

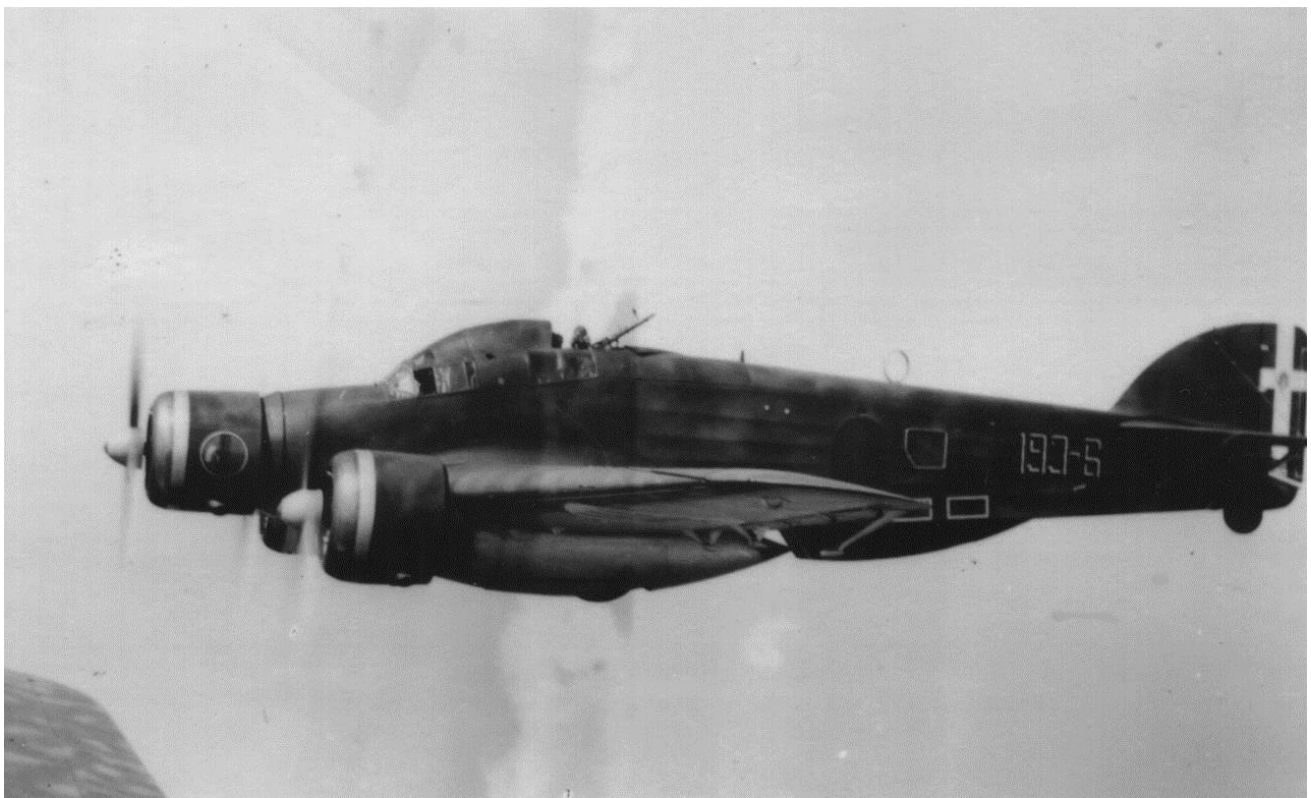
Savoia-Marchetti SM.79 Sparviero



[Caproni Trento F5 suspendu au-dessus d'un SM.79](#)

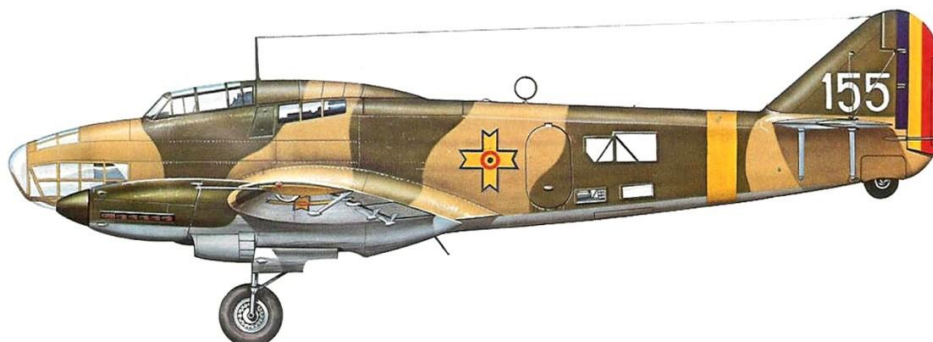
Après la Première Guerre Mondiale, à laquelle elle avait participé dans le camp allié, l'Italie chercha à devenir une grande puissance européenne. Pour cela, elle s'attacha à accroître sa puissance en mer Méditerranée et à constituer une puissance force militaire. Un des volets de sa politique fut le renforcement de ses forces aériennes, en s'appuyant sur les constructeurs italiens et le talent de leurs ingénieurs. En 1934, la firme Savoia-Marchetti avait produit un appareil de transport commercial, baptisé SM.73. A partir de ce modèle, elle extrapola un prototype également destiné au transport de passagers, mais pourvu de hautes performances. Le futur appareil devait notamment briller lors des grandes courses aériennes qui étaient organisées alors, des évènements très prisés par les autorités italiennes car mettant en lumière la technologie et les créations du peuple italien. Le désormais baptisé SM.79 effectua son premier vol au début du mois d'octobre 1934. Il révéla rapidement un immense potentiel. Les essais furent très prometteurs : en juin 1935, le prototype du SM.79 relia Milan à Rome en une heure et dix minutes, à la vitesse moyenne de 410 km/h. Après avoir battu plusieurs records de vitesse, l'avion fut engagé sur un vol particulier, entre Rome et Massoua (alors en Somalie italienne, actuel Erythrée), le 2 août 1935. Il relia les deux cités en un peu plus de douze heures, avec un unique ravitaillement au Caire. Ces vols publicitaires se poursuivirent par la suite (trois SM.79 civils s'adjugèrent ainsi les trois premières places lors d'une course reliant Istres à Paris, en passant par Damas, en 1937). Le processus d'essais n'ayant révélé aucun défaut ou vice notable, le gouvernement italien autorisa la mise en production du SM.79. La production démarra en octobre 1936, les premiers appareils de série entrant en service dans la foulée, juste au moment où débutait un grave conflit en Espagne. Le SM.79 fut officiellement baptisé SM.79 Sparviero (épervier).





[Savoia-Marchetti SM.79 Sparviero du Squadriglia Bombardamento Terrestre](#)

Le SM.79 ressemblait encore par bien des aspects à un appareil de transport aérien civil. Son fuselage était un assemblage de tubes d'acier, recouverts de plaques de métal et de contreplaqué. Sa voilure, implantée en position basse, était construite en bois, avec un intérieur mixte bois-contreplaqué. L'unique dérive arrière avait une forme très particulière, presque en "d", avec deux stabilisateurs horizontaux. Le cockpit situé à l'avant était surmonté d'une protubérance métallique, qui conduisit les équipages italiens à donner au SM.79 le surnom de Gobbo (bossu). Juste à l'arrière du cockpit, un poste de tir octroyant une bonne visibilité était aménagé. Le train d'atterrissage principal était entièrement rétractable grâce à un système hydraulique. La roulette de queue à l'arrière s'encastrait quant à elle partiellement dans un carénage, sous la dérive. Pour propulser leur bombardier, les ingénieurs de Savoia-Marchetti décidèrent d'implanter non pas deux, mais trois moteurs, comme ils devaient aussi le faire sur le SM.81 de bombardement et de transport. Ce choix était la conséquence d'un manque de moteurs puissants en Italie. Il devait aussi se révéler utile durant les opérations dans le désert ou en mer, où la perte d'un moteur ou deux aurait pu avoir des conséquences fatales pour un bimoteur. Deux de ses moteurs se situaient sous la voilure, le troisième étant installé devant le cockpit. La motorisation évolua au fur et à mesure : le prototype avait reçu des Piaggio P.IX RC.40, d'une puissance unitaire de 590 ch. Les SM.79-I furent quant à eux pourvus d'Alfa Romeo 125 RC.35 (ou des 126 RC.34 équivalents), de 780 ch chacun. Les versions destinées aux missions de torpillage et certains appareils vendus à l'exportation disposaient de Piaggio P.XI, de 1 000 ch. D'autres moteurs furent utilisés, notamment le Junkers Ju211DA allemand (1 200 ch) ou le Fiat A.80. De manière générale, les SM.79 avaient d'excellentes performances. Ils atteignaient les 430 km/h en vitesse de pointe, ce qui les mettait virtuellement à l'abri de nombre de chasseurs de l'époque. Leur vitesse ascensionnelle était bonne, et leur endurance élevée. A vide, elle atteignait presque les 2 000 kilomètres. En configuration de combat, elle suffisait amplement pour la Méditerranée.





[Savoia-Marchetti SM.79 Sparviero de la Regia Aeronautica en vol](#)

Très maniable pour sa taille, le Sparviero avait une structure très robuste. Certaines parties du fuselage (notamment le cockpit) étaient blindées. Le moteur placé à l'avant offrait paradoxalement une protection supplémentaire au pilote. Les équipages apprécèrent également la flottabilité relative du SM.79, grâce à sa voilure en bois, qui leur permettait souvent d'évacuer leur appareil en cas d'amerrissage. L'armement embarqué était respectable. La protubérance au-dessus du cockpit abritait deux mitrailleuses Breda-SAFAT de calibre 12,7 mm, l'une pointée vers l'avant, l'autre vers l'arrière. Une troisième mitrailleuse du même type était montée dans une gondole ventrale. Une quatrième mitrailleuse (pouvant être complétée par une cinquième), de calibre 7,62 mm, assurait la défense des flancs du fuselage. Une soute à bombes pouvait emporter deux bombes de 500 kg, cinq bombes de 250 kg ou des bombes plus petites (100, 50 kg ou moins). A partir de 1936, des essais furent menés pour transformer le Sparviero en bombardier torpilleur. On l'arma d'une torpille de 450 mm fixée à un pylône décentré placé sous le fuselage. En 1938, des essais menés avec deux torpilles Whitehead (d'environ 900 kg, d'une portée théorique d'environ 3 000 mètres, lâchée le plus souvent à 1 000 mètres, à une vitesse maximale de 300 km/h, et à une altitude comprise entre 40 et 120 m) aboutirent à l'adoption du S.M 79-II comme bombardier torpilleur standard. La Guerre d'Espagne constitua le début de la carrière militaire du SM.79. Le second prototype fut hâtivement modifié et engagé avec plusieurs autres appareils au sein d'un Stormo de bombardement tactique, en appui des forces nationalistes. Une centaine de SM.79 participèrent au conflit, avec des pertes minimales. Le retour d'expérience sera précieux et permettra le développement du SM.79-II. En juin 1940, à l'entrée en guerre de l'Italie, quatorze Stormi (environ 400 appareils opérationnels) étaient équipés du S.M 79, basés en Sicile, Sardaigne et Libye. Ils furent très vite engagés dans des missions d'attaque anti-navire : ainsi, les 13 et 14 juin 1940, 19 S.M 79 des 9^e et 46^e Stormi attaquent les bâtiments français au large des côtes méditerranéennes. Les premières attaques à la torpille furent menées à partir d'août 1940.





