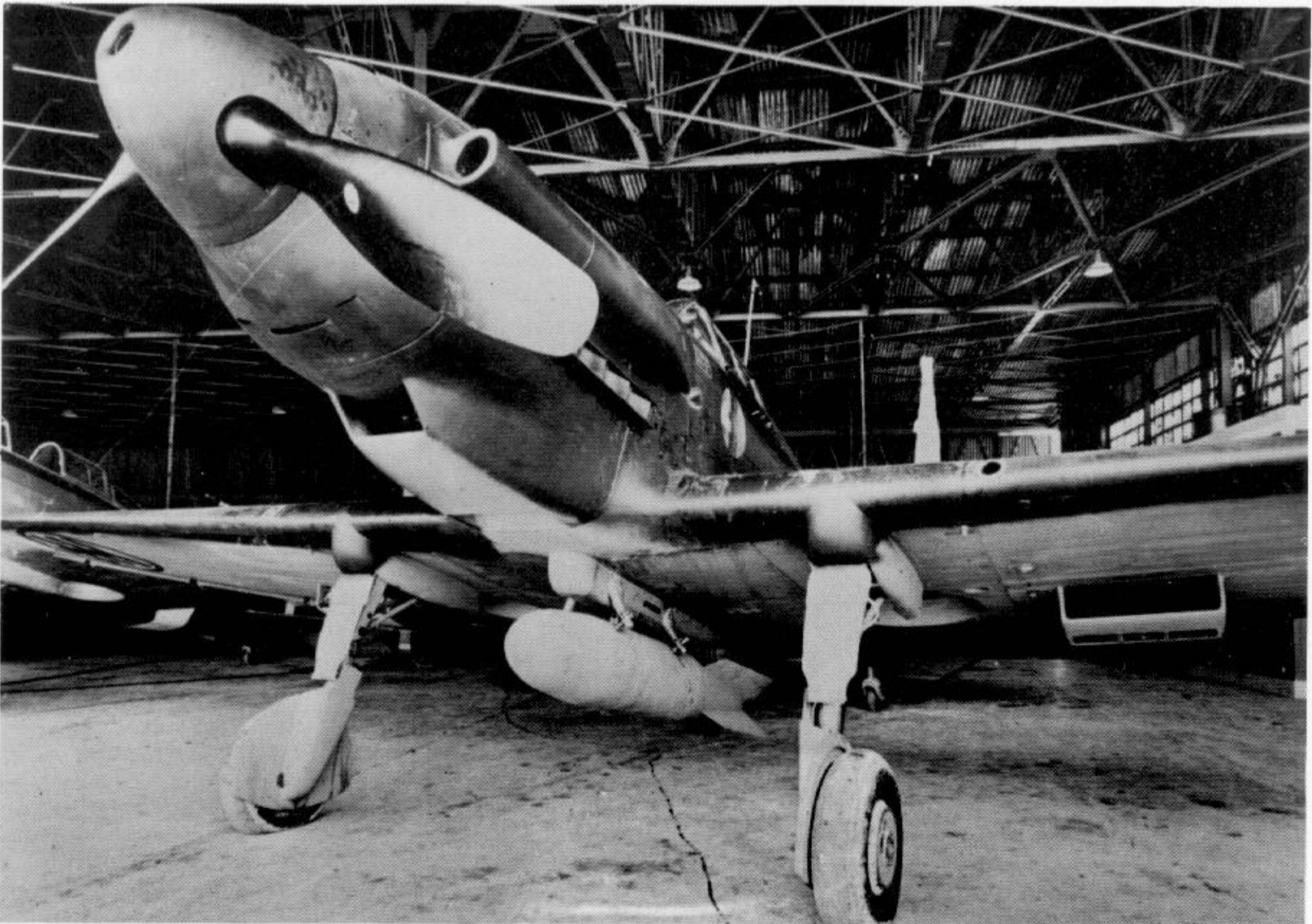


The sole example of the Re 2001 Delta (serial MM9920). This aircraft was lost in an accident on January 27, 1943. Apart from its powerplant and the altered nose contours, the Re 2001 Delta was similar to the standard version.



(Below) A factory shot of the Re 2001 CB fighter-bomber, showing the ventral rack and a dummy 550-lb. (250-kg.) bomb. (Right) Loading a 550-lb. bomb under an Re 2001 CB - possibly an aircraft of the 22^o Gruppo.

(Photos: Museo Aeronautico Caproni di Taliedo and the author)



THE RE 2001 IN SERVICE

The first unit to receive the Re 2001, late in 1941, was the 2° *Gruppo** (part of the 6° *Stormo*), comprising the 150^a, 152^a and 358^a *Squadriglie*, then based at Gorizia. The *Gruppo* moved to Rome-Ciampino in January 1942 and was supposed to go south to Sicily the following month. However, not until May 4 did the group arrive in Sicily, at Caltagirone, with a complement of 18 Re 2001s.

The 2° *Gruppo* went into action late in May 1942, with the role of escorting Italian Air Force and German bombers attacking Malta. Of the British fighters in that area, only the Supermarine Spitfire V matched up to the Re 2001: below 23,000 ft. (7,000 m), the Italian aircraft was able to hold its own, but above that height the Spitfire V was better. The group moved to Castelvetrano in June and, on the 14th of that month, was involved in escorting SM 79 torpedo-bombers which were attacking a British convoy. Shortly after, the 2° moved yet again, to Pantelleria.

At the end of June, another unit equipped with the Re 2001. This was the 22° *Gruppo*, which was made up of the 359^a, 362^a, 369^a and 371^a *Squadriglie*, based at Rome-Ciampino. The 22° was issued with the Re 2001 CB version. The 362^a *Squadriglia* was posted to Monserrato, in Sardinia, and was joined there by the 2° *Gruppo* from Sicily, which had lost its commander, Lieutenant Colonel Quarantotti, in tragic circumstances. On July 12, one of the group's pilots was missing believed down in the sea. Colonel Quarantotti took off to look for the missing man and likewise came down in the sea, to meet his death by drowning.

On August 12, 1942, the 2° *Gruppo* and the 362^a *Squadriglia*, operating from Sardinia, were involved in an attack on the British aircraft-carrier HMS *Victorious*. Two Re 2001s were specially-equipped to carry a single

*Approximate equivalents: Stormo = Wing; Gruppo = Group; Squadriglia = Squadron

Mention is made in the text of a liquid oxygen bomb tested at Furbara: it is shown here fitted to an Re 2001 Falco II. In the background is an Re 2002 Ariete carrying a torpedo. (Photo: Museo Aeronautico Caproni di Taliedo)



Key to colour illustrations

- 1 Re 2001 Falco II of the 358^a Squadriglia (22° Gruppo Caccia) of the Regia Aeronautica; Gerbini, Sicily, August 1942.
- 2 Re 2001 CN Falco II of the 82^a Squadriglia (21° Gruppo) of the Italian Co-Belligerent Air Force; Lecce, Italy, December 1943.
- 3 Re 2001 Falco II of the post-war Italian Air Force's Centro Osservazioni Meteorologiche (Meteorological Observation Centre); Venice-Lido, Italy, 1947. Underside view shows the identifying code U-31.

NOTE. Details A and B are applicable to colour illustrations Nos. 4 and 7 respectively (see page 232) while C is the traditional Roman ensign adopted by the dictatorship.

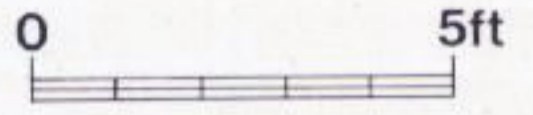
1,410-lb. (640-kg.) fragmentation bomb each and, escorted by a substantial force of normal Re 2001 fighters, were able to attack the vessel. One bomb missed completely, but the other scored a direct hit on the carrier's flight deck – only to slide overboard without exploding. These bombs were never used in action again.

The following day, the 2° *Gruppo* moved back to Sicily, with Trapani-Chinisia as their main base. Then, on August 14, tragedy occurred again, when the new commanding officer, Major Scarpetti, was lost in action. The Re 2001s had been escorting three *Luftwaffe* Heinkel He 111 torpedo-bombers attacking British shipping. Bad weather forced many of the Re 2001s to return to base and the He 111s failed to find any British vessels to attack. During the homeward trip, three Re 2001s, including that of Major Scarpetti, were escorting the bombers, when they were "jumped" by Spitfires. All three Reggiane were shot down, although the He 111s escaped.

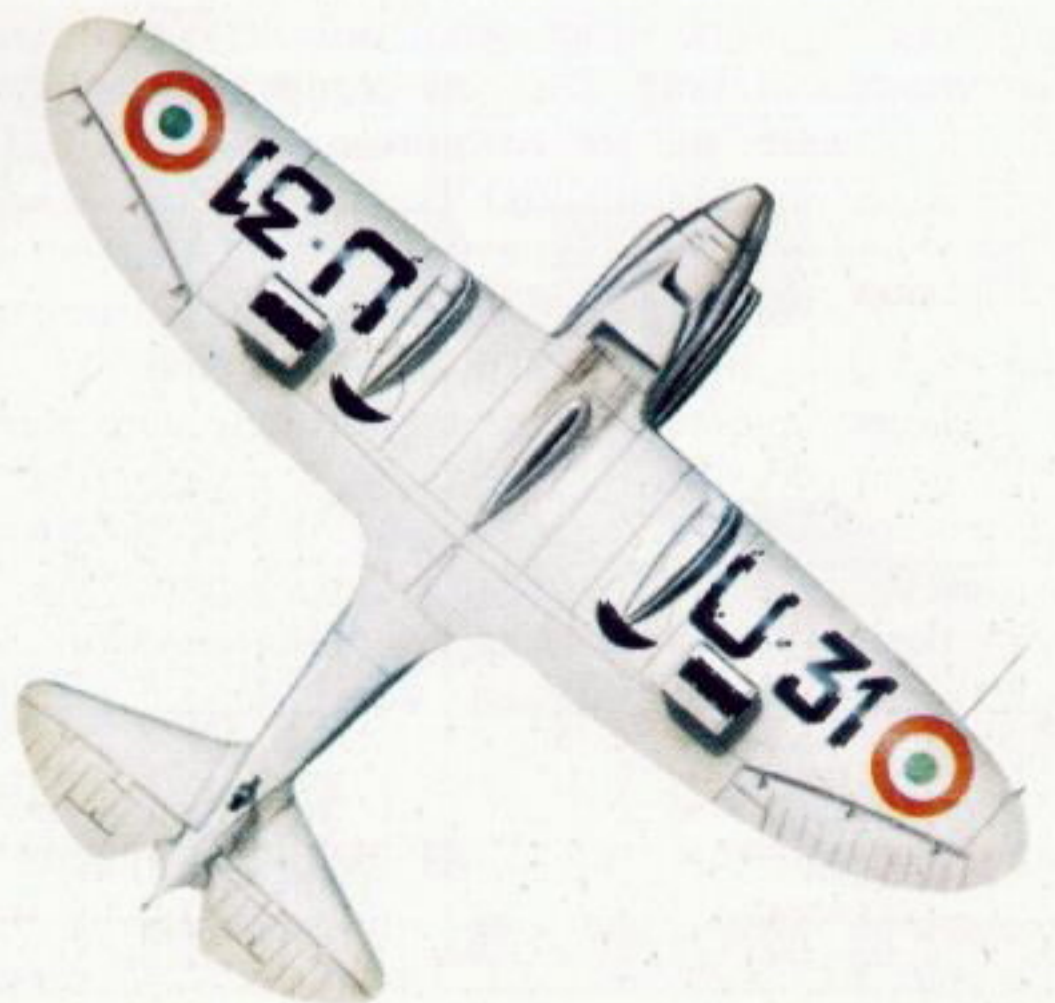
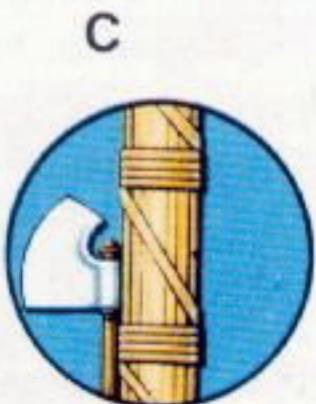
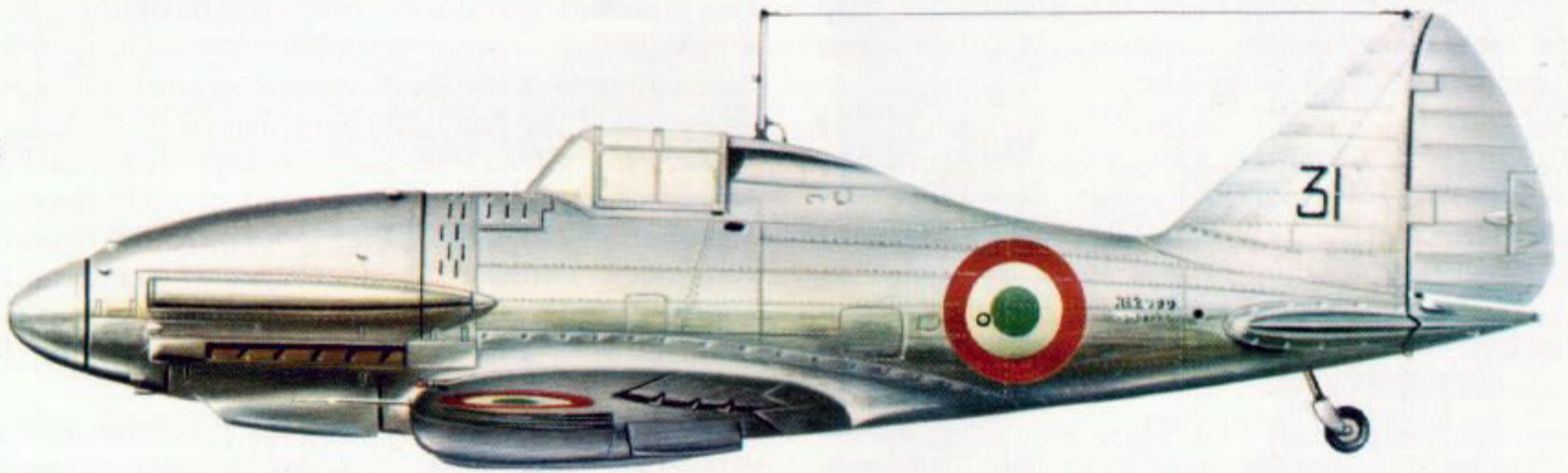
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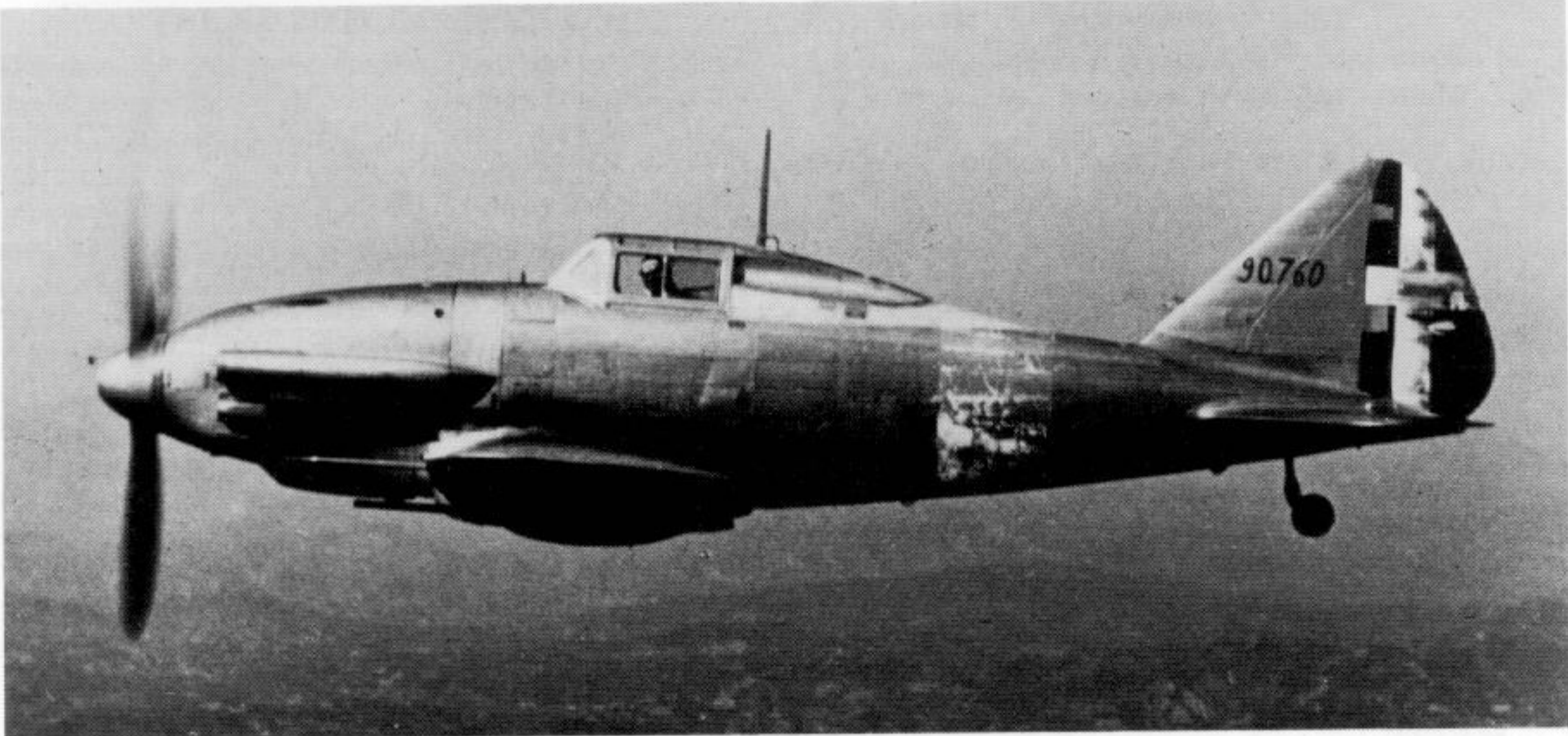


