IAR 80

IAR 80 - Réplique vue de l'arrière

Dans les années 1920 et 1930, la Roumanie finança la création de 3 entreprises aéronautiques afin d'être indépendante et d'assurer l'équipement de sa force aérienne, surtout en temps de guerre. La deuxième fut IAR (Industria Aeronautică Română), fondée à Brasov en 1925. Dès 1930, la Roumanie réclama un nouveau chasseur. IAR produisit plusieurs prototypes, mais le gouvernement roumain leur préféra le PZL P.11, puis le P.24 polonais. IAR se vit confier la construction sous licence de ces chasseurs, ainsi que celle du moteur Gnome-Rhone 14K. C'est l'argent gagné grâce à ces productions sous licence qui va permettre de financer l'étude d'un nouveau chasseur. En effet, au sein d'IAR, une équipé formée autour du Dr. Ion Grosu était persuadée que l'IAR-24, avec son aile basse, était supérieure au P.24 polonais à aile parasol. Les caractéristiques les plus intéressantes du P.24, en particulier sa section arrière, furent réutilisées sur un nouveau projet, l'IAR 80. Celui-ci se présentait donc comme un monoplace à cabine fermée, avec un cockpit assez en arrière et une aile très en avant. La verrière est en bulle et coulisse vers l'arrière. Le train d'atterrissage est classique et rétractable. Le fuselage est de section circulaire puis ovale derrière le cockpit. La queue, de construction semi-monocoque, est directement copiée sur le P.24. En revanche, la partie avant est entièrement nouvelle et est construite en tubes d'acier recouverts de duralumin. Les ailes, directement inspirées de l'IAR-24 (le concurrent malheureux du P.24), sont basses. Elles seraient d'après une source inspirées de celles du SM.79, ce qui favoriserait la maniabilité au dépens de la vitesse. Le prototype entra en construction en 1937 : à l'origine, il disposait d'un cockpit ouvert et d'un moteur IAR K14-III C32 de 870 ch (un Gnome-Rhône 14K II Mistral Major construit sous licence). La construction fut longue et le vol inaugural eut lieu le 12 avril 1939.

IAR 80 - Cockpit

Les essais en vol montrèrent des performances tout-à-fait honorables pour l'époque : 510 km/h à 4000 m d'altitude, plafond de 11000 mètres, montée à 5000 mètres en 6 minutes. Un officier de la Luftwaffe qui testa l'IAR 80 en avril 1941 jugea ses performances équivalentes à celles du Bf 109E (20 à 30 km/h plus lent, taux de montée à 5000 mètres équivalent, taux de virage équivalent en combat rapproché, plus lent en piqué que le BF 109E). Il se révélait maniable et plaisant à piloter. Quelques défauts furent corrigés : un moteur plus puissant fut installé (la variante C36 du K14-III, fournissant 930 ch), mais comme il était plus lourd, il fallut allonger la partie arrière afin de ramener le centre de gravité plus en arrière. Cela eut d'ailleurs pour conséquence d'augmenter la capacité en carburant. L'aile fut agrandie et la queue redessinée. Son principal défaut était son long nez, limitant la visibilité aussi bien au sol qu'en combat tournoyant. Ce problème fut contrebalancé en partie par la verrière en bulle et l'élévation du siège du pilote. Le prototype révisé de l'IAR 80 fut mis en compétition avec le He 112 (concurrent malheureux du Bf 109 qui fut toutefois exporté à quelques dizaines d'exemplaires, dont la Roumanie). Bien que le He 112 soit plus moderne et mieux armé (2 canons de 20 mm et 2 mitrailleuses, alors que le prototype de l'IAR 80 ne possédait que 2 mitrailleuses de 7,92 mm), ce dernier fut préféré pour la production en masse.

100 exemplaires furent commandés en décembre 1939, 100 autres en août 1940, 50 le 5 septembre 1941, autant le 11 avril 1942, encore 100 le 28 mai la même année, et finalement 35 IAR 81C en février 1943 et 15 autres en janvier 1944. La production commença immédiatement, et l'IAR 80 évolua au fil des versions pour recevoir un armement et un moteur plus puissant (problèmes immédiatement révélés), et pour devenir un bombardier en piqué (IAR 81). Il entra donc en service au sein de la force aérienne roumaine en février 1941.