[Savoia-Marchetti SM.79 Sparviero libanais](#)

Les marins britanniques apprirent vite à se méfier comme de la peste des SM.79 évoluant au ras des eaux. Les pilotes italiens acquirent une réelle compétence dans les attaques à la torpille contre les navires alliés, aussi bien de commerce que de guerre. Lors de l'attaque de la Grèce, les Sparviero du 92^e Gruppo et de la 281^e Squadriglia attaquèrent les navires alliés en Mer Egée. Puis, la plupart des appareils furent envoyés en Libye, pour harceler les convois et les forces navales britanniques, ainsi que la base navale de Malte. Dans ce rôle, les Sparviero se montreront redoutables et redoutés, glanant de nombreux succès. Ils coulèrent notamment les destroyers britanniques Husky, Jaguar, Legion et Southwall. Le cuirassé Malaya, les porte-avions Indomitable et Victorious furent avariés par des torpilles tirés par des S.M 79. Les Sparviero prirent enfin une large part des assauts lancés contre le convoi Pedestal. Progressivement, les pertes en SM.79 augmentèrent. L'arrivée croissante de chasseurs alliés plus performants, l'installation de radars sur les navires alliés et le renforcement de la DCA embarquée réduisirent le nombre d'appareils disponibles. Ainsi, les SM.79 ne purent jouer un rôle offensif durant les opérations en Sicile, en 1943. De plus, l'industrie italienne s'avéra incapable de supporter les effets des bombardements alliés, de compenser les pertes et de produire de nouveaux modèles. Le SM.79 devait ainsi rester en service jusqu'à la fin du conflit, faute de remplaçant valable. Au moment de la capitulation italienne en septembre 1943, la soixantaine d'appareils survivants furent partagés entre les Alliés et l'Axe. La Luftwaffe en récupéra quelques-uns qu'elle mit en ligne dans des missions de transport, tandis que la République sociale italienne de Mussolini les engagea dans leurs missions d'origine. Un raid particulièrement audacieux contre Gibraltar, mené depuis Istres en juin 1944, fut couronné de succès et entraîna la perte de plusieurs navires alliés. Cependant, beaucoup d'autres furent repoussés par la chasse alliée, à Anzio ou au large de la Sicile. Les derniers exemplaires disponibles servirent après la guerre d'appareils de transport puis de remorqueurs de cibles. D'octobre 1936 à juin 1943, environ 1 350 appareils auraient été produits. Le SM.79 connut aussi une carrière à l'exportation. 45 exemplaires, des SM.79-I désignés SM.79K, furent livrés à la Yougoslavie, en 1939. L'Irak fit l'acquisition de 4 SM.79B, tandis que le Brésil en achetait 3. La Roumanie obtint une licence de production et fabriqua ses propres SM.79 (JRS 79B et JRS 79B1). La Croatie et l'Espagne utilisèrent des appareils saisis en Yougoslavie, ou tombés en panne d'essence sur leur sol.

Source : <https://aviationsmilitaires.net/v3/kb/aircraft/show/2708/savoia-marchetti-sm79-sparviero>

The **Savoia-Marchetti SM.79 Sparviero** (Italian for [sparrowhawk](#)) was a [three-engined](#) Italian [medium bomber](#) developed and manufactured by aviation company [Savoia-Marchetti](#). It may be the best-known Italian aeroplane of the [Second World War](#).^[2] The SM.79 was easily recognizable due to its [fuselage](#)'s distinctive dorsal "hump", and was reportedly well liked by its crews, who nicknamed it *il gobbo maledetto* ("damned hunchback").^[3] The SM.79 was originally developed in the early 1930s as a [cantilever](#) low-wing monoplane of combined wood and metal construction. It had been designed with the intention of producing a swift eight-passenger transport aircraft, capable of besting even the fastest of its contemporaries, but had quickly attracted the attention of the Italian government with its potential as a combat aircraft. Performing its first flight on 28 September 1934, early examples of the type established 26 separate world records between 1937 and 1939, qualifying it for some time as the fastest [medium bomber](#) in the world.^[4] As such, the SM.79 quickly came to be regarded as an item of national [prestige](#) in [Fascist Italy](#), attracting significant government support and often being deployed as an element of state [propaganda](#). Early on, the aircraft was routinely entered in competitive fly-offs and air races, seeking to capitalise on its advantages, and often emerged victorious in such contests. The SM.79 first saw combat during the [Spanish Civil War](#). In this theatre it normally operated without fighter escort, relying on its relatively high speed to evade interception. While some issues were identified, and in some cases resolved, the SM.79's performance during the Spanish deployment was encouraging and stimulated demand for the type, including a decision to adopt it as the backbone of Italy's bomber units. Both [Yugoslavia](#) and [Romania](#) opted to procure the type for their own air services, while large numbers were also procured for the [Regia Aeronautica](#). Almost 600 SM.79-I and -II aircraft were in service when Italy entered the [Second World War](#) in May 1940; thereafter, they were deployed in every theatre of war in which the Italians fought. The SM.79 was operated in various capacities during the Second World War, initially being used mainly as a transport aircraft and medium bomber.^[2] Following pioneering work by the "Special Aerotorpedoes Unit", Italy put the type to work as a [torpedo bomber](#); in this role, the SM.79 achieved notable successes against Allied shipping in the [Mediterranean theatre of the war](#).^[5] A specialised [drone](#) version of the aircraft flown by remote control was also developed, although the [Armistice with Italy](#) was enacted prior to any operational deployment. It was the most numerous Italian bomber of the Second World War, with about 1,300 built. The type would remain in Italian service until 1952.^[6]

Development



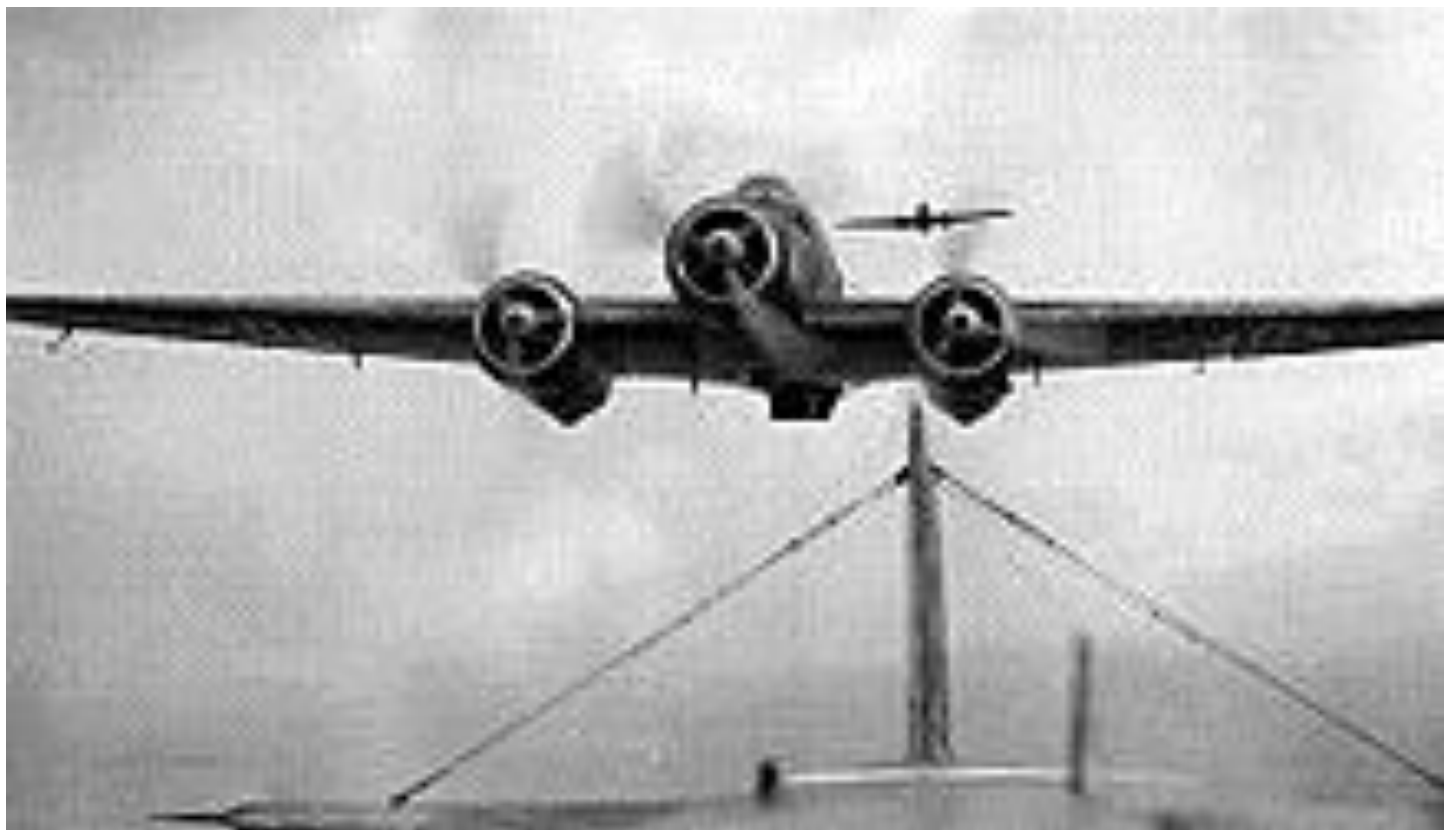
Savoia-Marchetti SM.81

In 1934, Italian aircraft manufacturer [Savoia-Marchetti](#) commenced work on what would become the SM.79. The design team was headed by [aeronautical engineer](#) Alessandro Marchetti.^[7] It had originally been conceived as a fast monoplane transport aircraft, capable of accommodating up to eight passengers and of being used in air racing (such as the [London-Melbourne race](#)).

