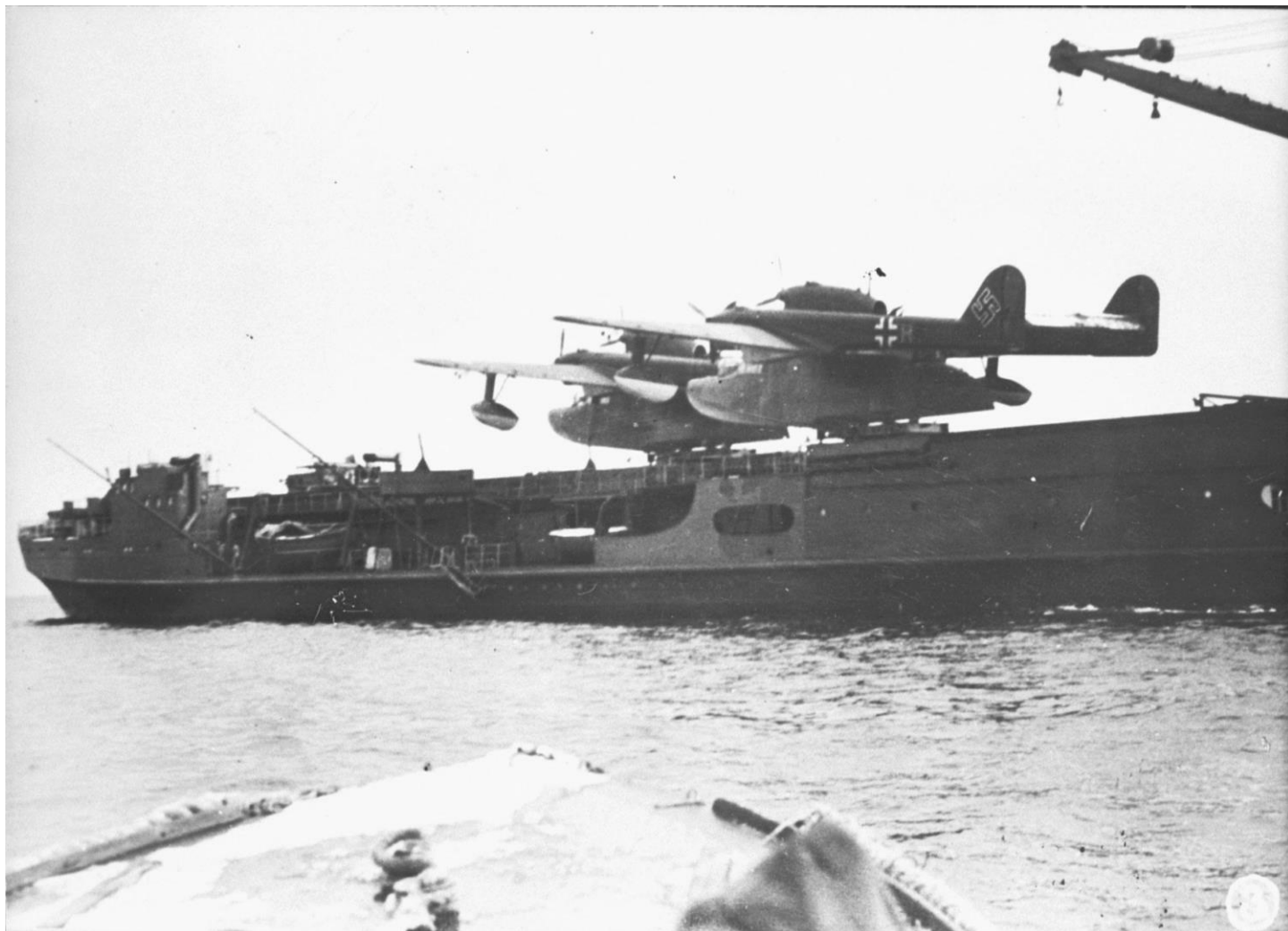


Blohm Voss BV 138



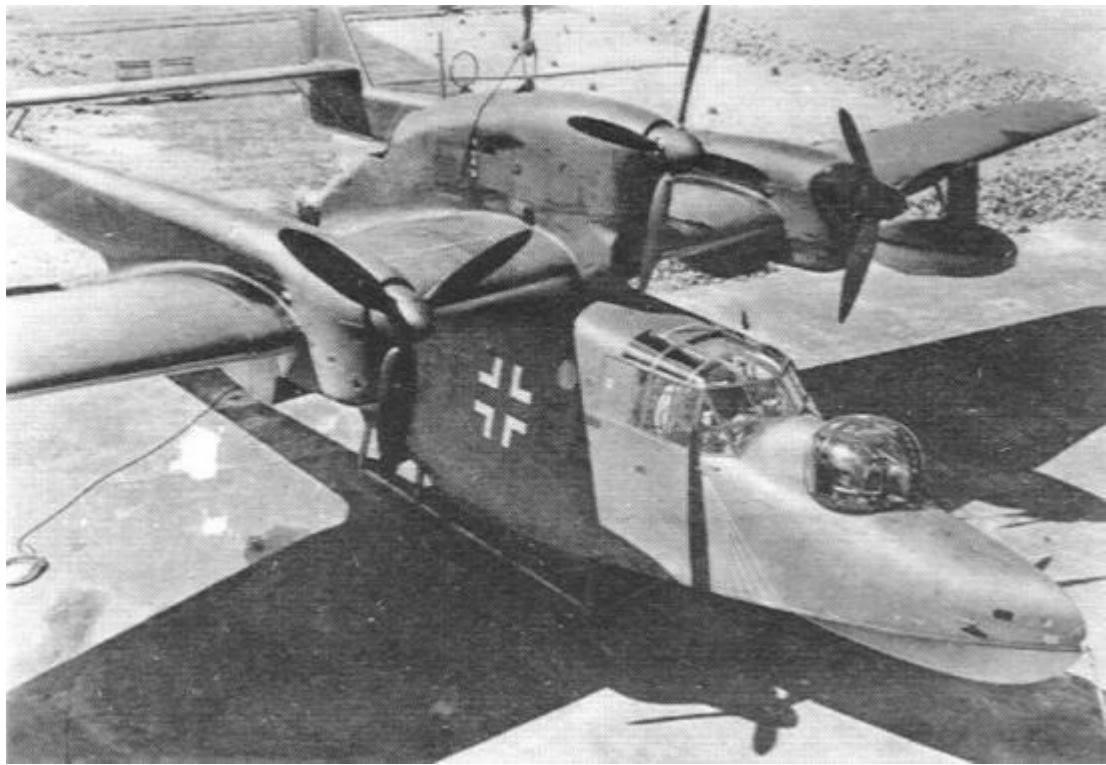
Le Blohm & Voss BV 138 Seedorf (dragon des mers) est un hydravion allemand, utilisé pour des missions de reconnaissance maritime lointaine et fut le principal appareil de reconnaissance maritime de la Luftwaffe pendant la Seconde Guerre mondiale. Un des premiers projets étudié par Hamburger Flugzeugbau, filiale de Blohm & Voss, fut celui d'un hydravion de reconnaissance maritime lointaine. Parmi les configurations variées proposées, celle constituée d'une coque centrale et de deux travées de queue pour le soutien des gouvernails, fut choisie. Le travail de construction du modèle débuta en mars 1935. La première commande concerna un prototype désigné HA 138, pourvu de trois moteurs diesel Junkers Jumo 205C. Durant les vols d'essais, il fut constaté des défauts de stabilité directionnelle, de robustesse structurale par mer forte et des caractéristiques hydrodynamiques insuffisantes. Il fut décidé de redessiner complètement l'appareil en gardant seulement la configuration avec la coque centrale et des travées de queue. Le premier vol, du nouvel appareil appelé BV 138, eut lieu en février 1939. Le premier ordre de production fut de 25 exemplaires. Quelques-uns furent immédiatement utilisés pendant l'occupation de la Norvège. Cette première expérience au front révéla la nécessité de renforcer la structure. Le prototype de l'hydravion **Bv 138** vola pour la première fois en juillet 1937. Les autres prototypes furent modifiés au niveau des ailes et de la coque, la production du modèle **Bv 138A** démarra fin 1939 avec 22 exemplaires. L'avion se présentait sous la forme d'un hydravion à coque centrale, muni d'ailes hautes et doté d'un fuselage bipoutre et par l'installation de trois moteurs. Le troisième moteur occupait une position centrale, au-dessus des ailes. Sa mise au point fut assez lente et il n'arriva sur le front qu'à partir d'avril 1940 et sa construction fut stoppée au milieu de l'année 1943. Cet hydravion opéra jusqu'à la fin de 1942, en étroite collaboration avec les sous-marins, et contribua de manière valable à la lutte acharnée menée par l'Allemagne afin de couper les lignes de ravitaillement maritimes vers la Russie. Hydravion à coque tri-moteur de reconnaissance maritime, ils furent employés pour de la surveillance maritime sur de longues distances, mais aussi pour du transport de passagers en Norvège.