IAR 80 roumain par Stanak

Dès le milieu de l'année 1941, les ingénieurs d'IAR jugèrent que le moteur Mistral Major avait atteint ses limites. Ils envisagèrent de remotoriser l'IAR 80 avec soit le BMW 801 du Fw 190, soit le Jumo 211. Dans le premier cas, le moteur avait le même encombrement que le K14, était plus lourd mais fournissait 600 cv supplémentaires. La vitesse calculée dépassait les 600 km/h. Mais les Allemands furent incapables de fournir des moteurs en nombre conséquent et la construction sous licence était hors de question : ce moteur était tellement demandé qu'il était impossible d'en fournir quelques exemplaires comme modèles. Un Jumo 211Da de 1220 cv fut installé sur un IAR 80 en 1942 : l'unique vol montra de telles vibrations que les essais en vol furent aussitôt arrêtés. Lorsque l'opération Barbarossa commença, la Roumanie déploya ses 3e et 4e armées sur le flanc sud, ainsi que le Grupul Aerian de Lupta afin de les soutenir. Ce dernier était constitué des Grupul 5,7 et 8, dotés de He 112, Bf 109 et IAR 80. L'IAR 80 équipait les escadrilles 41, 59 et 60 du Grupul 8, dédié à la chasse pure, tandis que les He 112 et Bf 109 des Grupul 5 et 7 se voyait assigner des missions de chasse et de bombardement. L'IAR 80 connut son baptême du feu dès le 22 juin 1941, avec une unique victoire en 4 combats aériens distincts. En retour, au moins 4 appareils durent atterrir endommagés et 2 autres eurent des ennuis avec leur moteur. A la fin de 1941, 20 appareils avaient été perdus au combat ou par accident. Les IAR 80A entrèrent en service en 1942 au sein des escadrilles 47, 48 et 52 du Grupul Vânătoare, des escadrilles 43, 44 et 50 du Grupul 3, des escadrilles 41, 42 et 60 du Grupul 8, ainsi que de l'escadrille 53 où il remplaça les Hurricane. L'IAR 81 entra en service la même année au sein du Grupul 6 Bopi. Lors de la bataille de Stalingrad, le 12 septembre 1942, les IAR 80B du Grupul 8 revendiquèrent 7 victoires sur les Yak pour la perte de deux d'entre eux.

Les IAR 81 du Grupul 6 soutinrent l'armée de Hoth sur le Don les 12 et 13 décembre 1942. Dès l'été 1943, les IAR 80 revinrent en Roumanie pour des missions de défense aérienne, en particulier pour protéger la fameuse raffinerie de Ploiesti.

IAR 80 roumains en formation

Ce fut le 1er août 1943 que les IAR 80 affrontèrent pour la première fois les B-24 Liberator. Les IAR 80B des escadrilles 61 et 62 du Grupul 6 Vânătoare, les IAR 80C de la nouvelle escadrille 45 du Grupul 4 Vânătoare, ainsi que les Bf 109 et 110 roumains plongèrent sur les 178 B-24 volant à basse altitude. 51 bombardiers furent perdus, dont 25 revendiqués par les Roumains pour 2 pertes, dont un IAR 80B. Le 10 juin 1944, les IAR 80 affrontèrent avec l'aide de la Luftwaffe et de la DCA 36 P-38 équipés d'une bombe chacun escortés par 39 autres Lightning. 22 ou 23 P-38 furent perdus, dont 8 revendiqués par les Roumains. Les Américains revendiquèrent 23 victoires alors que les Roumains et les Allemands ne déclarèrent qu'une perte chacun. Le pilote roumain Dan Vizanty, commandant alors le Grupul 6, jugea grosso modo l'IAR 80 supérieur au P-38 aux basses altitudes. Le pilote américain Herbert "Stub" Hatch fut confronté aux IAR 81C qu'il confondit avec des Fw 190. Il en descendit 5, 2 qu'il revendiqua et 3 autres rapportés par ses ailiers, ce qui fit qu'il devint as en un jour. Mais le 71e Fighter Squadron auquel il appartenait perdit 9 appareils ce jour-là. La conséquence de cette rencontre fut de stopper toute tentative d'utiliser le P-38 comme bombardier en piqué au-dessus de la Roumanie. Cela n'empêcha pas les Américains de continuer à se battre dans les cieux de la Roumanie en 1944 et le 3 juillet, les pilotes du Grupul 6 revendiquèrent 87 victoires confirmées. Cependant, les pertes furent également lourdes du côté roumain : 32 pilotes d'IAR 80/81 furent tués en quatre mois, dont 11 as. A partir de juillet 1944, les 3 groupes équipés d'IAR 80 commencèrent leur conversion sur le Bf 109G-6 plus moderne. Les IAR 80 restèrent globalement en service jusqu'en 1949, date à laquelle ils furent remplacés par les La-9 et Il-10. La version biplace resta en service jusqu'en 1952. Ils furent alors tous ferraillés. Une réplique fut construite après la chute du communisme et dévoilée lors d'un meeting à l'aéroport international Mihail-Kogălniceanu. Un IAR 80 reconstruit à partir d'un biplace est visible au musée national militaire de Bucarest.