The design, which was initially designated as the *SM.79P* (*P* stood for passenger), was once intended to be a civil derivative of the [Savoia-Marchetti SM.81](#), a militarised transport/bomber aircraft that was itself based upon the [Savoia-Marchetti S.73](#) airliner.^[7] The company quickly set about the construction of a single prototype of its design, being keen to participate in the high-profile London-Melbourne race if possible. According to aviation author Giorgio Apostolo, the SM.79 had adopted a three-engine configuration (two in mid-wing positions and the third mounted upon the nose) due to commercial safety concerns rather than for speed.^[8] Originally, there had been plans to adopt the 597 kW (801 hp) [Isotta-Fraschini Asso XI Ri](#) as the aircraft's powerplant; however, it was decided to revert to the less powerful 440 kW (590 hp) [Piaggio Stella P.IX R.C.40](#), a derivative of the license-produced model of the British [Bristol Jupiter](#), on which many of Piaggio's engines were based.^[9] On 28 September 1934, the prototype SM.79 conducted its [maiden flight](#), piloted by Adriano Bacula. Despite the company's ambitions to participate, the prototype (registration *I-MAGO*) had been completed too late for it to be entered in the London-Melbourne race.^[7] It featured very sleek contours and continuous [panoramic](#) windows, true to its original intended role as a passenger aircraft. Despite its delay, the prototype was able to quickly demonstrate its speed, conducting a flight from Milan to Rome in just one hour and 10 minutes, flying at an average speed of 410 km/h (250 mph).^[7] On 20 July 1935, it was awarded its [Certificate of Airworthiness](#). Soon after, on 2 August 1935, the prototype established a new speed record by flying from Rome to [Massaua](#), in [Italian Eritrea](#), in 12 flying hours (with a refuelling stop at [Cairo, Egypt](#)).^[10] Various other world records were established during multiple test flights performed by the prototype.^[7] It was determined early on that it was the engines, rather than the airframe itself, that proved to be its limiting factor; accordingly, the prototype was re-engined multiple times. During 1935, the P.IX engines that had been originally installed were replaced by [Alfa Romeo 125 RC.35s](#) (this was a license-produced version of the [Bristol Pegasus](#) engine); during 1936, these were replaced by [Alfa Romeo 126 RC.34s](#).^{[7][9]} The high performance demonstrated by the prototype attracted the attention of the Italian military, which approached Savoia-Marchetti with a request to investigate the prospects for producing a bomber-conversion of the type.^[7] An evaluation of the SM.79 from a military perspective was conducted.^[7] Amongst the determinations made was that the installation of either two or three defensive [machine guns](#) would produce a highly effective defense against contemporary fighter aircraft. In response to the military interest, the company decided to construct a militarised second prototype.^[7] While it did not differ in structure from the first civil-orientated prototype, it featured a faired ventral nacelle for a bomb-aimer, a forward-firing machine gun above the pilot's cabin, along with another machine gun located on the underside of the tail. Furthermore, a third machinegun could be installed at an open position aft of the dorsal fairing to provide for further rear defense.^[11] During October 1936, production of the SM.79 formally commenced. Initially, focus was given to producing civil aircraft while military variants continued to be developed; as such, there were a pair of principal commercial variants produced as well, these being the speed-focused *SM.79C* (*C* standing for race) and the long-range *SM.79T* (*T* for [Transatlantic](#)).^[12] Aircraft amongst these variants participated in various early record-setting attempts during 1937 and 1938.^[13] In light of opinions amongst prospective export customers of the desirability of a nose-mounted gun position (impossible due to the nose-mounted third engine), Savoia-Marchetti commenced work on the design of a two-engined model of the type, known as the *SM.79B*. This model, which featured a redesigned nose section that incorporated the bomb-aimer's position and an elevated position for the pilot, along with a single movable machine gun, performed its first flight during 1936.^[14] In addition to the manufacturing activity performed by Savoia-Marchetti, in order to meet demand for the type, an Italian subcontractor in the form of [Aeronautica Umbra](#), based in [Foligno](#), also produced the type. Manufacturing of the type continued until June 1943, during which a total of 1,217 aircraft were completed, many of which were completed to bomber, torpedo-bomber, and transport configurations.^[15] Aviation author Bill Gunston described the SM.79 as being by far the most important Italian offensive warplane of the Second World War, and one of the very few Italian aircraft to be produced in substantial quantities.^[16]

Design

Overview



A head-on view of a SM.79

The SM.79 was a cantilever low-wing monoplaner trimotor, with a retractable [taildragger undercarriage](#).^[17] The fuselage used a welded tubular steel frame structure, which was covered with [duralumin](#) on the forward section, a mixture of duralumin and [plywood](#) across the upper fuselage surface, and [fabric](#) for all of the other exterior surfaces.^{[6][18]} The wings were of all-wood construction, with [trailing edge flaps](#) and [leading edge slats](#) ([Handley Page](#) style) to offset their relatively small size. The internal structure was made of three [spruce](#) and plywood spars, linked with plywood ribs, with a skin of plywood.^{[19][18]} The wing had a [dihedral](#) of 2° 15'. The [ailerons](#) were capable of rotating through +13/-26°, and were used together with the flaps in low-speed flight and in takeoff. The aircraft's capabilities were significantly greater than its predecessor, the [SM.75](#), with over 1,715 kW (2,300 hp) available and a high [wing loading](#) that gave it characteristics not dissimilar to a large [fighter](#). The engines fitted to the main bomber version were three 582 kW (780 hp) [Alfa Romeo 126 RC.34](#) radials, equipped with [variable-pitch](#), all-metal three-bladed propellers.^[12] Speeds attained were around 430 km/h (270 mph) at 4,250 m (13,940 ft), with a relatively low practical ceiling of 6,500 m (21,300 ft). Cruise speed was 373 km/h (232 mph) at 5,000 m (16,000 ft), but the best cruise speed was 259 km/h (161 mph) (60% power). The landing was characterized by a 200 km/h (120 mph) final approach with the slats extended, slowing to 145 km/h (90 mph) with extension of flaps, and finally the run over the field with only 200 m (660 ft) needed to land (2,050 rpm, 644 Hg pressure). The SM.79 was typically operated by a crew of five (or a crew of six upon the bomber version). The cockpit was designed for the accommodation of two pilots seated in a side-by-side configuration. Instrumentation in the central panel included oil and fuel gauges, [altimeters](#) for low (1,000 m, 3,300 ft) and high altitude (8,000 m, 26,000 ft), clock, [airspeed](#) and [vertical speed indicator](#), [gyroscope](#), [compass](#), [artificial horizon](#), [turn and bank indicator](#), [rev counters](#) and throttles.^[20]

Performance



Close-up view of the SM.79's nose-mounted center engine

The SM.79's performance was considered fairly strong.^[21] Its rate of climb was fairly high, it was fairly fast for its time, and was both rugged and responsive enough to allow it to be looped (with care). Its wooden structure was light enough to allow it to stay afloat for up to half an hour in case of [water landing](#), giving the crew ample time to escape, and the front engine offered some protection from [anti aircraft](#) fire. With full power available and flaps set for takeoff, the SM.79 could be airborne within 300 m (980 ft) before quickly climbing to an altitude of 1,000 m (3,300 ft) within the space of 3 minutes, 2,000 m (6,600 ft) in 6 minutes 30 seconds, 3,000 m (9,800 ft) in 9 minutes 34 seconds, 4,000 m (13,000 ft) in 13 minutes 2 seconds, and 5,000 m (16,000 ft) in 17 minutes 43 seconds.^[22] The bomber version had 10 separate [fuel tanks](#) that had a maximum combined capacity of 3,460 L (910 US gal).^[18] Endurance when flown at full load was reportedly around 4 hours 30 minutes at an average speed of 360 km/h (220 mph). The maximum ferry range, when flown at its optimal cruise speed, was unconfirmed; in order to reach [Addis Ababa](#) with non-stop flights from [Libya](#), SM.79s were frequently modified in order to carry more fuel, and were able to fly over 2,000 km (1,200 mi). The range (not endurance) with 1,000 kg (2,200 lb) payload was around 800–900 km (500–560 mi).^[22] The effective torpedo bombing range was stated to be between 500 and 1,000 m (1,600 and 3,300 ft) from the target. During combat operations, SM.79s would often fly at low level above hostile vessels prior to launching the [aerial torpedo](#); as such, they were frequently targeted by every weapon available, from infantry small arms to heavy artillery, in a last ditch effort to prevent the torpedoes from being deployed. The *Sparviero* had several advantages compared to British torpedo bombers, including a higher top speed and greater range.

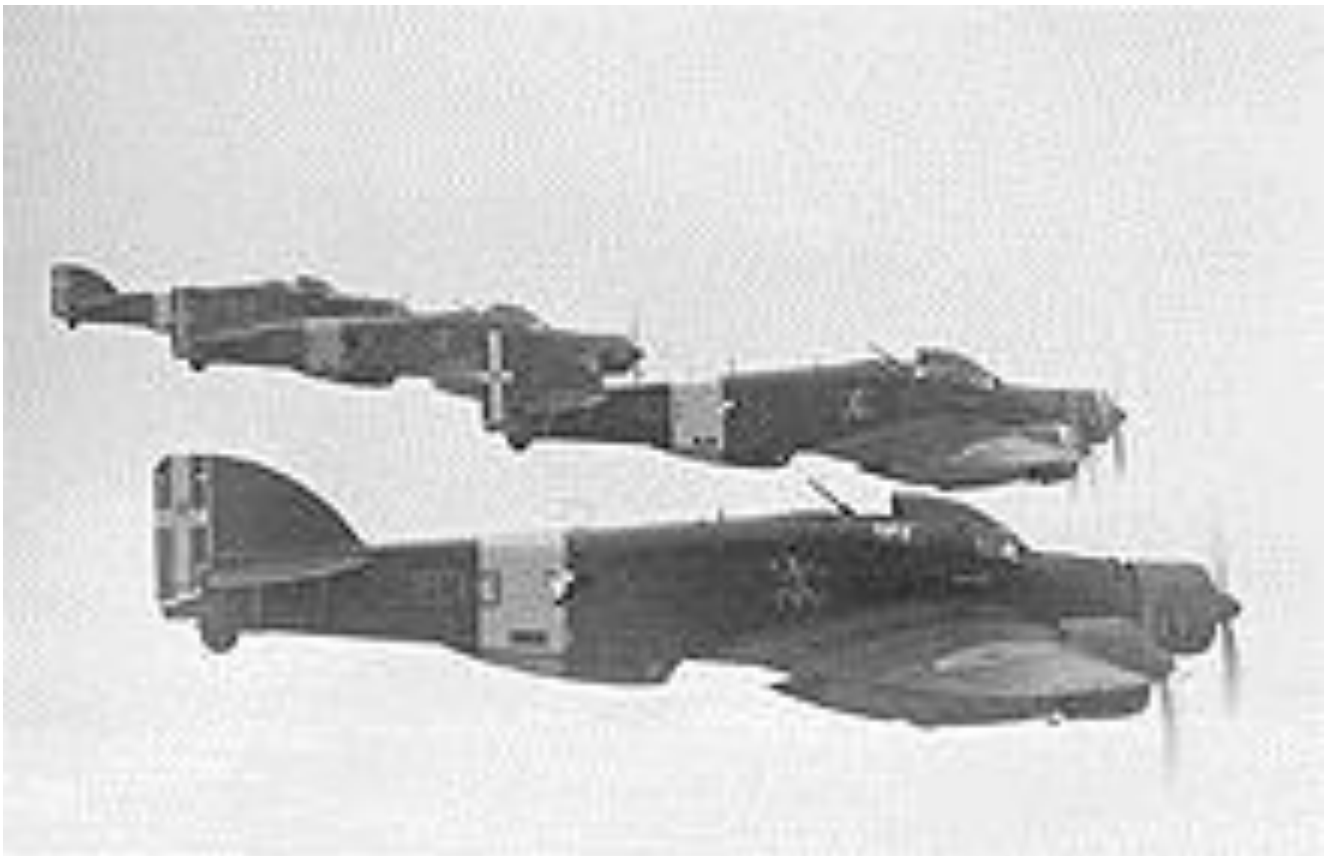
Soon however, the *Sparviero* faced the [Hawker Hurricane](#) and the naval [Fairey Fulmar](#), which was faster but still quite slow in relation to other escort fighters. [Bristol Beaufighters](#) were fast and well-armed, and as well as being effective long-range day fighters, were successful night interceptors and late in the war often chased *Sparviero*s in night missions. [Curtiss P-40s](#), [Lockheed P-38 Lightnings](#), [Grumman Martlets](#) and [Supermarine Spitfires](#) serving in the Mediterranean hindered *Sparviero* operations during the day.

