

Junkers Ju87A-2

A/C Type: Dive Bomber
 Engine(s): 1x Jumo 210Da
 Eng. Pwr: 680 hp, liquid-cooled, Non-FI
 A/C Crew: Pilot, Gunner

Maximum Speed: 199 mph at 9,840 ft.
 Maximum Ceiling: 22,700 / 17,700 / 12,700 ft.
 Defense factor: 5 Size Modifier: +0
 Damage Factor: 9/13 Endurance: 140
 Cockpit View: Good Blind Area: 6-line low

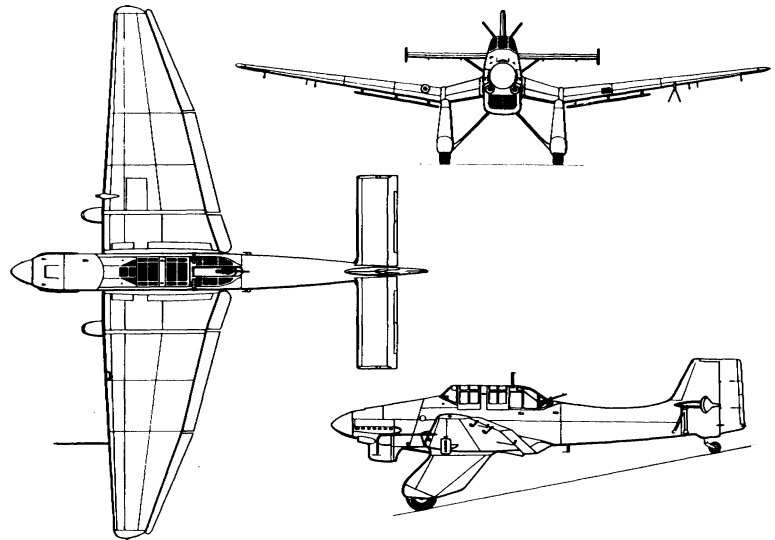
Protection: Cockpit +1 Fuel +2 Engine +0

Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 1,100 lbs / 2-5

Wpn Stations	Weight	Allowed Loads
1	1,100	1 bomb

Country: Germany

Service Entry Date: August, 1936



class: LD

Victory Points: 3-6

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(3)	Min HT(4)	Min BT(5)	Min ET(6)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	--	--	--	--	--	--	--	25-30	HI	--
19-24	MH	2.0	3.5	7.0	2.5	4.0	4.5	6.0	19-24	MH	300
13-18	ML	2.0	3.5	7.0	2.5	3.5	4.0	5.5	13-18	ML	400
7-12	LO	1.5	4.0	7.0	2.0	3.0	4.0	5.0	7-12	LO	700
1-6	VL	1.5	3.5	6.5	2.0	3.0	3.5	4.5	1-6	VL	1,000

FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
W1	1x 7.62mm MG17 mg	10	4
DG	1x 7.62mm MG15 mg	6x3	4

GUN ATTACK FACTORS

Range	W1	DG
0	6	4
1	5	3
2	3	2
3	2	1
4	1	1
5	1	1
6	--	--
7	--	--

WEAPON STATION LOCATION



1

POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	--	--	--	--	HI
19-24	MH	2	--	--	--	MH
13-18	ML	3	--	--	--	ML
7-12	LO	3	--	--	--	LO
1-6	VL	3	--	--	--	VL
Banking FPs		2	3	5	--	
Side Slip FPs		2	4	6	--	

NOTES AND VARIANTS

Defensive Gun Coverage

DG: Rear +30, level to high, 6:00 line = high only

Junkers Ju87A: First production series based around Jumo 210 engines. Mostly used for training original 5 StGr, though a few used in Spain. Would have been used against Czechoslovakia. Dive brakes, fixed landing gear.

Ju87A-1: Available Apr-36. First production version, with weaker Jumo 210Ca engine: -1 power; -100 roc; 500 kg bombs only carried w/o gunner. In late 1937, a kette of Ju87A-1s went to Spain for field evaluation. About 150 built.