Source : https://aviationsmilitaires.net/v3/kb/aircraft/show/517/iar-80

Version anglaise Wikipédia

The **IAR 80** was a Romanian World War II low-wing monoplane, all-metal monocoque fighter and ground-attack aircraft. When it first flew, in 1939, it was comparable to contemporary designs being deployed by the airforces of the most advanced military powers such as the Hawker Hurricane and Bf 109E.[2] Production problems and lack of available armament delayed entry of the IAR 80 into service until 1941. It remained in frontline use until May 1945.[3]

Development

IAR-80 undergoing maintenance

In order to ensure that the Royal Romanian Air Force (*FARR*) could continue to be supplied with aircraft in time of war, the government subsidized the creation of three major aircraft manufacturers in the 1920s and 1930s. The first was Societatea pentru Exploatări Tehnice (SET) which was formed in Bucharest in 1923. Next came Industria Aeronautică Română (IAR) which set up shop in Brașov in 1925. Finally there was Întreprinderea de Construcții Aeronautice Românești (ICAR), which was founded in Bucharest in 1932. In 1930 the Romanian government issued specifications for a new fighter. Although the government was not anticipating bids from its own aircraft industry, IAR produced several prototypes in response to the tender. The contract was eventually won by the Polish PZL P.11. The FARR purchased 50 of a modified version called the P.11b, all of which were delivered in 1934.

A second contest was also fought between the newer IAR 14 and PZL P.24 designs, and once again the PZL design won a contract for another 50 aircraft. Although IAR's own designs had not entered production, they nevertheless won the contracts to build PZLs and Gnome-Rhone 14K engines under license. As a result of these and other licence contracts the company had enough money to fund a design studio even if its designs never went into production. Despite losing to PZL, an IAR design team led by Ion Grosu continued work on fighter designs. He was convinced that the low-wing design of the IAR 24 represented a better design than the PZL gull-wing design, which was often referred to as the "Polish wing". Once again the team studied the new PZL fighter looking to incorporate its best features into a new aircraft, and the result was the IAR 80.

Design

IAR 80 side view

- Description: Low-wing monoplane fighter with conventional control surface layout.
- Fuselage: The fuselage was circular in cross-section, turning to egg-shaped behind the cockpit where it incorporated a ridge-back. The general fuselage layout was based on the Polish PZL P.24.
- Wings: The wings were tapered with rounded tips, the trailing edge angled very slightly forwards. Small flaps ran from the fuselage to a point about 1/3 along the span, where the ailerons started and extended out to the rounded wingtips.
- Other details: A bubble canopy was fitted, sliding to the rear to open, providing excellent visibility except over the nose due to its rearward position. A conventional tailwheel landing gear was used, with the main gear wide-set and retracting inward, with a non-retractable tail skid.

The semi-monocoque tail was copied directly from the P.24. The fuselage from the engine back to the cockpit was new, consisting of a welded steel tube frame covered with duralumin sheeting. The wings were mounted low and were of the same design as those used on the early IAR 24, which had competed with the P.24. According to one source, the wing profile was taken directly from the Italian Savoia-Marchetti SM.79 bomber, in service with the FARR at the time, as the design team lacked the time for wing section studies. As a result, the profile was less favorable for higher speeds, but gave the aircraft more maneuverability. This is highly unlikely as the contract for the SM.79B licence was signed on October 1, 1938, roughly one year after the I.A.R. 80 prototype was completed. The cockpit's interior, instruments, and gunsight were imported from foreign suppliers. This effort to aggregate a fighter from various sources was a result of the last-minute demands for a frontline fighter. A Luftwaffe major who tested it in March 1941 had this to say about the IAR 80:

"Takeoff and landing are very good. It's 20–30 km/h slower than the Bf 109E. The climb to 5,000 meters is equivalent. In a dogfight, the turns are also equivalent, although the long nose reduces the visibility. In a dive it's outclassed by the Bf 109E, because it lacks an automated propeller pitch regulator. It's a fighter adequate to modern needs.[4]

Prototypes

Work began on the IAR 80 prototype in late 1937, originally with an open cockpit and the 870 hp (650 kW) IAR K14-III C32 engine which was a licensed Gnome-Rhône 14K II Mistral Major. The prototype was completed slowly, and first took to the air in April 1939. Test flights of the prototype were impressive; the aircraft could reach 510 km/h (320 mph) at 4,000 m (13,000 ft), service ceiling of 11,000 m (36,000 ft) with the ability to climb to 5,000 m (16,000 ft) in 6 minutes,[5] which was respectable at the time, though not up to the contemporary Supermarine Spitfire or Messerschmitt Bf 109 fighters. In comparison the P.24E was almost 450 kg lighter, yet over 80 km/h slower with the same engine. The IAR 80 also proved to be enjoyable to fly and was maneuverable.