Armament



Internal view from nose gun of twin engine version

The defensive armament of the SM.79 initially consisted of four, later increased to five, [Breda-SAFAT machine guns](#).^[18] Three of these were 12.7 mm (0.5 in) guns, two of which were positioned in the dorsal "hump", with the forward one (with 300 rounds) fixed at an elevation of 15°, and the other manoeuvrable with 60° pivotal movement in the horizontal, and 0–70° in the vertical plane. The third 12.7 mm (0.5 in) machine gun was located ventrally. Each gun except for the forward one was equipped with 500 rounds. There was also a 7.7 mm (0.303 in) [Lewis Gun](#) in one of a pair of "waist" mounts, on a mount that allowed rapid change of side of the weapon.^[18] This Lewis gun was later replaced by two 7.7 mm (0.303 in) Bredas in the waist mounts, which were more reliable and faster firing (900 rounds/min instead of 500), even though there was only sufficient room in the fuselage for one man to operate them. Despite the low overall "hitting power", it was heavily armed by 1930s standards, the armament being more than a match for the fighter aircraft of the time, which were not usually fitted with any armour. By the Second World War, however, the *Sparviero*'s vulnerability to newer fighters was significant, and it lost the reputation for near-invulnerability that it had gained over Spain. No [turrets](#) were ever installed upon any SM.79s, which imposed considerable limitations upon its fields of defensive fire. Of all its defensive weapons, the dorsal one was often considered to be the most important as, following the shift to low-level attacks, the *Sparviero* was attacked almost exclusively from the rear and above. The defensive weapons located in the rear gondola and the rear hump were protected by aerodynamic shields, which were intended to only be opened in the event of attackers appearing. However, in practice, an enemy aircraft could attack the *Sparviero* while remaining unseen, so the defensive positions were usually left open even though this had the effect of reducing the aircraft's maximum effective speed. The cramped layout of the ventral [gondola](#), with the bomb-aiming instruments located in front and the rearwards-aimed ventral defensive machine gun in the rear, made it impossible to perform both bomb-aiming and rear defence simultaneously, so its usefulness was compromised. Because of this, in the later versions which were used exclusively for torpedo-bombing tasks, the ventral weapon and nacelle were removed. The fixed forward Breda machine gun, more suited to offensive tasks and aimed by the pilot, was seldom used defensively, and was often removed or replaced with a smaller calibre gun or mock-up, with an associated gain in speed and range due to the reduction in weight. The rear ventral gondola on the *Sparviero* was somewhat similar to the almost identically located *Bola* emplacement on the main wartime production -P and -H subtypes of the [Heinkel He 111](#) German medium bomber, which was only used as a ventral defensive armament mount on the German aircraft.



A flight of four SM.79s showing their rear-cockpit mounted machine guns

As with the Luftwaffe's He 111, the *Sparviero's* bomb bay was configured to carry bombs vertically; this design decision had the consequence of preventing large bombs from being accommodated internally. The aircraft could accommodate a pair of 500 kg (1,100 lb), five 250 kg (550 lb), 12 100 or 50 kg (220 or 110 lb) bombs, or hundreds of [bomblets](#).^{[23][18]} The [bombardier](#), who had an 85° forward field of view from their position, was normally provided with a "Jozza-2" aiming system, automatic [cameras](#) and a series of bomb-release mechanisms. The machine gun to the rear of the gondola prevented the bombardier from lying in a prone position, and as a result, the bombardier was provided with retractable structures to support his legs while seated.^[18] From 1939 onwards, two torpedoes could be carried externally, as could larger bombs, on two hardpoints fitted under the inner wing.^[24] However, in practice, owing to the reduced performance and manoeuvrability of the aircraft when carrying two torpedoes, usually only one was carried.^[22] The SM.79's overall payload of 3,800 kg (8,400 lb) precluded carrying 1,600–1,860 kg (3,530–4,100 lb) of bombs without a noticeable reduction of the fuel load (approximately 2,400 kg (5,300 lb), when full).^[22] The standard torpedo, a 1938 [Whitehead](#) design, had a weight of 876 kg (1,931 lb), length of 5.46 m (17 ft 11 in) and a 170 kg (370 lb) HE warhead. It had a 3 km (1.9 mi) range at 74 km/h (40 kn), and could be launched from a wide range of speeds and altitudes: 40–120 m (130–390 ft) and up to 300 km/h (190 mph) maximum.^[25] It took over ten years to develop effective torpedo-bombing techniques; consequently, with the failure of the [SM.84](#) (its intended successor) and the lack of power of the [Ca.314](#), only the SM.79 continued to serve as a torpedo bomber until 1944, despite trials conducted with many other types of aircraft, including the [Fiat G.55S](#) fighter.

Operational history

Record-setting aircraft

Although Italy did not win the prestigious [Schneider Trophy](#), state support for aeronautical feats was maintained as one element of [Italian Prime Minister Benito Mussolini's](#) long term [propaganda](#) campaign to promote and win prestige for [fascist Italy](#) and his government. Following a pair of initial successes, further *Sparvieros* received specialised modifications for the purpose of establishing new speed records. The SM.79 prototype *I-MAGO* was modified to carry a payload of 6,100 kg (13,400 lb) of bombs internally, which enabled it to attempt speed records while carrying a payload. On 23 September 1935, it flew for 2,000 km (1,200 mi) with a 2,000 kg (4,400 lb) load at an average speed of 389.61 km/h (242.09 mph), breaking six separate world records in the process.^{[9][26]} As on the prototype, the "hump" was not fitted to some of the first production aircraft, these being transformed into performance aircraft, designated as the *SM.79CS*. One of these aircraft established further records during 1937; powered by an arrangement of three Piaggio P.XI RC.40 engines (providing a combined thrust of 2,237 kW (3,000 hp)), it averaged 423.618 km/h (263.224 mph) over 1,000 km (620 mi) with a 2,000 kg (4,400 lb) payload. This record then improved to 444.115 km/h (275.960 mph), while another SM.79 achieved 428.296 km/h (266.131 mph) in the 2,000 km (1,200 mi)/ 2,000 kg (4,400 lb) category. Unofficially, a speed of 472 km/h (293 mph) was later achieved in the same category. A group of five SM.79CSs went on to enter the Paris-[Damascus–Istres](#) race. *I-CUPA*, *I-FILU* and *I-BIMU* took the first three positions, while the other two were placed sixth and seventh, the latter of which was heavily damaged in Damascus. A pair of [Fiat BR.20s](#) had also competed in the same race, but were only able to achieve a joint sixth place (with a SM.79) and an eighth place. Three of the SM.79CSs were modified to increase their endurance, allowing them to traverse the [Atlantic Ocean](#) and reach Brazil. On 24 January 1938, the three aircraft took off; 11 hours later, they landed in [Dakar, Senegal](#), where they refuelled before heading for [Rio de Janeiro, Brazil](#); on 25 January, two of the three arrived at 22:45 local time. However, one of the aircraft suffered a technical fault, forcing the crew to land at [Natal, Northeastern Brazil](#); this SM.79 remained there for some time, and was eventually donated to the [Brazilian Air Force](#).^[27]

Regia Aeronautica

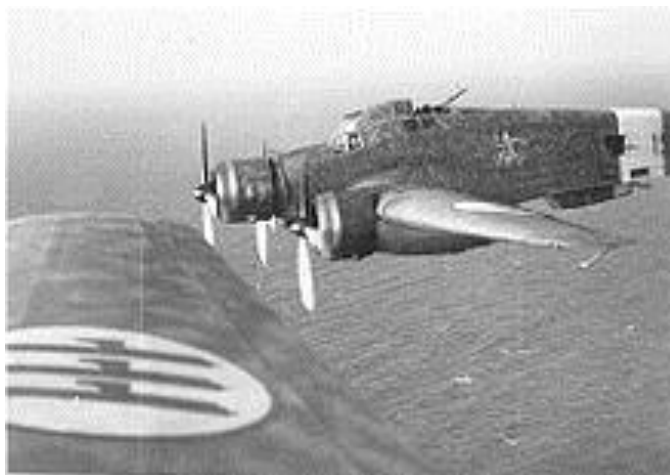
Introduction



Lines of parked SM.79s

The 12° *Stormo* (Wing) was the first to be equipped with the SM.79, starting in early 1936, and was involved in the initial evaluation of the bomber, which continued throughout 1936. The Wing went operational on 1 May 1936 with the SM.79 successfully completing torpedo launches from a target distance of 5 km (3.1 mi) in August 1936. The torpedo bomber variant was much more unstable and harder to control than the civilian version (and much less precise than its successor, the [SM.81](#)). Its capabilities were still being explored when the Spanish Civil War broke out, and a number of SM.79s were dispatched to support the [Nationalists](#).^[28] Following its service in the Spanish Civil War, the *Sparviero* came into use with 111° and 8° Wing. By the end of 1939, there were 388 *Sparvieros* in Italian service, spread across 11 wings that were either partially or totally equipped with this aircraft. The type also participated in the Italian [occupation of Albania](#) during autumn 1939.^[29] By the beginning of the Second World War, a total of 612 aircraft had been delivered, making the *Sparviero* the most numerous bomber in the whole of the *Regia Aeronautica*, assigned to a total of 14 wings (8, 9, 10, 11, 12, 14, 15, 30, 32, 33, 34, 36, 41 and 46).^[29] Not all of these wings had *Gruppi* (groups) entirely equipped with the SM.79. Every squadron had around nine to 10 aircraft, but this included second line aircraft, so the force of each squadron consisted on average of around seven to eight bombers, and every wing had around 30 bombers. Among these units; 8, 9, 11, 12, 30, 32, 36, 41 and 46 *Stormi* (Wings) were based in Italy, and participated in the [Battle of France](#). They were equipped with a total of around 350 SM.79s, including those used in training squadrons.^[30]

