

# Eyes of the Kriegsmarine



*John Rue looks at the development and combat role of the Arado Ar 196.*

Prototype Ar 196 V-1 D-IEHK; the Arado seaplane was selected for production in 1939.

On May 5, 1940, Leutnant Günther Mehrens of *Küstenfliegergruppe* 706 based at Aalborg in Denmark was flying a patrol over the Kattegat when he spotted a submarine on the surface. On closer inspection Mehrens and his observer in the rear seat confirmed that the submarine was British and that it was laying mines.

Lt Cdr Lonsdale, the captain of HM Submarine Seal was in a quandary. His vessel had hit a mine and the damage was preventing him from diving — how ironic, that he should hit a mine before he had laid his own. Knowing that he could be spotted on the surface at any time, the only course open to him was to unload his mines just in case he became the target of enemy action. The operation was going well until a look-out spotted an aircraft in the distance that was heading towards them. The gun crew 'closed up' and prepared to defend their boat.

Günther Mehrens was flying the Arado Ar 196 A-2, a low-wing, twin-float, seaplane armed with two 20mm MG/FF cannons in the wings, a 7.92 MG17 in the engine cowling and a rear-mounted MG15 — formidable armament for a coastal patrol aircraft. Under the wings were two SC-50 bombs (50kg/110lb) which Mehrens was intending to use to good effect.

Swinging round to get a good run at his target, Mehrens opened up with everything that pointed forward, and as he swooped over the conning tower of the submarine he jettisoned his bombs.

Lonsdale was determined to stave off his attacker, but he could not dive, he could not manoeuvre out of the way because of the mines he had just laid, and he did not want to jeopardise



This aircraft carries the fictitious code of CP+AB, probably for security purposes. In the twin-float arrangement, the Ar 196 was a stable aircraft on the water. (MAP)

the lives of his crew. For all he knew, more German aircraft would be on the way, after all the Kattegat was a major route for German warships entering the North Sea and was, therefore, very heavily defended. He had two options open to him, to fight to the end or to surrender.

A second A-2 arrived on the scene and Lonsdale's mind was made up. He signalled his intentions to Mehrens. Landing alongside the submarine Günther Mehrens received the captain's surrender and, leaving his observer with his prize, flew Lonsdale to Aalborg as a prisoner of war. The Seal was later towed to Friedrichshafen and after repairs was taken into service with the *Kriegsmarine* as U-B. She was eventually scuttled at Kiel on May 3, 1945. The Ar 196 seaplane had proved that it was not the innocent-looking patrol aircraft that it appeared to be.

The Arado Ar 196A entered service with the

*Luftwaffe* in 1938 having been designed primarily as a multi-purpose marine aircraft for both ship-borne and coastal reconnaissance duties. Its development history began in 1935 with the introduction of the Arado Ar 95 twin-float, two-seat biplane designed by Dipl Ing. Walter Blume who gained his aircraft design experience whilst working for the Albatross factory during World War One. The Ar 95 was a private venture project to supply a marine reconnaissance aircraft to the *Luftwaffe* but it was not successful against the Heinkel He 60 twin-float, two-seater biplane which had established a position in the ship-borne and coastal reconnaissance role. In that same year Heinkel tried to introduce its He 114 twin-float, sesquiplane to replace the He 60, which had a limited load capability, a range of only 590 miles and was slow at a maximum speed of 150mph (240km/h). A few of the new type did see service with some warships (operating with 5/BFG 196) but when production ceased in 1939

they were reduced to the role of shore-based coastal reconnaissance.

The *Arado Flugzeugwerke GmbH*, whose main production facilities were at Warnemünde on the Baltic coast, north of Rostock, continued development of the Ar 95 despite the Heinkel monopoly on seaplanes. Indeed, they took a bold step forward and after reviewing the design of the Ar 95, they removed the top wing and revised the wing profile to produce the initial prototype design of what was later to be the Ar 196 low-wing, twin-float monoplane. Like the He 60, it was intended for use as a catapult-launched, ship-borne reconnaissance and light attack aircraft. Six Ar 95s were sent to Spain for operational trials with the Condor Legion during the Spanish Civil War. Arado even managed to export the Ar 95 to Chile, but the war intervened to prevent fulfilment of an export order to Turkey.