IAR 80 incomplete cockpit

A number of minor problems turned up during the prototype phase, and were dealt with over the next year. To improve power the design was updated to mount the newer 930 hp (690 kW) C36 version of the K14-III. However this engine was slightly heavier than the C32, which required the rear fuselage to be stretched to move the center of gravity back into the proper position. The extra space in the fuselage allowed the fuel tanks to be increased in volume to 455 L (100 imp gal). The wing was also enlarged and the tail was revised to eliminate the bracing struts. A side effect of this extreme rearward position was that the pilot had even worse forward visibility while taxiing than most other taildraggers. To address this somewhat, the pilot's seat was raised slightly and a bubble-style canopy was added. The updated prototype was tested competitively against the Heinkel He 112, which had arrived in Romania as the start of a potentially large order. Although the He 112 was more modern and much more heavily armed with two machine guns and two 20 mm cannon, the ARR ordered 100 IAR 80s in December 1939 while only 30 He 112s were accepted. The government in Bucharest ordered another 100 IAR 80s in August 1940. Further orders for batches of 50 IAR 80s followed on 5 September 1941 and 11 April 1942, then another 100 on 28 May 1942, to be followed by 35 of the IAR 81C development in February 1943, with a further 15 in January 1944.[5]

IAR 80

Production of the IAR 80 started immediately, although the armament proved to be a serious problem. The prototype had mounted only two Belgian-made Fabrique Nationale 7.92 mm machine guns, a licensed modification of the Browning .30 cal. This armament was not heavy enough against modern aircraft, and the production model was expected to mount six. The German invasion of Belgium in 1940 suspended the supply from FN, and there was no suitable replacement. Lacking armament, production was halted. The Germans only allowed the delivery of the guns to resume after Romania joined the Axis in November 1940. As a result the first production IAR 80 didn't roll off the line until January 1941, although the first batch of 20 were delivered by the middle of February.[6] The armament supply remained inadequate so production models only carried four guns. The initial batch of fighters was well received by the Romanian pilots, but they found the aircraft underpowered and lacking firepower. In order to address this, the aircraft mounted the 960 hp (720 kW) K14-IV C32 engine in the 21st through 50th examples, but the firepower concern could not be resolved at the time.

IAR 80A

By April 1941 the Romanians were firmly in the German sphere, and as a result the Germans released more FN guns for their use. These were quickly installed, and the resulting 80A model finally mounted the original complement of six guns. Armored glass in the windscreen, seat-back armor, and a new gun sight were also added at the same time, along with the newer 1,025 hp (764 kW) K14-1000A engine. The extra engine power proved to be more than the fuselage structure was designed to handle, and it had to be reinforced with a duralumin "belt" just behind the cockpit in the first 95 A series aircraft built before the fuselage could be modified. Although the IAR 80A had a more powerful engine, the added weight of the guns, ammunition and armor plating reduced the top speed slightly to 316 mph (509 km/h). Nevertheless the new model was clearly an advancement, and the A model replaced the earlier one on the assembly line starting with the 51st airframe. Eight of these had been completed in time for the invasion of the Soviet Union on 22 June 1941. FN guns remained in short supply, so throughout late 1941 and early 1942, guns were stripped from PZLs and observation aircraft for use in the IARs.

IAR 80B

Combat over the Soviet Union proved that even six of the FN guns still lacked punch, and once again firepower was increased, with 13.2 mm FN machine guns taken from Romanian SM.79s were installed in the IAR 80 in a new lengthened wing. The result was the IAR 80B, which also introduced new radios, an area where the aircraft had previously been weak. A total of 50 of the new design were completed, including 20 airframes which were originally intended to be IAR 81As. These last 20 were thus able to carry a 50 kg (110 lb) bomb or a 100 L (22 imp gal; 26 US gal) drop tank under each wing. The entire series were delivered between June and September 1942

IAR 81

The ARR had intended to replace its light strike and dive bomber aircraft for some time when the war opened in 1941. The first role was to be filled by the IAR 37 (and later 38 and 39 models) but the plan was to fill the second role with the Junkers Ju 87. Once again the Germans deferred and the ARR was left searching for a design.

The modification of the existing IAR 80 as a dive bomber was seen as a reasonable option, easier than designing an entirely new aircraft; as well as having obvious production benefits. The result was the IAR 81, a minor change to the IAR 80A models that were then in production, adding a hinged bomb cradle under the centerline to throw a 225 kg (496 lb) bomb clear of the propeller (many dive bombers used a similar system). Delivery consisted of a shallow dive from about 3,000 to 1,000 m (9,800 to 3,300 ft) with the speed around 470 km/h (290 mph). Pilots disliked the aircraft, as the drag from the bomb cradle significantly hampered performance. Fifty were ordered in mid-1941 but after 40 had been delivered, 50 kg (110 lb) bomb racks were added under each wing. The wing racks could also mount 100L drop tanks, allowing the 81 to be used as long-range fighters.

