

## Fiat CR.32 Bis Freccia



En 1930, le gouvernement italien et la Regia Aeronautica demande le remplacement des CR.20 encore en service et largement dépassés. Le bureau technique de la Fiat Aviazione, dirigée par Celestino Rosatelli, développe le CR.30 (Caccia Rosatelli n°30 - Chasseur Rosatelli n°30). L'appareil, bien que sesquiplan comme le précédent, est de conception plus moderne et est nettement plus performant. La première série d'appareil est à peine en cours de fabrication que déjà la Fiat Aviazione fait voler un appareil assez similaire, mais de plus petite taille. Désigné CR.32, puisqu'également conçu par Rosatelli, ce prototype (MM 201) effectue son premier vol le 28 avril 1933, depuis le terrain du constructeur à Turin. Son moteur FIAT A.30RA de 600 ch, qui entraîne une hélice bipale métallique à pas variable, est le même moteur qui équipe de CR.30. Le carburant utilisé n'est pas un carburant d'aviation normal, mais de l'AS.3, un mélange possédant un indice d'octane de 94 composé de 55% d'essence, de 22% de benzène et de 23% d'Ethanol. Le fuselage est constitué de tubes d'aluminium et d'acier recouverts de Duralium à l'avant et, derrière le cockpit, de toile. Les ailes aux extrémités arrondies sont de type sesquiplan traditionnel et sont reliées entre elles par des entretoises de type Warren en tubes rigides et par des filins métalliques. Elles sont également constituées de longerons en Duralium recouverts de toile. La dérive et l'empennage de type conventionnel sont équipés de surfaces mobiles de grande taille. Le poste de pilotage, ouvert et protégé par un pare-brise, est situé à l'arrière du bord de fuite de l'aile supérieure, dans laquelle une découpe est faite pour améliorer la visibilité du pilote vers le haut. Le train d'atterrissage est fixe et de type classique, avec deux roues carénées à l'avant et une roulette de queue mobile à l'arrière. L'armement est constitué de deux mitrailleuses Breda-SAFAT de 7,7mm synchronisées, tirant au travers du disque de l'hélice. Munitionnées de 500 cartouches chacune, elles sont reliées à une caméra permettant de filmer durant le tir. Pour les missions d'attaque au sol, l'avion peut également emporter jusqu'à 100 kg de bombes diverses. En option, le CR.32 peut être équipé d'une radio Marconi RA.80-I ainsi que divers appareils photographiques pour la reconnaissance aérienne. Plus petit que le CR.30 et équilibré différemment, le CR.32 est plus facile à piloter et encore plus maniable. Malgré le fait qu'il ne soit pas des plus rapides, dès les premiers essais il conquiert les pilotes qui le testent et il est rapidement surnommé "freccia", la "flèche".

