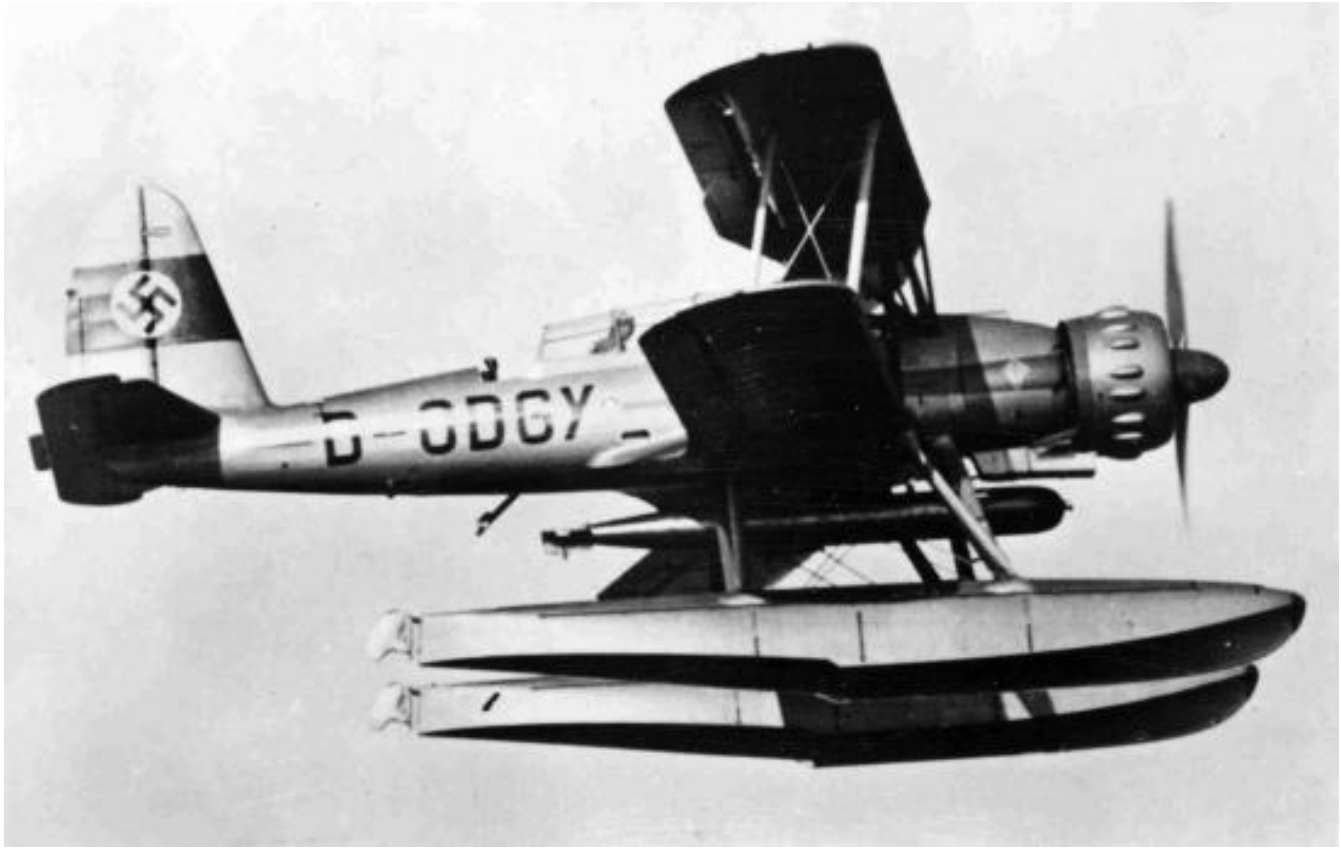
Arado Ar 95

L'Arado Ar 95 est un hydravion biplan allemand, utilisé pour des missions de reconnaissance côtière et de bombardement léger lors de la Seconde Guerre mondiale. En 1935, Walter Blume, l'as de la première guerre mondiale et ingénieur a l'Arado Flugzeugwerke, débute de son initiative l'étude d'un hydravion léger de reconnaissance côtière et d'attaque. Il s'inspire de son travail sur l'Arado Ar 68 pour la conception d'un biplan, biplace entièrement métallique, soignant particulièrement le travail de l'haubanage, afin de faciliter à la fois la vision vers le haut et l'accès à l'habitacle. L'armement de l'appareil est composé d'une mitrailleuse MG 17 de 7,9 mm tirant vers l'avant, une MG 15 de même calibre sur pivot à l'arrière et une torpille de 800 kg ou une bombe de 500 kg sous le fuselage. Le premier prototype, un hydravion catamaran, prend l'air en 1936, équipé d'un moteur 9 cylindres en étoile BMW 132 De de 880 chevaux. Un deuxième prototype est conçu en même temps, équipé pour sa part d'un 12 cylindres en V inversé Junkers Jumo 210 de 690 chevaux. Un troisième prototype est aménagé en triplace. Ces prototypes sont testés et comparés au Focke Wulf FW62 et au Heinkel He 114. Le prototype à moteur BMW est finalement jugé comme le meilleur et bénéficie d'une commande de 6 Ar 95 A-0 de présérie. Le premier Ar 95 de présérie se différencie des prototypes par l'ajout d'une verrière recouvrant les cockpits et ouverte à l'arrière pour laisser