Spanish Civil War



SM.79 in flight

The SM.79 saw action for the first time when serving with the [Aviazione Legionaria](#), an Italian unit sent to assist [Franco](#)'s Nationalist forces during the [Spanish Civil War](#). The *Sparviero* started its operational service at the end of 1936 when 8° Stormo B.T. (Bombardamento Tattico), with *Gruppi XXVII°* and *XXVIII°*, under the command of *Tenente Colonnello* Riccardo Seidl, was sent to Spain. Deployed to the [Balearic Islands](#), the unit was named "Falchi delle Baleari" (Balearic Falcons) and operated over [Catalonia](#) and the main cities of eastern Spain, attacking the [Second Spanish Republic](#), killing 2,700 civilians and injuring more than 7,000.^[31] During the three years of the civil conflict, in excess of 100 SM.79s served as bombers for the *Aviazione Legionaria*, of these, only four were recorded as being lost in combat.^[5] Due to the experience gained in Spain the SM.79-II, introduced during October 1939, went on to form the backbone of the Italian bomber corps during the Second World War. By 4 November 1936, there were only six SM.79s with enough crew to fly them operating in Spain. At the beginning of 1937, there were 15 SM.79s in total, and they went on to be used in Spain throughout the conflict, experiencing few losses throughout. Around 19 SM.79s of what was dispatched to the Spanish theatre were lost, while deliveries to 12 Wing and other units involved in combat numbered at least 99 aircraft. The first recorded interception of an SM.79 formation took place on 11 October 1937 when three aircraft were attacked by a formation of 12 [Polikarpov I-16s](#). One of the SM.79s was damaged, but its defensive armament prevented the fighters from performing close-up attacks. All of the bombers successfully returned to base, although one had been hit by 27 bullets, many of which having struck fuel tanks. Several other interceptions occurred during the conflict without any SM.79s being lost as a result.^{[32][28]} On 26 April 1937, three SM.79 took part in the bombing of Basque town of [Guernica](#), carried out with the Nazi German Luftwaffe's [Condor Legion](#), at the behest of Francisco Franco's rebel Nationalist faction. The bombing, under the code name '[Operation Rügen](#)', opened the way to Franco's capture of [Bilbao](#) and his victory in northern Spain. Combat experience gained during the war had revealed some deficiencies present in the SM.79: the lack of [oxygen masks](#) for high altitude operation, relatively high levels of instability, vibrations experienced at speeds over 400 km/h (250 mph) and other problems were encountered and sometimes solved. [General Valle](#), in an attempt to answer some of the criticisms about the ability of the aircraft to operate at night, took off from [Guidonia](#) and bombed [Barcelona](#), a journey of six hours and 15 minutes. On this occasion, the aircraft proved it had a useful range (around 1,000 km; 620 mi with eight 100 kg (220 lb) bombs, for a total gross weight of around 1,000 kg (2,200 lb). SM.79s initially operated from the [Balearic Islands](#) and later from mainland Spain. Hundreds of missions were performed in a wide range of roles against Republican targets. No [Fiat CR.32s](#) were required to escort the SM.79s, partly because the biplane fighters were too slow to keep up with the type.^[33]

Malta



SM.79 attacking a convoy heading for Malta.

The SM.79 began to lose its reputation for invulnerability when RAF [Gloster Gladiators](#) and [Hawker Hurricanes](#) were encountered over the fortress-island Malta, at the centre of the Mediterranean, in June 1940.^[20] The first of many *Sparvieros* shot down over Malta fell on 22 June. That day, *Sparviero* M.M.22068 of 216^a *Squadriglia*, piloted by *Tenente* Francesco Solimene, took off at 18.15 to reconnoitre intended bombing targets on the island. Two Gladiators were scrambled, one piloted by Flt Lt George Burges. Over [Sliema](#) and [Valletta](#) Burges attacked the *Sparviero* from superior height, shooting off the port engine. The SM.79 caught fire and crashed in the sea off [Kalafrana](#). The pilot, Solimene, and 1^o *Aviere Armiere* Torrisi were rescued from the sea, but the other four crew members were lost.^[34] A *Sparviero* had the dubious honour of being the first aircraft to fall on Maltese soil during the Second World War: on 10 July 1940, an estimated twenty SM.79s without escort arrived to bomb the dockyard, [Manoel Island](#), [Tarxien](#) and [Zabbar](#). They were attacked by British Gladiators; during the ensuing engagement, one bomber, piloted by *Sottotenente* Felice Filippi from 195^a *Squadriglia*, 90^o *Gruppo*, 30^o *Stormo Bombardamento Terrestre*, came down in flames just behind the Knight's watchtower east of [Fort San Leonardo](#). The air victory was credited to Flying Officer Frederick Taylor. At least one Italian bailed out, but his parachute was on fire and he did not survive.^[35]

Other theaters

A small number of SM.79s saw service in [Ethiopia](#); according to Apostolo, it was the most advanced aircraft to be deployed to the theatre by either side.^[36] On the western side of Italian East Africa, at [Diredawa](#), 6a and 7a *Squadriglie* of 44^o *Gruppo* operated twelve SM.79s each. Italy also had six SM.79s as part of the reserve forces but two of them were under repair.^[37] The *Sparviero* was the only type present that had not participated in the [Second Italo-Abyssinian War](#). The SM.79s of Italian East Africa first saw action on 13 June 1940, when nine of them took off from Diredawa to attack [Aden](#). The SM.79 flown by *Sottotenente* Ruffini was hit by anti-aircraft fire from a British warship and crashed. Two Gloster Gladiators then intercepted the remaining bombers; Pilot Officer Stephenson's Gladiator attacked the *Sparviero* of *Capitano* Serafini, which had been damaged by anti-aircraft fire, but the Gladiator was hit by the SM.79's dorsal gunner, forcing it to crash-land. Serafini managed to land at [Assab](#), but his aircraft was a write-off; another Savoia Marchetti was damaged, but landed at the same base.^[38] These few aircraft were later reinforced by others which were modified to fly at an economical speed over Sudan for the hazardous ferry flight of over 2,000 km (1,200 mi). They could not, however, do much to help Italian forces in Ethiopia, which were forced to surrender in spring 1941. The same period saw the five Iraqi SM.79Bs and the 45 SM.79Ks in Yugoslavian service unable to mount a successful defence in either Iraq or Yugoslavia.



A crashed SM.79 in North Africa

During the [North African campaign](#), around 100 SM.79s served in 10, 14, 15 and 30 Wings, bombing mainly non-strategic targets in the desert. The British offensive in December hit the *Regia Aeronautica* hard and many wings (a total of nine by May 1941) were phased out because of losses caused by enemy aircraft and ground fire.^[36] One aircraft was destroyed on the ground by R patrol of the [Long Range Desert Group](#) at the western landing ground at [Jebel Uweinat](#) in November 1940^[39] (the remains were still there in 2003^[40]). At the beginning of 1941 only around 40 SM.79s were still present in Libya, and by the end of 1941 only one operational squadron remained. In the [Second Battle of El Alamein](#), many *Sparvieros* were used for defensive tasks, such as countering [SAS](#) teams in the desert, and in anti-ship roles. From autumn 1940, SM.79s were used against the [Kingdom of Greece](#), then Yugoslavia. They continued to be hampered in their operations by the [Royal Air Force](#), but also by poor weather conditions. Over the Mediterranean, the *Sparvieros* were used in reconnaissance missions and anti-ship attacks.^[41]

Use as a torpedo bomber

1940

On 25 July 1940, the *Sparviero* formally commenced service as a [torpedo bomber](#) (*Aerosilurante* in [Italian](#)) as a new operational unit, the "Special Aerotorpedoes Unit" (headed by Colonel Moiola), was established following several years of experiments involving the type. After having ordered the first 50 torpedoes from Whitehead Torpedo Works, on 10 August 1940, the first aircraft landed at T5 airfield, near Tobruk. Despite the lack of an aiming system and a specific doctrine for tactics, an attack on shipping in [Alexandria](#) was quickly organized. There had been experiments for many years but still, no service, no gear (except hardpoints) and no tactics were developed for the new role. This was despite previous Italian experiments into the practice of [aerial torpedoing](#) in 1914, 26 years earlier.^[42] On 15 August 1940, the type's first combat sortie saw five SM.79s that had been modified and prepared for the task dispatched to El Adem airfield. Among their pilots were Buscaglia, Dequal and other pilots destined to become "aces." The journey was made at an altitude of 1,500 m (4,900 ft) and after two hours, at 21:30, they arrived over Alexandria and began attacking ships, but unsuccessfully. The departure airport had only 1,000 m (3,300 ft) of runway for takeoff, so two of the fuel tanks were left empty to reduce weight, giving an endurance of five hours for a 4.33-hour journey. Only Buscaglia and Dequal returned, both aircraft damaged by anti-aircraft fire. Buscaglia landed on only one wheel, with some other damage. The other three SM.79s, attacking after the first two, were hindered by a fierce anti-aircraft defence and low clouds and returned to their base without releasing their torpedoes. However, all three ran out of fuel and were forced to jettison the torpedoes which exploded in the desert, and then force-landed three hours after the attack. Two crews were rescued later, but the third (Fusco's) was still in Egypt when they force-landed. The crew set light to their aircraft the next morning, which alerted the British who then captured them. These failures were experienced within a combat radius of only about 650 km (400 mi), in clear contrast with the glamorous performances of the racer *Sparvieros* just a few years before.^[42] Many missions followed, on 22–23 August (Alexandria), 26 August (against ships never found), and 27 August (Buscaglia against a cruiser). The special unit became known as the 278^a *Squadriglia*, and from September 1940 carried out many shipping attacks, including on 4 September (when Buscaglia had his aircraft damaged by fighters) and 10 September, when Robone claimed a merchant ship sunk. On 17 September, after an unsuccessful day attack, Buscaglia and Robone returned at night, attacking the British ships that shelled [Bardia](#). One torpedo hit [HMS Kent](#), damaging the [heavy cruiser](#) to the extent that the ship remained under repair until September 1941. After almost a month of attacks, this was the first success officially acknowledged and proven. After almost a month of further attacks, a newcomer, Erasi, flew with Robone on 14 October 1940 against a British formation and hit [HMS Liverpool](#), a modern cruiser that lost her bow and needed 13 months of repair. After several months, and despite the losses and the first unfortunate mission, the core of the 278^a was still operating the same four aircraft. The last success of this squadron was at [Souda Bay, Crete](#), when Buscaglia damaged another cruiser, [HMS Glasgow](#), despite the anti-torpedo netting surrounding the ship, sending it out of commission for nine months while repairs were made. The aircraft continued in service until a British bomb struck them, setting off a torpedo and a "chain reaction" which destroyed them all.^[42]