En mars 1934, les premières commandes sont passées et les premières unités de la Regia Aeronautica sont équipées dès le début 1935. Sur la première série de 298 appareils, 16 exemplaires sont livrés à la République de Chine, 76 au Royaume de Hongrie et 206 à la Regia Aeronautica. Une version CR.32bis est produite à 283 exemplaires avec deux mitrailleuses de 7,7mm supplémentaires dans les ailes inférieures. Mais plusieurs utilisateurs préfèrent par la suite les enlever pour diminuer la masse de l'appareil. La version CR.32ter construite à 150 exemplaires voit ses deux mitrailleuses de 7,7mm tirant au travers du disque de l'hélice remplacées par deux mitrailleuses Breda-SAFAT de 12,7mm. Munitionnées de 350 coups chacune, ces armes lui donnent une puissance de feu tout à fait correcte pour l'époque. De plus, le système de visée original est rapidement remplacé par un collimateur à réflexion permettant une plus grande précision. La dernière version, le CR.32quater, est une version allégée produite à 317 exemplaires. La production du CR.32 se termine en 1939 chez Fiat Aviazione, néanmoins une centaine d'exemplaires sont encore construits en Espagne par Hispano entre 1938 et 1942 sous la désignation locale de Ha 132L Chirri. Au total entre 1'153 et 1'212 exemplaires, selon les sources, sont construits dans les différentes versions qui sont utilisées par l'Autriche, la République de Chine, l'Espagne (nationalistes et républicains), la Hongrie, l'Italie, le Paraguay et le Venezuela. L'URSS en obtiendra un exemplaire pour l'évaluer. Le CR.32 fait son baptême du feu pendant la guerre civile espagnole en 1936. C'est le 18 août de cette année-là que les premiers CR.32 "Freccia" arrivent en Espagne pour former peu à peu les escadrons "Gamba di Ferro", "Cucaracha" et "Asso di Batoni" de l'Aviazione Legionaria (Aviación Legionaria, en espagnol). Trois jours plus tard, ils obtiennent leur première victoire aérienne sur un Nieuport-Delage NiD-52 dans le ciel de Cordoue. Au total, le gouvernement italien envoie entre 365 et 405 CR.32 de différentes versions en Espagne pour servir au sein de l'Aviazione Legionaria. Environ 130 autres exemplaires sont fournis directement à l'Aviación Nacional, l'armée de l'air nationaliste Franquiste. Six de ces appareils sont capturés par les forces républicaines, un exemplaire est envoyé en Union soviétique pour être évalué, tandis que les autres sont utilisés par les Fuerzas Aéreas de la República Española. Bien que moins rapides que la plupart des appareils des forces aériennes républicaines, l'excellente manœuvrabilité et la solide expérience des pilotes permettent aux CR.32 d'établir leur suprématie sur leurs rivaux. Ces derniers, qui comptent jusqu'à 2'400 appareils de différentes origines et de performances très diverses, causent la perte de 73 Fiat CR.32 durant le conflit. L'Aviación Legionaria, de son côté, revendique 60 bombardiers Tupolev SB-2 (dont 48 confirmés) considérés jusqu'alors comme ininterceptables, 242 biplans Polikarpov I-15, 240 monoplans Polikarpov I-16, ainsi qu'une centaine d'autres appareils divers, certains non confirmés. Cela porte à un taux de réussite de plus de 8 pour 1 en faveur des avions Fiat. Le plus grand as espagnol pilotant un Fiat CR32, et également le pilote ayant obtenu le plus grand nombre de victoire aérienne durant la guerre civile espagnole, est l'Espagnol Joaquín García-Morato qui obtient 36 de ses 40 victoires aériennes sur le CR-32 portant le numéro 3-51 sur le fuselage. À la fin de la guerre civile espagnole, lors du retrait de l'Aviazione Legionaria en 1939, les CR.32 restants sont laissés au gouvernement espagnol de Franco. En République de Chine, 16 CR.32 sont en service au sein du Chung-Hua Min-Kuo K'ung-Chün dès 1935. Bien que supérieurs aux Boeing P.26 et aux Curtiss Hawk III également alignés, la Chine de Chiang Kai-shek doit se résoudre à choisir les Curtiss pour constituer l'épine dorsale de son aviation, l'alcool et le benzène nécessaire au mélange de carburant de l'avion italien lui étant alors difficile à se procurer. En 1937, les quelques exemplaires de CR.32 disponibles obtiennent quelques belles victoires contre l'aviation japonaise, mais ils sont retirés du service l'année suivante. La Hongrie utilise ses 76 CR.32 achetés entre 1935 et 1936 au sein du Magyar Királyi Honvéd Légierő, qui est la force aérienne du Royaume de Hongrie. En 1938, après l'Anschluss, la Hongrie rachète les 36 CR.32bis autrichiens et les utilise pour la chasse et l'entraînement des pilotes. En mars 1939, durant le bref conflit qui l'oppose à la Slovaquie, la Hongrie obtient facilement la supériorité aérienne grâce à ses CR.32. Deux exemplaires auraient été abattus par la chasse slovaque, mais plusieurs Avia B.534 et un Letov Š-328 sont à leur tour abattus par les Fiat magyars. Par la suite, un CR.32 hongrois est équipé d'un moteur radial Gnome-Rhône "Mars" 14M de 750 ch lui permettant de faire passer sa vitesse maximale de 375 à 420 km/h à 4'000 mètres. Ces moteurs n'étant pas disponibles en grand nombre, la Hongrie abandonne son intention de remotoriser entièrement sa flotte.