Ju87A-2: Available Nov-37. Improved engine. By late spring, 1938, these were replaced by Ju87Bs. About 50 built.

Junkers Ju87C-1

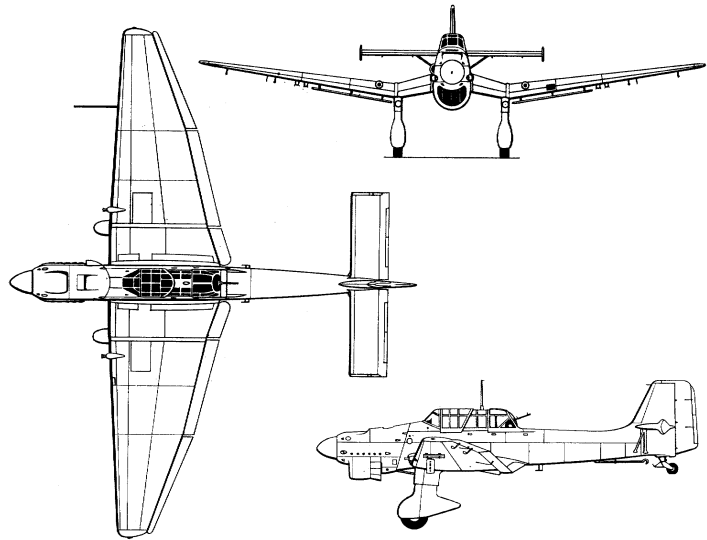
A/C Type: Carrier-borne Dive Bomber
 Engine(s): 1x Jumo 211D-1
 Eng. Pwr: 1,100 hp, liquid-cooled
 A/C Crew: Pilot, Gunner

Maximum Speed: 218 mph at 16,400 ft.
 Maximum Ceiling: 29,700 / 22,700 / 14,700 ft.
 Defense factor: 5 Size Modifier: +0
 Damage Factor: 9/13 Endurance: 105
 Cockpit View: Good Blind Area: 6-line low
 Protection: Cockpit +1 Fuel +2 Engine +0
 Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 2200 lbs / 3-8

Wpn Stations	Weight	Allowed Loads
1, 3	550	66 gal FT or 1 bomb
2	1,700	1 bomb or torpedo

Country: Germany

Service Entry Date: August, 1939



Class: LD

Victory Points: 3-6

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(3)	Min HT(4)	Min BT(5)	Min ET(6)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	2.0	4.0	9.0	3.0	4.5	5.0	6.0	25-30	HI	300
19-24	MH	2.0	4.0	9.0	2.5	4.0	4.5	6.0	19-24	MH	400
13-18	ML	2.0	4.5	9.0	2.5	3.5	4.0	5.5	13-18	ML	600
7-12	LO	1.5	4.5	8.0	2.0	3.0	4.0	5.0	7-12	LO	800
1-6	VL	1.5	4.5	7.5	2.0	3.0	3.5	4.5	1-6	VL	1,200

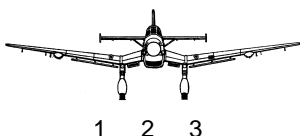
FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
W1	1x 7.62mm MG17	mg 10	4
W2	1x 7.62mm MG17	mg 10	4
DG	1x 7.62mm MG15	mg 6x3	4

GUN ATTACK FACTORS

Range	N1	N2	DG	Total
0	6	6	4	12
1	5	5	3	10
2	3	3	2	6
3	2	2	1	4
4	1	1	1	2
5	1	1	1	2
6	--	--	--	--
7	--	--	--	--

WEAPON STATION LOCATION



POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1/-	--	--	--	HI
19-24	MH	2/-	--	--	--	MH
13-18	ML	3/4	--	--	--	ML
7-12	LO	3/4	--	--	--	LO
1-6	VL	3/4	--	--	--	VL
Banking FPs		2	3	5	8	
Side Slip FPs		2	4	6	9	

NOTES AND VARIANTS

Defensive Gun Coverage

DG: Rear +30, level to high, 6:00 line = high only

Junkers Ju87C: Ju87B tricked out for carrier operations: smaller wing, folding wing, catapult and arrestor gear, stations 1 and 3 plumbed for fuel tanks. Dive brakes, fixed landing gear, jettisonable for emergency water landing.