le champ libre à la mitrailleuse. La mise au point opérationnelle de l'Arado Ar 95 se fait en Espagne, au sein de la Légion Condor en août 1938. Ils sont basés à Majorque et 3 appareils sont finalement cédés aux espagnols. Les commandes tardant à venir, Arado développe deux versions destinées à l'exportation, l'Ar 95W à flotteurs et l'Ar 95L, version terrestre avec train classique fixe caréné. Le Chili commande 6 Ar 95 suivie de la Turquie qui en commande 12, qui seront finalement réquisitionnés par la Luftwaffe. Une version destiné à être embarqué sur les futurs porte-avions allemands, l'Arado Ar 195 est aussi développée.

L’Ar 195 se différencie de l’Ar 95 par un habitacle déporté vers l’avant, le pare-brise venant s’appuyer sur l’intrados du plan supérieur au niveau du bord d’attaque. 3 prototypes sont construits (Ar-195V-1, Ar 195V-2 et Ar 195V-3) avec des carénages de train moins importants et les équipements marins spécifiques aux appareils embarqués. Cet appareil fut rapidement abandonné en faveur de l'Ar 197. L’Arado Ar 95 sera construit a 42 exemplaire et fut retiré du service en 1944.

Arado Ar 95 :

- Moteur BMW De
- 880 Ch
- 310 Km/h
- 3 Mitrailleuses 7.92 mm 1 torpille de 800 Kg ou 500 Kg de bombes
- 3560 Kg en charge
- 7300 m de plafond pratique
- 1100 Km en distance franchissable
- 2 Pilote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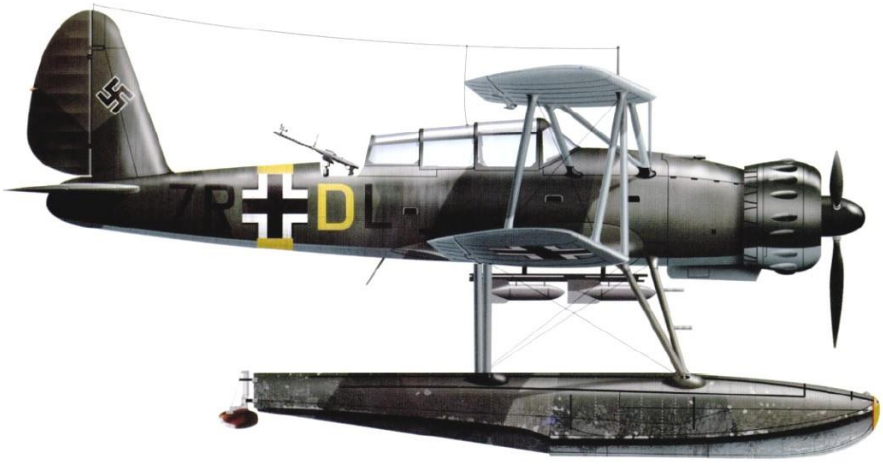
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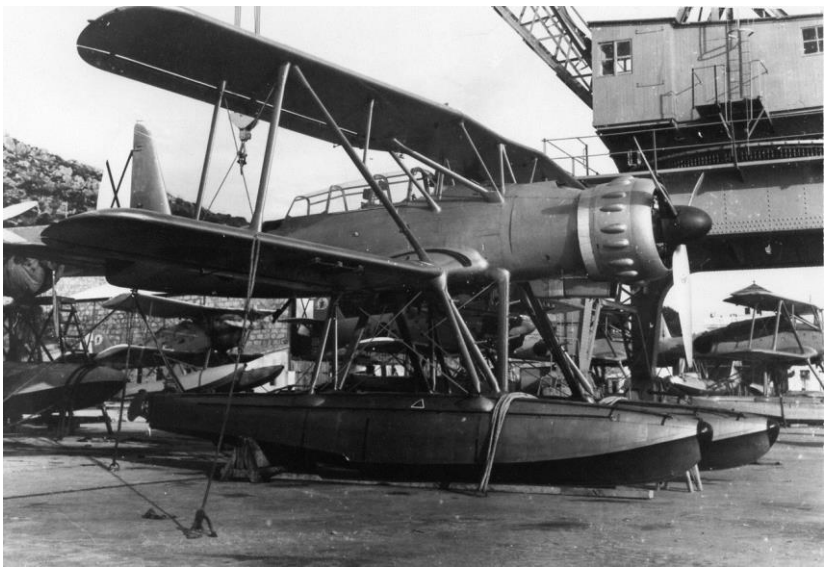