Le MKHL perd encore trois CR.32 durant le bref conflit avec la Yougoslavie, dans lequel la Hongrie s'est retrouvée aux côtés des puissances de l'Axe. À partir de juin 1941, ils obtiennent encore plusieurs victoires en assurant la couverture aérienne des troupes hongroises face aux troupes soviétiques. Dès les premières livraisons de CR.32 à la Regia Aeronautica, ces appareils sont utilisés dans de nombreux spectacles aériens en Italie, comprenant de la voltige et des vols en formation avec parfois plus de 10 appareils. En 1936, ces manifestations sont également organisées dans des villes européennes, puis en Amérique du Sud l'année suivante. La remarquable maniabilité du CR.32 et son succès incontesté en Espagne durant la guerre civile donne à croire aux responsables de la Regia Aeronautica que la formule biplan a toujours un sérieux potentiel face à des avions monoplans plus rapides, mieux protégés et mieux armés. C'est ce qui explique pourquoi, lorsque la seconde Guerre Mondiale commence, les deux tiers des avions de combat de la Regia Aeronautica sont des biplans, soit 294 CR.32 et 300 CR.42. La première utilisation opérationnelle des Fiat CR.32 durant la Seconde Guerre mondiale concerne la quarantaine d'appareils du 2<sup>o</sup> Stormo basés en Libye qui patrouilles, à partir du 10 juin 1940, au-dessus des villes et le long de la frontière tunisienne, escortent des bombardiers et effectuent des missions d'attaque au sol contre les forces terrestres adverses. À l'arrivée des Fiat CR.42, les Freccia sont transférés au 50<sup>o</sup> Stormo Assalto pour protéger les Breda 65 durant leurs missions de bombardement et d'attaque au sol. Néanmoins, durant ces missions les Freccia obtiennent encore de nombreux succès aériens. En Afrique de l'Est, les CR.32 qui y sont déployés détruisent une quantité substantielle d'avions de la RAF et de la SAAF, y compris des bombardiers modernes Junkers Ju.86 et des monoplans rapides Bristol Blenheim et Hawker Hurricanes. Malheureusement pour les escadrilles italiennes, la fourniture de pièces de rechange ne suit pas et de moins en moins de CR.32 sont disponibles. Si le 10 janvier 1941 il y a encore 22 CR.32 en état de vol, plus aucun exemplaire n'est capable de prendre l'air à la mi-avril. Des CR.32 sont également utilisés pendant la campagne de Grèce. La bataille de Crète est le dernier combat auquel participent les CR.32 italiens, puisqu'ils ne sont ensuite utilisés que pour la formation au sein des écoles de chasse et pour l'entraînement. Deux exemplaires de CR.32 sont encore visibles de nos jours. Un Hispano Ha 132L offert en 1955 à l'Aeronautica Militare Italiana est exposé au Museo storico dell'Aeronautica Militare de Vigna di Valle, Bracciano (Rome). Un CR.32 restauré avec des pièces d'un Hispano Ha 132L exposé au Museo del Aire, à Madrid.



The **Fiat CR.32** was an Italian [biplane fighter](#) used in the [Spanish Civil War](#) and the [Second World War](#). Designed by the [aeronautical engineer Celestino Rosatelli](#), it was a compact, robust and highly manoeuvrable aircraft for its era, leading to it being a relatively popular fighter during the 1930s. The CR.32 fought in North and East Africa, in Albania, and in the Mediterranean theatre. It was extensively used in the [Spanish Civil War](#), where it gained a reputation as one of the most outstanding fighter biplanes of all time.<sup>[3]</sup> It also saw service in the air forces of [China](#), [Austria](#), [Hungary](#), [Paraguay](#) and [Venezuela](#). It frequently performed impressive displays all over Europe in the hands of the Italian *Pattuglie Acrobatiche*.<sup>[4]</sup> During the late 1930s, the CR.32 was overtaken by more advanced [monoplane](#) designs; by the start of the Second World War, it was considered to be obsolete. While it had been superseded by a number of newer Italian fighters, including the newer [Fiat CR.42 Falco](#) which had been derived from the CR.32, the type continued to be flown throughout the conflict.<sup>[5]</sup>

