

FM 30-35

BASIC FIELD MANUAL



MILITARY INTELLIGENCE  
IDENTIFICATION OF  
GERMAN AIRCRAFT

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Prepared under direction of the  
Chief of Staff



UNITED STATES  
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WASHINGTON : 1942

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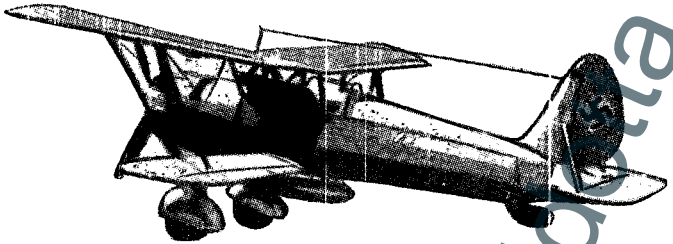
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MILITARY INTELLIGENCE

GERMAN  
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FIGHTER ARADO AR-197

**Description:** Round tip, straight-wing, staggered biplane of unequal span, slightly dihedral, in-closed cockpit, single-engine, blunt nose, fixed landing gear.

**Crew:** One.

**Armament:** Machine guns and bomb.

**Ammunition:**

**Bomb load:**

**Radio:**

**Armor:**

**Motors:** One nine-cylinder BMW radial.

**Maximum speed:**

**Rate of climb:**

**Service ceiling:**

**Maximum range:**

**Wing span:**

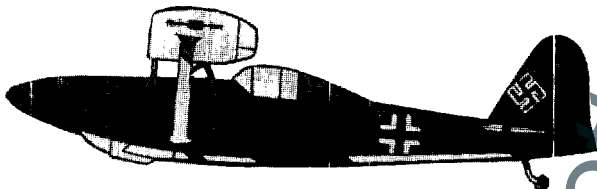
IDENTIFICATION OF GERMAN AIRCRAFT

Fighter  
ARADO AR-197



MILITARY INTELLIGENCE

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FIGHTER FOCKE-WULF FW-159

Description: High-wing, parasol type monoplane, in-  
closed cockpit, single-engine, long ta-  
pered nose, retractable landing gear.

Crew: One.

Armament: Two fixed machine guns.

Ammunition:

Bomb load:

Radio:

Armor:

Motors: One 1,000-horsepower Daimler Benz DB  
600G.

Maximum speed:

Rate of climb:

Service ceiling:

Maximum range:

Wing span:

Fighter  
FOCKE-WULF FW-159

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## FIGHTER FOCKE-WULF FW-190

**Description:** Single-engine, low-wing monoplane; side view resembles P-36, front view, an Arado Ar-96, and wing form, a Spitfire; fairly short fuselage.

**Crew:** One.

**Armament:** Four machine guns, three cannon.

**Ammunition:**

**Bomb load:**

**Radio:**

**Armor:**

**Motors:** One 1,500-horsepower BMW 802.

**Maximum speed:** 380 miles per hour.

**Rate of climb:**

**Service ceiling:** 38,000 feet.

**Maximum range:** 380 miles.

**Wing span:** 30 feet.



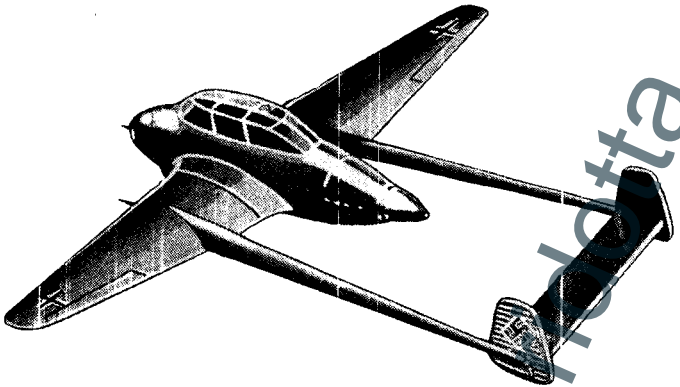
IDENTIFICATION OF GERMAN AIRCRAFT

Fighter  
FOCKE-WULF FW-190

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PURSUIT FOCKE-WULF FW-198

**Description:** Tapered, mid-wing monoplane, all metal, single pusher type motor, short, blunt nose, inclosed cockpit, twin tail boom and rudder fins.