1941

The year was one of intense activity for the Italian torpedo bombers.^[43] In April many successes were recorded by SM.79s of the 281^a and 280^a *Squadriglie*. They sank two merchant ships, heavily damaged the British cruiser [HMS Manchester](#) (rendering her out of service for nine months for repair and refit) and later also sank the [F-class destroyer HMS Fearless](#). However, one SM.79 was shot down 25 nmi (46 km) north west of Gozo on 3 June, landing in the sea and staying afloat for some time. Further Italian successes came in August, when the [light cruiser HMS Phoebe](#) was damaged. The large merchant ship *SS Imperial Star* (12,427 GRT) was damaged by an SM.79 on 27 September during [Operation Halberd](#) which resupplied Malta; unable to tow it to Malta it was scuttled by [HMS Oribi](#).^[44] In the same Operation the [battleship HMS Nelson](#) was torpedoed and damaged by a SM.79 which in turn was shot down. The 130^o and 132^o *Gruppi* were also active during the autumn. On 24 October, they sank the merchant vessels [Empire Pelican](#) and [Empire Defender](#), on 23 November they sank the merchant vessels *Glennearn* and *Khakdina*, and on 11 December they heavily damaged *Jackal*.^[45] The year ended with a total of nine Allied ships sunk and 30 damaged; for 14 torpedo bombers lost and another 46 damaged in action.^[46] This was the best year for the Italian torpedo bombers and also the year when the SM.84, the SM.79's successor was introduced. Overall, these numbers meant little in the war, and almost no other results were recorded by Italian bombers. Horizontal bombing proved to be a failure and only dive bombers and torpedo-bombers achieved some results. Most of the major British ships lost were due to [U-boat](#) attacks, with the damaging of [HMS Warspite](#), and the sinking of [HMS Barham](#) and [HMS Ark Royal](#), whereas the most significant success of Italian torpedo bombers were the damaging of *HMS Nelson* and of some cruisers. After the [Raid on Alexandria](#) by Italian frogmen of [Decima MAS](#), the British fleet was left without major ships in their Mediterranean fleet, leaving the Axis better situated to control the sea.^[45]

1942



A S.M.79 of the 193^a Squadriglia Bombardamento Terrestre (193th Land Bombing Squadron), 87^o Gruppo (87th Group), 30^o Stormo (87th Wing)

The Axis' fortunes started to decline steadily during 1942. Over 100 SM.79s were in service in different Italian torpedo squadrons. In addition to its wide-scale deployment in its intended bomber-torpedo bomber role, the *Sparviero* was also used for [close support](#), reconnaissance and transport missions. In the first six months of 1942, all the Italo-German efforts to hit Allied ships had only resulted in the sinking of the merchant ship *Thermopilae* by an aircraft flown by Carlo Faggioni.

The Allies aimed to [provide Malta with vital supplies and fuel through major convoy operations](#) at all costs. Almost all Axis air potential was used against the first big Allied convoy of 1942, code-named [Operation Harpoon](#). 14 June saw the second torpedoing of *Liverpool*, by a 132^o *Gruppo* SM.79, putting it out of action for another 13 months. Regardless of where the torpedo struck (amidships in the case of *Liverpool*, aft as for *Kent*, or forward as happened to *Glasgow*), the cruisers remained highly vulnerable to torpedoes, but no Italian air attack managed to hit them with more than one torpedo at once. On the same day the merchant ship *Tanimbar* was sunk by SM.79s of the 132nd, and finally the day after *HMS Bedouin*, a [Tribal-class](#) destroyer, already damaged by two Italian cruisers, was sunk by pilot M. Aichner, also of 132nd *Gruppo*. For years this victory was contested by the Italian Navy, who claimed to have sunk *Bedouin* with gunfire.^[47] August saw heavy attacks on the 14 merchant ships and 44 major warships of the [Operation Pedestal](#) convoy, the second Allied attempt to resupply Malta past Axis bombers, [minefields](#) and [U-boats](#).^[48] Nine of the merchant ships and four of the warships were sunk, and others were damaged, but only the destroyer [HMS Foresight](#) and the merchant ship *MV Deucalion* were sunk by Italian torpedo bombers. Although damaged, the tanker [SS Ohio](#), a key part of the convoy, was towed into [Grand Harbour](#) to deliver the vital fuel on 15 August 1942 to enable Malta to continue functioning as an important Allied base, a major Allied strategic success. By winter 1942, in contrast to [Operation Torch](#), 9 December was a successful day when four SM.79s sank a [Flower-class corvette](#) and a merchant ship, with the loss of one aircraft. [Carlo Emanuele Buscaglia](#), another prominent member of the Italian torpedo-airforce who was credited with over 90,718 tonnes (100,000 tons) of enemy shipping sunk, was shot down the day after saying "We will probably all be dead before Christmas". The risks of attempting to overcome the effective defences of allied ships were too great to expect much chance of long-term survival, but he was later rescued from the water, badly wounded.^[45] On 18 November, the light cruiser [HMS Arethusa](#) was torpedoed and badly damaged during [Operation Stone Age](#). Despite the increased activity in 1942, the results were considerably poorer than those of the previous year; the efforts made by the bombers were subject to heavy criticism and widely deemed to have been insufficient. Many debated the possibilities of torpedo manufacturing defects or even sabotage: the first 30 used in 1940 had excellent reliability, but a number of later torpedoes were found to be defective, especially those made at the Naples factory. During Operation Harpoon, over 100 torpedoes were launched, but only three of these had hit their targets.

1943



A pair of S.M.79s in flight over [Sciacca](#), [Sicily](#)

Prior to 1943, the survival chances of the *Aerosiluranti* had diminished steadily: on average, a SM.79 would be shot down after just three missions.^[43] The year opened with attacks against Allied shipping off North Africa, during which they were unable to accomplish many successes. During July, the [Allies invaded Sicily](#) with an immense fleet. The *Sparvieri* were already obsolete and phased out of service in bomber Wings and its intended successors, the SM.84 and Z.1007, were considered to be failures, while the latter were not produced in enough numbers. As a consequence, the latest version of the *Sparviero* was retained for performing torpedo attacks, being considerably faster than its predecessors. Before the invasion, there was a large force of torpedo aircraft: 7 *Gruppi* (groups), 41, 89, 104, 108, 130, 131 and 132nd equipped with dozens of aircraft, but this was nevertheless a weak force. Except for the 104th, based around the [Aegean Sea](#), the other six *Gruppi* comprised just 61 aircraft, with only 22 serviceable. Almost all the available machines were sent to the *Raggruppamento Aerosiluranti*, but of the 44 aircraft, only a third were considered flight-worthy by 9 July 1943. Production of new SM.79s continued to fall behind and up to the end of July only 37 SM.79s and 39 SM.84s were delivered. Despite the use of an improved engine, capable of a maximum speed of 475 km/h (295 mph), these machines were unable to cope with the difficult task of resisting the invasion. They were too large to allow them to evade detection by enemy defences, and their large aircrew requirement resulted in heavy losses of personnel. In the first five days SM.79s performed 57 missions, at night only, and failed to achieve any results, with the loss of seven aircraft. Another three aircraft were lost on 16 July 1943 in a co-ordinated attack with German forces on [HMS Indomitable](#),^[49] which was hit and put out of combat for many months. SM.79s were not equipped with [radar](#), so the attacks had to be performed visually, hopefully aided by moonlight, while the Allies had ship-borne radar and interceptor aircraft.^[45] Despite their depleted state, the *Regia Aeronautica* attempted a strategic attack on [Gibraltar](#) on 19 July with 10 SM.79GAs, but only two managed to reach their target, again without achieving any result. During September 1943, the last offensive operation involving the type was conducted, and resulted in the damaging of the [LST 417](#), on 7 September 1943.^[50] On 8 September, when the [Armistice with Italy](#) was announced, the *Regia Aeronautica* had no fewer than 61 SM.79s, of which 36 were operational.^[51] Following the signing of the Armistice, the SM.79s based in southern Italy (34 altogether) were used by the [Italian Co-Belligerent Air Force](#) as transport aircraft in support of the Allies; those that remained in the North (believed to number roughly 36 aircraft) continued to fight along German forces as part of the [Aeronautica Nazionale Repubblicana](#) or were incorporated into the [Luftwaffe](#).^[52] A small number of SM.79s remained in service in the post-war [Aeronautica Militare](#), where they served as passenger transports into the early 1950s.

RSI service: 1943–1945

After the Armistice, the *Repubblica Sociale Italiana* (RSI) decided to continue using the SM.79s as torpedo-bombers. But only 15 more *Sparvieri* were built after the armistice, while five were overhauled by the Reggiane factories. Counting the aircraft taken over from the *Regia Aeronautica*, new deliveries and aircraft in workshops and depots, the Aeronautica Nazionale Repubblicana (ANR) had 73 SM.79 at its disposal. They were mostly SM.79-III type. This version featured strengthened armament and had no ventral "bathtub" turret. They were based mostly in Venegono. Two secondary bases were [Merna di Gorizia](#) and [Perugia](#), in [Umbria](#).^[46] The first missions attempted to oppose the [Anzio landings](#),^[50] where the British and American forces had landed on 22 January 1944. On the evening of 10 March, a flight of six ANR SM.79s attacked Allied merchant ships near the Anzio-Nettuno beachhead, during which a single *Sparviero* was lost. On the night of 13–14 March five SM.79s repeated the attack.^[46] The *Gruppo Buscaglia* suffered heavy losses on 4 April, when 13 unescorted SM.79s, during a ferry flight from Lonate Pozzolo to Perugia, were bounced by [P-47s](#): five *Sparvieri* were shot down and 27 crew members were killed.^[46] According to other sources, this encounter occurred on 6 April and four out of seven SM.79s were shot down, while the other three crash-landed.^[50] During one of the missions on Anzio, *Comandante* Carlo Faggioni was killed.^[50] On 10 April 1944, four SM.79s took off to attack the Anzio bridgehead. *Capitano* Faggioni's aircraft was hit by AA fire and crashed into the sea; only one *Sparviero* was able to return to base. Immediately thereafter, *Capitano* Marino Marini took command of the torpedo-bomber group;^[46] early on, Marini set about planning a mission over Gibraltar.^[50] For this mission, 12 SM.79 bis models were used. They had enhanced engines, armoured shields for the lateral machine guns, an additional 1,000 L (264 US gal) fuel tank in the bomb bay, and had the bombardier's nacelle removed.