Cet hydravion, lent mais solide et robuste, sera employé pour accompagner des convois, de la surveillance maritime et de la destruction de navires en Europe du Nord et en Méditerranée. Certains seront aussi convertis pour du déminage, et la plupart étaient aptes au catapultage. À la suite de cette modification, l'appareil prit la dénomination de BV 138 B1. Il fut aussi décidé de pourvoir l'armement défensif de deux canons MG 151 de 20 mm dans les tourelles avant et arrière et d'une mitrailleuse MG 131 de 13 mm dans un poste de tir ouvert derrière le moteur central. L'armement offensif étant constitué de trois bombes de 50 kg, montées sous la section centrale de l'aile droite. Les versions suivantes sont le **Bv 138B** équipé de tourelles défensives, et la version la plus répandue est le **Bv 138C** dont la production est de 227 exemplaires entre 1941 et 1943. La meilleure version, le Bv 138C, connut de bons résultats en localisant et poursuivant les convois du Cap Nord. Durant l'hiver de 1940-1941, les unités équipées de BV 138 B1, basées en Norvège, effectuèrent des missions de recherche des convois en mer du Nord et dans l'Atlantique. En mars 1941, fut mis en production un successeur amélioré, dénommé BV 138 C1, peu différent du type précédent dans ses particularités externes, doté de trois moteurs diesel à 12 cylindres opposés verticaux, Junkers Jumo 205D de 880 ch. Quelques BV 138 furent convertis en appareils chercheurs de mines et désignés BV 138 MS. Dotés d'un anneau en duralumin passant de la tourelle arrière à l'avant de l'arme de la tourelle avant, le moteur fournissait l'énergie à l'anneau. Après avoir résolu les problèmes mis en évidence par les prototypes, le BV 138 se révéla un très bon appareil opérationnel, démontrant qu'il était une robuste machine, en mesure de supporter les attaques de l'ennemi et dans quelques cas de sortir vainqueur de confrontations avec des avions plus agiles et plus rapides.

Blohm & Voss BV 138 :

- 3 Moteurs Diesel Junkers Jumo 205D
- 3 X 880 Ch
- 275 Km/h
- 2 Canon 20 mm 1 Mitrailleuse 13 mm 150 kg de bombes
- 18000 Kg en charge
- 5000 m de plafond pratique
- 4500 Km en distance franchissable
- 5 Equipiers





Source : <http://les-avions-de-legende.e-monsite.com/pages/les-hydravions/les-hydravions-allemands/blohm-voss-bv-138.html>

Version anglaise Wikipédia

The **Blohm & Voss BV 138** *Seedrache* (Sea Dragon), but nicknamed *Der Fliegende Holzschuh* ("flying [clog](#)",^[1] from the side-view shape of its fuselage, as well as a play on the title of the Wagner opera '[Der fliegende Holländer](#)' or '[The Flying Dutchman](#)') was a [World War II German trimotor flying boat](#) that served as the *Luftwaffe*'s main seaborne long-range [maritime patrol](#) and [naval reconnaissance](#) aircraft. A total of 297 BV 138s were built between 1938 and 1943.