**Crew:** One.

**Armament:** Two cannon in boom extension forward; four machine guns in nose.

**Ammunition:**

**Bomb load:**

**Radio:** Two-way.

**Armor:**

**Motors:** One 1,360-horsepower DB 601E.

**Maximum speed:** 370 miles per hour at 19,000 feet.

**Rate of climb:** 2,750 feet per minute.

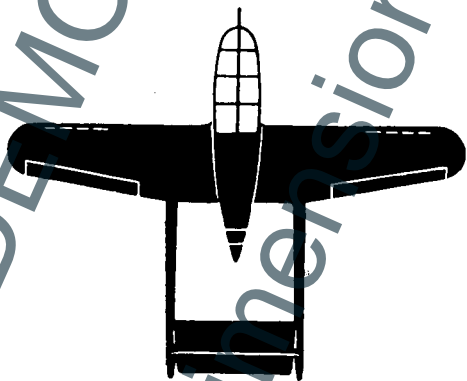
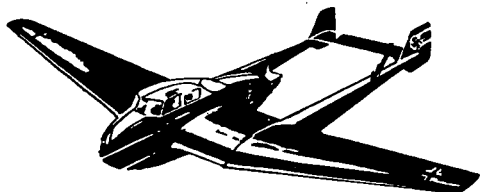
**Service ceiling:** 34,500.

**Maximum range:** 590 miles.

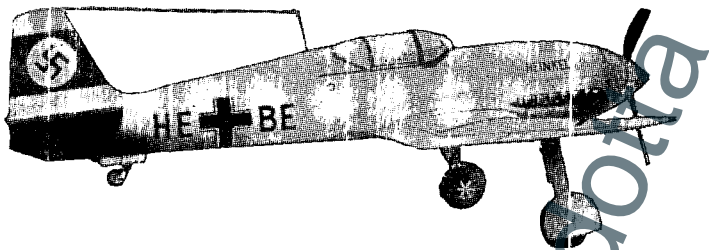
**Wing span:**

IDENTIFICATION OF GERMAN AIRCRAFT

Pursuit  
FOCKE-WULF FW-198



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FIGHTER HEINKEL HE-112

Description: Round tip, tapered, slightly swept-back, dihedral, low-wing monoplane, inclosed cockpit, single-engine, long pointed nose, retractable landing gear.

Crew: One.

Armament: Two cannon and two machine guns.

Ammunition: 600 rounds per machine gun; 100 rounds per cannon.

Bomb load: Six 22-pound.

Radio:

Armor:

Motors: One 1,150 horsepower Daimler Benz DB 601A.

Maximum speed: 354 miles per hour.

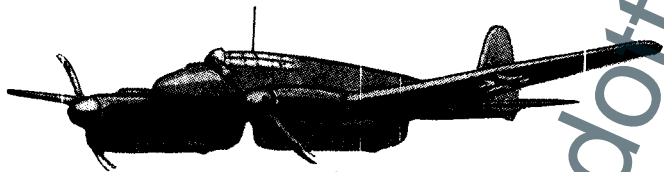
Rate of climb: 2,760 feet per minute.

Service ceiling: 31,700 feet.

Maximum range: 715 miles at 282 miles per hour.

Wing span: 30 feet.

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PURSUIT FOCKE-WULF FW-187

**Description:** Low-wing cantilever monoplane, thin wing, twin motors projecting noticeably from wings, pointed nose, retractable landing gear.

**Crew:** Two.

**Armament:** Four machine guns; two 20-mm cannon.

**Ammunition:**

**Bomb load:** Light bombs carried externally.

**Radio:** Two-way.

**Armor:**

**Motors:** Two 1,400-horsepower, DB 603.

**Maximum speed:** 395 miles per hour.

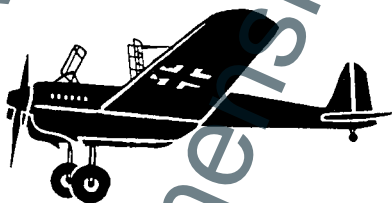
**Rate of climb:** To 6,560 feet in 1.9 minutes.