Even these modifications could not provide sufficient range to achieve the necessary distance that the mission required, and so all weapons except one were removed, one member of crew was left behind, and the fuel load was increased to 5,000 L (1,320 US gal). To reach Gibraltar, it was necessary to take off from Istres, in Southern France, and then fly for a total of 2,700 km (1,700 mi). Of the 12 aircraft that departed from Istres on 5 June 1944, 10 reached their target (according to other sources, ten SM.79s took off on 4 June and nine reached the target^[53]). The defenders were taken by surprise, and all the aircraft successfully launched their torpedoes, but three SM.79s ran out of fuel and were forced to land in Spain. Initial claims by the Italians were four ships sunk, totalling 27,216 tonnes (30,000 tons).^[50] German observers in [Algeciras](#), in Spain, reported that four ships, totalling 30,000 tons were badly damaged and that two others had been hit.^[54] British sources however stated that no ships were lost, due to an effective system of defence. Regardless, this was the largest enemy incursion over Gibraltar in four years of war^[50] and this operation demonstrated the flying skill of the Republican torpedo airmen.^[54] The following data shows the decline in effectiveness of the SM.79 as a torpedo bomber:

- During 1940, two squadrons made 39 sorties and 17 attacks; the damaging of 27,578 tonnes (30,400 tons) of shipping was attributed to these squadrons in this period.
- In 1941, a total of 14 squadrons conducted 225 sorties and 87 attacks, which were responsible for the sinking of nine ships (42,373 tonnes/47,700 tons) and another 12 being damaged (75,841 tonnes/83,600 tons).
- During 1942, 24 squadrons comprising 307 aircraft performed 60 attacks, sinking 10 ships (27,624 tonnes/30,450 tons) and damaging three 29,157 tonnes (32,140 tons).
- In 1943, 18 squadrons made 221 combat sorties, during which three ships were sunk (12,519 tonnes/13,800 tons) and another four were damaged (32,024 tonnes/35,300 tons).^[45]

During July 1944, several SM.79s were transferred to [Eleusis/Athens](#) base to carry out sorties in the Eastern Mediterranean. Their crews achieved some successes then and came back to Lonate Pozzolo on 12 August. In October, this formation was renamed *Gruppo O.M. Carlo Faggioni*.^[54] After a time, the RSI torpedo-bombers based in [Ghedi](#) in October 1944 became operative again, with 10 aircraft. On 25 December 1944 they attacked a convoy in [Adriatic sea](#) off [Ancona](#), and *Capitano Bertuzzi* hit a 7,000-ton freighter with a torpedo. The following day, a formation of Republic P-47 Thunderbolt destroyed 14 "Sparvieri" on Lonate Pozzolo airfield. The only two serviceable SM.79s left flew the last operational mission of the group and sank a 5,000-ton ship in the Adriatic off the Dalmatian coast.^[55]

Results against Allied warships

Throughout the conflict, SM.79s were credited with the sinking of a number of Allied warships, including the [destroyer HMS Fearless](#) on 23 July 1941, the destroyer [HMS Bedouin](#) on 15 June 1942, the destroyer [HMAS Nestor](#) on 16 June 1942, the destroyer [HMS Foresight](#) on 13 August 1942, the [sloop HMS Ibis](#) on 10 November 1942, the [corvette HMS Marigold](#) on 9 December 1942, the auxiliary anti-aircraft ship [HMS Pozarica](#) on 29 January 1943. Additionally, several more Allied warships were torpedoed and suffered serious damage as a result of attacks by the SM.79s. These included the [heavy cruiser HMS Kent](#) on 18 September 1940, the [light cruiser HMS Liverpool](#) twice, on 8 October 1940 and on 14 June 1942, the light cruiser [HMS Glasgow](#) on 7 December 1940, the light cruiser [HMS Manchester](#) on 23 July 1941, the light cruiser [HMS Phoebe](#) on 27 August 1941, the battleship [HMS Nelson](#) on 23 September 1941, the light cruiser [HMS Arethusa](#) on 18 November 1942, and the [aircraft carrier HMS Indomitable](#) on 16 July 1943.

Radio controlled flying bomb

During 1942, General [Ferdinando Raffaelli](#) reportedly came up with the idea of packing an SM.79 with explosives and a [radio control](#) device.^[56] On 12 August 1942, as the [Operation Pedestal](#) convoy was steaming off the [Algerian](#) coast, a SM.79 drone, a [Z.1007bis](#) guide plane and an escort of five [FIAT G.50](#) fighters flew out to intercept it. Once the pilot of the SM.79 had set his aircraft on a course toward the Allied ships he bailed out, leaving the Z.1007bis crew to guide the flying bomb the rest of the way by radio.^[56]

However, the radio controls malfunctioned and with nothing to guide it the SM.79 drone cruised along until it ran out of fuel and crashed into [Mount Khenchela](#) on the Algerian mainland. Raffaelli later developed a simpler single-engined guided bomb, the [Ambrosini A.R.4](#), which was tested in June 1943, but the armistice intervened before it could go into production.^{[57][56]} Another proposal suggested using a parasite Macchi C.202 [coupled](#) with a SM.79 or A.R.4 in an arrangement similar to the German [Mistel](#), but with the fighter remotely guiding the bomber to its target.

Notable crewmembers

Among the men who became famous through serving in the *Regia Aeronautica*, the *Sparviero* crews became even more renowned than fighter aces because of the initial records set, the successful raids in Spain, especially those made by the "Green Mice" (*I sorci verdi*), and the torpedo missions carried out during the war which became the subject of fascist propaganda. Among the men famous for serving in *Sparvieri* were:

- [Giulio Cesare Graziani](#) (relative of [Marshal Rodolfo Graziani](#)), who before joining the 132nd Torpedo Squadron, was badly wounded in an encounter with RAF Hurricanes and made a forced landing in the Ethiopian desert. Postwar, he later rose to the rank of Lieutenant General of the Air Force.
- Carlo Faggioni, one of the more skilled pilots, who was shot down in 1944 during the Anzio landings. Only his hat was recovered from the sea.
- Martino Aichner (nicknamed "Dolphin"), who made an inauspicious start to his career by hitting the sea during a low-level run in training that destroyed the propellers of both wing-mounted engines of his *Sparviero*, and running on only the power of the central engine, managed a sea landing. He was involved in the sinking of the already crippled destroyer [HMS Bedouin](#) on 15 June 1942, which was able to shoot down his bomber, forcing him to ditch in the sea, and in 1943 he was forced to make a third landing in the sea.
- [Emilio Pucci](#) became a designer after the war.
- Guido Cimicchi, Dequal, Robone and Faggioni, who were some of the early torpedo bomber pilots.
- [Carlo Emanuele Buscaglia](#), perhaps the most famous and highest scoring SM.79 pilot, who was involved in the torpedoing of the *Kent* and the *Glasgow*, and was shot down in December 1942. After the Italian Armistice Buscaglia joined the Italian Co-Belligerent Air Force; while flying a [Martin Baltimore](#), he crashed during takeoff and died as a result of his injuries the day after.
- [Italo Balbo](#), notable Italian pilot, air marshal and military commander during the Second World War, who was shot down over [Tobruk](#) by [friendly fire](#), an incident that Balbo's closest friends and family strongly believed was an assassination ordered by Mussolini.^[58] Historians have generally accepted that this incident was an accident.

Yugoslavia



A [Royal Yugoslav Air Force](#) SM.79

Favourable reports of the type's reliability and performance during the Spanish Civil War led to the 1938 [Kingdom of Yugoslavia](#)'s order of 45 aircraft generally similar to the SM.79-I variant, designated the **SM.79K**. They were delivered to Yugoslavia in 1939, but most were destroyed during the [1941 Axis invasion](#) by their crews or by advancing Axis forces. During several sorties against German and Italian forces they managed some success in [Kačanik Gorge](#). Some of these aircraft escaped to Greece, carrying King Peter Karadjordjevic and his entourage. A few survived, one to be pressed into service with the pro-Axis forces of the [NDH](#), and four which became AX702-AX705 in the [RAF](#).^[59]

Romania

During 1937, the [Romanian](#) government decided to place an order for 24 twin-engined [SM.79B](#) bombers, fitted with 746 kW (1,000 hp) [Gnome-Rhône Mistral Major](#) 14K radial engines. These aircraft, however, proved to be underpowered. Consequently, in February 1940, Romania ordered from Italy a further eight aircraft, which were each equipped with two [Junkers Jumo 211](#) inline engines of 1,200 PS (883 kW). These aircraft were designated *JIS 79* (J for Jumo, I for Italy and S for Savoia) and were delivered in 1941–2. A further 72 SM.79s were built under licence by the [Industria Aeronautică Română](#) (IAR) and designated [JRS 79B](#) (J for Jumo, R for Romania, S for Savoia).^{[60][61][59]} Another license-built version was the [JRS 79B1](#), which was armed with a single 20 mm Ikaria cannon and fitted with an enlarged cockpit for a fifth crew member. Due to its role in low-level attacks, the type frequently suffered heavy losses.^{[62][59]}

Others



Savoia Marchetti SM.79 Bs Iraq Air force

A number of twin-engined versions were sold to [Brazil](#) (three with 694 kW (931 hp) [Alfa Romeo 128 RC.18](#) engines) and [Iraq](#) (four with 768 kW (1,030 hp) [Fiat A.80](#) RC.14 engines).

Variants

SM.79

Prototype S.79P (civil variant), powered by radial engines [Piaggio Stella P.IX](#) (610 cv). Roll-out 28 September 1934. The first flight was conducted on 8 October 1934. During spring 1935, it was re-equipped with Alfa Romeo 125 RC.35 (590–750 cv) and used as fast airliner for Regia Aeronautica and for some reconnaissance missions over Ethiopia.

SM.79-I (also known as S.79K or S.79 Militare)

The first production four- or five-seat bomber version powered by three 582 kW (780 hp) [Alfa Romeo 126 RC.34](#) nine-cylinder engines. Span 21.20 m (69.6 ft), length 15.80 m (51.8 ft), max speed 430 km/h (270 mph) at 4,000 m (13,000 ft), up to 1,250 kg (2,760 lb) of bombs, max takeoff weight 10,480 kg (23,100 lb), range 1,899 km (1,180 mi). First flights: the prototype MM.260 (the former civil version S-79P converted) 20 May 1936, still with the AR.125 engines. First production S.79-I MM.20663(also known as S.79K or S.79M) 7 July 1936, delivered to Regia Aeronautica on 29 July 1936. After the first three, the next production models had the AR.126 RC.34 (780 cv), the first one flew on 27 September 1936.

SM.79-II

Torpedo-bomber powered by three improved Alfa Romeo 126 engines, bomb bay removed and often crew armour added. One had three [Piaggio P.XI](#) engines.



Savoia-Marchetti S.M.79-I

SM.79-III

Improved, extended range torpedo bomber introduced during late 1942. It was not available in significant numbers until mid-1943. Known also as **SM.79bis**, **SM.79GA**, or **SM.579**. Powered by AR.128 engines of approximately 746 kW (1,000 hp) each, giving increased performance (speed increased to 475 km/h (295 mph), and climb to 5,000 m (16,000 ft) in 16 minutes 7 sec). Ventral nacelle deleted. 1,000 L (260 US gal) fuel tank mounted in the bomb bay. The forward machine gun was retained, with its flash protection, probably as an anti-ship weapon.