Source : http://les-avions-de-legende.e-monsite.com/pages/les-hydravions/les-hydravions-allemands/arado-ar-95.html

Version anglaise Wikipédia

The **Arado Ar 95** was a single-engine reconnaissance and patrol biplane designed and produced by the German aircraft manufacturer Arado. During the mid 1930s, the *Reichsluftfahrtministerium* (German Air Ministry, RLM) sought a replacement for the Heinkel He 60 floatplanes operated by the *Kriegsmarine* (German Navy). Arado opted to design the Ar 95 with the intention of fulfilling this requirement. While the competing Heinkel He 114 was selected, the RLM encouraged the company to continue work on the aircraft. Furthermore, six aircraft were dispatched overseas with the *Legion Condor* and thus saw action during the Spanish Civil War. The Ar 95 also selected as the basis for the Ar 195 carrier-based torpedo bomber intended for the Kriegsmarine's future aircraft carriers. Opting to focus on export opportunities for the aircraft, Arado produced two distinct versions, the *Ar 95W* floatplane and the *Ar 95L* landplane, which had a fixed undercarriage. The company was able to secure orders from both Chile and Turkey. However, the latter would not receive their Ar 95s as a consequence of the outbreak of the Second World War; instead, they were taken over by the Kriegsmarine and used as trainers and coastal patrol aircraft off the coast of Latvia and Estonia as well as in the Gulf of Finland. Despite being built in relative low numbers, German Ar 95s continued to be operated up until late 1944. Spain continued to operate at least one of its Ar 95s as late as 1948.

Development

Background

During the mid-1930s, several German aircraft manufacturers embarked on biplane aircraft that would be suited to performing multiple roles and operational environments, including as floatplanes, trainers, and fighter aircraft.[1][2] These efforts were heavily connected with Nazi Germany's expansion of the *Kriegsmarine* (German Navy), which was a key customer for such aircraft.[3] By early 1935, it was determined that the Kriegsmarine's existing fleet of Heinkel He 60 floatplanes was lacking in performance, thus the *Reichsluftfahrtministerium* (German Air Ministry, RLM) sought out a suitable successor to replace it.[4] Arado opted to design and submit their own two-seat seaplane, designated *Ar 95*. It was designed to perform various missions, including coastal patrol, aerial reconnaissance, artillery spotting, target-toeing, as well as torpedo and bomber attacks.[5][2] The design team was headed by Arado's chief engineer, the aeronautical engineer Walter Blume. He opted to produce a relatively compact all-metal aircraft, being largely composed of duralumin, that was suited to the challenging maritime environment.[5][2] The Ar 95 was equipped with foldable wings to ease storage requirements as well as to perform catapult launches.[6] Furthermore, the Ar 95's configuration was validated to conform with modern standards as per the RLM's requirements.[7] The fuselage featured a monocoque construction, the wing centre section being joined to the fuselage via its continuous spars.[7] The wings were of an all-metal construction, although a fabric covering was present on the underside of the wing. The tailplane and fin were composed of lightweight metals and employed cantilever construction.[8] All control surfaces were counterbalanced, although only the horizontal stabiliser could be trimmed mid-flight. The ailerons and vertical stabiliser could be adjusted on the ground.[9] Two separate compartments for stowing equipment were present just forward of the pilot's cockpit, which were externally accessible via their own hatches.[7] An observer's compartment was beneath the cockpit that comprised the entire height of the fuselage and could readily accommodate two people. Fuel was also accommodated beneath the cockpit.[7]