## Development

The Fiat CR.32 was designed by the [aeronautical engineer Celestino Rosatelli](#).<sup>[6]</sup> It was derived from the earlier [Fiat CR.30](#), which had received limited production orders from the *Regia Aeronautica* but, within the space of 12 months, it was superseded by the newer CR.32.<sup>[6]</sup> The CR.32 had a smaller and more streamlined fuselage than the CR.30, resulting in a more compact aircraft. On 28 April 1933, the [prototype](#) CR.32, which was designated the *MM.201*, made its [maiden flight](#) from the Fiat company airfield at [Turin](#).<sup>[3]</sup> By the end of the year, the first production examples were already arriving with front line units of the Regia Aeronautica.<sup>[7]</sup> Mass production of the type took place between 1933 and 1938. Four variants of the CR.32 were developed: the standard, *bis*, *ter*, and *quater*.<sup>[8]</sup> The CR.32 *bis* had a more powerful [Fiat A.30R](#) V12 engine and two additional [machine guns](#), while the *ter* and the *quater* retained the original armament, differing in the use of improved [gunsights](#) and instrumentation.<sup>[8]</sup> By 1938, the CR.32 had been rendered obsolete by advances in the field of aviation, including the arrival of a new generation of monoplane fighters, which were capable of superior performance. The CR.32 was directly succeeded by the [Fiat CR.42 Falco](#), which was derived from the CR.32.<sup>[7]</sup> During the development of this design, four CR.32s were converted to serve as prototypes.<sup>[9]</sup>

## Design



Capt. Mario D'Agostini standing next to the rear of his CR.32, 1940

The Fiat CR.32's [fuselage](#) had the same structure as the earlier CR.30, using [aluminium](#) and [steel](#) tubes covered by [duraluminium](#) on the nose up to the [cockpit](#), on the back, in the lower section under the [tail](#), while a [fabric](#) covering was used on the sides and belly.<sup>[7]</sup> According to Cattaneo, the fuselage was very robust for the time. The CR.32 had a fixed undercarriage with [hydraulic shock absorbers](#); the wheels were housed in [fairings](#) and braking was [pneumatically](#) activated.<sup>[7]</sup> The wings and tail used a mixed composition, similar to the fuselage, composed of a pair of aluminium [alloy](#) tubular spars and square tubes, which were covered by fabric. It was a [sesquiplane](#), the lower wing being shorter than the upper wing. The interplane struts were arranged to form a pair of [Warren trusses](#) on either side. [Ailerons](#) were only present upon the upper wings, which were balanced by out-rigged tabs mounted on steel struts.<sup>[7]</sup> The empennage, which was largely composed of aluminium tubes, had a variable incidence tailplane and an aerodynamically-balanced [elevator](#).<sup>[7]</sup>



Members of the [Royal Australian Air Force](#) besides a captured CR.32 in [Benghazi, Libya](#), 1941

The cockpit of the CR.32 had an adjustable seat and a parachute, the latter of which being stored within the squab.<sup>[7]</sup> Although it was considered to be fully instrumented for the era, the RA.80-1 [radio](#) set was only an optional piece of equipment.<sup>[10]</sup> Other equipment included a fire extinguisher, [gun camera](#), an [oxygen](#) system for the pilot; both an [optical](#) gunsight and [survey](#) camera could also be installed as optional item.<sup>[11]</sup> The armament initially included a pair of 7.7 mm (.030 in) [Breda-SAFAT machine guns](#) (which was later substituted for a pair of 12.7 mm (.5 in) Breda-SAFAT guns), which were fitted on top of the engine cowling; each gun had an ammo capacity of 350 rounds each. Later examples were also furnished with a pair of [hard points](#), which could accommodate up to 12 5lb bombs, a pair of 100lb bombs, or a single 200lb bomb.<sup>[11]</sup> The CR.32 was powered by a single water-cooled [Fiat A.30 R.A. V12](#) engine.<sup>[11]</sup> Designed in 1930, it was a 60° V 12, producing up to 447 kW (600 hp) at 2,600 rpm, reportedly inspired by the American [Curtiss D-12](#). It drove a 2.82 meter (9 ft 4 in) two-blade metal propeller with pitch only adjustable on the ground, not in flight.<sup>[11]</sup> The engine did not use the usual [aviation gasoline](#), but instead ran on a mixture of [petrol](#) (55%), [ethanol](#) (23%) and [benzol](#) (22%). The main fuel tank, which was located between the engine and cockpit, carried 325 litres (85.9 US gal). There was another small 25 liter (6.6 US gal) auxiliary tank positioned in a streamlined fairing in the center of the upper wing.<sup>[11]</sup>