Design and development



The second prototype Ha 138/BV 138 V2

Originally developed under the company name of [Hamburger Flugzeugbau](#), the type was initially designated the Ha 138. Its appearance was unique in its combination of unusual design features with its [twin boom](#) tail unit, short [fuselage](#) and [trimotor](#) engine configuration. The short hull, with its [hydrodynamic](#) step beneath and flat sides, earned it the nickname, "*Fliegender Holzschuh*" (the flying clog). The booms of the twin tail unit, much like the smaller [Focke-Wulf Fw 189](#) twin-engined reconnaissance monoplane, extended horizontally from the rear of the outer [engine nacelles](#). For [hydrodynamic](#) reasons, the hull featured a distinct "turn-down", or "beak" at the stern. The first prototype featured a [gull wing](#), but during the first flight it was discovered that this wing could not generate enough lift, so the concept was abandoned on the second prototype. The airplanes had also a hardpoint for catapult launches from seaplane tenders. BV 138 being prepared for catapult launch on the aircraft tender *Friesenland*. Three [piston engines](#) were used. The central engine was mounted above the wing, while the wing engines were lower. The pre-production [prototypes](#) and the **BV 138 A-01** to **BV 138 A-06**, were powered by various makes of engines ranging from 485 to 746 kW (650–1,000 hp). The first standardized version, **BV 138 B-1**, was powered by three 880 PS (868 hp, 647 kW) [Junkers Jumo 205D two-stroke, opposed-piston aircraft diesel engines](#). The [engine cowlings](#) also had an atypical appearance, due to the unique nature of the vertical orientation of the six-cylinder opposed-piston Jumo 205 diesel engines, and resembled the cowlings of 4 or 6-cylinder [inverted inline engines](#) found on smaller civil and utility aircraft from the Jumo 205's propshaft placement, emerging forward at the uppermost front end of the powerplant. The choice for diesel engines made it possible to refuel at sea from U-boats, who also use diesel engines. When refuelling at sea, the airplane had to be fitted with a fuel filter as diesel fuel from ships contains some condensation. There were three gun positions on the aircraft: there was one on the bow with an enclosed, [powered gun turret](#) with a single [MG 151/20 autocannon](#).

On the stern the fields of fire were obstructed by the tail with the horizontal stabilizer, so there was one gun position lower on the fuselage and a second one higher just behind the central top engine. The gun position behind the central engine, which could see over the horizontal stabilizer, was a fully open [Scarff ring](#)-like emplacement which could mount a 7.92 mm [MG 15 machine gun](#), but most aircraft mounted a 13 mm [MG 131 heavy machine gun](#). The lower gun position at the rear fuselage sighted below the horizontal stabilizer. It too was left open and equipped with a machine gun on early aircraft, however later most aircraft mounted an enclosed powered turret similar to the one on the bow.

Operational history



Blohm & Voss BV 138 at anchor on [Lake Siutghiol](#), near [Constanta, Romania](#) in 1943.



A Bv 138 flying boat shot down by a [Bristol Beaufighter](#) of [No. 404 Squadron RCAF](#) near the northern coast of Scotland, 1943.

During the [invasion of Norway](#) in April 1940, some of the pre-production aircraft were pressed into service as troop transports. The main variant, **BV 138 C-1**, began service in March 1941.

Notable Operations

In preparation of a repeat of [Operation Wunderland](#) in 1943, the U-boat [U-255](#) was sent to the East coast of [Novaja Zemlya](#) where it teamed up with a BV 138. The [U-255](#) refuelled the BV 138 four times for reconnaissance flights over the [Kara Sea](#), up to the [Vilkitsky Strait](#). The BV 138 could not find any shipping however, that would make a mission for the German cruiser [Lützow](#) worthwhile, so the operation was cancelled.^[2]

Modifications

The BV 138 was tested with the [Walter HWK 109-500 Starthilfe RATO](#) jettisonable rocket pod, used in pairs, for shorter takeoff performance.^[3] For reconnaissance over sea, some aircraft carried [FuG 200 Hohentwiel](#) low-UHF band maritime search [radar](#). Some examples of the BV 138 were adapted to specialized roles :

- The **BV 138 MS** variant was converted for [minesweeping](#),^[4] and carried magnetic field-generating [degaussing](#) equipment, including a hoop antenna with a diameter equal to the length of the fuselage, which encircled the hull and wings, which was also used on certain models of the [Ju 52/3m](#) trimotor transport used for the same duty.
- Some BV 138s served with the specialist [KG200](#), carrying 10 fully armed infantry troops instead of a bombload.