Formed 4.(Stuka)/TrGr 186 (1 and 2 staffeln were fighters).

Fought in Poland. In 1941, surviving Cs were converted back to B standard.

66-gal FT: Wght: 550 Ld: 3.0/2.0 End: +40 each

Junkers Ju 87D-1

A/C Type: Dive Bomber
 Engine(s): 1x Jumo 211J, inline
 Eng. Pwr: 1440-hp, liquid-cooled
 A/C Crew: Pilot, Gunner

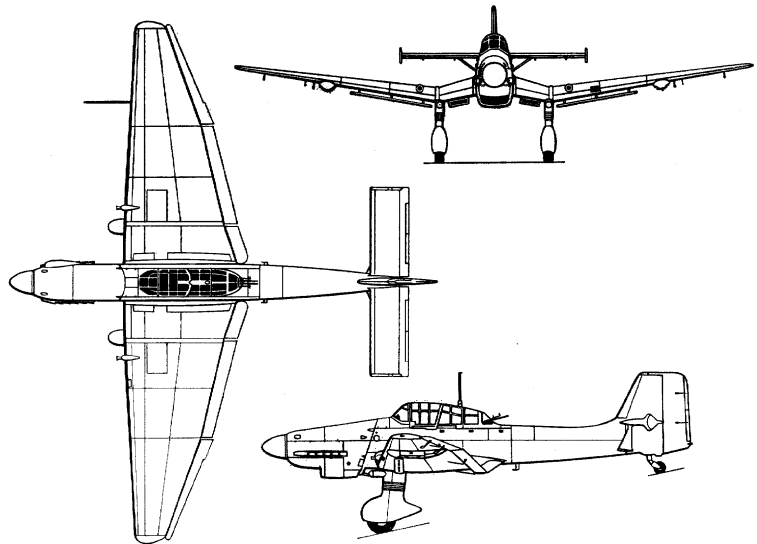
Maximum Speed: 255 mph at 13,500 ft
 Maximum Ceiling: 29,700 / 23,900 / 15,500 ft.
 Defense factor: 5 Size Modifier: +0
 Damage Factor: 9/14 Endurance: 159
 Cockpit View: Good Blind Area: Rear, low
 Protection: Cockpit +2 Fuel +2 Engine +0

Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 4,400 / 5-10

Wpn Stations	Weight	Allowed Loads
1, 3	1100	FT, 2x SC50 or 1x500 kg bomb
2	2,200	1x 1000 kg bomb

Country: Germany

Service Entry Date: February, 1942



Class: LD

Victory Points: 4-7

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(3)	Min HT(4)	Min BT(5)	Min ET(6)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	2.0	4.0	9.5	3.0	4.5	5.0	6.0	25-30	HI	300
19-24	MH	2.0	4.5	9.0	2.5	4.0	4.5	6.0	19-24	MH	600
13-18	ML	2.0	5.0	9.0	2.5	3.5	4.0	5.5	13-18	ML	900
7-12	LO	1.5	5.0	8.0	2.0	3.0	4.0	5.0	7-12	LO	1,200
1-6	VL	1.5	4.5	7.5	2.0	2.5	3.5	4.5	1-6	VL	1,500

FIRE POWER CHART

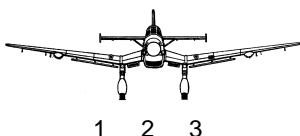
Guns	Type Weapons	Ammo	Criticals
W1	1x 7.62mm MG17 mg	25	4
W2	1x 7.62mm MG17 mg	25	4
DG	1x 7.62mm MG81Z mg	6x3	4
GP	6x 7.62mm MG81 mg		

Fire GP separately.
 Treat as No Gunsight for air-to-air.