## Operational history

### Early operations

The new biplane proved to be an instant success. After a brief period of testing, the first production orders for the CR.32 were received during March 1934. Within a short amount of time, the type soon equipped the 1°, 3° and 4° *Stormi* of the *Regia Aeronautica*.<sup>[13]</sup> The CR.32 was commonly well liked by its crews, being very maneuverable and benefitting from a relatively strong fuselage structure. The Fiat biplanes were used for many aerobatic shows, in Italy and abroad. When foreign statesmen visited [Rome](#), the 4° *Stormo*, *Regia Aeronautica* élite unit put on impressive displays with formations of five or ten aircraft. During 1936, air shows were organized above various other European capitals and major cities, and, during the following year, in South America. When the team returned, a brilliant display was put on in [Berlin](#).<sup>[12]</sup> Further overseas tours by Italian display teams, such as a [South American](#) expedition in 1938, were performed using the type. The CR.32's tight turning circle and excellent handling made the type ideal for aerobatic displays.<sup>[13]</sup> The stand-out feature of the CR.32 was its remarkable manoeuvrability. It is possible its outstanding performance and popularity amongst its pilots were responsible for a continued attitude within many officials of the *Regia Aeronautica* that the biplane platform remained a viable concept for further development and deployment even in the face of a new generation of monoplane fighters.<sup>[11]</sup>

### Spain



A pair of Fiat C.R.32 of the X Gruppo "Baleari".

During 1938, Spain acquired a license to build the CR.32. Spanish manufacturer [Hispano Aviación](#) established a production line and constructed at least 100 examples, which were locally known under the designation [HA-132-L Chirri](#). Some of these aircraft remained in military service as C.1 aerobatic trainers up until as late as 1953.<sup>[12]</sup> The Fiat CR.32 was used extensively in the Spanish Civil War on the side of the [Fascist](#) military rebellion against the [Spanish Republic](#).<sup>[14]</sup> At least 380 examples took part in the air battles fought over Spain, proving formidable adversaries to the [Soviet Polikarpov I-15](#) biplane and [Polikarpov I-16](#) monoplane that formed the backbone of the [Spanish Republican Air Force](#).<sup>[15]</sup> During 1936, the type had its baptism of fire.

On 18 August, the first 12 CR.32s arrived in [Spain](#) and formed the *Squadriglia Gamba di Ferro*, *Cucaracha*, and *Asso di Bastoni* of 3° Stormo; three days later *Tenente* Vittorino Ceccherelli, a [Gold Medal of Military Valor](#) winner, shot down the first enemy aircraft, a [Nieuport 52](#), over [Cordoba](#).<sup>[10]</sup> In total, the Italian government dispatched between 365 and 405 C.R.32s to Spain while between 127 and 131 were delivered directly to Nationalist aviation units. During the conflict, six aircraft were captured by Republican forces, according to Nico, one of these was shipped to the Soviet Union, where it underwent a detailed evaluation.<sup>[16][17]</sup> Thanks to the agile CR.32, the Italians managed to achieved air superiority over their *Fuerzas Aéreas de la República Española* opponents, who flew a motley collection of very different and often obsolete aircraft. The Fiat biplane proved to be effective in the theatre, the [Aviazione Legionaria](#) claiming 60 (48 confirmed) modern Russian [Tupolev SB](#) bombers, which were once believed to be impossible to intercept, as well as 242 [Polikarpov I-15](#) biplane fighters, and 240 [Polikarpov I-16](#) monoplane fighters, plus another hundred aircraft that were not confirmed. In exchange, C.R.32 losses were reportedly only 73.<sup>[10]</sup> According to other sources, of the 376 Fiat shipped to Spain, 175 (43 Spanish operated and 132 Italian) were lost, including 99 (26 Spanish and 73 Italian) shot down, while, by January 1939, the number of I-15s shot down was just 88.<sup>[18][19]</sup>