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Re 2001 production Serie II aircraft were ordered as shipboard fighters, but completed as Re 2001 CN night fighters when it became obvious that the Italian aircraft carrier programme was badly delayed. The barrel of the port underwing 20-mm cannon is apparent in this view of Re 2001 CN serial MM90760. (Photo: Museo Aeronautico Caproni di Taliedo)

Early in September, the 22° *Gruppo* — with its bomb-carrying Re 2001 CBs — moved down to Sicily to participate in the last (and third) major assault from the air on Malta. During these attacks, in October 1942, the 2° and 22° *Gruppi* had an average daily availability of 22 Re 2001s between them. The Allied invasion of North Africa the following month, resulted in the transfer of the 22° back to Sardinia. From this island, the group undertook quite a number of missions over the Allied bridgeheads at Bone and Bougie.

Subsequently, life for these two groups became quieter. The 2° *Gruppo* remained in Sicily until the spring of 1943 — watching its daily average of serviceable aircraft decline from 15 (November 1942), to 13 (February 1943), and to 10 (April 1943). The unit then moved to Sarzana, in northern Italy, as an interceptor formation. The 22° *Gruppo* moved to Naples-Capodichino early in 1943.

During the second half of 1942, to move back in time a little, Allied bombing raids over Italy had been growing more frequent, and more worrisome. The build-up coincided with the first deliveries of Re 2001 CN night-fighters, which went into service during the first months of 1943. The new groups receiving the Re 2001 CN were—the 59° (comprising the 232^a and 233^a *Squadriglie*) at Metato and Latina; the 60° (234^a and 235^a *Squadriglie*) at Lonate Pozzolo and Venegono; the 160° (375^a, 393^a and 394^a *Squadriglie*) in Sardinia; and the 167° (300^a and 303^a) at Rome-Ciampino.

It should be noted that several of these units were not fully equipped with Re 2001s and some moved base at various times during the months of 1943 prior to the Armistice. To avoid confusing the reader, two basic dates have been taken to illustrate the final months of the Re 2001's career with the Italian Air Force up to the Armistice.

On July 10, 1943 — the date of the Allied invasion of Sicily — 72 Re 2001s were with the various units. The 2° *Gruppo* at Sarzana had four (three serviceable); the 22° *Gruppo* at Capodichino, 10 (9); the 59° *Gruppo* at Me-

tato, 11 (8); the 60° *Gruppo* at Lonate Pozzolo, 10 (7); the 160° *Gruppo* had 22 (10) at Venafiorita, in Sicily, and four (all serviceable) detached to Corsica; finally, the 167° *Gruppo* at Rome-Ciampino had 11 (9).

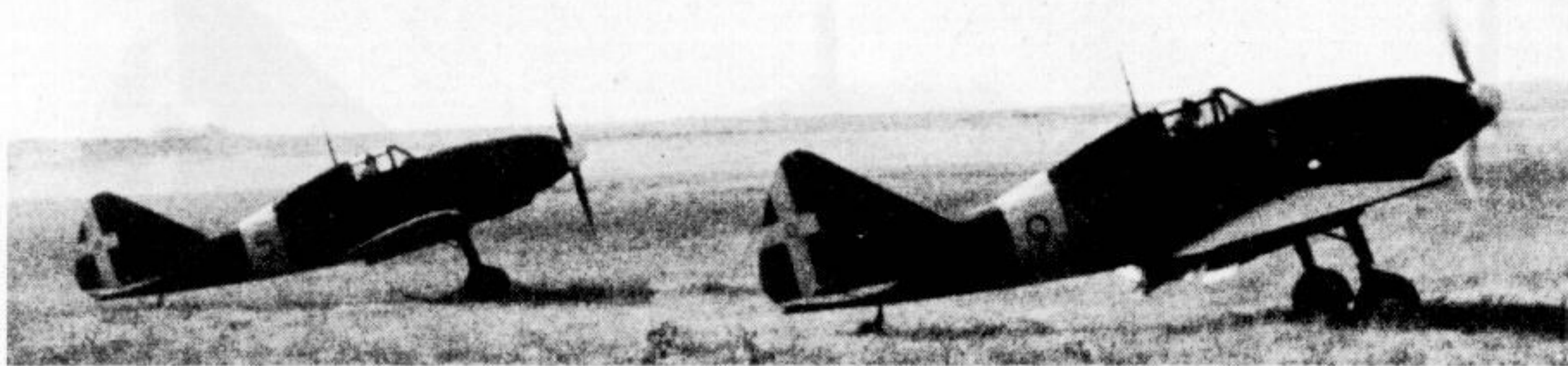
The 160° *Gruppo* was very active in the defence of Sicily, protecting airfields and ports and escorting trains, ships and aircraft, as well as engaging enemy aircraft. The unit was withdrawn from action at the end of August 1943.

The number of Re 2001s with the various units was 73 on the eve of the Armistice, September 7, 1943, but only 33 were still serviceable; the 2° *Gruppo* at Sarzana and Albengo had six (three serviceable); the 22° *Gruppo* at Capodichino and Capua, four (none); the 59° *Gruppo* at Venegono, 11 (four); the 60° *Gruppo* at Venegono and Lonate Pozzolo, eight (seven); the 160° *Gruppo* at Casa Zeppera, Milis and Venafiorita, 30 (12); and the 167° *Gruppo* at Littoria, 14 (seven).

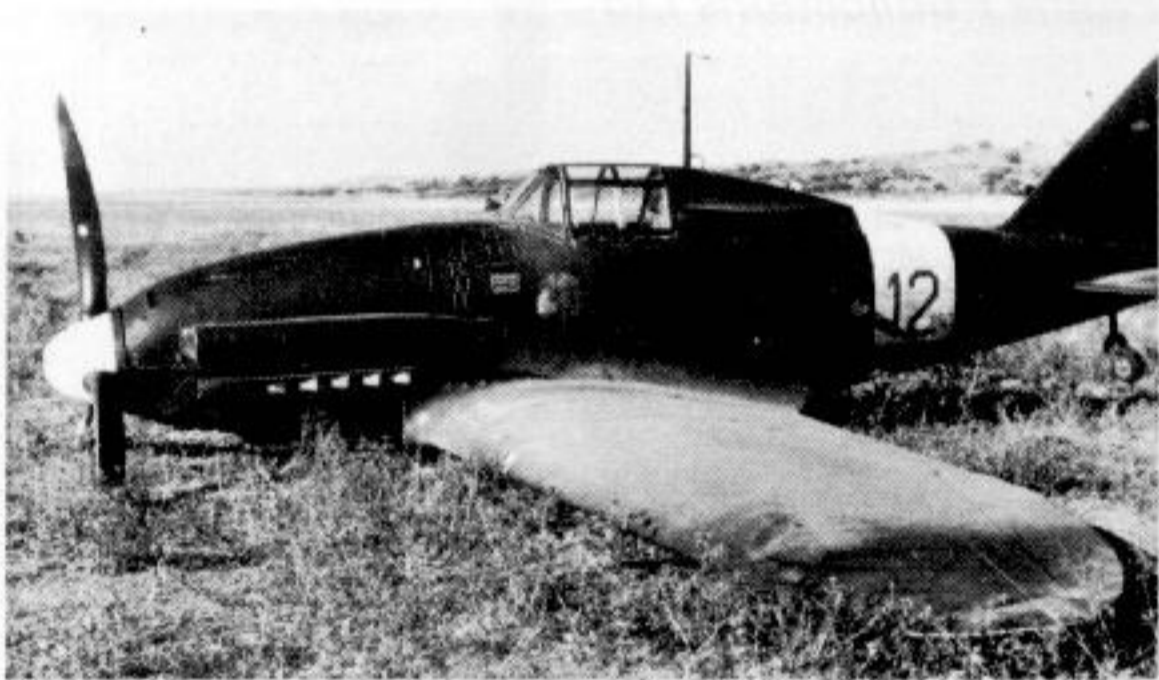
The Re 2001's career after the armistice was not particularly outstanding, serviceability being a continual problem. The Co-Belligerent Air Force, fighting on the Allied side, disposed of about a score, while the *Aviazione della Repubblica Sociale Italiana*, on the German side, appears to have used only a handful.

In the Co-Belligerent Air Force, a few missions were flown by Re 2001s at the beginning of October 1943, and also the following month, the aircraft in question being assigned to the 21° *Gruppo*. Other Re 2001s were issued to the *Squadriglia Addestramento Caccia* (Fighter Training Squadron).

