

# He177-A5/R2 Greif

Country: Germany

Service Entry Date: July 43

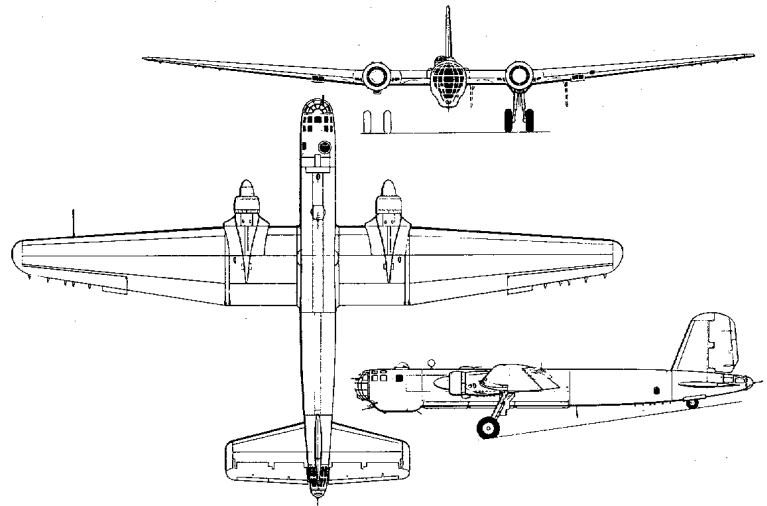
A/C Type: Heavy bomber  
 Engine(s): 2 Daimler-Benz DB610 A-1/B-1  
 Eng. Pwr: 2x 2950-hp. Liquid-cooled.  
 A/C Crew: Pilot, Co-pilot, Bombardier, radio-op/gunner, 1 gunner.

Maximum Speed: 295 mph @ 17,000 ft  
 Maximum Ceiling: 26,300 ft / 23,000 ft / 20,000 ft  
 Defense factor: 7 Size Modifier: +2  
 Damage Factor: 20/30 Endurance: 540  
 Cockpit View: Good Blind Area: none  
 Protection: Cockpit +0 Engines +0 Fuel +1

Climb Dece/ Dive Accel: 2.0 / 1.0

Weight and Load Limit: 13200 / 12-26

Wpn Stations	Weight	Allowed Loads
1, 5	1700	Torpedo or Glide/Guide bomb
2, 3, 4 (bays)	4400	4x 500kg bomb



Class: H

Victory Points: 8-16

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(5)	Min HT(6)	Min BT(-)	Min ET(-)	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	3.5	5.5	9.5	5.0	6.0	--	--	25-30	HI	200
19-24	MH	3.5	6.0	9.0	4.5	5.5	--	--	19-24	MH	500
13-18	ML	3.0	6.0	9.5	4.5	5.0	--	--	13-18	ML	700
7-12	LO	3.0	5.5	8.5	4.0	4.5	--	--	7-12	LO	800
1-6	VL	2.5	5.0	7.5	3.5	4.0	--	--	1-6	VL	900

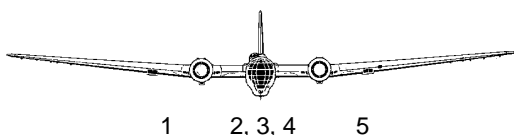
## FIRE POWER CHART

Guns	Type	Weapons	Ammo	Criticals
FG	1x	MG81J 7.92mm MG	20	4
FVG	1x	20mm MG-FF	4	2
AVG	1x	MG131 13mm MG	16	3
TT1	1x	MG131 13mm MG	16	3
TT2	1x	MG131 13mm MG	16	3
TG	1x	20mm MG-FF	4	2

## GUN ATTACK FACTORS

Range	FG	FVG	AVG	TT1	TT2	TG
0	4	16	6	6	6	16
1	3	11	4	4	4	11
2	2	8	3	3	3	8
3	1	5	2	2	2	5
4	1	3	1	1	1	3
5	1	2	1	1	1	2
6	--	1	1	1	1	1
7	--	--	--	--	--	--

## WEAPON STATION LOCATION



## POWER VERSUS SPEED CHART

(per engine)

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	.5	0.5	--	--	HI
19-24	MH	1.0	0.5	--	--	MH
13-18	ML	1.5	0.5	--	--	ML
7-12	LO	2.5	1.5	--	--	LO
1-6	VL	2.5	1.5	--	--	VL
Banking FPs		2	3	5	7	
Side Slip FPs		3	5	7	9	

## NOTES AND VARIANTS

FG: Front, level  
 FVG: Front, low  
 AVG: Rear, low  
 TT1/2: All, level to high;  
 6:00 high only  
 TG: Rear, level

He177: Heavy bomber with good handling airborne, but with very untrustworthy (double) engines and poor landing gear. +2 to Join Up, join-Up Incident, and Aircraft malfunction Table rolls. Usually used external hardpoints (for Hs293) rather than bomb-bay. Did not use both at once.