GUN ATTACK FACTORS

Range	N1	N2	GP	DG	Total
0	6	6	36	8	12
1	5	5	24	6	10
2	3	3	18	4	6
3	2	2	12	3	4
4	1	1	8	2	2
5	1	1	6	1	2
6	--	--	--	--	--
7	--	--	--	--	--

WEAPON STATION LOCATION



POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1/-	--	--	--	HI
19-24	MH	2/3	--	--	--	MH
13-18	ML	4/5	1/2	--	--	ML
7-12	LO	4/5	1/2	--	--	LO
1-6	VL	4/5	--	--	--	VL
Banking FPs		2	3	5	8	
Side Slip FPs		2	4	6	9	

NOTES AND VARIANTS

Defensive Gun Coverage

DG: Rear +30, level to high, 6:00 line = high only

Ju87D-1: Available Feb, 1942. More streamlined, stronger Stuka with an upgraded engine. Not much more speed, but a lot of extra hauling capacity. Dive brakes, fixed landing gear.

Ju87D-3: Available Jan, 1943. More ground support than dive bomber. Used 2x 48-packs of SC2 antipersonnel bomblets; container distintegrated after use. Engine protection +1.

66-gal FT: Wght: 550 Ld: 3.0/2.0 End: +30 each

Junkers Ju 87D-5

A/C Type: Ground Support Bomber
 Engine(s): 1x Jumo 211J-1, inline 12-cylinder
 Eng. Pwr: 1440-hp, liquid-cooled
 A/C Crew: Pilot, Gunner

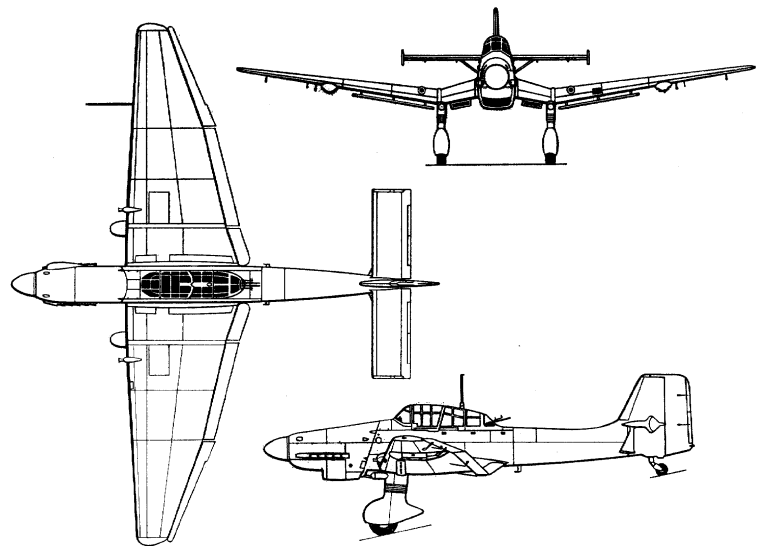
Maximum Speed: 255 mph at 13,500 ft
 Maximum Ceiling: 29,700 / 23,900 / 15,500 ft.
 Defense factor: 5 Size Modifier: +0
 Damage Factor: 9/14 Endurance: 159
 Cockpit View: Good Blind Area: Rear, low
 Protection: Cockpit +2 Fuel +2 Engine +1

Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 4,400 / 5-10

Wpn Stations	Weight	Allowed Loads
1, 3	1100	FT, 2x SC50 or 1x500 kg bomb
2	2,200	1x 1000 kg bomb

Country: Germany

Service Entry Date: March, 1943



Class: LD

Victory Points: 4-7

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(2)	Min HT(3)	Min BT(4)	Min ET(5)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	2.0	4.0	9.5	3.0	4.5	5.0	6.0	25-30	HI	300
19-24	MH	2.0	4.5	9.0	2.5	4.0	4.5	6.0	19-24	MH	600
13-18	ML	2.0	5.0	9.0	2.5	3.5	4.0	5.5	13-18	ML	900
7-12	LO	1.5	5.0	8.0	2.0	3.0	4.0	5.0	7-12	LO	1,200
1-6	VL	1.5	4.5	7.5	2.0	2.5	3.5	4.5	1-6	VL	1,500