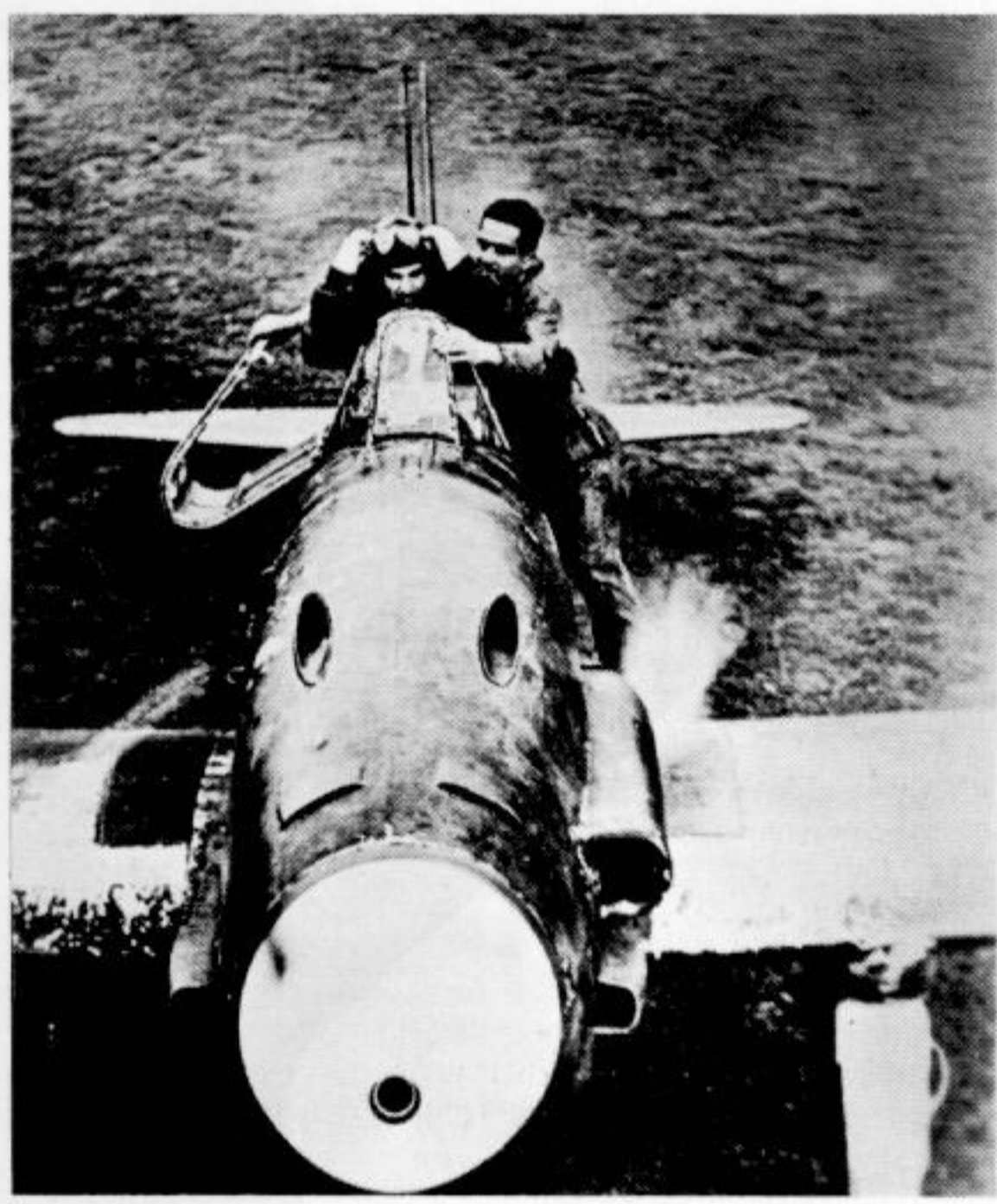
The 21° *Gruppo* was disbanded on January 1, 1944 and its 82^a *Squadriglia*, which had operated the Reggiane, handed its aircraft over to the 208^a *Squadriglia* of the 101° *Gruppo Tuffatori* (a dive-bomber group), based at Foggia. This unit later moved to Lecce and it was from here that the last operational missions were flown by the Re 2001. The final mission was in mid-May 1944, over Montenegro, in support of Yugoslav partisans. The next month, the surviving Reggiane Re 2001s were assigned to the Fighter Training School at Leverano



(Above) Aircraft of the 358^a Squadriglia at Gerbini, Sicily, in August 1942. (Photo: Bundesarchiv)



A pilot of the 358^a Squadriglia about to take off in an Re 2001: note the machine-gun muzzles in the upper engine cowling. (Photo: Bundesarchiv)



An Re 2001 of the 362^a Squadriglia (22^o Gruppo). This unit was very active over the Mediterranean during the latter half of 1942, operating from bases in Sicily and Sardinia on fighter-bomber missions. (Photo: Museo Aeronautico Caproni di Taliedo)

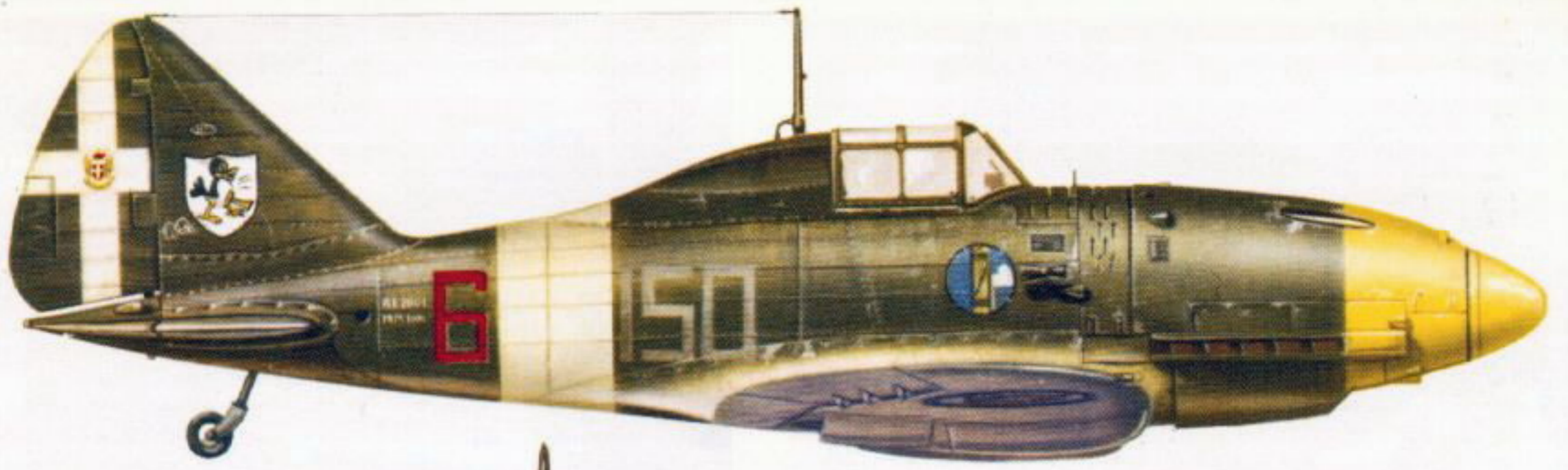


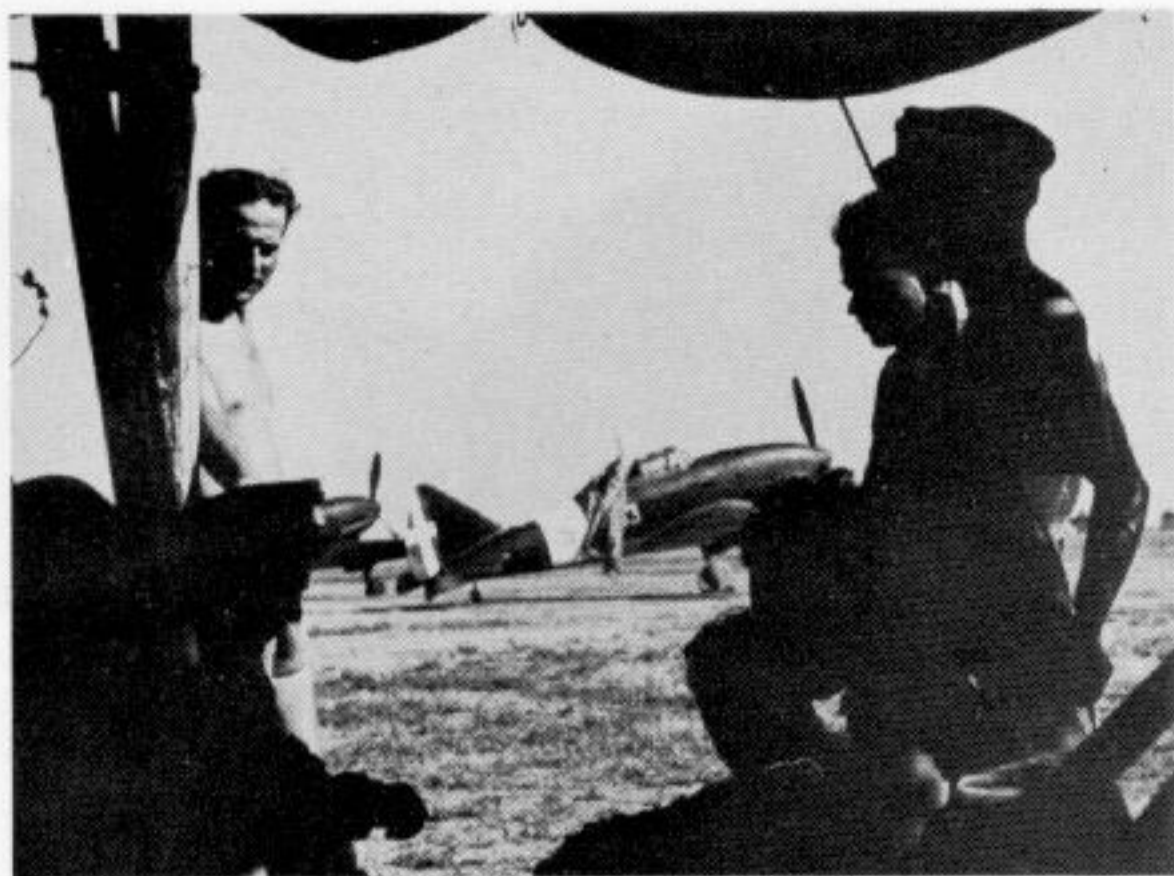


Caproni Reggiane Re 2001 Falco II of the 150^a Squadriglia (2° Gruppo Caccia Terrestre, 6° Stormo) of the Regia Aeronautica, Ravenna, Italy, 1942.

T. Hadler © Profile Publications Ltd







Re 2001s of the 303^a Squadriglia (167^o Gruppo), which was based at Rome-Ciampino in the summer of 1943.
(Photo: Museo Aeronautico Caproni di Taliedo)

Close-up of the tail badge carried by Re 2001s of the 2^o Gruppo. This particular photograph was taken during the Allied invasion of Sicily in the summer of 1943.
(Photo: Imperial War Museum)

(nine aircraft) and to a liaison unit (two). There they remained until the end of World War Two, when none of the training school's Re 2001s and only one of the liaison unit's was still serviceable.

On the Axis side, the 2^o Gruppo Caccia of the *Aviazione della Repubblica Sociale Italiana* used a small number of Re 2001s for training and liaison.

Five Re 2001s were restored to flying condition after the end of the war, three being issued to the Meteorological Observation Centre at Venice-Lido and two to a liaison unit at Rome-Centocelle. They remained in service for several years.

The Reggiane Re 2001 is remembered with some affection by Italian pilots, who appreciated its good handling qualities, notably its manoeuvrability, which was superior to that of the Macchi C.202 *Folgore* (see *Profile No. 28*). Unfortunately, no Re 2001 survives today, although a number of partially-assembled

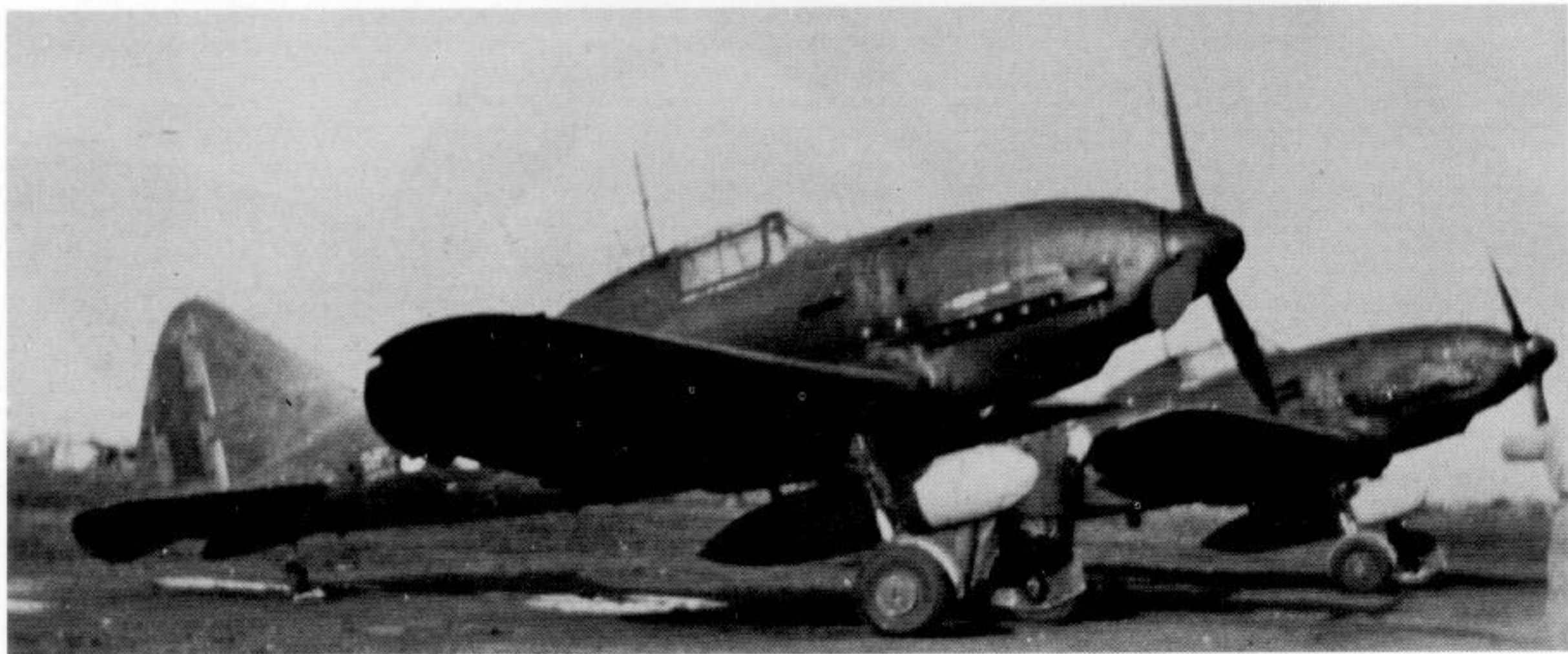
examples remained in storage at the Reggiane factory until about 1950. They were scrapped without more than cursory thought being given to the preservation of an example for posterity.