**Service ceiling:** 38,700 feet.

**Maximum range:** 650 miles.

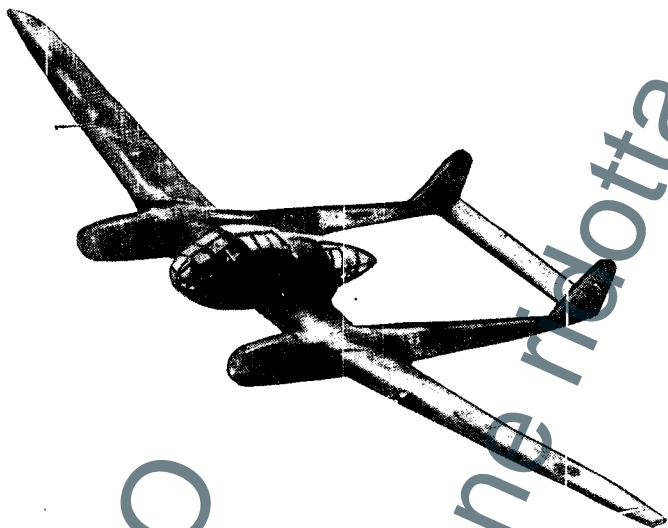
**Wing span:** 51 feet.

Pursuit  
FOCKE-WULF FW-187



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FIGHTER FOCKE-WULF FW-189

**Description:** Round tip, decidedly swept-back, dihedral, low-wing monoplane, inclosed cockpit, twin engines, twin tail boom and rudders, retractable landing gear.

**Crew:** Three.

**Armament:** Four machine guns.

**Ammunition:**

**Bomb load:**

**Radio:**

**Armor:**

**Motors:** Two 450-horsepower Argus 32 410 A1.

**Maximum speed:** 222 miles per hour.

**Rate of climb:** 1,640 feet in 1 minute.

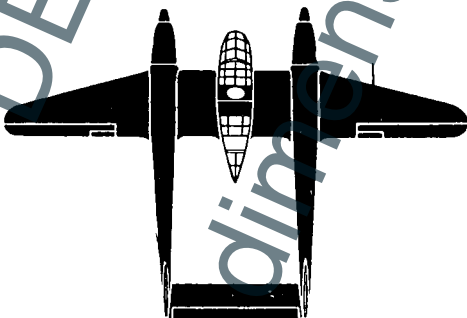
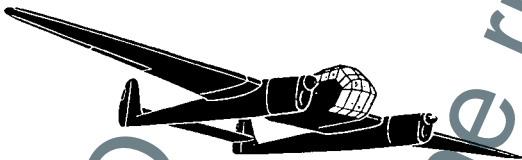
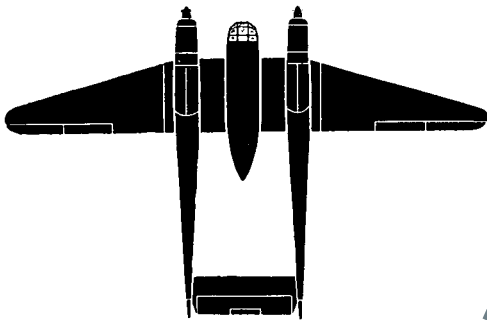
**Service ceiling:** 27,500 feet.

**Maximum range:**

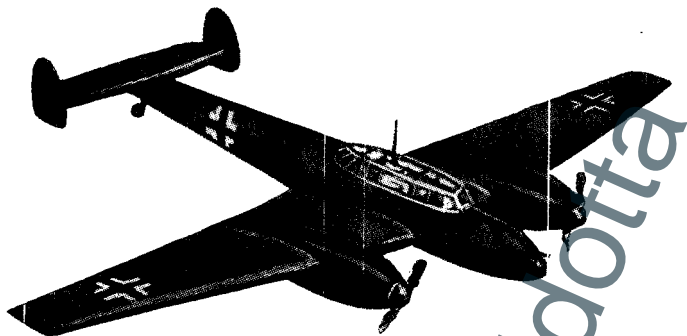
**Wing span:** 60 feet.