was the Fw 62 which was designed as a conventional two-seat, twin-float biplane. This represented something of a retrograde step in view of the performance of Heinkel's earlier production biplane. Arado, however, opted for a more modern approach and proffered its revised Ar 95, now officially designated the Ar 196. By the summer of 1937, Arado's first prototype, the Ar 196 V-1 (D-IEHK) was flying, followed in October by the Focke-Wulf Fw 62 V-1 (D-OFWF). Both versions were built with a twin-float configuration and two further prototypes swiftly followed: the Ar 196 V-2 (D-IHQI) and the Fw 62 V-2 (D-OKDU). The single-float versions of each of the competitors' proposals materialised before the end of 1937: Ar 196 V-3 (D-ILRE), Ar 196 V-4 (D-OVMB), Fw 62 V-3 (D-OHGF) and Fw 62 V-4 (D-OMCR). All the prototypes were powered by the 880hp BMW 132 Dc nine-

Despite the possible advantages of the single-float variants the trials found in favour of the twin-float arrangement and came down in favour of the Arado design; the sleek modern appearance of the Ar 196, together with its increased load capability, were significant factors. An order was placed with Arado for the delivery of 20 units by the autumn of 1939.

At least two pre-production Ar 196 A-O aircraft (D-IYFS) and (D-ISFD) were at Travemünde in 1939 for trials with the so-called *Schleppsegel* (towed sail) which was streamed out from a boom to run alongside a ship onto which a landed seaplane could be recovered to facilitate the hoisting on board without getting the crews' feet wet! Most capital ships carried this system but did not always use it, primarily because the aircraft could be winched out of the water long before the *Schleppsegel* could be deployed.

The 20 production aircraft, designated Ar 196 A-1s, armed with a single 7.92mm MG17 mounted in the right side of the engine cowling plus a swivel-mounted MG17 in the rear cockpit, were delivered by June 1939 and distributed to the 1st and 5th Squadrons of *Bordfliegergruppe 196* (ship's flight group) based at Wilhelmshaven and Kiel-Holtenau respectively. This group was responsible for the supply of reconnaissance aircraft to the capital warships of the *Kriegsmarine* some of which were to receive up to four aircraft. By the end of 1939 the following ships received their complement of Ar 196 A-1s: *Gneisenau* (4), *Prinz Eugen* (3), *Graf Spee* (2), *Lützow* (2), and the *Admiral Scheer* (2). By the following year, two further variants were issued to coastal reconnaissance squadrons based in Germany and Denmark. The Ar 196 A-2, of which only a small production run was completed, differed from the A-1 by the addition of two 20mm MG/FF machine-guns mounted one in each wing. The Ar 196 A-3, which was to be the main production machine, had its armament increased to include a twin MG17 installation in the rear cockpit position.

By 1941 the Ar 196 A-3 was serving with 19 units operating from the French coast to the Mediterranean and could also be found on many capital warships, including the *Tirpitz* and the *Bismarck* (each receiving six aircraft). Their duties included coastal reconnaissance, air-sea rescue, convoy protection, anti-submarine patrols and anti-shipping strikes. The units were:

- 1./Kü.Fl.Gr.706, SAGr.125, 2./3./4. & 5./SAGr.126, Stab./SAGr.127, 1./2./SAGr.128, 1./&2./SAGr.130, 2./SAGr.131, 2./SAGr.132, 1./&3./KG.200, BFerg St, 3./Fl.Erg.Gr (See), 1./ & 5./BFLGr.196



Ar 196 A-2 GA+DX; note the lack of a spinner. (MAP)

In the years before the outbreak of war, there was to be some strong competition between Arado and Focke-Wulf. In the autumn of 1936 the RLM (*Reichsluftfahrt-ministerium*) published an invitation for tenders to supply a new two-seater, catapult-launched maritime reconnaissance aircraft to ultimately replace the existing He 60. Heinkel was excluded from the RLM tender competition — it was policy that certain manufacturers were required to concentrate design and production efforts upon certain categories of aircraft; and Heinkel was in the bomber business.

The RLM tender specification was wide open and offered the competitors the opportunity to provide prototype aircraft with both twin-float and single-float configurations for evaluation at the test site at Travemünde. Focke Wulf's contender

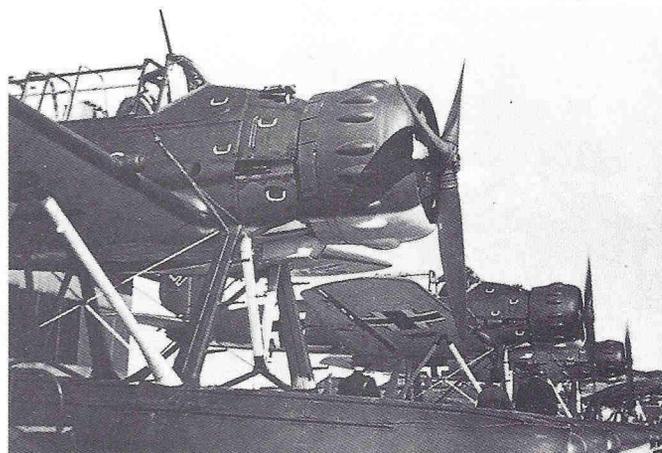
cylinder radial engine with a two-bladed propeller.