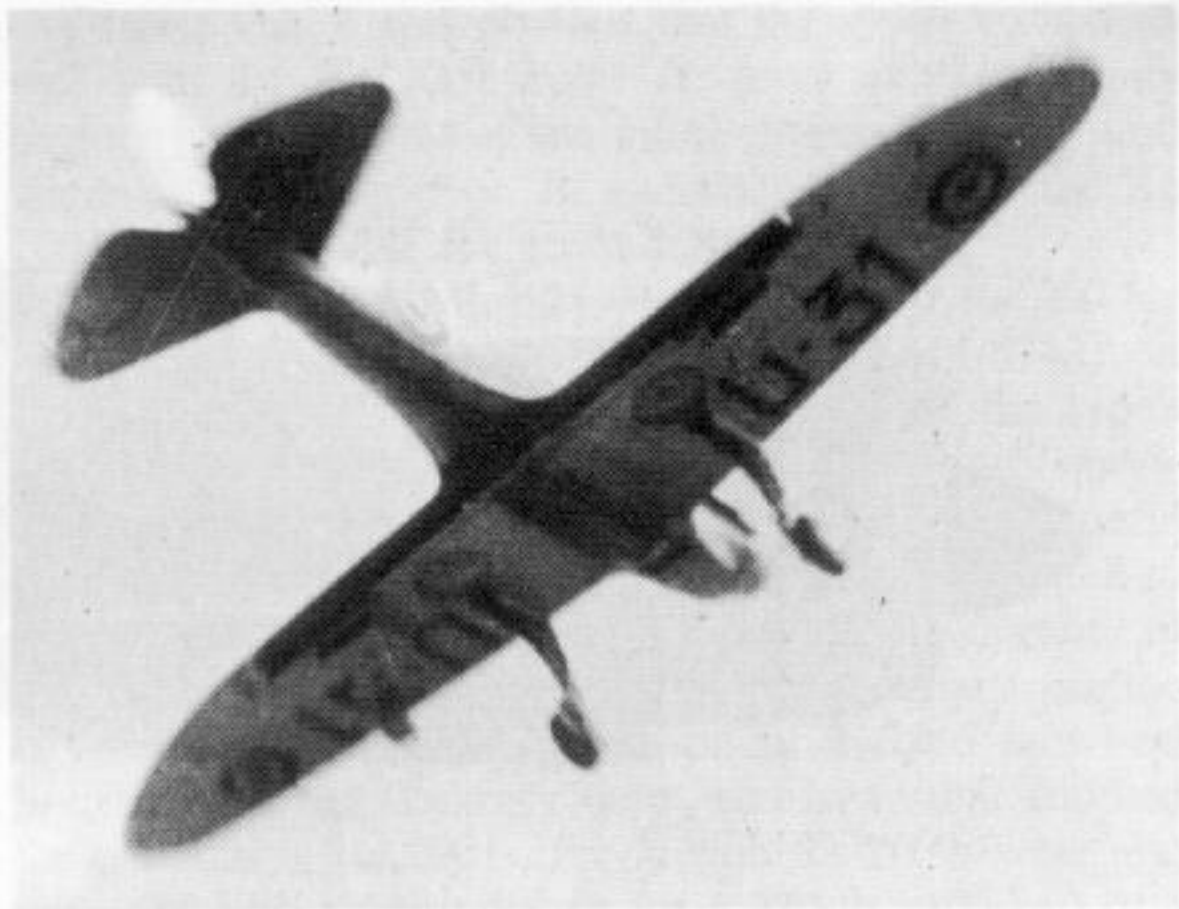
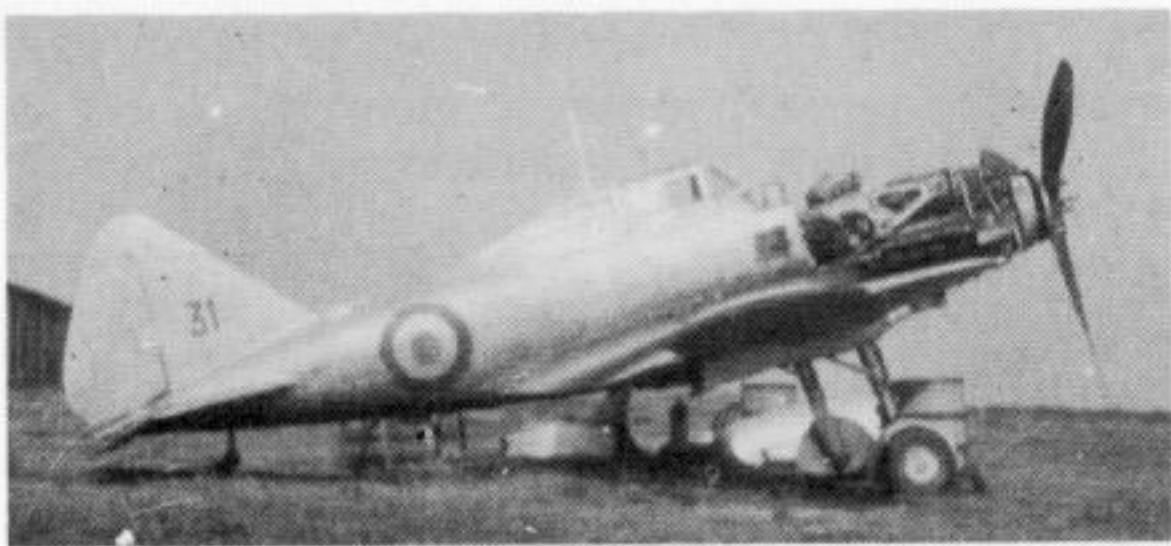
A brief technical description, specification and production list are to be found at the end of this *Profile*.

BIRTH OF THE RE 2002

The Re 2002 was first projected around the beginning of 1940 by Robert G. Longhi and his team and it owed its existence in some measure to the Italian Aeronautics Ministry's dissatisfaction with the integral fuel tanks of the Re 2000. An order for 12 Re 2000s was cancelled in April 1940 and replaced by a contract for one aircraft with a redesigned wing and conventional fuel tanks. The Reggiane company decided not to build another Re 2000 prototype but to make this aircraft the first prototype Re 2002, known as the *Ariete* (Ram).

A pair of Re 2001s of the Italian Co-Belligerent Air Force, which fought on the side of the Allies. Both aircraft are carrying auxiliary fuel tanks.
(Photo: Museo Aeronautico Caproni di Taliedo)





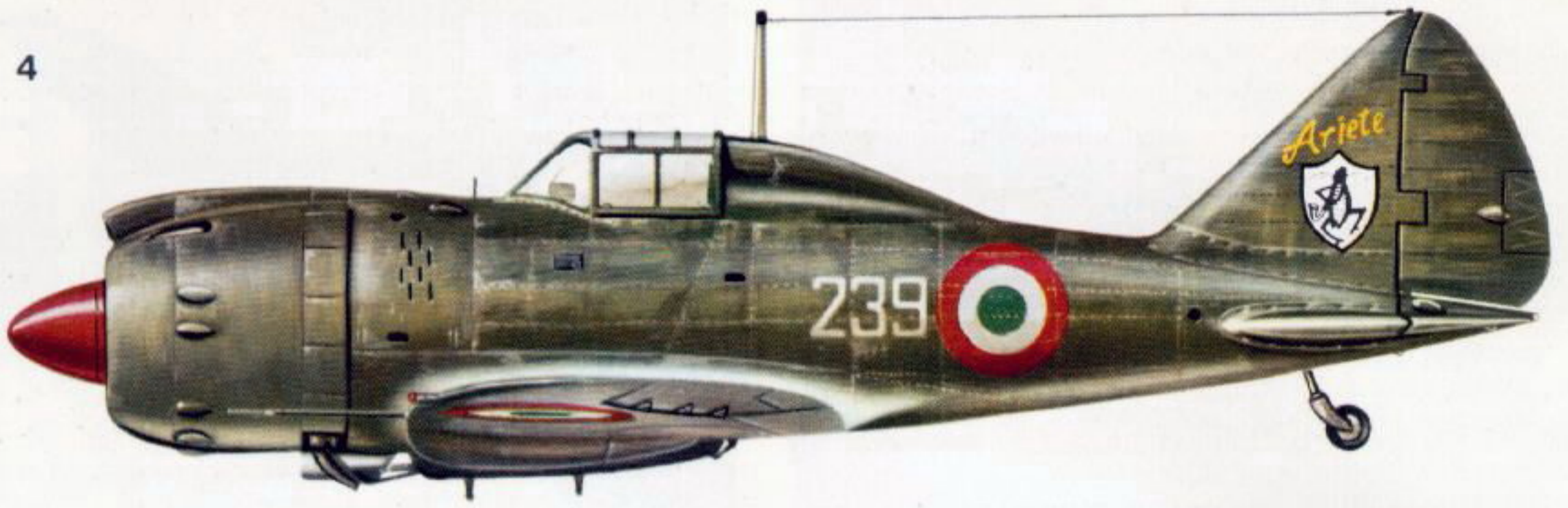
One of the three Re 2001s used by the Meteorological Observation Centre at Venice-Lido after World War Two. This example is the subject of one of the colour views.
(Photos: courtesy Giuseppe Ghergo)



Two views of the prototype Caproni-Reggiane Re 2002 Ariete (serial MM454): among its special features, not incorporated on production examples, were the copious cockpit glazing and retractable tailwheel.
(Photos: Museo Aeronautico Caproni di Taliedo)



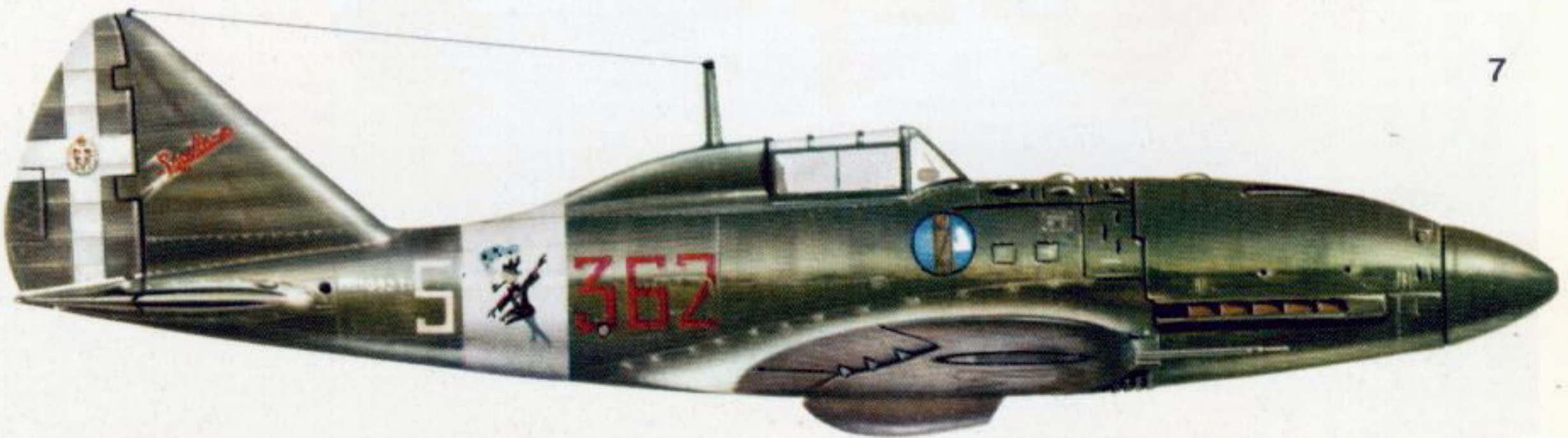
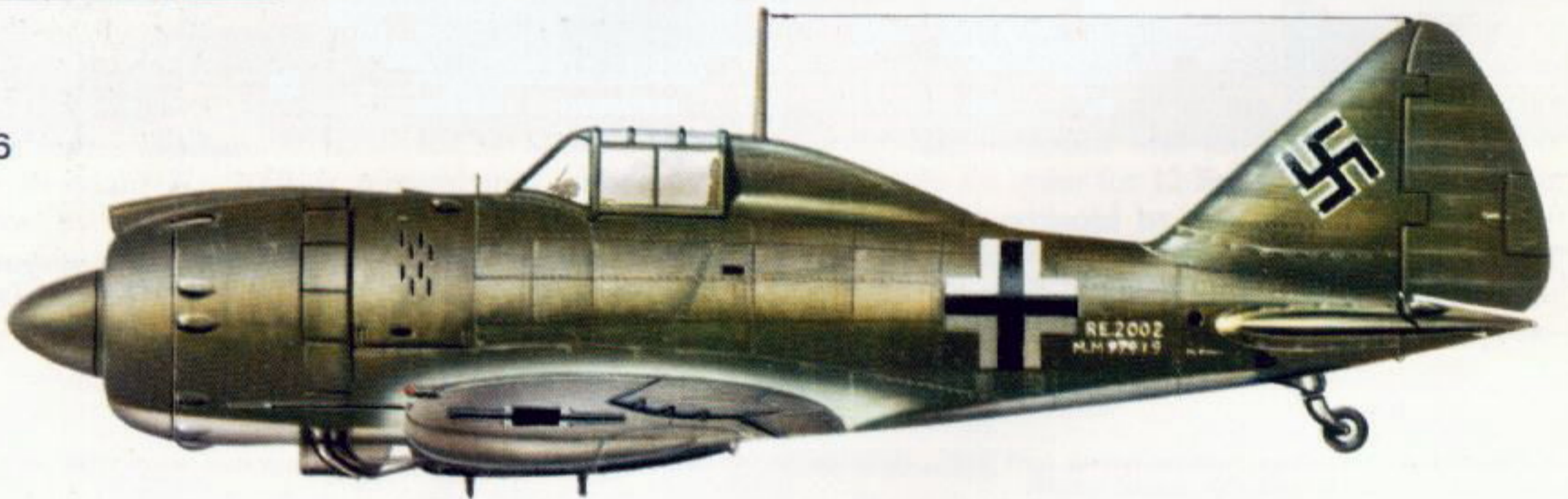
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Key to colour illustrations