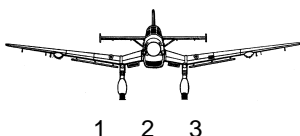
FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
W1	1x 7.62mm MG17 mg	25	4
W2	1x 7.62mm MG17 mg	25	4
DG	1x 7.62mm MG81Z mg	6x3	4
W3	1x 37mm BK3.7 cannon	11	1
W4	1x 37mm BK3.7 cannon	11	1

GUN ATTACK FACTORS

Range	W1	W2	W3	W4	DG	Total
0	6	6	21	21	8	12/42
1	5	5	14	14	6	10/28
2	3	3	8	8	4	6/16
3	2	2	6	6	3	4/12
4	1	1	4	4	2	/8
5	1	1	3	3	1	2/6
6	--	--	2	2	--	--/4
7/8	--	--	2	2	--	--/4

WEAPON STATION LOCATION



POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1/-	--	--	--	HI
19-24	MH	2/3	--	--	--	MH
13-18	ML	4/5	1/2	--	--	ML
7-12	LO	4/5	1/2	--	--	LO
1-6	VL	4/5	--	--	--	VL
Banking FPs		2	3	5	8	
Side Slip FPs		2	4	6	9	

NOTES AND VARIANTS

Defensive Gun Coverage

DG: Rear +30, level to high, 6:00 line = high only

Ju87D-5: Available March, 1943. Bigger wing/reduced wingloading made turns easier. Armed with W1 & W2 (&DG). Can use GP per Ju87D-3. Use total to left of slash. Fixed gear.

Ju87G-1: Antitank aircraft converted from D-5. BK3.7mm under each wing (vice stations 1 and 2). Could be removed and replaced with a 500kg station. Armed with W3, W4, & DG. Use total to right of slash. Flies as loaded. Fixed gear.

66-gal FT: Wght: 550 Ld: 3.0/2.0 End: +30 each

Henschel Hs129B-2/Wa

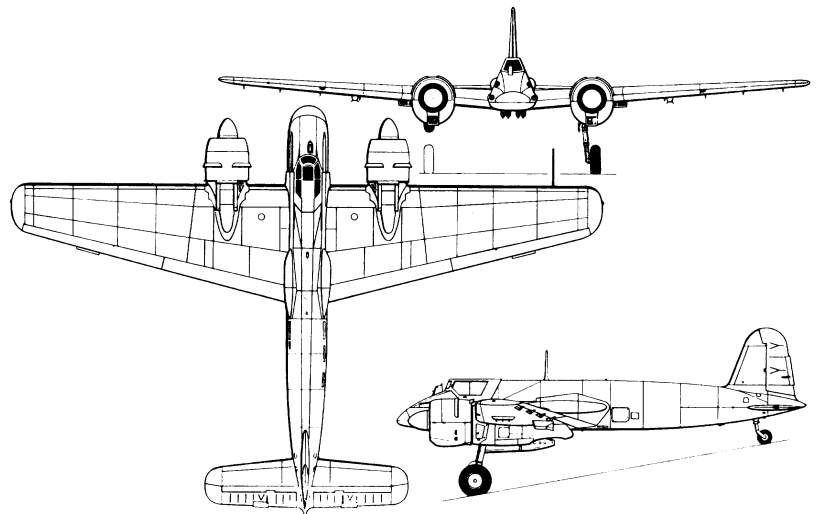
A/C Type: Ground support aircraft
 Engine(s): 2x Gnome Rhone 14M 4/5 Radial
 Eng. Pwr: 1320-1400 hp, air cooled
 A/C Crew: Pilot

Maximum Speed: 253 mph @ 12,570 ft.
 Maximum Ceiling: 29,530 / 22,000 / 14,200 ft.
 Defense factor: 5 Size Modifier: +0
 Damage Factor: 11/16 Endurance: 131
 Cockpit View: Poor Blind Area: Rear
 Protection: Cockpit +2 Fuel +1 Engine +1
 Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 1000 / 4-7