### Spanish aces

The top scoring CR.32 ace was Spaniard [Joaquín García Morato y Castaño](#), who was the leading Nationalist fighter pilot of the [Spanish Civil War](#). He achieved 36 of his 40 victories while flying the Fiat biplane. He used the same aircraft, which carried the number 3-51 on the fuselage, until his death. During April 1939, shortly after the war had finished, Morato fatally crashed his faithful 3-51 while performing low aerobatics.<sup>[20]</sup> Another Nationalist CR.32 ace was *Capitán* Manuel Vázquez Sagastizábal, who claimed 21½ victories with *Grupo 2-G-3*, before he was shot down and killed on 23 January 1939. *Comandante* Angel Salas Larrazabal, after one kill flying a [Nieuport-Delage 52](#), flew multiple CR.32s, shooting down, on 29 October 1936, the first of the fast Soviet monoplane [Tupolev SB-2](#) bombers to fall to Nationalist fighters. He shot down four more aircraft with the CR.32 before moving to a [Heinkel He 51](#) unit. After two more victories, he joined the new *Grupo 2-G-3*. With this unit, again flying CR.32s, he raised his score to 16, including three SB-2s and an [I-16](#) in a single sortie on 2 September 1938. *Capitán* Miguel Guerrero Garcia achieved nine of his 13 victories flying the Fiat biplane: four [I-15s](#), three "Papagayos" ([R-5s](#) and [Polikarpov-RZs](#) assault bombers), and two [I-16s](#).<sup>[21]</sup>

### Second World War



A CR.32 in 1940–1942.

The aerobatic characteristics of the CR.32 and its success in Spain misled the Italian air ministry, which was convinced that a biplane fighter still had potential as a weapon of war.<sup>[3]</sup> Consequently, during May 1939, prior to Italy entering the Second World War, large numbers of CR.32 fighters, in *bis*, *ter*, and *quater* versions, represented two-thirds of all fighters in the *Regia Aeronautica*. A total of 288 were based in Italy and [North Africa](#), while 24 were stationed in [East Africa](#).<sup>[8]</sup>

### North Africa

When Italy declared war on Britain and France on 10 June 1940, 36 CR.32s together with 51 Fiat CR.42s formed the operational fighter force of the *Regia Aeronautica* in [Libya](#).<sup>[22]</sup> The first combat between CR.32s and British aircraft came the following day. Six CR.32s intercepted a formation of [Bristol Blenheim](#) bombers attacking the airfield at [El Adem](#), claiming two Blenheims shot down and the remaining four damaged (compared with actual British losses of two Blenheims lost and two damaged), for no losses.<sup>[23][24]</sup> According to Cattaneo, instead of focusing on air-to-air dogfighting, CR.32 pilots typically engaged in strafing ground targets, acting as light attack aircraft instead; he stated these activities to have been of "limited effectiveness" in the campaign.<sup>[25]</sup>

### East Africa

Possibly the greatest wartime successes to be achieved by CR.32s were accomplished in [Italian East Africa](#).<sup>[12]</sup> Here, 410<sup>a</sup> and 411<sup>a</sup> *Squadriglia* CR.32s (which represented half of all the fighters operational in the Italian colony) destroyed a number of British and South African aircraft.<sup>[12]</sup> In the hands of a skillful pilot, the CR.32 could be capable of defeating the faster, more powerful, and better-armed monoplanes, like the Hurricanes and the Blenheims. The Fiats received their baptism of fire on 17 June, when CR. 32s of 411<sup>a</sup> *Squadriglia* flown by *Tenente* Aldo Meoli and *Maresciallo* Bossi attacked three [South African Air Force Junkers Ju 86](#) bombers bound for Yavello, escorted by two Hurricanes of 1 SAAF Squadron. The Fiat CR.32s shot down one of the Ju 86s and then pounced on the Hurricanes, shooting down the one flown by 2/Lt B.L. Griffiths, who was killed in the crash.<sup>[26]</sup> On the 7th of July, three CR.32s, escorting as many [Caproni Ca.133s](#), intercepted three [Hawker Hartebeests](#), and shot down the plane flown by Lt N.K. Rankin, killing the pilot and his gunner, Air Sgt D.H. Hughes.<sup>[27]</sup> On 23 February 1941, while in the process of attacking the airfield at [Makale](#), Maj Laurie Wilmot, who was flying a Hurricane, was bounced by Italian ace Alberto Veronese in a Fiat biplane. Wilmot was forced to crash-land, becoming a [prisoner of war](#) (PoW). Soon after, Capt [Andrew Duncan](#) hit Veronese, who was wounded and bailed out.<sup>[28]</sup> The CR.32s obtained other kills, despite having to face an ever increasing number of more modern aircraft. The 410<sup>a</sup> *Squadriglia* alone managed to shoot down 14 enemy aircraft, before being disbanded. But the impossibility of obtaining replacements and spare parts from the motherland caused the gradual thinning of the rows of CR.32s. On 10 January 1941 there were still 22 CR.32s in service, on 31 January there were 14, on 10 February 11 and on 5 March just eight. The last CR.32 survived until mid-April 1941.<sup>[29]</sup>