Into flight

The first prototype, an all-metal biplane powered by a BMW 132 radial engine, performed its maiden flight on 3 December 1936.[10][5] It was followed by a second prototype, which was powered by a Junkers Jumo 210 liquid-cooled engine. The two prototypes were evaluated against the similar Focke-Wulf Fw 62. The BMW-powered version was considered worthy of further study, and a batch of six was sent for further evaluation with the *Legion Condor*, and thus flew active combat missions during the Spanish Civil War.[11] The third prototype was the first to be fitted with a three-blade metal variable-pitch propeller along with an automated RPM control system; it was also the first model outfitted to be operated by a crew of three, comprising a pilot, gunner, and radio operator/observer.[9] The fourth prototype was configured as a land-based aircraft, being equipped with fixed landing gear that housed fuel within its spats. The RLM were reportedly interested in operating a land-based model, but ultimately chose not to procure it, allegedly due to it not achieving performance expectations.[9]

Even prior to the start of flight testing, it had become increasingly clear that the RLM favoured a rival submission, the Heinkel He 114, yet the ministry still encouraged development to continue, albeit with alterations that would make it better suited as a universal naval aircraft suitable for export customers. Furthermore, German officials advocated for a derivative that would be suited to the torpedo bomber role that could be operated from the under-construction German aircraft carrier *Graf Zeppelin*; the resulting aircraft was designated Ar 195.[5][12]

Operational history

Arado Ar 95

The Ar 95 was not ordered by the German armed forces, and so was offered for export in two versions, the *Ar 95W* floatplane and *Ar 95L* landplane, the latter featuring a fixed, spatted undercarriage. During late 1938, an Ar 95 was lost in a fatal accident, killing test pilot Graf Resseguier, while attempting to perform a snap roll in spite of restrictions during a demonstration flight to visiting officials from Chile.[9] Nevertheless, six Ar 95Ls were ordered by the Chilean Air Force, they were delivered prior to the start of the Second World War.[13] Turkey also placed an order for Ar 95Ws, however, none were delivered as these aircraft were instead taken over by Germany at the outbreak of the conflict. These requisitioned Ar 95s were designated by the *Luftwaffe* as the *Ar 95A*, and were used for training,[10] and also for coastal reconnaissance operations in the Baltic Sea, operating off the coast of Latvia and Estonia in 1941, and in the Gulf of Finland.[11] In German service, the Ar 75 continued operating until late 1944.[10] The type lasted longer in Spanish service, being operational as late as 1948.[9]

Specifications (Arado 95A-1)[edit]