IDENTIFICATION OF GERMAN AIRCRAFT

Fighter  
FOCKE-WULF FW-189





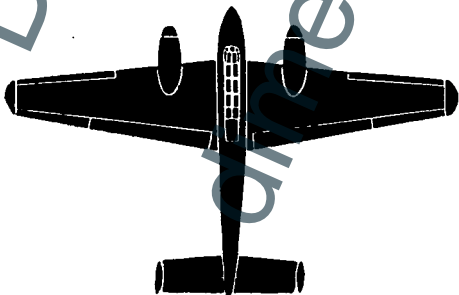
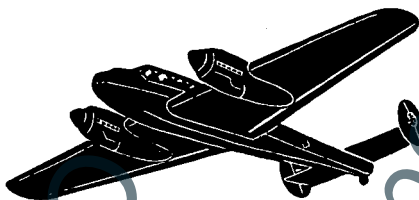
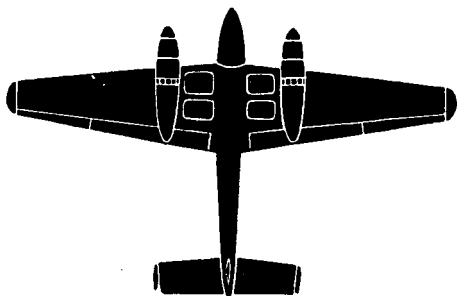
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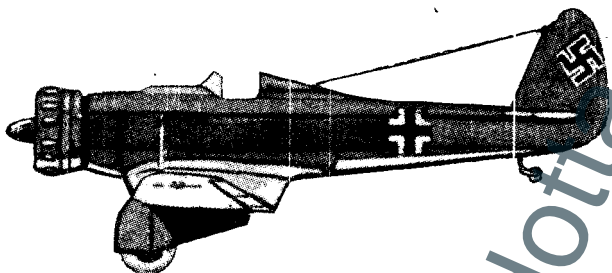
## PURSUIT MESSERSCHMITT ME-110

- Description:** Long, narrow, slightly swept-back and tapered, low-wing monoplane, two mid-wing motors, pointed engine nacelles, inclosed cockpit, retractable landing gear, and twin rudder fins.
- Crew:** Three.
- Armament:** Four machine guns, fixed-fuselage; two machine guns, flexible-fuselage, rear; two 20-mm cannon, fixed-nose.
- Ammunition:** 5,000 rounds machine gun; 400 rounds 20-mm.
- Bomb load:** Can carry one 1,100-pound bomb.
- Radio:** Two-way and blind landing equipment.
- Armor:** 9-mm in front; bulletproof windshield.
- Motors:** Two 1,175-horsepower DB 601A, liquid-cooled.
- Maximum speed:** 370 miles per hour.
- Rate of climb:** 10,000 feet in 4.1 minutes; 20,000 feet in 10.1 minutes.
- Service ceiling:** 30,000 feet.
- Maximum range:** 1,800 miles.
- Wing span:** 55 feet.

IDENTIFICATION OF GERMAN AIRCRAFT

Pursuit  
MESSERSCHMITT ME-110



GERMAN  
ARMY

## DIVE BOMBER BLOHM AND VOSS-137A

|                  |   |
|------------------|---|
| Description:     | Round tip, tapered, swept-back, negative dihedral, low-wing monoplane, open cockpit, single-engine, blunt nose, fixed landing gear. |
| Crew:            | One.  |
| Armament:        | Four fixed machine guns.  |
| Ammunition:      |   |
| Bomb load:       | One 550-pound bomb.   |
| Radio:           |   |
| Aarmor:          |   |
| Motors:          | One 770-horsepower BMW 132A.  |
| Maximum speed:   | 211 miles per hour.   |
| Rate of climb:   | 2,100 feet per minute.  |
| Service ceiling: | 23,000 feet.  |
| Maximum range:   | 320 miles.  |
| Wing span:       | 37 feet.  |

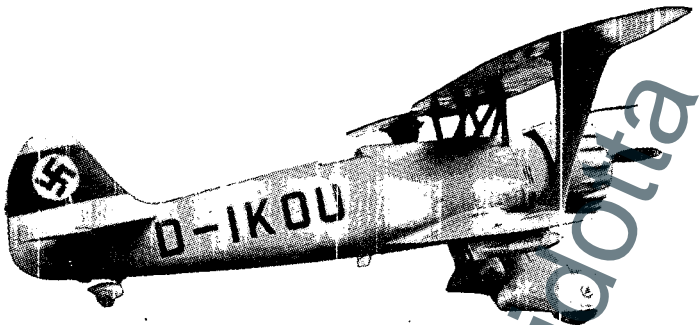
IDENTIFICATION OF GERMAN AIRCRAFT

Dive Bomber  
BLOHM AND VOSS-137A

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DIVE BOMBER HENSCHEL HS-123

Description: Round tip, straight-winged, staggered, cut-out biplane of unequal span open cockpit, single-engine, fixed landing gear.

Crew: One

Armament: Two machine guns.

Ammunition: 1,100 pounds.

Bomb load: 1,100 pounds.

Radio: None

Armor: None

Motors: One 880-horsepower BMW 132 DC.

Maximum speed: 225 miles per hour.

Rate of climb: 2,000 feet per minute.