Wpn Stations	Weight	Allowed Loads
1, 3	220	2x SC 50
2	550	1-4 bombs, 2 bomblet paks, 1 GP

Country: Germany

Service Entry Date: May, 1943



Class: L

Victory Points: 4-7

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(6)	Min HT(7)	Min BT(9)	Min ET(10)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	2.5	4.0	8.0	4.5	5.5	6.5	7.5	25-30	HI	300
19-24	MH	2.0	4.5	8.5	4.0	5.0	6.0	7.0	19-24	MH	700
13-18	ML	2.0	5.0	8.5	3.5	4.5	5.5	6.5	13-18	ML	1,100
7-12	LO	1.5	5.0	8.0	3.0	4.0	5.0	6.0	7-12	LO	1,400
1-6	VL	1.5	4.5	7.0	2.5	3.5	4.5	5.5	1-6	VL	1,600

FIRE POWER CHART

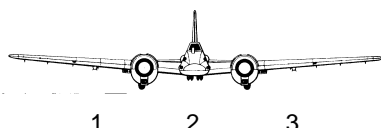
Guns	Type Weapons	Ammo	Criticals
N1	2x 7.62mm MG17 mg	10	4
N2	2x 20mm MG151 cannon	6	2
GP1	1x 30mm Mk101 cannon	2	1.5
GP2	4x 7.62mm MG17 mg	5	4
GP3	1x 37mm BK 3.7 cannon	11	1
GP4	1x 75mm BK7.5 cannon	4	Strafe

GUN ATTACK FACTORS

Range	N1	N2	GP1	GP2	GP3	Total
0	12	46	19	24	21	58
1	8	30	15	16	14	38
2	6	20	11	12	8	26
3	4	14	7	9	6	18
4	3	10	4	6	4	13
5	2	7	3	4	3	9
6	--	5	--	--	2	5
7/8	--	--	--	--	2	--

All GPs fire separate from Nose guns.

WEAPON STATION LOCATION



POWER VERSUS SPEED CHART

Levels	Bands	(Per Engine)				Band
		1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	0.5	--	--	--	HI
19-24	MH	0.5	--	--	--	MH
13-18	ML	1	0.5	--	--	ML
7-12	LO	1	0.5	--	--	LO
1-6	VL	1	--	--	--	VL
Banking FPs		3	4	6	--	
Side Slip FPs		3	5	7	--	

NOTES AND VARIANTS

Henschel Hs129B: Purpose built as a ground attack aircraft, this project languished waiting for a suitable engine. Strong, but handled poorly. French Gnome-Rhone was especially prone to damage: -1 to engine criticals.

Hs129B-1: Available May '42. 300 built. Fuselage stations for Rustsatz kits:

R2: Station 2 - 30mm Mk101 w/ 30 rds. -1 Max speed, Ceil = 24,600.

R3: Station 2 - 4x uncowed 7.62mm MG17s w/ 5 ammo.

R4: Station 2 - 2x SC50 each or 2x 24-pk of SD2 antipersonnel bombs.

R5: Internally mounted Rb 20/30 Recon camera.

Hs129B-2/Waffenträger (weapon carrier): Available July '43. B-2/R-1 = 2 MG131 vice MG17s. Can use R2-R5. Some built with mk103 or BK3.7 in bellypack vice MG17s and station 2. 400 built.

Hs129B-3: Available Oct 44. Used jettisonable 75mm BK7.5 AT gun for ground attack. While carried, -.5 to max speed. 24 built.