Many German aircraft had Umbau sets available for modifications in the field. For the BV 138 there was an Umbau set for adding a bomb rack under the port wing. With such an Umbau the bomb payload could be doubled.^[5] As per German nomenclature, such aircraft held a suffix '/U'. A BV 138 C-1 aircraft with the Umbau modification would become BV 138 C-1/U1.

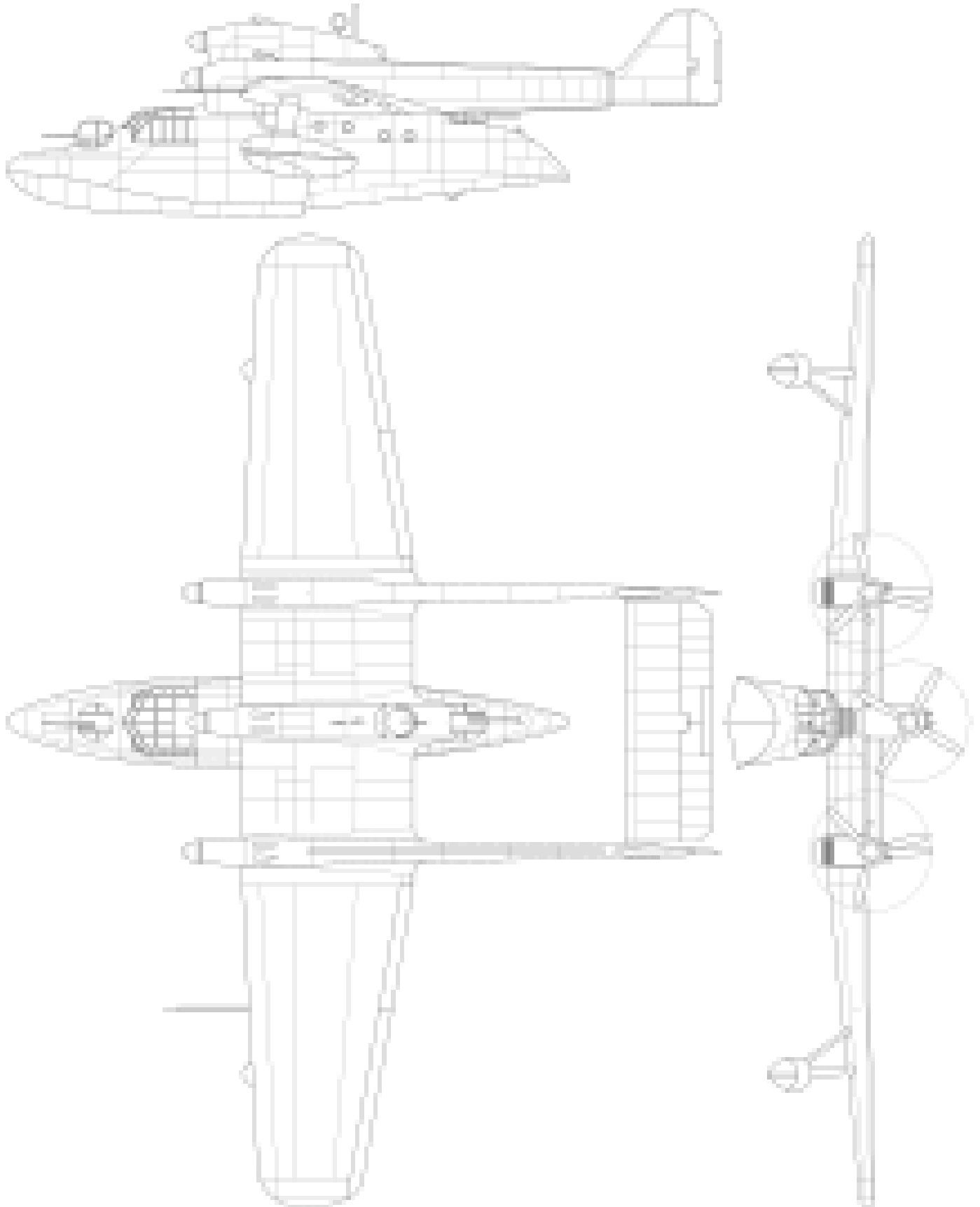
Surviving aircraft



The wreck of NJ+HE a Blohm & Voss BV 138 at display at the National Museum of Science and Technology (Danmarks Tekniske Museum) in Elsinore, Denmark. The wing spar is poised over the aircraft in the same position as it was, when the wreck was discovered in The Sound, off Copenhagen.

No complete BV 138s remain in existence. However, the wreck of one aircraft, sunk after the war in a British air show, was raised from the seabed of the [Øresund Sound](#) in 2000, and is on display at the [Danish Technical Museum](#) in [Helsingør](#). In June 2013, a vessel from the [Norwegian Geological Survey](#) filmed a Blohm & Voss BV 138 at a depth of 35 m in [Porsangerfjorden](#), Norway, not far from the WWII German seaplane harbour in Indre Billefjord.^[6] Another wreckage of a BV 138 was identified by the [Norwegian Mapping and Cadastre Authority](#) on the seabed near [Svalbard](#) in 2022.^[7]

Specifications (BV 138 C-1)



General characteristics

- **Crew:** 6 (pilot, [navigator](#), [radio operator](#), nose-gunner, rear-gunner, upper-rear gunner)
- **Capacity:** up to 10 passengers
- **Length:** 19.85 m (65 ft 1 in)
- **Wingspan:** 26.94 m (88 ft 5 in)
- **Height:** 5.9 m (19 ft 4 in)