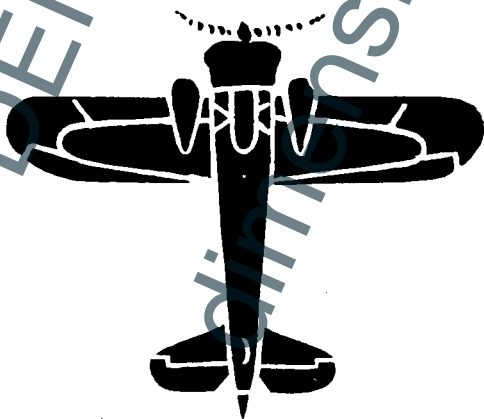
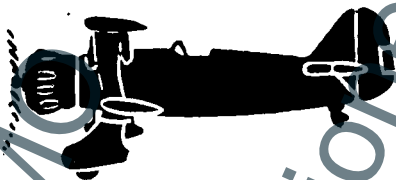
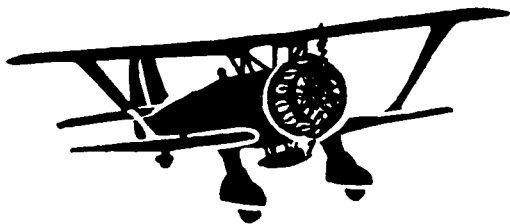
Service ceiling: 27,500 feet.

Maximum range: 650 miles.

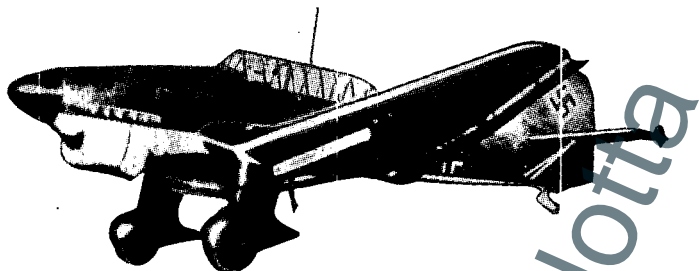
Wing span: 40 feet.

IDENTIFICATION OF GERMAN AIRCRAFT

Dive Bomber  
HENSCHEL HS-123



GERMAN  
ARMY



DIVE BOMBER JUNKERS JU-87  
("STUKA" DIVE BOMBERS)

- Description:** Slightly swept-back, tapered, negative dihedral, square tip, low-wing monoplane, all metal, single-motor, inclosed cockpit, long pointed nose, square-tip tail plane, and fixed landing gear.
- Crew:** Two.
- Armament:** Two machine guns, fixed-fuselage; one machine gun, flexible-fuselage, rear.
- Ammunition:**
- Bomb load:** One 1,100-pound and two 55-pound.
- Radio:** Two-way.
- Armor:**
- Motors:** One 1,200-horsepower Junkers Jumo 211A, liquid-cooled.
- Maximum speed:** 242 to 250 miles per hour. Diving speed, 430 miles per hour.
- Rate of climb:** To 13,120 feet in 8.5 minutes.
- Service ceiling:** 27,890 feet.
- Maximum range:** 498 miles at 186 miles per hour.
- Wing span:** 45 feet.

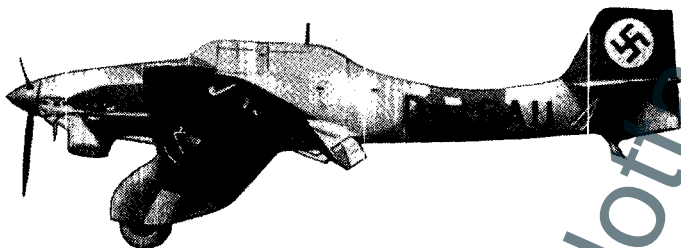
IDENTIFICATION OF GERMAN AIRCRAFT

Dive Bomber  
JUNKERS JU-87  
("STUKA" DIVE BOMBERS)