### Mediterranean

Fourteen CR.32s of 160<sup>o</sup> *Gruppo* and nine of 2<sup>o</sup> *Gruppo* from 6<sup>o</sup> *Stormo* saw action against [Greece](#) in the first weeks after the attack of 28 October 1940. Eight more from 163<sup>a</sup> *Squadriglia*, based at Gadurrà airport on [Rhodes](#), took part in the invasion of [Crete](#). CR.32s of 3<sup>o</sup> *Gruppo* operated in [Sardinia](#), but in the period of July–December 1940 their number fell from 28 to seven serviceable aircraft. Cattaneo observed that ground crews lacked the fuel, ammunition, and spare components to properly maintain their aircraft, often resulting to improvisation due to the poor supply situation, which severely impacted the fighter's operational effectiveness.<sup>[25]</sup> The last front line CR.32 survived until mid-April 1941 when they were sent to the *Scuola Caccia* (Schools for fighter pilots). By 1942, the type was relegated to only night missions as newer fighters were put into service.

### International use

#### China

The first international operator of the CR.32 was [Chiang Kai-shek](#)'s for China, which ordered 16 (according to other sources 24) CR.32s of the first series in 1933. The aircraft mounted Vickers 7.7 mm machine guns instead of the Breda-SAFAT, electric [headlights](#), and the cooling fins on the oil tank in the nose were removed. Additionally, some were equipped with radios. They were based at [Nangahang airport](#), near [Shanghai](#).

Some officers of the Chinese high command disliked the Fiat, but Chinese pilots appreciated that the Italian biplanes in comparative tests proved superior to the American [Curtiss Hawk](#) and [Boeing P-26](#). The Chinese Government did not order more CR.32s as it was difficult to import alcohol and benzole to mix with petrol for the engines. In May 1936, only six CR.32s were still operational. In August 1937, the remaining CR.32s were used with some initial success in Shanghai against the invading Japanese.<sup>[16][8]</sup> By late 1937, when the Chinese capital at [Nanjing](#) fell, all CR.32s had been lost.<sup>[10]</sup>

### Austria

In spring 1936, 45 CR.32s were ordered by Austria to equip [Jagdgeschwader II](#) at [Wiener Neustadt](#). In March 1938, following the [Anschluss](#) with neighbouring [Nazi Germany](#), the Austrian units were absorbed into the [Luftwaffe](#),<sup>[30]</sup> and, after a brief period, the 36 remaining aircraft were handed over to Hungary.<sup>[31][8]</sup>