- **Wing area:** 112 m² (1,210 sq ft)
- **Empty weight:** 11,770 kg (25,948 lb)
- **Gross weight:** 14,500 kg (31,967 lb)
- **Max takeoff weight:** 17,650 kg (38,912 lb)
- **Fuel capacity:** 3,750 L (990 US gal; 820 imp gal) maximum internal fuel
- **Powerplant:** 3 × [Junkers Jumo 205D](#) 6-cylinder liquid-cooled [opposed piston diesel engines](#), 647 kW (868 hp) each for take-off
- **Propellers:** 3-bladed constant-speed propellers

Performance

- **Maximum speed:** 285 km/h (177 mph, 154 kn) at sea level at 14,000 kg (31,000 lb) at sea level
- **Cruise speed:** 235 km/h (146 mph, 127 kn) at 1,000 m (3,300 ft)
- **Range:** 1,220 km (760 mi, 660 nmi) at 195 km/h (121 mph; 105 kn)
- **Ferry range:** 4,300 km (2,700 mi, 2,300 nmi) with max fuel
- **Endurance:** 6 hours 30 minutes normal; 18 hours maximum
- **Service ceiling:** 5,000 m (16,000 ft) at 14,500 kg (32,000 lb)
2,800 m (9,200 ft) at 17,650 kg (38,910 lb)
- **Rate of climb:** 3.67 m/s (722 ft/min)
- **Time to altitude:** 3,170 m (10,400 ft) in 24 minutes
- **Wing loading:** 114.2 kg/m² (23.4 lb/sq ft)
- **Power/mass:** 0.106 kW/kg (0.064 hp/lb)

Armament

- **Guns:**
- 2 × 20 mm (0.787 in) [MG 151 cannon](#), one in a nose turret and one in the rear fuselage covering upper rear area
- 1 × 13 mm (0.512 in) [MG 131 machine gun](#) in open position behind the central engine, covering the top rear area
- 1–3 × 7.92 mm (0.312 in) [MG 15 machine guns](#) (optional)
- **Bombs:** * up to 3 × 50 kg (110.2 lb) [bombs](#) or 2 × 150 kg (330.7 lb) [depth charges](#) under starboard wing root, and with the Umbau set, the same payload could be attached to the port wing as well.