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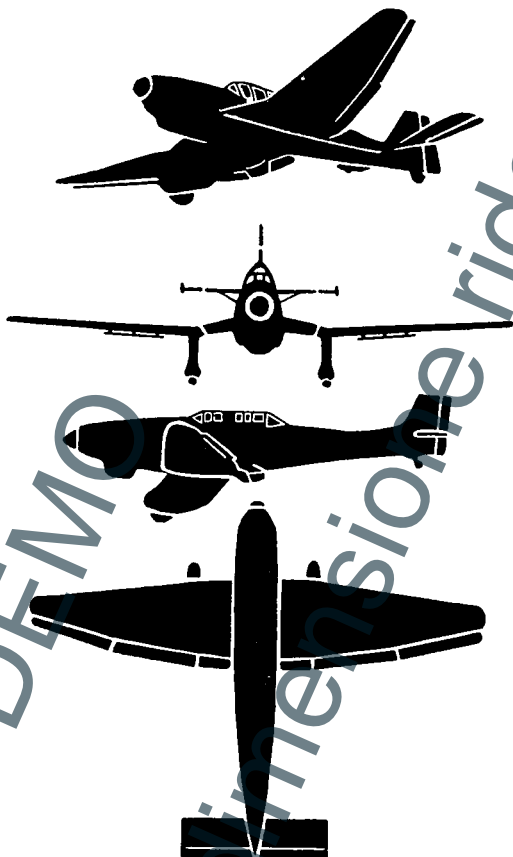
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## DIVE BOMBER JUNKERS JU-87K

- Description:** Swept-back, tapered, negative dihedral, round tip, low-wing monoplane, single-motor, pointed nose, inclosed cockpit, and fixed landing gear.
- Crew:** Two.
- Armament:** Two machine guns, fixed-fuselage; one machine gun, flexible-fuselage, rear.
- Ammunition:**
- Bomb load:** One 1,100-pound and two 110-pound.
- Radio:** Two-way.
- Armor:**
- Motors:** One 1,200-horsepower Junkers Jumo 211A, liquid-cooled.
- Maximum speed:** 242 to 250 miles per hour. Diving speed, 430 miles per hour.
- Rate of climb:** To 13,120 feet in 8.5 minutes.
- Service ceiling:** 27,890 feet.
- Maximum range:** 2.5 hours at cruising speed; 498 miles at 186 miles per hour.
- Wing span:** 45 feet.

IDENTIFICATION OF GERMAN AIRCRAFT

Dive Bomber  
JUNKERS JU-87K



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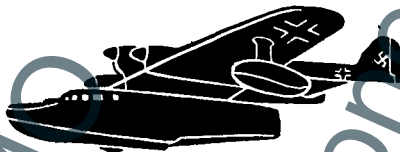
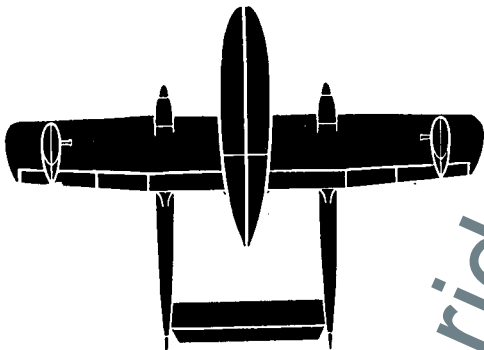


PATROL BLOHM AND VOSS HA-138

- Description:** Tapered, round tip monoplane flying boat, three motors, floats attached to under-surface of wings, and twin boom tail.
- Crew:** Four.
- Armament:** 4 machine guns; retractable gun turret in nose and gun positions behind middle motor and in stern of short hull.
- Ammunition:**
- Bomb load:**
- Radio:**
- Armor:**
- Motors:** Three 600-horsepower Junkers Jumo 205c Diesel motors.
- Maximum speed:** 171 miles per hour.
- Rate of climb:** 13,128 feet in 48 minutes.
- Service ceiling:**
- Maximum range:** 1,500 miles at 146 miles per hour.
- Wing span:** 89 feet.

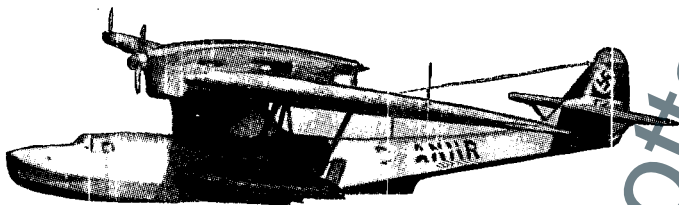
IDENTIFICATION OF GERMAN AIRCRAFT

Patrol  
BLOHM AND VOSS HA-138



MILITARY INTELLIGENCE

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PATROL DORNIER DO-18K

Description: Slightly swept-back, slightly tapered, round tip monoplane flying boat, twin motors in tandem, sponsons or sea wings protruding from the hull of the float and braced to the wing.