General characteristics

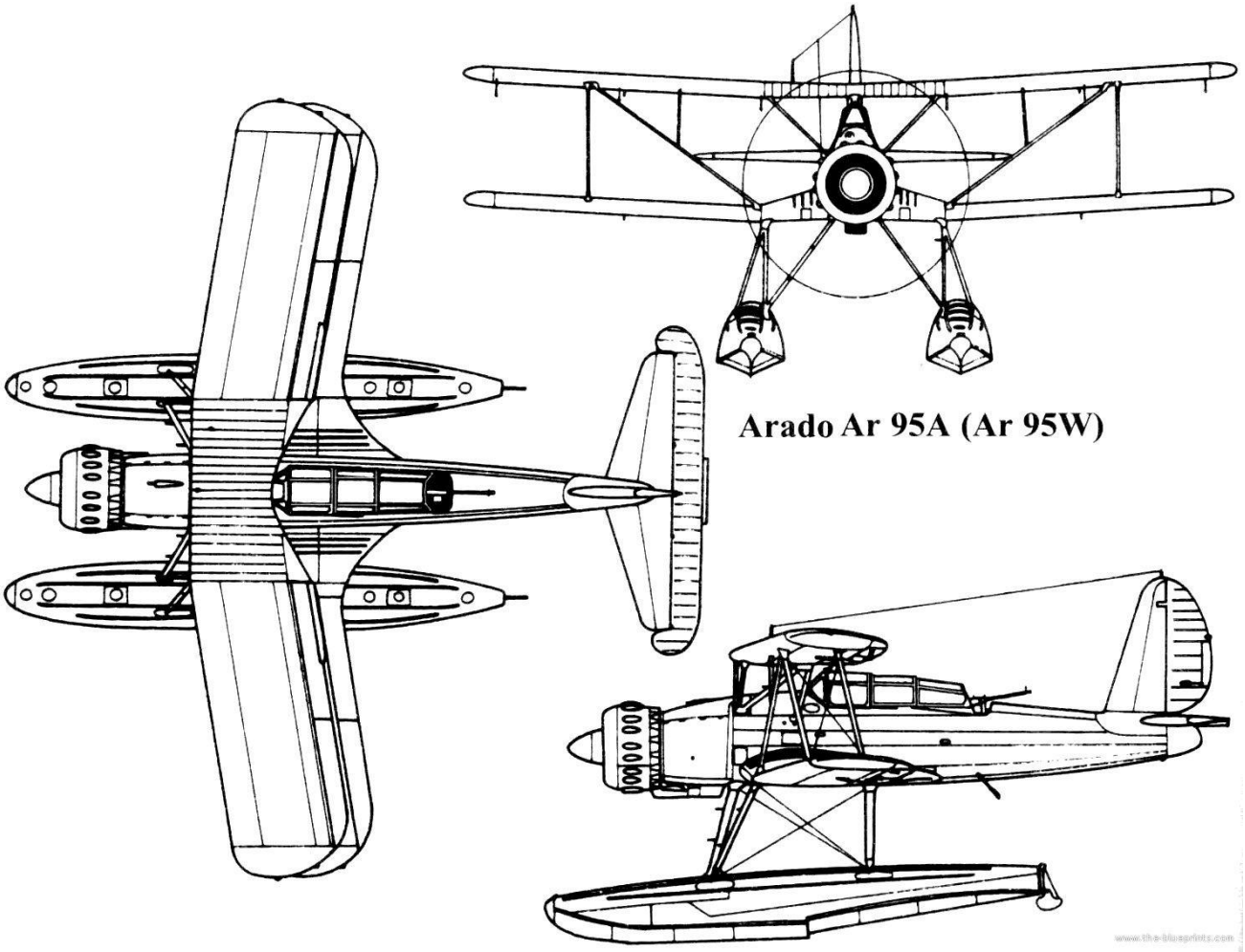
- **Crew:** 2
- **Length:** 11.10 m (36 ft 5 in)
- **Wingspan:** 12.50 m (41 ft 0 in)
- **Height:** 3.60 m (11 ft 10 in)
- **Wing area:** 45.40 m^2 (488.7 sq ft)
- **Empty weight:** 1,111 kg (2,450 lb)
- **Max takeoff weight:** 3,560 kg (7,848 lb)
- **Powerplant:** 1 × BMW 132De air-cooled nine-cylinder radial engine, 656 kW (880 hp)

Performance

- **Maximum speed:** 310 km/h (190 mph, 170 kn) at 3,000 m (9,800 ft)
- **Cruise speed:** 255 km/h (158 mph, 138 kn) at 1,200 m (3,900 ft)
- **Range:** 1,100 km (680 mi, 590 nmi)
- **Service ceiling:** 7,300 m (24,000 ft)
- **Rate of climb:** 7.5 m/s (1,480 ft/min) [10]

Armament

- **Guns:** 1 × fixed, forward-firing 7.92 mm (.312 in) MG 17 machine gun and 1 × flexible 7.92 (.312 in) MG 15 machine gun in rear cockpit
- **Bombs:** 1 × 800 kg (1,764 lb) torpedo *or* 500 kg (1,102 lb) bomb on underfuselage rack



Source : https://en.wikipedia.org/wiki/Arado_Ar_95