IAR 81A

As the fighter model was converting from the A to B series with the addition of the 13.2 mm guns, likewise the 81 model was upgraded in the same fashion, creating the IAR 81A. The only distinguishing feature between the 80B and the 81A was the 81's centerline bomb rack, and both were built on the same assembly line. The first order for 81As was cancelled and the airframes were instead delivered to fighter units as 80Bs. Efforts to obtain the Ju 87 dragged on, so a second batch of IAR 81As was ordered in May 1943 to replace losses. Once again fate intervened, and the Germans released the Ju 87 for delivery before the batch could be completed. Like the first batch, these 10 airframes were delivered as fighters.

IAR 81B

The supply of the 13.2 mm guns was clearly limited, and in a further attempt to increase the firepower of the design the Romanians signed a deal with Ikaria in Germany for a supply of 20 mm MG FF/M cannon. These were a licensed version of the Swiss Oerlikon FF, which had been in use in various German aircraft. The new gun also required a redesign of the wing. The 60 IAR 81Bs were intended to be dive bombers, but were delivered as IAR 80Cs fighters (a designation that appears painted on the tail of this model) without the centerline bomb rack. After the first 10 were completed, self-sealing tanks were added along with improved seat-back armor. The first 10 were delivered in December 1942 and the entire order was completed by April 1943.

IAR 81C

The final stage in the IAR 80's wartime history was the 81C. This version changed the guns once again, this time to the Mauser MG 151/20 which was replacing the MG FF/M in German service and had just been released for Romanian use. The order for the 81C was placed in May 1942, predating the second order of the 81As. The first order for 100 airframes was delivered, like all of the prior updates to the 81 series, with the centreline bomb rack removed to be used as fighters. An additional order for 35 was placed in February 1943, and then another 15 in January 1944. These aircraft were primarily to replace losses in earlier models, while production of the Bf 109G ramped up.

IAR 80M

By 1944 the ARR fighter units included examples of 80A, B and C models, as well as 81A, B and Cs. In order to up-gun the earlier fighters as well as simplify logistics and maintenance, an upgrade program was started in mid-1944 to bring all existing airframes to the 81C armament suite of two MG 151/20s and four FN 7.92s. The resulting A and B models of the 80 and 81s would become the 80M and 81M respectively, although at this point there were no dive bombers in use. It is unclear how many conversions were completed.

IAR 80DC

IAR 80s remained in service until 1949, when they were replaced by La-9s and Il-10s. Those airframes with the lowest hours were modified by removing a fuel tank in front of the cockpit and adding a second seat, resulting in a trainer designated the IAR 80DC. These were used for only a short time before being replaced by Yak-11s and Yak-18s in late 1952.

Further development

IAR 80 replica

IAR realized that the Mistral Major was at the limits of its development potential even by the middle of 1941, when the 1000A model reached the same ultimate output as the original Gnome-Rhône versions. An ongoing program to fit the IAR 80 with a more powerful engine had been in the works for most of the design's lifetime, but this proved to be a fruitless endeavor. The most obvious choice for a new engine would have been the BMW 801 used in the Focke-Wulf Fw 190. This engine produced a full 600 hp (450 kW) more power, and although it was heavier, it was of roughly the same size as the K14. IAR engineers estimated that a BMW powered IAR 80 would have a maximum speed of at least 600 km/h (370 mph). But, as always, the Germans were unable to supply the engine as every example coming off the line was needed for installation in a German airframe. Licensed production was likewise out of the question, the engine production was in the midst of being ramped and the demand was so great that not even one set of jigs could be spared. A Junkers Jumo 211 was tested, and although this engine was also in high demand in Germany in this case the SM.79JRs in FARR service already used the engine, so some were available for testing. One 1,200 PS (883 kW) 211Da was obtained, complete with cowling and ring radiator from an SM.79 and fitted to an IAR 80 in 1942. Development was abandoned after the first test flight when vibrations proved to be excessive, and was never flown again. After World War II, the Soviets shipped home the entire I.A.R. factory and all aircraft from Brașov, as war reparations.[7]