Crew: Four.

Armament: Three machine guns.

Ammunition:

Bomb load: 2,200 pounds.

Radio: Yes.

Armor:

Motors: Two 750-horsepower Jumo 205.

Maximum speed: 155 miles per hour.

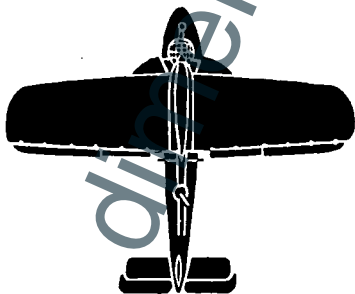
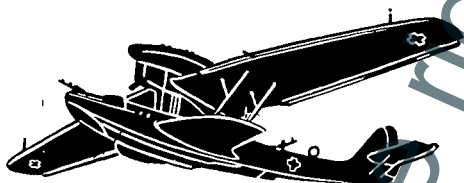
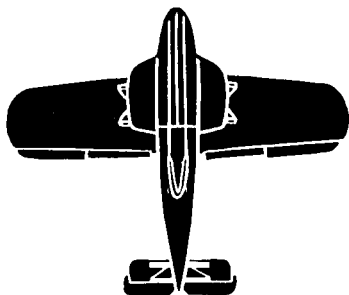
Rate of climb:

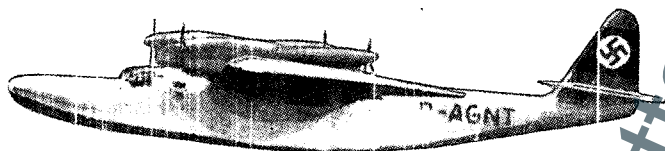
Service ceiling: 18,370 feet.

Maximum range: 3,600 miles.

Wing span: 86 feet.

Patrol  
DORNIER DO-18K



GERMAN  
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## PATROL DORNIER DO-26

**Description:** High-wing monoplane flying boat, four motors with engine nacelles protruding above the wings, two each in tandem.

**Crew:** Six.

**Armament:** Gun turret in nose and one behind wing.

**Ammunition:**

**Bomb load:** 2,000 pounds.

**Radio:** Yes.

**Armor:**

**Motors:** Four 750-horsepower Jumo 205c Diesel motors.

**Maximum speed:** 208 miles per hour.

**Rate of climb:**

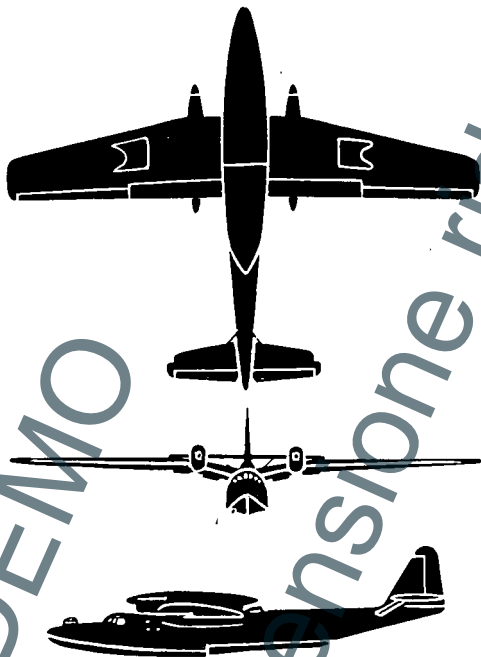
**Service ceiling:**

**Maximum range:** 5,600 miles at 190 miles per hour.

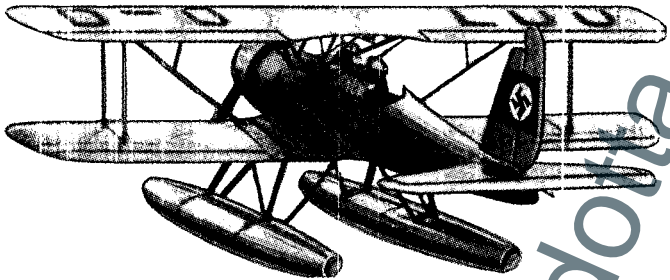
**Wing span:** 99 feet.