Henschel Hs123A-1

A/C Type: Ground support biplane
 Engine(s): 1x BWM 132 Dc 9-cylinder radial
 Eng. Pwr: 880-hp, air-cooled, non-F.I.
 A/C Crew: Pilot

Maximum Speed: 211 mph @ 3,9500 ft
 Maximum Ceiling: 29,530 ft

Defense factor: 5 Size Modifier: +0
 Damage Factor: 7/10 Endurance: 165
 Cockpit View: Fair Blind Area: Rear,Low

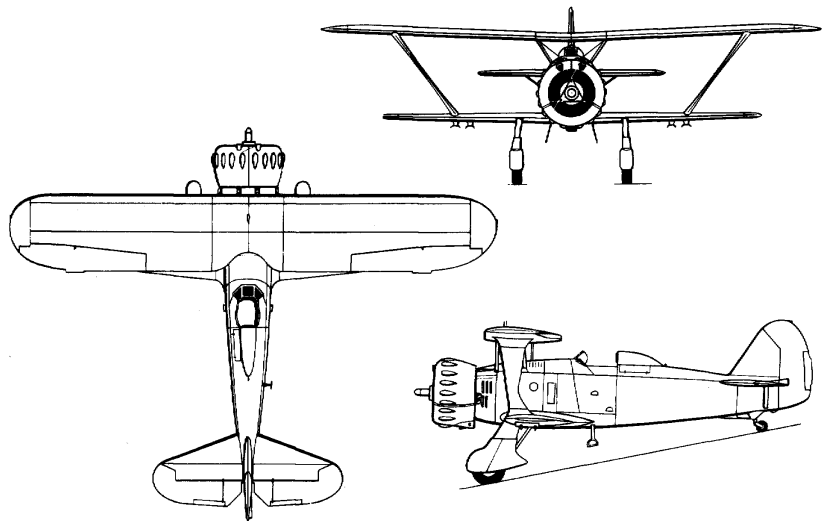
Protection: Cockpit +0 Fuel +0 Engine +0

Climb Dece/ Dive Accel: 3.0 / 1.0
 Weight and Load Limit: 440 / 2-4

Wpn Stations	Weight	Allowed Loads
1,2	220	2x SC50

Country: Germany

Service Entry Date: January 1937



Class: L

Victory Points: 3-6

AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(2)	Min HT(3)	Min BT(4)	Min ET(5)	Altitude Levels	Bands	Average Rate of Climb
43+	UH	--	--	--	--	--	--	--	43+	UH	--
37-42	EH	--	--	--	--	--	--	--	37-42	EH	--
31-36	VH	--	--	--	--	--	--	--	31-36	VH	--
25-30	HI	2.0	3.0	6.5	4.5	6.0	7.0	8.0	25-30	HI	500
19-24	MH	2.0	3.0	6.5	4.0	5.5	6.5	7.5	19-24	MH	1,100
13-18	ML	1.5	3.5	6.5	3.5	5.0	6.0	7.0	13-18	ML	1,800
7-12	LO	1.5	4.0	6.5	3.5	4.5	5.5	6.5	7-12	LO	2,400
1-6	VL	1.5	4.0	6.0	3.0	4.0	5.0	6.5	1-6	VL	2,900

FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
N1	1x 7.62mm MG17 mgs	7	4
N2	1x 7.62mm MG17 mgs	7	4

GUN ATTACK FACTORS

Range	N1	N2	Total
0	5.5	5.5	11
1	4	4	8
2	3	3	6
3	2	2	4
4	1	1	2
5	1	1	2
6	--	--	--
7	--	--	--

WEAPON STATION LOCATION



1 2

POWER VERSUS SPEED CHART

Levels	Bands	1.0 - 4.5	5.0 - 7.5	8.0 - 9.5	10.0+	Band
43+	UH	--	--	--	--	UH
37-42	EH	--	--	--	--	EH
31-36	VH	--	--	--	--	VH
25-30	HI	1	--	--	--	HI
19-24	MH	1	--	--	--	MH
13-18	ML	3	--	--	--	ML
7-12	LO	4	--	--	--	LO
1-6	VL	4	--	--	--	VL
Banking FPs		1	2	--	-	
Side Slip FPs		2	4	--	9	

NOTES AND VARIANTS

Henschel HS123A-1: Available January 1937. Included for completeness. The Luftwaffe's first divebomber. 5 sent to Spain for evaluation Spring, 1937, but was already being replaced in 1938 by Ju87. Used in Poland, France, and Russia for ground support in areas known to have little air resistance. Finally replaced in the front line by Hs129B-1 in 1942. Open cockpit. Fixed gear.