Savoia-Marchetti S.M.79B

SM.79B

Twin-engine export version powered by the less reliable Fiat A.80 engines and with a glazed nose for improved bomb-aiming. More economical but slower (420 km/h; 260 mph) and 21.45 minutes to 5,000 m (16,000 ft) than the standard SM.79, but weighing 6,600–10,100 kg (14,600–22,300 lb), around 500 kg (1,100 lb) less than the basic SM.79), was longer (16.22 m; 53.2 ft), and had the same armament. Iraq bought five, but this version achieved little success in Italy.

SM.79C

[VIP](#) transport conversion, powered by Piaggio P.XI RC.40 engines, with the dorsal and ventral machine guns removed.

SM.79JR

Twin-engine version for Romania, powered by 895 kW (1,200 hp) Junkers Jumo 211Da engines. Eight Italian built aircraft (designated **JIS.79B** by Romania), followed by 36 license built [JRS 79B](#) powered by the Jumo 211Da and 36 [JRS 79B1](#) with 1,029 kW (1,380 hp) Jumo 211F engines. Production continued until 1946.^[60]

SM.79K

Version for Yugoslavia.

SM.79T

Long-range VIP transport version.

SM.79 Flying Bomb

An SM.79 converted into a radio-controlled flying bomb, remotely guided by a [CANT Z.1007 "Alcione"](#).(one built)

Mishaps and combat losses



A SM.79 following a crash landing, circa 1940



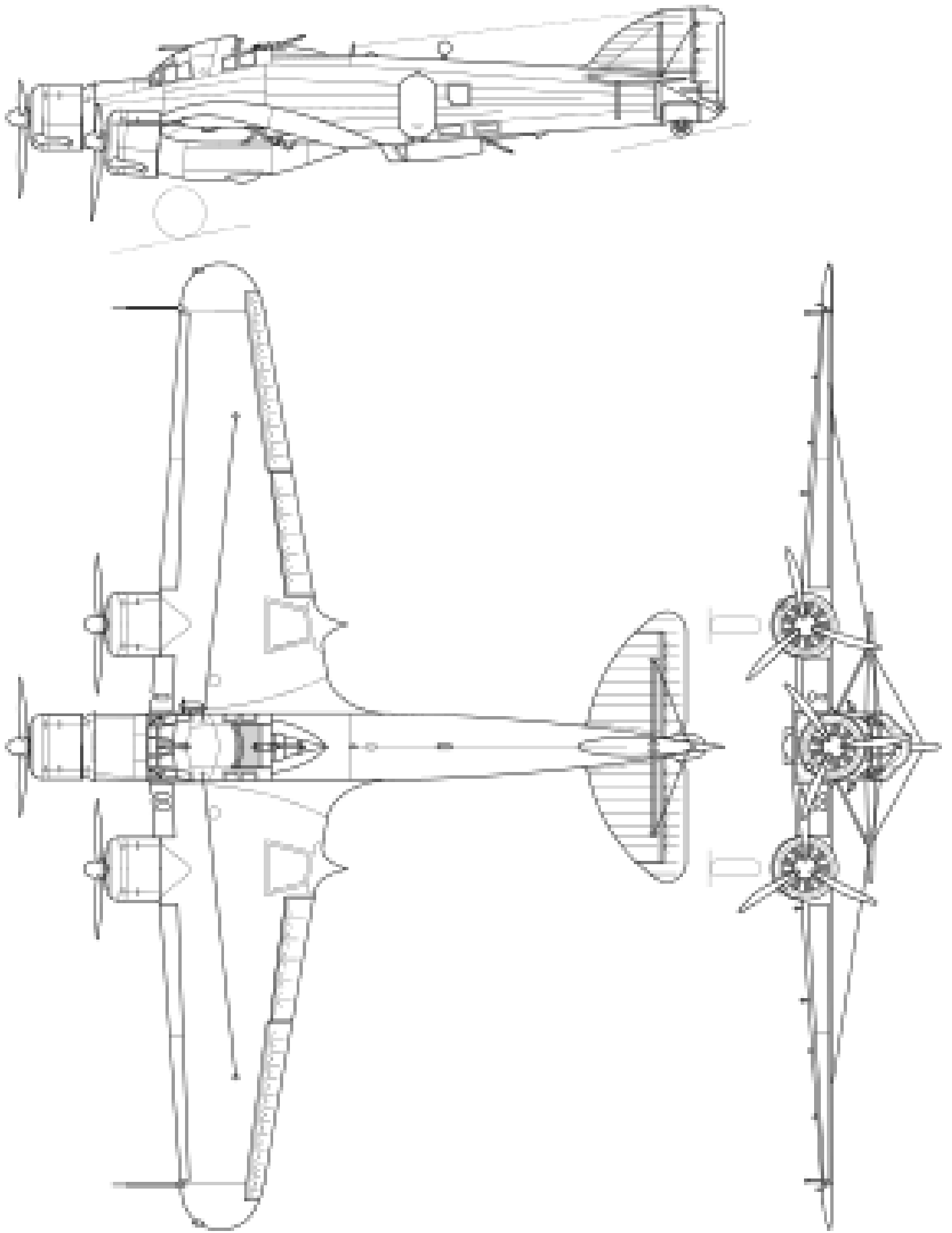
A heavily damaged SM.79, circa 1943

While the SM.79 was often considered overall to be a relatively sturdy and well-developed aircraft, the type had experienced their share of misfortune. In Spain, SM.79 *MM.28-16* (with a total crew of 17) was destroyed in the air on 12 April 1938, when one of its bombs detonated in the bomb bay. *MM.28-25* (again with a crew of 17) was lost when another SM.79 damaged by anti-aircraft guns collided with it on 23 March. A further SM.79, *MM.28-16* was damaged by an anti-aircraft shell, and landed with dead and wounded on-board (4 January 1939).^[68] On 30 June 1939 two of the aircraft, *13-6* and *13-7*, both carrying a full fuel load, collided and crashed, with the entire crew of nine killed on impact. At the beginning of World War II, on 13 June 1940, six *Sparvieri* of 9° *Stormo* (Wing) bombed [Ghisonaccia](#) airfield, in [Corsica](#), but one was shot down by anti-aircraft guns and became the first *Sparviero* downed in World War II.^[69] The 9° *Stormo* continued to suffer heavy losses in Africa. Initially used to harass light forces operating in the desert, the *Sparvieros* were subsequently sent against the British advanced columns in [Operation Compass](#). On 16 December 1940, six *Sparvieros* were sent over [As Sallum](#) to counter enemy armoured units, but before they could reach their target, three of the lead section were shot down with the loss of 16 men, including Commander Mario Aramu. The wing was put out of action and the personnel were sent back to Italy aboard the *RM Città di Messina*, but on 14 January 1941 the ship was sunk by submarine [HMS Regent](#), with the loss of 432 men, including 53 members of the 9°. The wing was later re-formed with Z.1007s. The total number of [reconnaissance](#), bomber and torpedo bombers downed in these two years by naval fighters was, not counting aircraft heavily damaged and eventually lost, 24 aircraft, 2% of total production.^[70] A major safety issue in the operation of the SM.79 was the difference between the calculated and effective range figures, which led to several mishaps. Two accidents highlight the deficiencies in range of the *Sparvieros*. One such incident befell the ferry flight of 27th Gruppo. This unit was transferred from [Alghero](#) to North Africa. The 16 *Sparvieros* took off at 11:50 of 4 April 1941, but one of the eight aircraft of the 18^a *Squadriglia* in the first wave had an accident and crashed on the airport strip. The other eight from 52^a *Squadriglia* could only take off 40 minutes later, while the first seven circled over the airfield. The 15 *Sparvieros* flew together until reaching Misurata, but the 18th *squadriglia* had flown for much longer and was short of fuel. Subsequently, its SM.79s crashed one after the other with only two landing safely. At least two were completely destroyed, and three damaged. On that day, on a simple ferry flight of 1,100 km, the 18th lost five *Sparvieros* and at least one crew, with many wounded. The flight of 52^a Sq lasted for 4 hours and 45 mins but 18^a Sq flew for 5h and 15 mins, without any payload, at an average speed of only 210 km/h.^[71]

MM. 23881^[edit]

Another such incident involved *MM.23881* of the 278th, which took off from Berka on 21 April 1941, piloted by [Captain](#) Oscar Cimolini, with the intention of searching for enemy shipping near Crete. After an attack around 20:00 hours, it began the trip back to its base. The crew became disoriented and, unable to communicate due to broken radio, missed their airfield in bad weather conditions. Exhausting their fuel supply the aircraft made a forced landing some 500 km (310 mi) away from its base. Some of the crew of six had suffered some injuries, but at least one crew member was able to leave to search for help. He walked for over 90 km (56 mi) in the desert, was overcome and died only eight kilometres from the [Jalo–Giarabub](#) road, where his remains were found by chance in 1960.^{[72][73]} Subsequent searches found the still largely intact SM.79 on 5 October 1960.^[74] The skeleton of one crew member (probably the pilot)^[75] was found still inside the [cockpit](#), two more bodies were found outside the wreck. The other two crew members were never found; the finding of an additional [clock](#) on Romanini's body indicated that at least another crewman had accompanied him through the desert, but had died earlier on the march.^[76]

Specifications (SM.79-III)



General characteristics

- **Crew:** 6 (pilot, co-pilot, flight engineer/gunner, radio operator, bombardier, rear gunner)
- **Length:** 16.2 m (53 ft 2 in)
- **Wingspan:** 20.2 m (66 ft 3 in)
- **Height:** 4.1 m (13 ft 5 in)
- **Wing area:** 61.7 m² (664 sq ft)
- **Empty weight:** 7,700 kg (16,976 lb)
- **Gross weight:** 10,050 kg (22,156 lb)
- **Powerplant:** 3 × [Alfa 128 R.C.18](#) 9-cylinder air-cooled radial piston engines, 642 kW (861 hp) each
- **Propellers:** 3-bladed variable-pitch propellers

Performance

- **Maximum speed:** 460 km/h (290 mph, 250 kn) at 3,790 m (12,430 ft)
- **Range:** 2,600 km (1,600 mi, 1,400 nmi)
- **Service ceiling:** 7,500 m (24,600 ft)
- **Rate of climb:** 5.3 m/s (1,040 ft/min)
- **Wing loading:** 165 kg/m² (34 lb/sq ft)
- **[Power/mass](#):** 0.173 kW/kg (0.105 hp/lb)

Armament

- **Guns:**
 - 1 × 12.7 mm (0.5 in) forward [Breda-SAFAT machine gun](#)
 - 2 × 12.7 mm (0.5 in) dorsal Breda-SAFAT machine gun 1 at the top, 1 in the belly (optional).
 - 2 × 7.7 mm (0.303 in) machine guns in lateral "waist-gun" ports (optional)
- **Bombs:** 1,200 kg (2,645 lb) internal bomb load *or* an external 450 millimetres (17.72 in) torpedo

Source : https://en.wikipedia.org/wiki/Savoia-Marchetti_SM.79_Sparviero