- 5 Re 2002 Ariete of the 5° Stormo Tuffatori of the Regia Aeronautica; Italy, early-1943.
- 6 Re 2002 Ariete of the 239^a Squadriglia (21° Gruppo) of the Italian Co-Belligerent Air Force; Lecce, Italy, December 1943.
- 7 Re 2002 Ariete (serial MM97919) completed for the *Luftwaffe* at Taliedo after the Armistice of September 8, 1943, seen at the Reggiane factory.
- 8 Re 2005 Sagittario of the 362^a Squadriglia (22° Gruppo, 42° Stormo) of the Regia Aeronautica; Sigonella, Sicily, August 1943.

The newly-developed Piaggio P.XIX RC 45 *Turbine B* air-cooled, 14-cylinder, two-row radial, which was undergoing bench tests in the spring of 1940, was selected as powerplant of the Re 2002. Although the *Ariete* resembled the Re 2000 externally, from the construction viewpoint – its powerplant excepted – it was very similar to the Re 2001 *Falco II*. The radial engine was housed in a neatly-designed, long-chord cowling. The armament was intended to be the same as that of the Re 2001; two 12.7-mm. machine-guns in the engine cowling and a 7.7-mm. machine-gun in each wing.

The prototype Re 2002 (serial MM454) showed great promise, except for continual problems with the *Turbine B* engine, which was still in the process of having its “bugs” ironed out. The first flight, with Mario de Bernardi at the controls, was made in October 1940 and a couple of months later, testing came to a complete stop for several weeks because of the temperamental engine. The aircraft went to Guidonia for official evaluation in March 1941 but this could not be completed until late in the year. Numerous modifications were made to the engine installation during this time in an attempt to cure things.

Despite this, it was obvious that the *Ariete* compared well with the Re 2001 *Falco II*; level speed was only slightly less than that of the inline-powered aircraft and climb rate was superior. Its radial engine made the Re 2002 highly suitable for ground attack work.

The Aeronautics Ministry placed an order for 200 Re 2002s (serials MM7309-7408 and MM8644-8743) on September 10, 1941, having seen enough of the type's promise to be convinced that, once the engine's shortcomings could be eradicated, it could be a very useful warplane. The first example (MM7309) was intended to be the production prototype. It differed in a number of ways from the first prototype, notably in its engine cowling design, the incorporation of a fixed tailwheel and a redesigned cockpit canopy similar to that adopted for production Re 2001s. Production Re 2002s were also provided with a ventral rack for a 220-lb. (100-kg.) or a 550-lb. (250-kg.) bomb.

The production prototype was quickly completed, except for its engine. The airframe was finished in October 1941 but the aircraft could not be delivered to the Italian Air Force until March 1942. By this date, a further order for 200 Re 2002s was placed with Caproni's Taliedo factory and in March 1943 another contract for 300 examples.

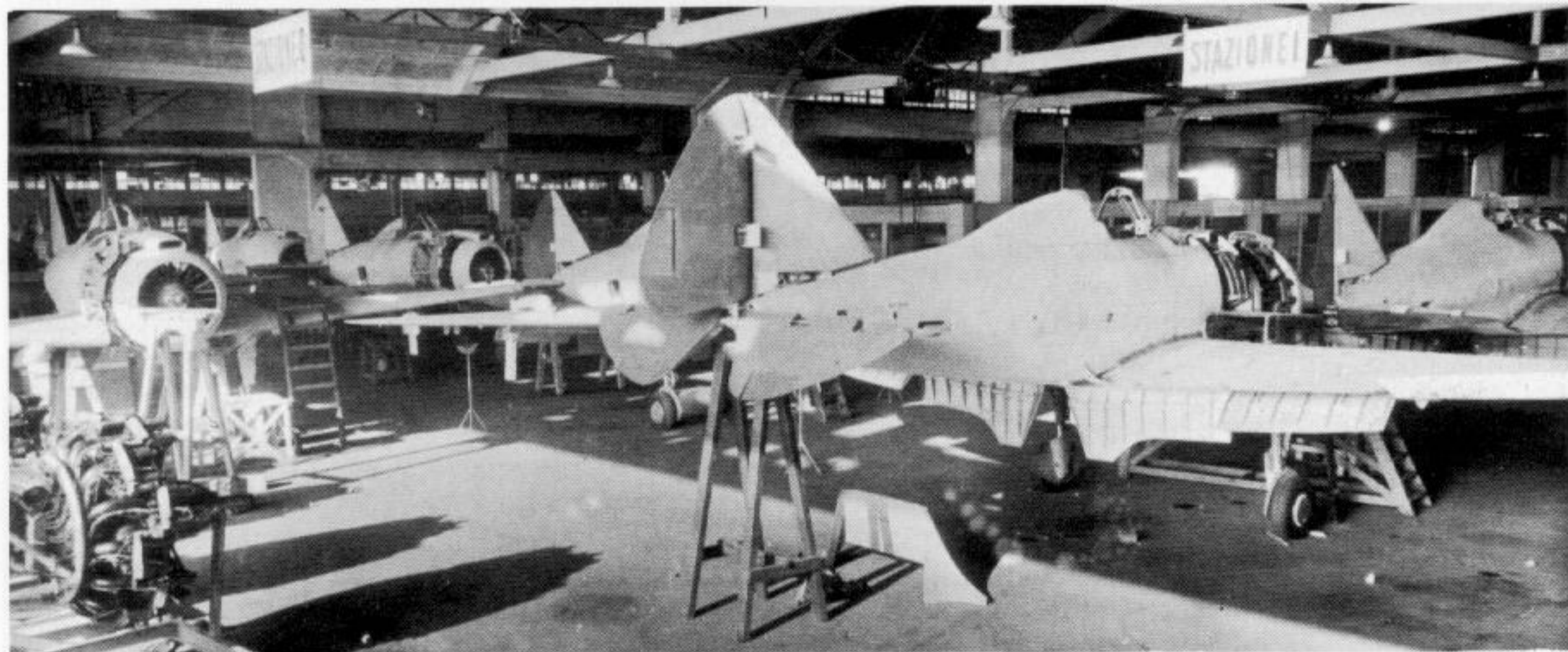
These subsequent orders were a little pointless, in a way, because the output of engines was far inferior to Reggiane's airframe production capability. The first production aircraft proper (MM7310) was delivered in June 1942, but only another 147 were handed over to the Italian Air Force by the time of the Armistice. The *Turbine B* powerplant functioned reasonably well in service – apart from overspeeding in a dive and sometimes cutting out when levelling out.

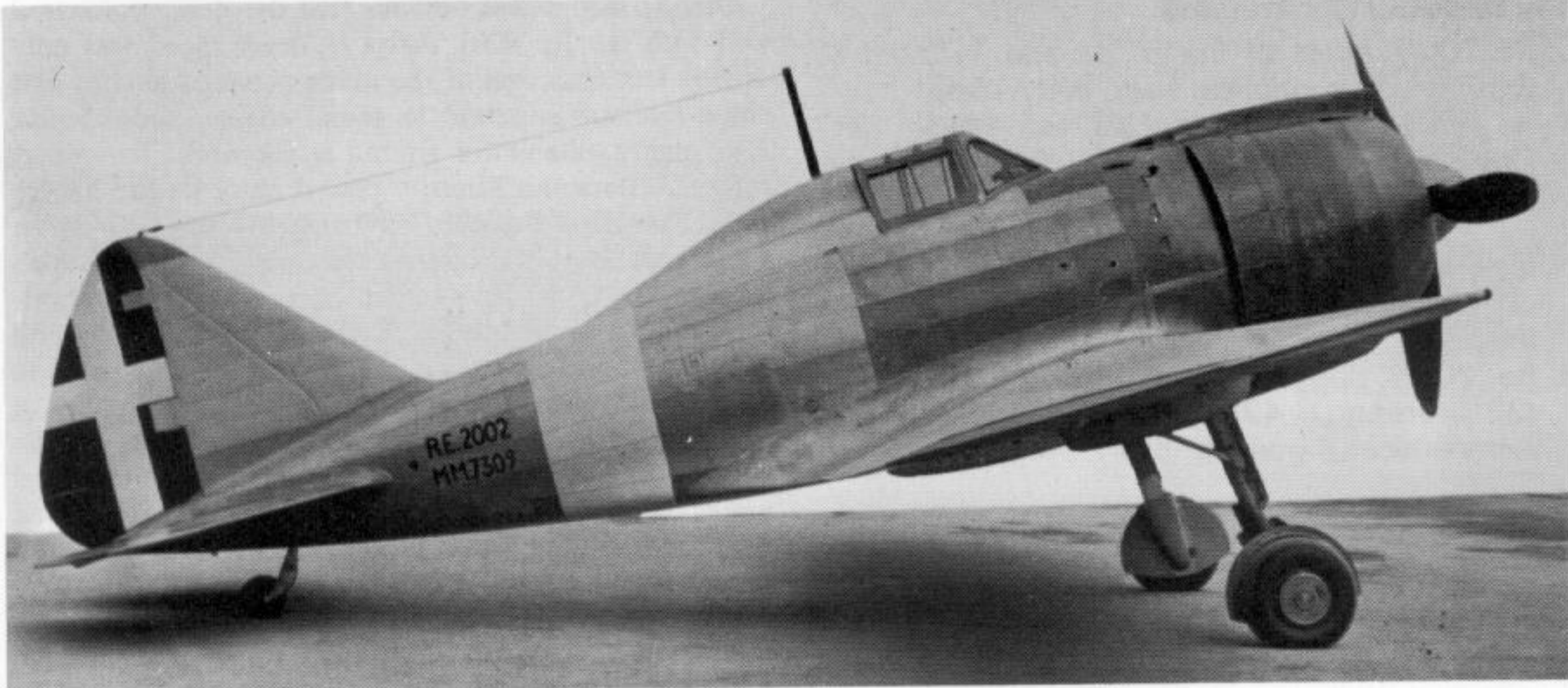
One experimental version of the *Ariete* was built, this marrying the Re 2002's fuselage with the wing of the Re 2005. Known as the Re 2002 *bis* (serial MM7327), it was approaching completion at the time of the Armistice but was subsequently abandoned without being flown.

Catapult trials were carried out with an Re 2002 with a view to using the type, suitably navalized, aboard the aircraft-carriers *Aquila* and *Sparviero* – referred to in the earlier part relating to the Re 2001. Like the vessels, the navalized Re 2002 was eventually abandoned. Another

Part of the Re 2002 *Ariete* production line at Reggio Emilia: note the flap design, shown on the aircraft at the right.