Operational history

"Hero shot" of an IAR-80 pilot with his aircraft

When Operation Barbarossa started, the IAR 80 equipped Esc. 41, 59 and 60 of *Grupul 8 Vânătoare (8th Hunter Group)*, part of the *Grupul Aerian de Luptă* (GAL), that were tasked to support the Romanian 3rd and 4th Armies deployed at the southern flank of the Eastern Front.[8] *8th Group* was the only unit assigned a pure fighter role, while 5th and 7th Groups, equipped with German aircraft (Heinkel He 112s and Messerschmitt Bf 109s) were employed primarily as fighter-bombers and bomber escorts.[9] On 22 June 1941, during the first day of the offensive, the IAR 80 patrols had their baptism of fire, achieving a single aerial victory (claimed by *Sublocotenent aviator* Ioan Mihăilescu of *Esc 60 van*, a future ace) during four separate air combats. However, at least four IARs force landed with battle damage, while another two suffered engine trouble.[10] By the end of 1941, 20 IAR 80/81s had been lost in combat or accidents.[11] During 1942 the Romanian aviation industry reached its highest output so that the Royal Romanian Air Force could be re-equipped as follows: Esc. 47, 48 and 52 (*Grupul Vânătoare*), Esc. 43, 44 and 50 (*Grupul 3 Vânătoare*) and Esc. 41, 42 and 60 (*Grupul 8 Vânătoare*) received the new IAR 80A. Esc. 53 also replaced its Hurricanes with the IAR 80A, while *Grupul 6 Bopi* re-equipped with the IAR 81.[12] In June 1942, the operational IAR fighter forces on the eastern front, combined into the *Flotilla 2 Vânătoare* consisted of *Grupul 8 Vânătoare*, commanded by Cdr. Lt Col E. Pîrvulescu, and included *Escadrila 41*, *Escadrila 42* and *Escadrila 60* with 12 IAR 80As each. During the Battle of Stalingrad, on 12 September, *Grupul* 8 Vânătoare IAR 80Bs (along with *Grupul* 7 Vânătoare's Bf 109s) claimed to have shot down seven Yaks but they lost two IARs.[13] *Grupul 8* moved at the end of September, to Karpovka, joining *Grupul 7*, equipped with Bf 109s.[14] On 12 and 13 December, *Grupul 6* used its IAR 81s to support the German counterattack by the Panzergruppe Hoth of the Heeresgruppe Don, from Kotelnikovo towards Stalingrad.[15] In the summer of 1943 the FARR's IAR-80s were transferred to Romania for air defense duties, where they were used in combat against the United States Air Force. USAAF attacks were directed at the oil refineries installation around Ploieşti, in particular. On 1 August 1943 the IAR 80 faced the Consolidated B-24 Liberator heavy bomber for the first time. There were 178 B-24s from 9th USAAF, part of Operation Tidal Wave.

The IAR 80Bs of *Escadrila 61* and 62 of *Grupul 6 Vânătoare*, as well as IAR 80Cs from the newly formed *Escadrila 45* of *Grupul 4 Vânătoare*,[16] together with the Bf 109Gs from Esc. 53 and Bf 110s from the Romanian night fighter squadron, dived on the low-flying, four-engined bombers, belonging to five USAAF bomber groups (the 44th, 93rd, 98th, 376th and 389th). The Americans lost – in combat or on the way back – 51 bombers. Only 89 reached their bases, of which only 31 were serviceable for a mission the next day. The Romanian pilots claimed 25 certain and probable victories for just two losses,[12] one IAR 80 B and one Bf 110C. According to Romanian statistics, IARs and Messerschmitts were confirmed as having shot down ten B-24s, with two probables.[17]

Abandoned IAR-80 No. 411 being inspected by Russians[18]