IDENTIFICATION OF GERMAN AIRCRAFT

Patrol  
DORNIER DO-26



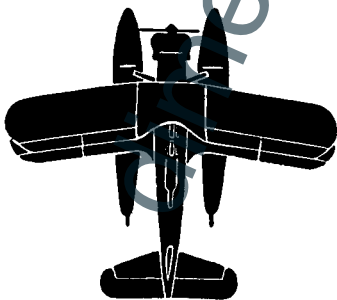
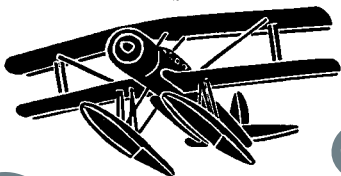
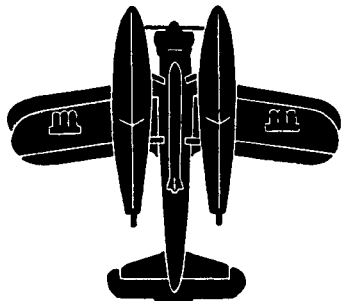


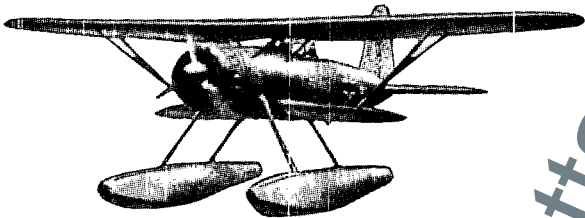
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## TORPEDO BOMBER ARADO AR-95W

|                         |   |
|-------------------------|---|
| <b>Description:</b>     | Swept-back, round tip biplane, twin float seaplane, single-motor, and blunt nose. |
| <b>Crew:</b>            | Two or three.   |
| <b>Armament:</b>        | Two machine guns.   |
| <b>Ammunition:</b>      | 500 rounds (front); 750 (rear).   |
| <b>Bomb load:</b>       | Six 110-pound, one 1,760-pound torpedo, or 825-pound smoke tank.                  |
| <b>Radio:</b>           | Two-way.  |
| <b>Armor:</b>           |   |
| <b>Motors:</b>          | One 880-horsepower BMW 132 DC.  |
| <b>Maximum speed:</b>   | 204 miles per hour.   |
| <b>Rate of climb:</b>   | To 13,120 feet in 7.6 minutes.  |
| <b>Service ceiling:</b> | 25,580 feet.  |
| <b>Maximum range:</b>   | 1,026 miles.  |
| <b>Wing span:</b>       | 41 feet.  |

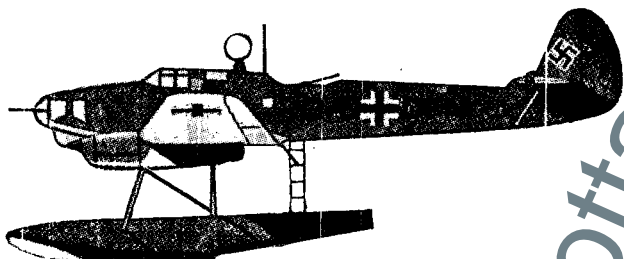
Torpedo Bomber  
ARADO AR-95W



GERMAN  
NAVY

## PATROL BOMBER HEINKEL HE-114

**Description:** Biplane seaplane, fuselage all metal, wings fabric, floats.  
**Crew:** Two.  
**Armament:** One fixed 7.9-mm machine gun in fuselage in front and one flexible machine gun in fuselage, rear.  
**Ammunition:** 500 rounds per machine gun.  
**Bomb load:** Light bomb can be accommodated.  
**Radio:** Two-way code.  
**Armor:**  
**Motors:** One 880-horsepower BMW 132 DC.  
**Maximum speed:** 205 miles per hour.  
**Rate of climb:** 3,280 feet in 3 minutes.  
**Service ceiling:** 23,000 feet.  
**Maximum range:** 696 miles; 510 miles with bombs.  
**Wing span:** 45 feet.

GERMAN  
NAVY

## TRAINER FOCKE-WULF FW-58W, WEHE

- Description:** Round tip, swept-back, tapered, dihedral, low-wing monoplane, inclosed cockpit, twin engines, nacelles set beneath wing, transparent nose, fixed floats.
- Crew:** Four.
- Armament:** One flexible forward and one flexible rear, machine gun.
- Ammunition:**
- Bomb load:**
- Radio:**
- Armor:**
- Motors:** Two 240-horsepower Argus As 10c.
- Maximum speed:** 140 miles per hour.
- Rate of climb:** 670 feet per minute.
- Service ceiling:** 11,750 feet.
- Maximum range:** 540 miles.
- Wing span:** 69 feet.