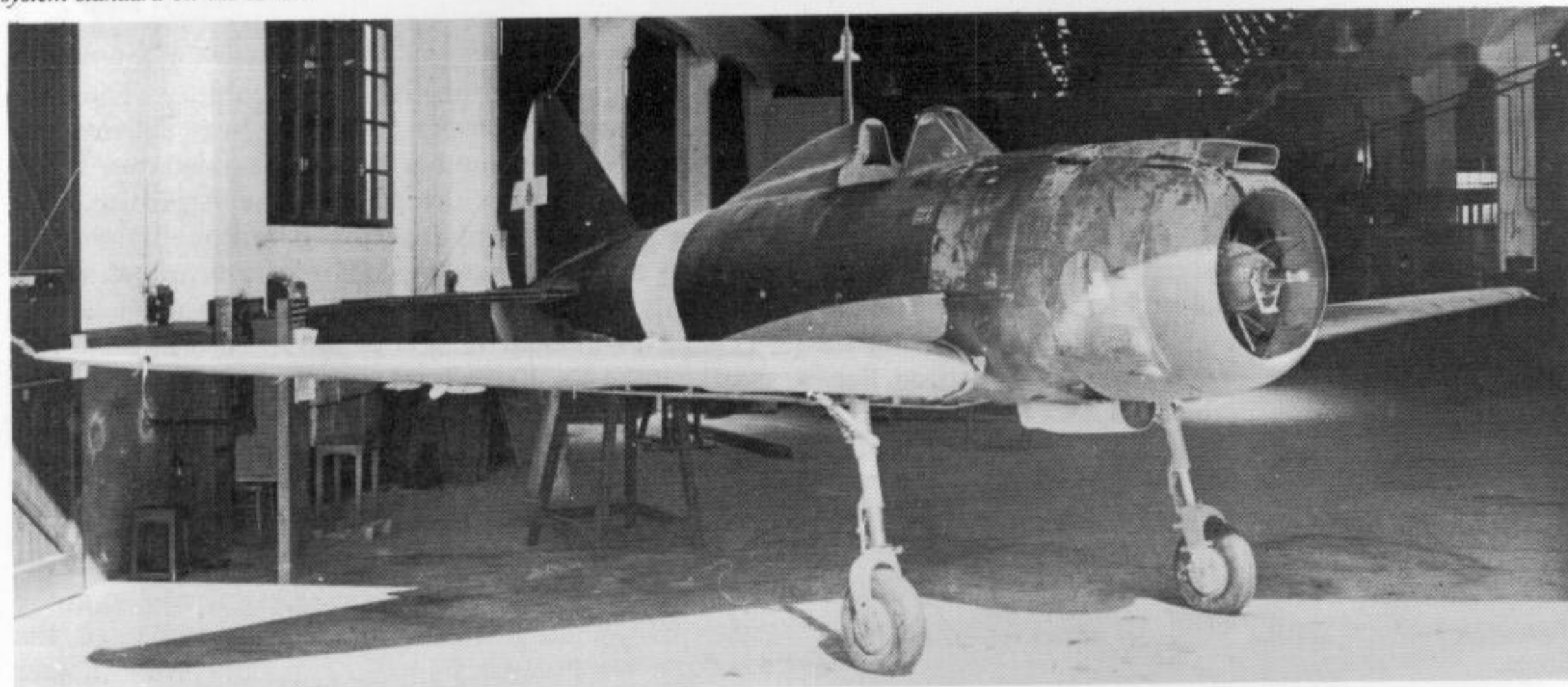
(Photo: Museo Aeronautico Caproni di Taliedo)





The production prototype Re 2002 (serial MM7309) had a redesigned engine cowling and spinner, modified cockpit canopy and fixed tailwheel. (Photo: Museo Aeronautico Caproni di Taliedo)

The Re 2002 bis featured a wing similar to that of the Re 2005, with an outwards-retracting main undercarriage rather than the rearwards-functioning system standard on the Ariete. (Photo: Museo Aeronautico Caproni di Taliedo)



aircraft was tested as a torpedo-carrier but the Re 2002 never dropped torpedoes in action.

RE 2002 PRE-ARMISTICE OPERATIONS

The slow delivery of Re 2002s meant that the first examples were not issued to a unit, the 102° *Gruppo* at Lonate Pozzolo, until November 1942. This group comprised the 209^a and 239^a *Squadriglie*, which had previously operated the dive-bomber Junkers Ju 87B (see *Profile No. 76*). The following month, the 101° *Gruppo* (made up of the 208^a and 238^a *Squadriglie*) also started to convert to the Re 2002 at Lonate Pozzolo; this group had formerly operated Fiat CR42s (*Profile No. 16*). The 102° *Gruppo* moved to Reggio Emilia in mid-May 1943 and on to Tarquinia at the end of that month.

An Italian reconnaissance aircraft spotted the Anglo-American fleet heading to invade Sicily on the afternoon of July 9, 1943. The following day, the two Re 2002-

equipped groups, which made up the 5° *Stormo* (5th Wing), moved to Crotone with a total of 32 aircraft. They both went into action that afternoon over Augusta, sinking a steamer, but losing four Re 2002s and the *Stormo* commander, Colonel Nobili. On July 13, an attack by 11 *Arietes* on shipping in the Augusta-Syracuse area resulted in a 550-lb. (250-kg.) bomb hitting the British battleship HMS *Nelson*; two aircraft were lost.

The 101° and 102° *Gruppi* were badly hit only a few hours after this mission, on July 13, when a very heavy raid was made on Crotone airfield by USAAF Consolidated B-24 Liberators. The loss of aircraft as a result forced the withdrawal of the groups to Manduria to receive replacement Re 2002s. They were back in action on July 19, when 15 aircraft attacked targets at Augusta, six *Arietes* being lost.

The Re 2002s continued in action until September 4, that day losing Major Cenni, who had succeeded Colonel Nobili as leader of the 5° *Stormo*. Four days later, the date of the Armistice, the unit was at Manduria

with 24 *Arietes* (12 serviceable). The 5° *Stormo* lost no fewer than 32 Re 2002s during two months of operations; 19 in action and the remainder in accidents or enemy bombing raids. To its credit, the unit had sunk three ships, all cargo vessels: *Talamba* on July 11, *Fort Pelly* on July 20, and *Fishpool* on July 26, 1943.

A few weeks before the Armistice, the 50° *Stormo* had started to convert from the Fiat G 50 *bis* to the Re 2002 at Lonate Pozzolo. This unit comprised the 158° *Gruppo* (236^a, 387^a and 388^a *Squadriglie*) and 159° *Gruppo* (389^a, 390^a and 391^a *Squadriglie*). Only the latter group actually received any Re 2002s but it was not ready to go into action on September 8, 1943, when the Armistice splintered the Italian Air Force into fractions fighting on the Allied and Axis sides.

RE 2002 PRODUCTION FOR GERMANY

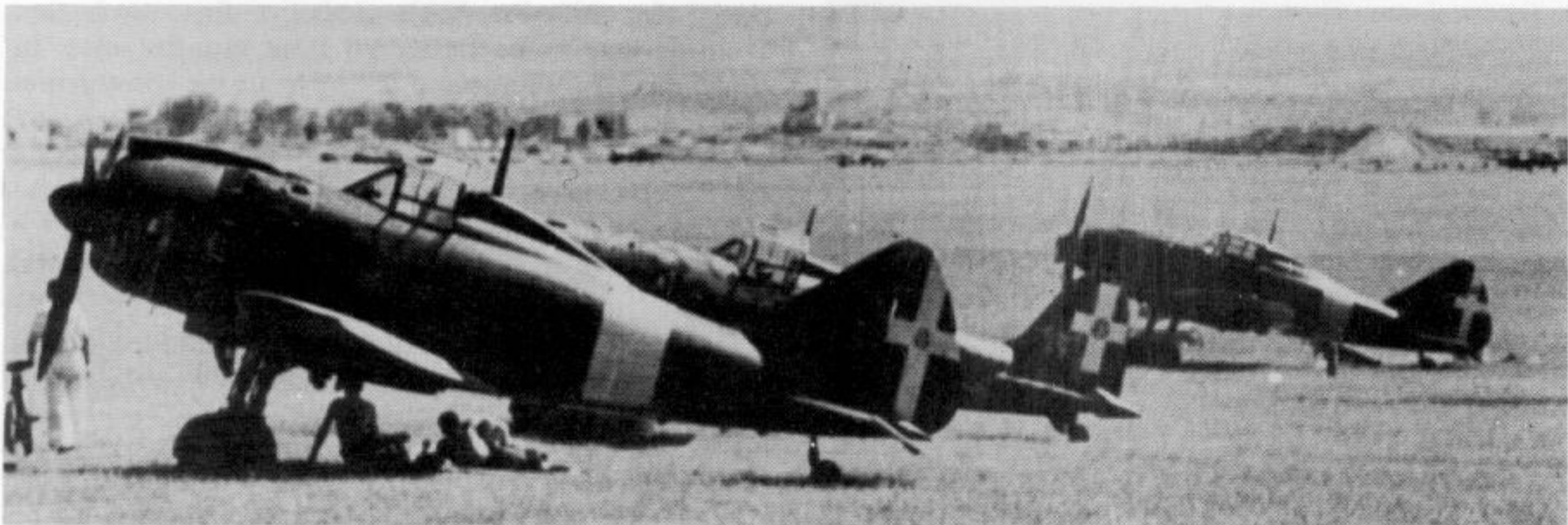
Production of the Re 2002 was going ahead at a modest rate at the time of the Armistice, output being regulated mainly by the availability of engines. As noted, 52 of the first order for 200 remained to be delivered and, in addition, work had started on the second (200 aircraft)

and third (300) orders. The Germans took control of the Reggiane and Caproni factories working on the Re 2002 and ordered completion of the remaining aircraft of the first order and another 30 being built against the subsequent contracts.

Reggiane was also told to start work on a batch of 500 Re 2002s, to be powered by BMW 801 radial engines and to be fitted with the original five-spar wing with integral fuel tanks designed for the Re 2000. Work on this large order did not get very far, although a specimen engine mounting for the BMW-powered *Ariete* was dispatched to Germany, before a heavy Allied bombing raid on the Reggio Emilia factory on the night of January 7-8, 1944 brought production activity to a halt.

Prior to this, Reggiane completed about 14 new Re 2002s for the Germans, who also took over about 10 others which had been accepted by the Italian Air Force before the Armistice but not flown away. The Reggio Emilia plant's activity after the big raid was confined to overhauling *Arietes* for the *Luftwaffe*.

The raid did not end the Germans hopes of continuing production of the *Ariete*, however. All surviving production tooling was gathered together at Caproni's



Two views of the Re 2002 in service with the Regia Aeronautica during the first half of 1943.

(Photos: Museo Aeronautico Caproni di Taliedo)



Taliedo and Biella plants which, incidentally, had both been involved in production preparations against the contract for 300 placed in March 1943. Taliedo completed 60 Re 2002s by September 1944, when work ground to a halt, while only two examples were completed at Biella. Twenty-five of the Taliedo-built examples were flown away by the Germans. The remaining 35 were destroyed at Taliedo by the Germans in April 1945 without ever having been used.

Thus, the production career of the *Ariete* ended after 225 had been built.

The Germans appear to have put about 60 Re 2002s in service with the *Luftwaffe*, about 40 newly-built examples and a score or so requisitioned at the time of the Armistice in September 1943. Surprisingly, for such a relatively large number of aircraft, their activities in German service remain rather obscure. A certain number were operated by *Schlachtgruppen* (Assault Groups) based in France against the underground *Maquis*, which by early 1944 was becoming very active in such areas as Aisne, Limoges and Vercors. The remains of one (a battered fuselage) can still be seen at Limoges, mounted on a concrete plinth as a monument to the local *maquisards* (partisans).

CO-BELLIGERENT RE 2002s

The *Aviazione della Repubblica Sociale Italiana*, fighting on the German side, did not use the Re 2002, but the Co-Belligerent Air Force, with the Allies, appears to have employed a total of about 40 after the Armistice. The first action involving Co-Belligerent Re 2002s was flown as early as September 18, 1943 – just ten days after the Armistice – when aircraft of the 5° *Stormo* attacked German landing forces sailing from Igomenizza, Albania, to the island of Corfu. Other Re 2002s of this unit carried out patrols in the Corfu area. Further attacks were undertaken during the remaining days of September, the 5° *Stormo*'s strength at this time averaging about 20 aircraft, although not all of them were serviceable.

The following month, the 5° *Stormo* Re 2002s were grouped together in a *Gruppo Tuffatori* (Dive-bombing Group) for operations in the Balkans in support of Italian Co-Belligerent troops and Yugoslav partisans. The Group initially had a strength of 18 *Arietes* (ten active and eight in reserve) and was moderately busy right through to the end of 1943, when 14 Re 2002s were still on strength.

The Dive-bombing Group's Re 2002s were reassigned on January 1, 1944 to the 102° *Gruppo* of the Co-Belligerent Air Force, which continued to operate in the Balkans, as before, from Lecce. By the end of January 1944, all the group's *Arietes* were with its 239^a *Squadriglia*. The last major action flown by the type took place on March 29 of that year, when nine Re 2002s attacked an oil refinery and storage tanks at Dubrovnik, Yugoslavia, although a small attack was mounted on a bridge at Skradin, Albania, on June 2.

Nine Re 2002s were lost in action by the Co-Belligerent Air Force and serviceability declined steadily as time went by. On June 15, 1944, the 15 surviving examples were withdrawn from operational use and allocated to the Fighter Training School at Leverano. The poor condition of the aircraft and their engines prevented much use of the Re 2002 at the school and,

before long, they were withdrawn from service. When the war ended, the *Arietes* were scrapped.

Production and technical data relevant to the Reggiane Re 2002 *Ariete* are given at the end of this *Profile*. One Re 2002 survives today in the Caproni Museum, Milan.

THE RE 2003 AND RE 2004

Although not adopted by the Italian Air Force, the Re 2003 and Re 2004 can be briefly considered, for the sake of completeness. The Re 2003 was a two-seat reconnaissance aircraft meeting an Aeronautics Ministry requirement of early 1941. To speed up development, the first prototype (serial MM478) was converted from an Re 2000. The Piaggio P.XI *bis* RC 40 radial of the Re 2000 was retained and space was provided behind the pilot for an observer. The first flight of the Re 2003 was made in July 1941, with Captain Francesco Agello as pilot. Certain modifications were made to the observer's station and provision was made for the installation of two cameras, following evaluation of the aircraft by two military pilots in November 1941.