During the evaluation trials, Arado built two more single-float machines, the V-5 (D-IPDB) and the V-6 (registration not known) and gave them the designation Type B. These two examples were fitted with a three-bladed propeller. The V-5 prototype was used to determine sea-going characteristics, in particular the disadvantages and advantages of using a single float.

During trials with the light cruiser *Karlsruhe*, the V-4 prototype (D-OVMB) sustained serious damage when the engine bolts sheared after a very heavy landing. The V-6 prototype was involved in further test flights during 1941 for an unspecified purpose and this aircraft was to survive through to 1944; however, it was destroyed in an accident whilst in the hands of the *Ergänzungs-Bordfliegerstaffel* (experimental ship's flight squadron).



V-4 B-series D-OVMB with streamlined outrigger floats and the twin-bladed Schwaez propeller. (MAP)



Fine line-up of newly-delivered Ar 196 A-3s. (MAP)

Kü.Fl.Gr = *Küstenfliegergruppe* — coastal reconnaissance group.

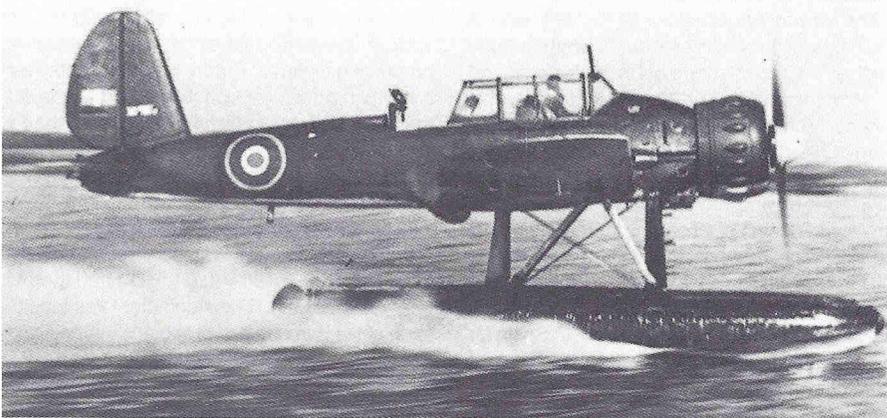
SAGr. = *Seeaufklärungsgruppe* — naval reconnaissance group. BFLGr. = *Bordfliegergruppe* — ship's flight group.

BFerg.St = *Bordflieger Ergänzungs Staffel* — ship's flight-experimental squadron.

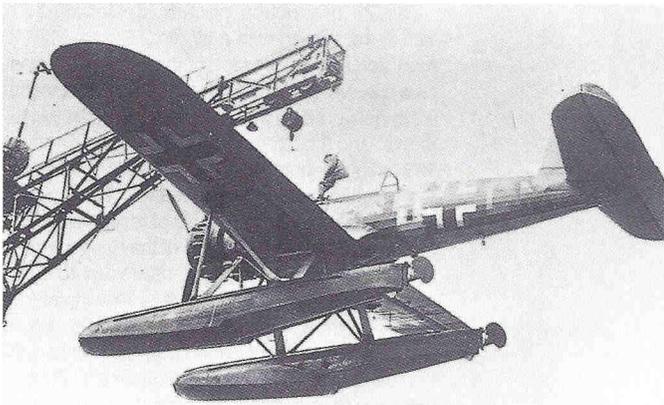
Fl.Erg.GR = *Flieger Ergänzungs Gruppe* — Flight experimental group.

KG = *Kampfgruppe* — bomber squadron.

From 1941 the Ar 196 A-3 was the major production model and remained so until 1943 when the A-5 was produced. Between July 1942 and March 1943 the French SNCA factory at St Nazaire supplied 23 A-3 versions. An intermediate variant, the A-4, was introduced in small numbers and was basically an A-3 with its fuel load increased from 66 to 176 Imp Gal (300 to 800 litres), thus giving a considerable increase in range. A total of 69 Ar



Two captured aircraft (Air Ministry 91 and 92) were used by the Marine Aircraft Experimental Establishment at Felixstowe. (MAP)



Winching 6H+LM of *Flieger Ergänzungs Gruppe* (See) using a dockside crane. (MAP)



The surviving aircraft at NAS Willow Grove, coded T3+HK (623183), an aircraft from the *Prinz Eugen*. (FAA Museum)

196 A-5 variants were built, most of them coming from the Fokker factory in Amsterdam.

The Ar 196 A-5 was generally similar to the A-3 but the wing-mounted armament was changed to the 2cm MG151, which had an increased rate of fire, and the rear defensive installation was changed from the MG 15 to the twin-barrelled MG 81Z.