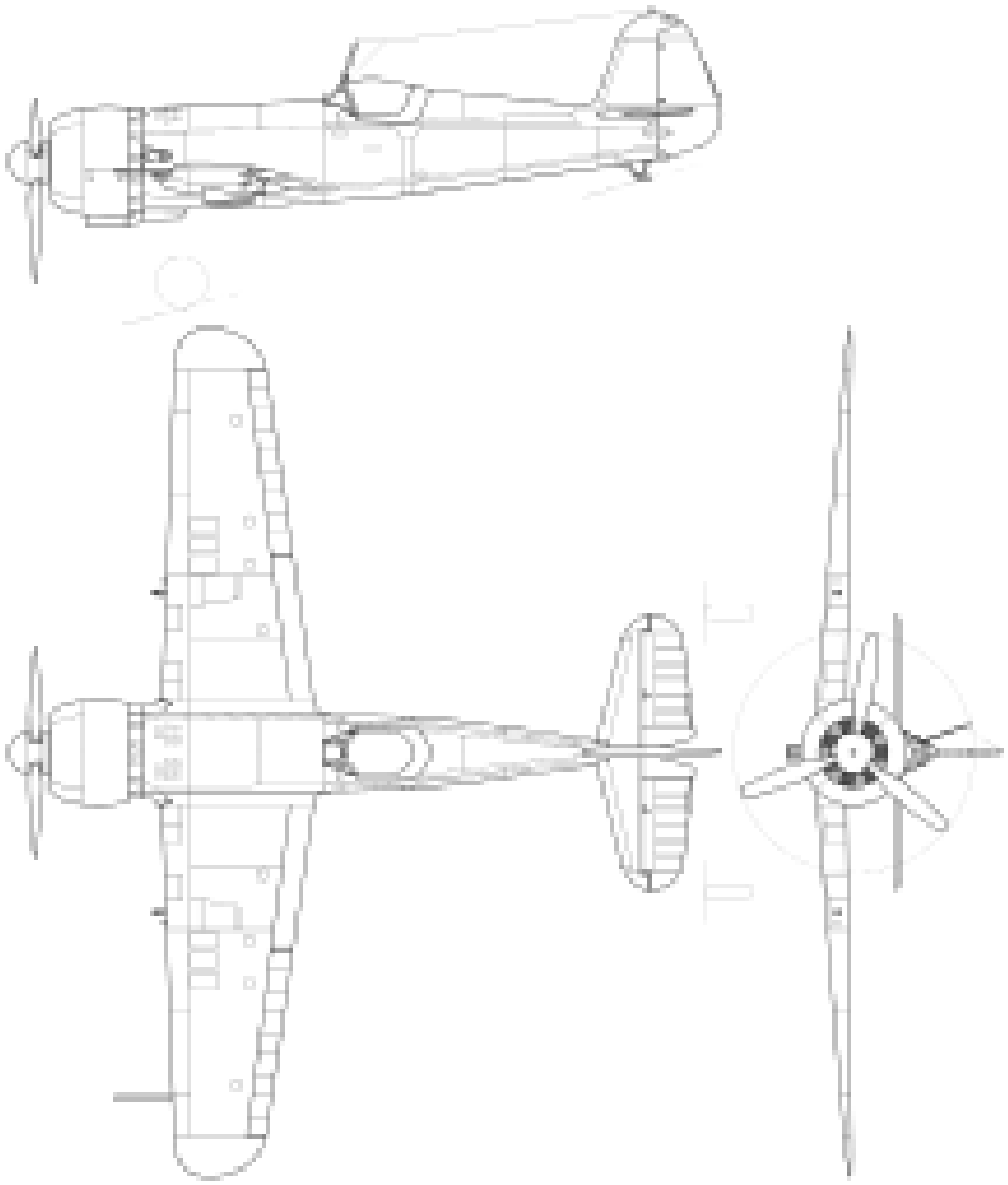
On 10 June 1944, IAR 80s took part in a major air battle when the USAAF attacked Ploiești with 38 P-38 Lightnings of the 82nd Fighter Group carrying one bomb each, escorted by 39 Lightnings of the 1st and 82 FGs.[19] The IAR 81Cs from *Grupul* 6, as well as the German fighters from I./JG 53 and 2./JG 77, intercepted the large American formation. Romanian pilot Dan Vizanty, commander of *Grupul* 6, recalled later:

"Our Lightning attack came as a complete surprise to the Americans. Our attack was so quick that not one of the 100 (sic) American aircraft managed to fire a single shot at our aircraft parked on the ground. Everything happened between ground level and about 2,000 meters (6,600 feet), and was total confusion. I was excited and proud of my "mills", the IAR 80s, which, thanks to their extraordinary agility, remained victorious in the air. I saw their crazy dives, quick rolls, reverse turns and inverted flying, always with just brief burst of fire to save ammunition. It was an incredible sight, but also a drama for the Lightning pilots, who, at this low altitude, were inferior to the ever-present, nimble IAR 80s". The USAAF lost 22[20] or 23 P-38s on that day. The Romanians claimed 24 victories, suffering three losses.[21] The Americans claimed 11 victories.[19]

IAR-80 during the winter on the eastern front

The American account of this battle conflicts significantly with the Romanian one. Fighter pilot Herbert "Stub" Hatch, who took part in the dogfight, wrote that his flight of 16 P-38s, the 71st Fighter Squadron, was challenged by a large formation of Romanian IAR 81C fighters that he misidentified as Focke-Wulf Fw 190s.[20] According to Hatch, the fight took place at and below 300 feet (100 m) in a narrow valley.[20] Hatch saw two IAR 81Cs hit the ground after taking fire from his guns, and his fellow pilots confirmed three more kills from his guns, making Hatch an ace in a day. However, the outnumbered 71st Fighter Squadron lost nine aircraft. The Americans never again repeated the P-38 dive-bombing mission profile over Romania.[22] But during 1944 USAAF aircraft appeared over Romania in more significant numbers. Many air combats occurred and by the time of their last encounter with the USAAF on 3 July 1944, pilots of *Grupul 6 vânătoare* had submitted 87 confirmed and ten unconfirmed claims.[23] Casualties among the Romanian fighter pilots quickly mounted too. The three IAR 80/81 groups (the 1st, 2nd and 6th) in a period of less than four months – known as the "American Campaign" – had at least 32 IAR pilots killed in action, including 11 aces. These losses exceeded the number of casualties suffered in the previous two and a half years of fighting against the Soviets.[24] Because of heavy losses, all IAR 80/81 units were withdrawn from combat against Americans in July 1944 and IAR pilots started to convert to the more modern Bf 109G-6s.[23]

Specifications (IAR.81C)