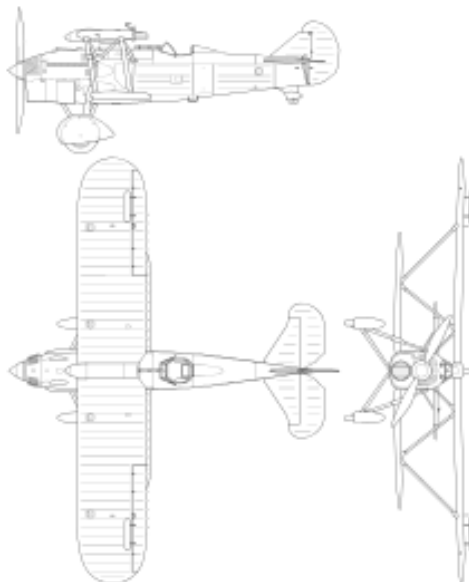
### Hungary

Members of the [Royal Hungarian Air Force](#) (MKHL) next to a CR.32, 1943. The [Magyar Királyi Honvéd Légierő](#), the Royal Hungarian Air Force (MKHL), acquired a total of 76 CR.32s during 1935 and 1936. MKHL Fiat biplanes had their baptism of fire in 1939, during the [short conflict](#) with the newly-formed state of [Slovakia](#). The CR.32s, which were emblazoned with the red/white/green chevrons insignia, easily gained air superiority over the fledgling Slovak Air Force, which lost a few [Avia B.534s](#) and [Letov S-328s](#) during this action.<sup>[31][8]</sup> During the short conflict against [Yugoslavia](#), fought in April 1941, the MKHL lost three CR.32s<sup>[32]</sup> and, on 6 May 1941, the Hungarian Air Force still had 69 Fiat CR.32s on line.<sup>[33]</sup> In June 1941, when the [Kingdom of Hungary](#) declared war on the [Soviet Union](#), the CR.32 fighter equipped two of the units that supported the Hungarian Army on the Eastern Front: 1./I Group of 1st Fighter Wing, based in [Szolnok](#), and 2./I Group, of 2nd Fighter Wing, based at [Nyíregyháza](#).<sup>[34]</sup> On 29 June, the first aerial combat over Hungary took place, when seven [Tupolev SB-2](#) bombers attacked the railway station at Csap and were intercepted by the Fiat CR.32s from 2/3 Fighter squadron. The Fiat biplanes shot down three of the raiders while incurring no loss to themselves.<sup>[35]</sup> Following the acquisition of newer fighters, including the Fiat CR.42 and [Reggiane Re.2000](#), the remaining Hungarian CR.32s were relegated being used for training missions only.<sup>[8]</sup>

### South America

In 1938, Venezuela acquired nine CR.32*quarters* (according to other sources, 10 aircraft.)<sup>[3]</sup> Modifications included a larger radiator to assist engine cooling in tropical climate conditions. The aircraft were delivered to [Maracay](#) in the second half of 1938 and equipped the 1° *Regimiento de Aviación Militar del Venezuela*. With five CR.32s still serviceable, the aircraft were struck off charge in 1943.<sup>[10][8]</sup> A small number, estimated at four,<sup>[3]</sup> went to Paraguay in 1938. Five CR.32*quarter* fighters (registered 1-1, 1-3, 1-5, 1-7 and 1-9) were assigned to 1.a *Escuadrilla de Caza* of the Fuerzas Aéreas del Ejército Nacional del Paraguay. They did not arrive in time for military operations against [Bolivia](#), but were in service for several years.<sup>[16][8]</sup>

### Specifications (CR.32)



3-view drawing of Fiat CR.32

## General characteristics

- **Crew:** 1
- **Length:** 7.47 m (24 ft 6 in)
- **Wingspan:** 9.5 m (31 ft 2 in)
- **Wing area:** 22.1 m<sup>2</sup> (238 sq ft)
- **Empty weight:** 1,455 kg (3,208 lb)
- **Gross weight:** 1,975 kg (4,354 lb)
- **Powerplant:** 1 × [Fiat A.30 R.A.bis](#) V-12 liquid-cooled piston engine, 447 kW (599 hp)

## Performance

- **Maximum speed:** 360 km/h (220 mph, 190 kn)
- **Range:** 781 km (485 mi, 422 nmi)
- **Service ceiling:** 8,800 m (28,900 ft)
- **Rate of climb:** 9 m/s (1,800 ft/min)

## Armament

- **Guns:** 2 × 7.7 mm (0.303 in) or 12.7 mm (0.500 in) [Breda-SAFAT machine guns](#)
- **Bombs:** Up to 100 kg (220 lb)



Source : [https://en.wikipedia.org/wiki/Fiat\\_CR.32](https://en.wikipedia.org/wiki/Fiat_CR.32)