During 1943, 12 A-3s were sold to Bulgaria where the variant was known as the Akula.

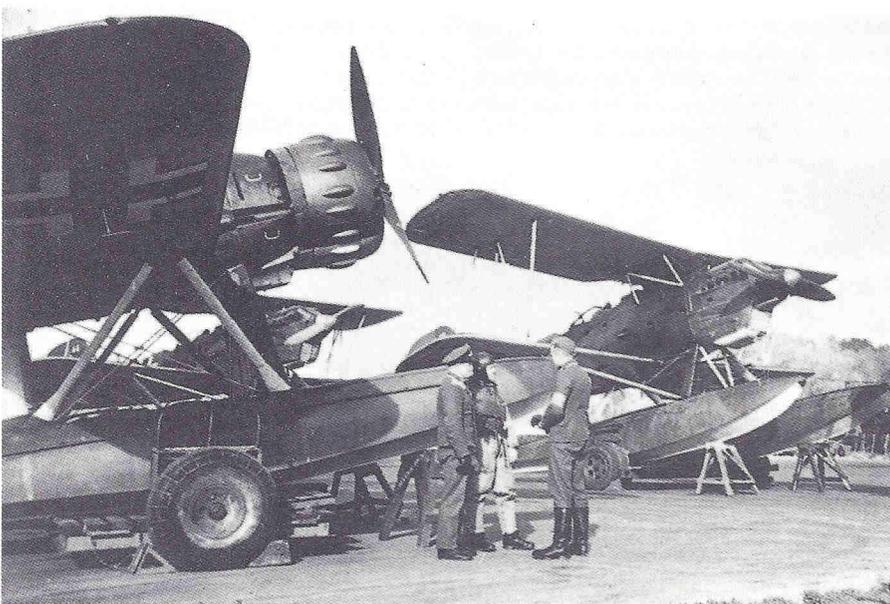
Production ceased in March 1944 after 596 production aircraft had been built. Most were lost through enemy action and only three have

survived to date. The sole, remaining Bulgarian A-3 Akula now stands in the Maritime Museum in Varna and it was still flying in 1955. Two A-3s are preserved in the USA, one at the Smithsonian Institute, Washington (presently stored at the Garber facility, Maryland) and the other at the US Navy station at Willow Grove in Pennsylvania. Both were originally part of the *Prinz Eugen's* aircraft complement, which was captured intact at Copenhagen and dispatched to the USA, arriving at Philadelphia in February 1946. The Smithsonian example, which it has held since 1960, was a Fokker-built aircraft and

wore the code T3+BH of *Bordfl. Gr.196* — the GA+DX that it wears now was taken from a photograph and is not correct for aircraft 623167. This aircraft will be restored to display status for inclusion in the new museum facility at Dulles Airport, due to open late in 2001, if funding goes as hoped.

The Willow Grove aircraft, 623183, likewise is a Fokker-built aircraft, and has been at this location since 1949. Although none now survive, the RAF is known to have made use of at least four Ar 196 floatplanes; the first of these was captured in Norway on April 8, 1940 and was flown by the Marine Aircraft Experimental Establishment (MAEE) at Helensburgh until it crashed on landing on April 26, 1940. The same organisation acquired two A-5 variants at the end of the war, both having been surrendered at Schleswig-See; aircraft '127 became VM748 and '514 became VM761, both were sold for scrap at the end of 1947. The fourth aircraft was acquired from the same source but does not appear to have been flown back to the UK. (Details of all Axis aircraft captured and used by the Allies can be found in *War Prizes*, a superb study by Phil Butler, published by Midland Counties in 1994.)

During its service, the Ar 196 was considered to be the best all-round, single-engined seaplane in service with the Luftwaffe. It served its purpose well, although — apart from the Seal adventure in the Kattegat — it did not enjoy the same level of fame as other aircraft. From 1944 until the war's end most of the Ar 196 units operated in the Black Sea and the Aegean, but two Ar 196A-3s were stationed in Penang (Malaysia) as part of the *Marinesonderdienst* and with the aid of other Ar 196s from the auxiliary cruisers operating in that area, carried out their duties against British and American submarines harassing German and Japanese transports.



The Arado type poses with two Heinkel He 60s, the type it replaced. (MAP)