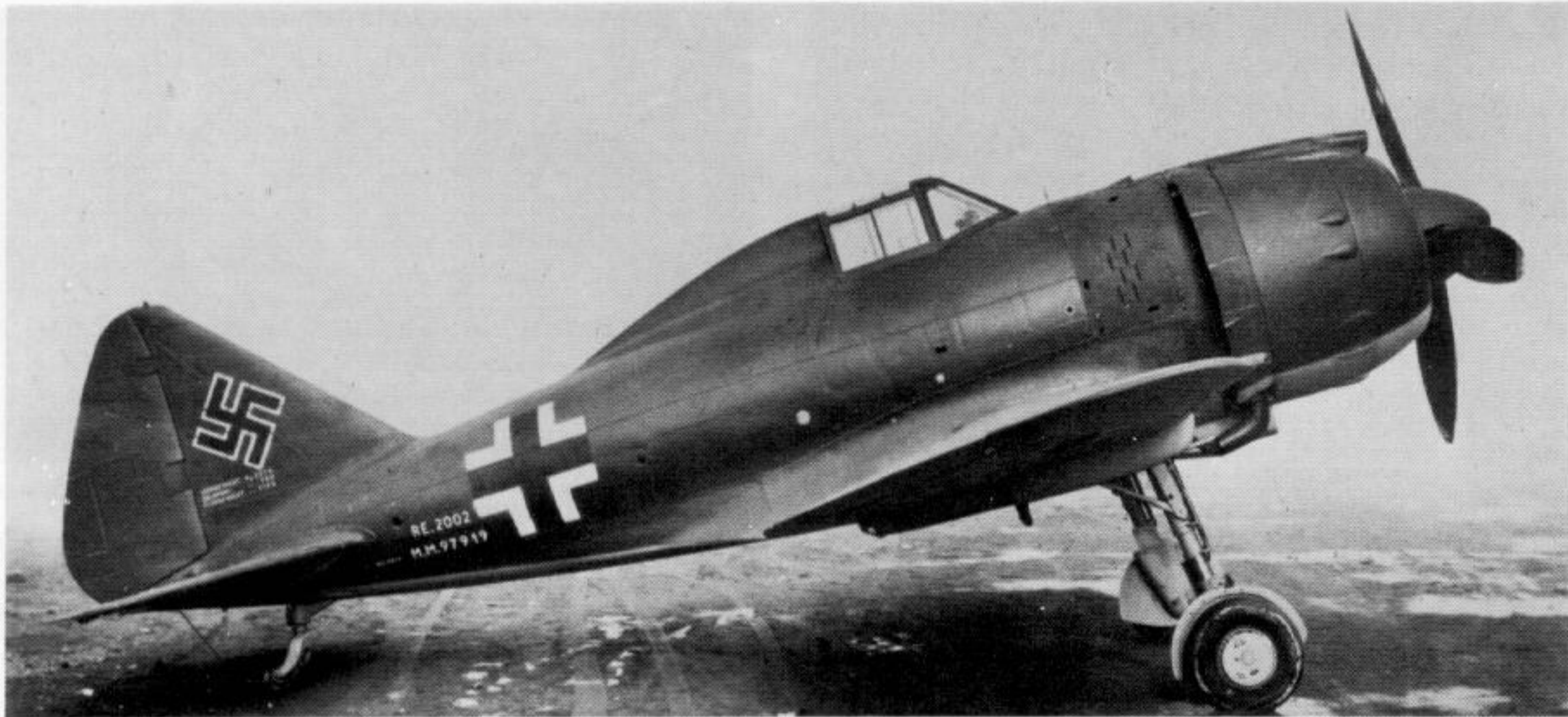
The following month, on the 16th, an order was placed for 200 Re 2003s and the first production example was to be delivered nine months later, in September 1942. Reggiane put in hand the construction of a production prototype (serial MM12415), this being similar to the first prototype but embodying certain detail refinements, such as a more streamlined Re 2002-like engine cowling. Provision was also made for the carriage of a 1,100-lb. (500-kg.) bomb on a ventral rack.

However, the Re 2003 did not enjoy high priority and the production prototype did not fly until October 13, 1942, while production preparations progressed only slowly. Late in 1942, the order was cancelled in order that Reggiane could devote its attention to the manufacture of more urgently-needed fighters and the Re 2003 was abandoned.

Some confusion surrounds the Re 2004 project. Count Caproni di Taliedo says that it was a derivative of the Re 2005 *Sagittario*, but published drawings show that it was closer to the Re 2001 *Falco II* – for one thing it had a rearwards- rather than sideways-retracting main undercarriage. Ing. Longhi, the Reggiane designer, was not in favour of the project, which was a single-seat fighter designed to take the 1,250 h.p. Isotta-Fraschini *Zeta* RC 24/60 liquid-cooled, 24-cylinder X-type in-line engine. The Air Ministry ordered 12 examples in June 1942 but, despite pressure from the Air Force and the Caproni Group (which owned Isotta-Fraschini), Longhi refused to continue its development beyond the initial design stage and the Re 2004 was stillborn. (The *Zeta* was flight tested in an SM 79 and the Caproni-Vizzola F.6Z fighter, where it manifested the cooling problems feared by Longhi.)

THE BRILLIANT RE 2005 SAGITTARIO

In a sense the Reggiane Re 2005 was the logical conclusion to the train of thought begun with the Re 2000 *Falco I* and it certainly owed much to the Re 2001 *Falco II*. This said, it must be stressed that the resemblance was purely external: the *Sagittario* differed considerably from the *Falco II*. The fuselage was exceptionally fine and the wing was of entirely new design.



(Above) An Re 2002 completed for the Luftwaffe after the Armistice of September 8, 1943; this aircraft is the subject of a colour side-view on page 232. (Right) A German Re 2002 in the butts for harmonization of its guns. (Photos: Museo Aeronautico Caproni di Taliedo)



Power was provided by the Daimler-Benz DB 605 A liquid-cooled, 12-cylinder, inverted-Vee inline engine and a heavy armament of three 20-mm. cannon (one in each wing and one firing through the propeller hub) and two 12.7-mm. machine-guns (in the upper engine cowling) was installed. Unlike its predecessors, the Re 2005 had outwards-retracting main undercarriage members – on the earlier members of the family, the main wheels folded backwards.

The Re 2005 was the last creation of the Reggiane design team to fly, the culmination of their work. Ing. Longhi still remembers with gratitude Ing. Antonio Alessio, who handled day-to-day administration as Managing Director, along with Ing. Maraschini (aerodynamics and stress), Pozzi (weights and installations), Toniolo (structures), Vardenega (mechanical engineering), and the other members of the team.

Work began during 1941 and construction of the first prototype (MM494) was completed in the December of that year. A DB 605 A engine was dispatched from Germany that month – and disappeared *en route*. The missing powerplant was not located until mid-April 1942, when it was found at a secondary railway station in Milan.

The DB 605 A was forwarded to Reggio Emilia and the Re 2005 was prepared for its first flight. (The other two Italian “five-series” fighters, the Macchi C.205 and the Fiat G.55 also made their first flights at this time, on April 19 and April 30, 1942, respectively.)

The record books say that the first prototype Re 2005 made its first flight on May 9, 1942 – the facts say otherwise. It was actually carried out a few days before, with Tullio de Prato as pilot; on landing, one main undercarriage leg was found to be not properly locked “down” and de Prato avoided serious damage to the

aircraft by the simple expedient of retracting the other leg and letting the Re 2005 slide in on its belly. The aircraft was not damaged and de Prato then made the “official” first flight on May 9.

In July 1942, the aircraft went to Guidonia for official evaluation and then, the following month, to Furbara for armament trials. The Re 2005 proved to have a maximum speed of 421 m.p.h. at 22,800 ft. (678.5 km/h. at 6,950 m.) and to be excellent in every way. Surprisingly, large-scale production was not immediately ordered by the Aeronautics Ministry. By the end of 1942, Reggiane only had contracts for three prototypes (MM494, MM495 and one non-flying example for static testing) and a “zero series” of 16 aircraft, to be hand-built by the Reggiane Experimental Department rather than on production jigs.

The Aeronautics Ministry went into action in February 1943, ordering 18 pre-production and no less than 750 production Re 2005s. In addition, the Ministry was considering placing orders for another 1,000 – their manufacture would have been assigned to Breda (Milan), Aerfer (Naples) and Caproni (Bergamo) – at the time of the Armistice.

Sweden, which figured in an abortive attempt to get a licence to manufacture the Re 2001 *Falco II*, was very interested in acquiring licence production rights for the Re 2005. A licence to build the Daimler-Benz DB 605 A had been negotiated by the Swedes in 1941. Their quest for permission to build the Re 2005, started in late-1942, dragged on until June 1943 when Reggiane was allowed to begin definitive negotiations. These came to an end with the September 1943 Armistice without success for the Swedes.

The Germans were also watching the Re 2005 programme with interest and, in April 1943, sent a



Although well-known, this photograph is mandatory for all chroniclers of the Re 2002 story, being one of the few extant showing the type in operational unit markings – in this case, the 239^a Squadriglia of the Italian Co-Belligerent Air Force.



The first prototype Caproni Reggiane Re 2003 two-seat reconnaissance aircraft (serial MM478). Only two Re 2003s were built. (Photo: Imperial War Museum)

The 'second "zero series" Sagittario (serial MM092344) prior to being painted in the markings of the 362^a Squadriglia – see colour side-view No. 8. (Photo: Museo Aeronautico Caproni di Taliedo)

The first prototype Caproni Reggiane Re 2005 Sagittario (serial MM494). The interesting story of its "official" and actual first flights is related in the text. (Photo: Italian Air Force)



special DB 605 engine with a VDM propeller (normally, a Piaggio unit was fitted) for installation in the second prototype (serial MM495). This aircraft proved to have a maximum speed of 447 m.p.h. at 23,950 ft. (720 km/h. at 7,300 m.).

Work on the "zero series" aircraft (serials MM092343-092358) pushed ahead rapidly early in 1943, the Reggiane workers being encouraged by special cash bonuses. These aircraft, and all production examples were to be powered by the Fiat RA 1050 RC 58 *Tifone* engine, rated at 1,475 h.p. for take-off, this being a licence-built DB 605 A. Deliveries of "zero series" Re 2005s began in May 1943 and of pre-production aircraft (serials MM096100-096117) a couple of months later.

At the time of the Armistice, on September 8, 1943, all the "zero series" aircraft and 13 of the pre-production batch had been completed. The first few of the order for 750 were approaching completion.

The Germans then set about acquiring as many of the few Re 2005s which had been completed as they could locate. The two prototypes were flown away in September 1943 by the Germans, the second (MM495) reputedly going to Romania. Eleven of the pre-production batch were requisitioned and, after certain modifications (the installation of German-built DB 605 A engines and VDM propellers, for example), they were flown to Germany during the period October 6-10, 1943. Reggiane was also told to complete a small number of additional Re 2005s, but there is no reliable evidence that this was actually done.

It is not clear what happened to the Re 2005s which the Germans acquired, although they were certainly used by the Luftwaffe in some capacity. There are reports that they were used for the defence of Bucharest

and Berlin. The five or six Re 2005s used by the *Aviazione della Repubblica Sociale Italiana* after the Armistice served only as trainers.

THE RE 2005 WITH THE REGIA AERONAUTICA

The first Re 2005 to be issued to the *Regia Aeronautica* or Royal Air Force was the first prototype which was assigned to the 362^a *Squadriglia* of the 22^o *Gruppo* in the spring of 1943. The squadron was then based at Naples-Capodichino and the opportunity was taken to evaluate the new fighter under active service conditions.

"Zero series" Re 2005s were issued to the 362^a *Squadriglia* from May 1943 as they became available and they operated, from Naples and Capua, in the defence of Rome and Naples. On July 10, eight of the squadron's aircraft were transferred to Sigonella, near Catania in Sicily, to take part in the defence against the Allied invasion of the island. Only two Re 2005s were still in flying condition on July 14 when the 362^a *Squadriglia* withdrew from Sicily.

These two survivors were handed over to the 371^a *Squadriglia*, based at Reggio Calabria, in southern Italy. Shortly afterwards, the two Re 2005s were destroyed during a bombing raid on Reggio Calabria.

The 362^a *Squadriglia* re-equipped with 10 Re 2005s at Capua at the end of July 1943, these being mostly pre-production examples. The squadron developed its own method of attacking the Boeing B-17 Fortress, which had proved to be a dangerous adversary because of its heavy defensive armament. The Re 2005s would attack the B-17s head on while in a shallow dive, with all guns firing; just short of a collision, the Italian fighters would flip over onto their backs and dive away under

the B-17s. The aircraft would then climb rapidly to repeat the process.

At the Armistice, the 362^a *Squadriglia* was at Naples-Capodichino with two aircraft, neither serviceable. They were burned by the squadron's personnel to prevent them falling into German hands, thus ending the Re 2005's career in combat. None were used by the Co-Belligerent Air Force and the last survivors were, presumably, those in German hands, whose fate is obscure.

FINAL PROJECTS

The Reggiane design team continued to develop the Re 2005 theme, although none of the projects outlined below saw the light of day. A twin-fuselage Re 2005 was proposed, but Ing. Longhi vetoed the idea and only a three-view drawing was prepared. The designer was also against the Re 2005 R project, which envisaged the installation of an auxiliary 370 hp Fiat A-20 engine buried in the rear fuselage and driving two Campini superchargers, one supercharging the normal DB 605 A of the Re 2005 and the other exhausting at the tail to provide some extra thrust.

The Aeronautics Ministry was quite enthusiastic about this project, but Longhi pointed out that a similar performance improvement could be gained by mating the Re 2005 airframe to the 1,750 h.p. Daimler-Benz DB 603 A in-line engine. This was, in fact, being done – as the Reggiane Re 2006 project. Two Re 2006 prototypes (serials MM540 and 541) were ordered in the spring of 1943 and the first was completed in February 1944. (As related below, the second was converted to become the prototype Re 2007). Aircraft MM540 was never flown, despite being completed, but was put into storage at Taliedo from October 1944 until May 1945 and subsequently handed over – after being made “unflyable” – to the Milan Polytechnic. (The engine, armament and

undercarriage were removed and, more important, the wing halves and fuselage were cut in two.)