IAR-80 3-view drawings

General characteristics

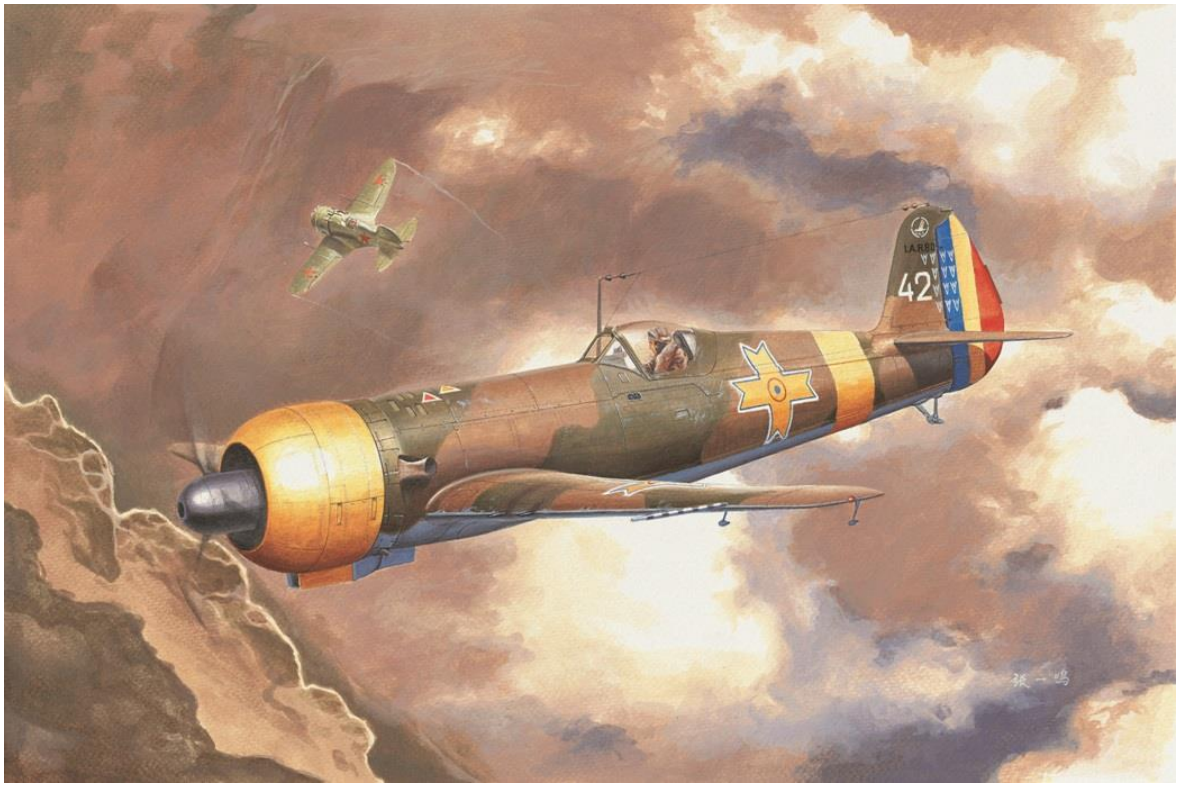
- **Crew:** 1
- **Length:** 8.97 m (29 ft 5 in)
- **Wingspan:** 11 m (36 ft 1 in)
- **Height:** 3.600 m (11 ft 10 in)
- **Wing area:** 17 m^2 (180 sq ft)
- **Empty weight:** 2,200 kg (4,850 lb)
- **Max takeoff weight:** 3,030 kg (6,680 lb)
- **Fuel capacity:** 330 kg (730 lb)
- **Powerplant:** 1 × IAR K14-IV C32 1000A 14-cylinder two-row air-cooled radial piston engine, 750 kW (1,000 hp)
- **Propellers:** 3-bladed constant-speed propeller

Performance

- **Maximum speed:** 510 km/h (320 mph, 280 kn) 524 Km/h at 5,350 m in tests of IAR 80 Nr.2 on 16.12.1940
- **Range:** 730 km (450 mi, 390 nmi) on internal fuel only
- **Ferry range:** 1,330 km (830 mi, 720 nmi) with extra fuel tanks
- **Service ceiling:** 10,000 m (33,000 ft)
- **Time to altitude:** 4'41" – 7'00" to 5,000 meters (depending on variant)
- **Wing loading:** 132.35 kg/m^2 (27.11 lb/sq ft)

Armament

- **Guns:** 2 × 20 mm (0.787 in) MG 151/20 cannon and 2 × 7.92 mm (0.312 in) FN-Browning machine guns mounted in the inner portion of the wing[28]
- **Bombs:** one 250 kg (550 lb) SC250 bomb under the fuselage and/or 2 × 50 kg (110 lb) SC50 bombs under the wings.



Source : https://en.wikipedia.org/wiki/IAR_80