As a tailpiece, it is noteworthy that Reggiane was developing a jet fighter project, known as the Re 2007. Design work began in the autumn of 1943, with power to be supplied by a Junkers Jumo 004 B turbojet. Considering the early state-of-the-art, the Re 2007 was a clever design: it had swept wings, the fuselage was in three sections to facilitate replacement of the Jumo 004 B which was buried in the fuselage aft of the pilot, and the pilot had a pressurised cockpit. An armament of four 20-mm. cannon was proposed.

The prototype Re 2007 was begun around the end of 1943 at Correggio, base of the Reggiane Experimental Section since the autumn of 1943. To speed things, the second prototype Re 2006 (serial MM541) was used as the basis of the jet prototype. The Re 2007 was about half complete in October 1944 when it was moved to Taliedo to await the delivery of an engine from Germany. Two Jumo 004 B turbojets were dispatched by Junkers in April 1945 but never arrived. It was too late, anyway, because on May 8, 1945 the war in Europe came to an end and the 70 per cent complete Re 2007 prototype languished at Taliedo until July 1945, when the Allies took away all the completed components and drawings.

The Reggiane fighter designs of the Second World War are of interest, not least because they are, in effect, a “potted history” of the development of fighter technology during 1939-45. The Re 2000 has been described in another *Profile* (No. 123; Volume 6 of *Aircraft in Profile*) but the remainder of the range has been covered – albeit briefly in some cases – in the present text. The saddest thing, from the Italian point of view, is that so few were built. Had the Italian aircraft industry been only half as productive as that of Germany, the Allies would have had a much harder task to win the war in Europe.

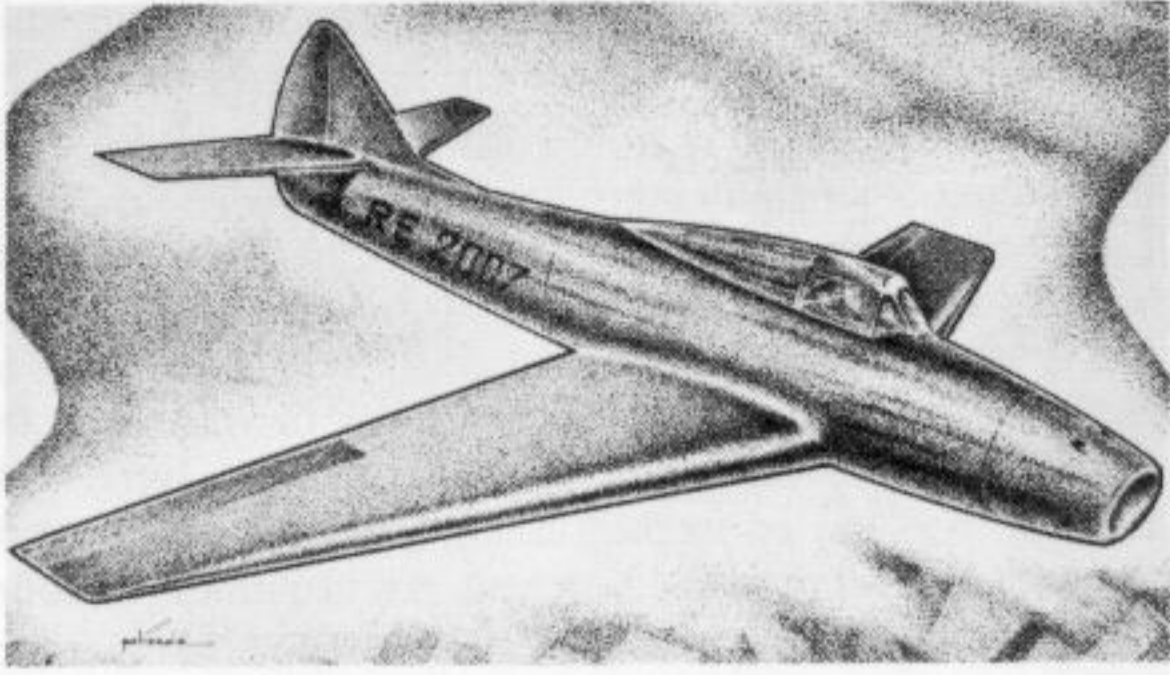
Most Re 2005s surviving after the Armistice of September 8, 1943 were sequestered by the Germans, although a few found their way into the ranks of the Aviazione della Repubblica Sociale Italiana, which fought alongside the Germans. This Italian-flown Axis Re 2005 (serial MM092347) shows the Aviazione della Repubblica Sociale Italiana wing and fuselage markings.

(Photo: Museo Aeronautico Caproni di Taliedo)

The second prototype Re 2005 (serial MM495) was powered by a special Daimler-Benz DB 605 engine, driving a VDM propeller, which gave it a rather more bulbous nose and spinner than other Re 2005s.

(Photo: Museo Aeronautico Caproni di Taliedo)





What might have been – an artist's impression of the jet-propelled Re 2007. (Photo: Museo Aeronautico Caproni di Taliedo)

CONSTRUCTION & SPECIFICATION DATA

RE 2001 FALCO II: Description

The Reggiane Re 2001 was a single-seat, low-wing monoplane fighter of all-metal construction.

Power was provided by an Alfa Romeo RA 1000 RC 41-la *Monsonie* liquid-cooled, 12-cylinder inverted-Vee inline engine rated at 1,175 h.p. for take-off and 1,050 h.p. at 14,765 ft. (4,500 m.).

The fuselage was of duralumin construction, with the pilot seated in a covered cockpit, the hood opening sideways to starboard.

The wing, of elliptical planform, was a three-spar design of duralumin construction. The ailerons and elevators were fabric-covered. Two fuel tanks were sited in the wing centre-section.

The main undercarriage members retracted backwards (and turned through 90°) into the wing, the struts being housed in protruding fairings. The tailwheel was fixed but steerable.

The three-blade Alfa Romeo constant-speed propeller featured a variable-pitch mechanism.

Two 12.7-mm. Breda-SAFAT machine-guns were mounted in the upper engine cowling, each with 350 rounds, and synchronized to fire through the propeller disc. Two 7.7-mm. Breda-SAFAT machine-guns were installed in the wings, each with 600 rounds, and firing outside the propeller disc.

On the Re 2001 CN, the wing-mounted machine-guns were replaced by two 20-mm. Mauser cannon, with 60 rounds each, mounted beneath the wings.

The Re 2001 CB fighter-bomber could normally carry a 550-lb. (250-kg.) bomb on a ventral rack; exceptionally, one of 1,410 lb. (640 kg.) could be carried.

RE 2001 FALCO II: Specification

Dimensions: Span 36.09 ft. (11.0 m.); length, 27.43 ft. (8.36 m.); height, 10.34 ft. (3.15 m.); wing area, 219.6 sq.ft. (20.4 sq.m.).

Weights: Empty, 5,423 lb. (2,460 kg.); loaded, 7,143 lb. (3,240 kg.).

Performance: Speeds, maximum 273 m.p.h. at sea-level (440 km/h.), 339 m.p.h. at 17,945 ft. (545 km/h. at 5,470 m.); stalling, flaps down, 75 m.p.h. (120 km/h.). Climb rate, 7 min. 59 sec. to 22,965 ft. (7,000 m.). Take-off run, 550 ft. (168 m.); landing run, 840 ft. (255 m.). Service ceiling, 36,090 ft. (11,000 m.). Normal range, 684 miles at 291 m.p.h. cruise at 19,685 ft. (1,100 km. at 469 km/h. at 6,000 m.).

RE 2001 FALCO II: Production

First prototype (MM409), converted to Re 2001 *bis* and later reconverted to production Re 2001 configuration.

Second prototype (MM408).

Prototype Re 2001 *Delta* (MM9920).

Pre-production series of 10 aircraft (MM8071-8080).

Production *Serie I* of 100 aircraft (MM7209-7308): 47 completed as normal fighters; 39 as fighter-bombers; 2 (MM7271-7272) as catapult trials aircraft; 12 with arrester-hooks.

Production *Serie II* of 50 aircraft (MM90751-90800): ordered as shipboard aircraft, completed as Re 2001 CN night fighters.

Production *Serie III* of 30 night fighters (MM9921-9950).

Production *Serie IV* of 34 night fighters (MM90000-90033): 50 ordered but last 16 not completed.

Series of 10 Re 2001 CN night fighters (MM6551-6560) built by Caproni-Predappio – all other Re 2001s were built by Reggiane.

Total built: 237 aircraft.

RE 2002 ARIETE: Description

The Reggiane Re 2002 was a single-seat, low-wing monoplane fighter-bomber of all-metal construction, similar technically to the Re 2001.

The main difference was the installation of a Piaggio P.XIX RC 45 *Turbine B*, air-cooled, 14-cylinder two-row radial, rated at 1,175 h.p. at 14,765 ft. (4,500 m.), driving a Piaggio three-blade constant-speed, variable-pitch propeller.

There were two fuel tanks in the wings and one in the fuselage. Auxiliary tanks, for ferrying, could be attached to the ventral and underwing hard-points.

Gun armament comprised two 12.7-mm. Breda-SAFAT machine-guns in the upper engine cowling, with 390 rounds for the port weapon and 450 rounds for the starboard one, firing through the propeller disc, plus two 7.7-mm. Breda-SAFAT machine-guns, each with 640 rounds, one in each wing firing outside the propeller disc. The ventral bomb carrier, which had a swinging fork for dive-bombing, had a maximum load capacity of 1,433 lb. (650 kg.) and could carry either a single bomb or torpedo. Additionally, there was also a rack under each wing for any bomb up to 353 lb. (160 kg.) in weight.

RE 2002 ARIETE: Specification

Dimensions: Span, 36.09 ft. (11.0 m.); length, 26.76 ft. (8.16 m.); height, 10.34 ft. (3.15 m.); wing area, 219.6 sq.ft. (20.4 sq.m.).

Weights: Empty, 5,269 lb. (2,390 kg.); maximum loaded 7,143 lb. (3,240 kg.).

Performance: Speeds maximum, 267 m.p.h. at sea-level (430 km/h.), 330 m.p.h. at 18,045 ft. (530 km/h. at 5,500 m.); economical cruise, 248 m.p.h. at 14,765 ft. (400 km/h. at 4,500 m.); stalling, flaps down, 75 m.p.h. (120 km/h.). Climb rate, 8 min. 48 sec. to 19,685 ft. (6,000 m.). Service ceiling, 36,090 ft. (11,000 m.). Take-off run, 550 ft. (168 m.); landing run, 840 ft. (255 m.). Normal range, 684 ml. at 259 m.p.h. cruise at 19,685 ft. (1,100 km. at 417 km/h. at 6,000 m.).

RE 2002 ARIETE: Production

One prototype (MM454).

One production prototype (MM7309).

Production *Serie I* of 99 aircraft (MM7310-7408).

Production *Serie II* of 100 aircraft (MM8644-8743); only 48 completed and delivered prior to Armistice.

A further 76 aircraft were completed for Germany after the Armistice.

Total built: 225 aircraft.

RE 2005 SAGITTARIO: Description

The Reggiane Re 2005 was a single-seat, low-wing monoplane fighter of all-metal construction.

Power was provided by a Fiat RA 1050 RC 58 *Tifone*, liquid-cooled, 12-cylinder inverted-Vee inline engine rated at 1,475 h.p. for take-off and 1,355 h.p. at 18,700 ft. (5,700 m.).

The fuselage was of duralumin construction, with the pilot seated in an enclosed cockpit, the hood opening sideways to starboard.

The three-spar wing of duralumin construction had an elliptical planform and housed four fuel tanks. The ailerons and elevators were fabric-covered.

The main undercarriage members retracted sideways to lie flush in the wing. The tailwheel was steerable and retractable.

A Piaggio constant-speed, variable-pitch, three-blade propeller was fitted. Note: Certain aircraft were modified for the Germans to take a German-built DB 605 A engine and a VDM propeller.

Two 12.7-mm. Breda-SAFAT machine-guns were mounted in the upper engine cowling, each with 350 rounds, and synchronized to fire through the propeller disc. A 20-mm. Mauser cannon, with 150 rounds, fired through the propeller boss. In each wing there was a 20-mm. Mauser cannon, with 200 rounds, firing outside the propeller disc. A ventral attachment point under the fuselage could carry a fuel tank or bomb of up to 2,200-lb. (1,000 kg.) weight. Additionally, under each wing there was an attachment point for a fuel tank or bomb weighing up to 353 lb. (160 kg.).

RE 2005 SAGITTARIO: Specification

Dimensions: Span, 36.09 ft. (11.0 m.); length, 28.64 ft. (8.73 m.); height, 10.34 ft. (3.15 m.); wing area, 219.6 sq.ft. (20.4 sq.m.).

Weights: Empty, 5,732 lb. (2,600 kg.); maximum loaded, 7,959 lb. (3,610 kg.).

Performance: Speeds, maximum 351 m.p.h. at 13,120 ft. (565 km/h. at 4,000 m.), 421 m.p.h. at 22,800 ft. (678 km/h. at 6,950 m.); stalling, flaps down, 85 m.p.h. (136 km/h.). Climb rate, 5 min. 30 sec. to 19,685 ft. (6,000 m.). Service ceiling, 39,370 ft. (12,000 m.). Normal range, 777 ml. at 320 m.p.h. cruise (1,250 km. at 515 km/h.).

RE 2005 SAGITTARIO: Production

Two prototypes (MM494, 495).

Zero series of 16 aircraft (MM092343-092358).

Pre-production series of 18 aircraft (MM096100-096117); 13 completed before Armistice, remainder finished subsequently for Germany.

Total built: 36 aircraft.

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