He177A-1: Available March, 1942. Weaker engines - ceiling = 23,000 ft, -100 roc, no wing hardpoints; -1 to Engine criticals. Flaps. No DT. AV = 2x MG81J vice MG131 = 12,8,5,3,2,1,-,-. Rear DG barbettes vice TTs; MG131 TG.

He177A-5: Available Feb. 1943. Used over England. Would climb to ceiling over North Sea, then long shallow dive for high speed pass over England.

# FW 200C-3/U-4 Kondor

A/C Type: Heavy maritime bomber  
 Engine(s): 4 BMW-Bramo 323 R-2 Fafnir  
 Eng. Pwr: 4x1200-hp, radials, air-cooled  
 A/C Crew: Pilot, Co-plot, radio-op/gunner, 3 gunners

Maximum Speed: 224 mph @ 17,000 ft  
 Maximum Ceiling: 19,700 ft / 16,500 ft / 12,000 ft  
 Defense factor: 7 Size Modifier: +2  
 Damage Factor: 16/24 Endurance: 700  
 Cockpit View: Good Blind Area: none

Protection: Cockpit +0 Engines +0 Fuel +0

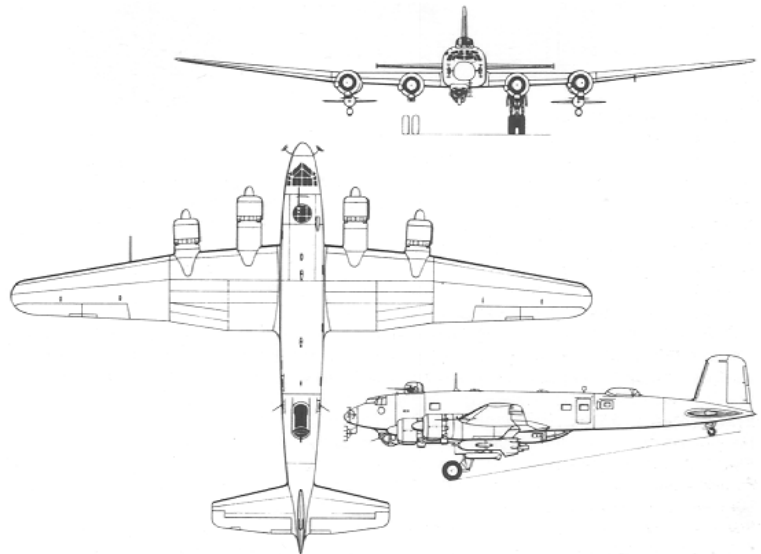
Climb Dece/ Dive Accel: 2.0 / 1.0

Weight and Load Limit: 4400 / 6-11

Wpn Stations	Weight	Allowed Loads
3(bombbay)	4400	8x250 kg bombs or 2 1-ton mines
2,4 (C-8 only)	1100	Hs293 Glidebomb
1,3	550	1 bomb <= 250 kg

Country: Germany

Service Entry Date: July 1941



Class: H

Victory Points: 7-13

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(2)	Min HT(3)	Min BT(-)	Min ET(-)	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	3.5	4.0	8.0	4.0	5.5	--	--	19-24	MH	200
13-18	ML	3.5	4.5	8.0	3.5	5.0	--	--	13-18	ML	500
7-12	LO	3.0	4.5	8.0	3.0	4.5	--	--	7-12	LO	700
1-6	VL	2.5	4.0	7.0	3.0	4.0	--	--	1-6	VL	900

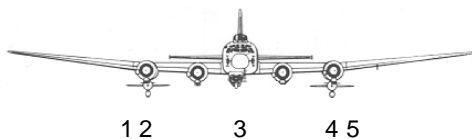
## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
TT	1x 7.62mm MG81J mg	12	4
DG	1x 13mm MG131 mg	15	3
LG	1x 13mm MG131 mg	10	3
RG	1x 13mm MG131 mg	10	3
FG	1x 20mm MG-FF cannon	4	2
VG	2x 7.62mm MG81J mg	8	4

## GUN ATTACK FACTORS

Range	TT	DG	L/RG	FG	VG
0	4	6	6	16	8
1	3	4	4	11	6
2	2	3	3	8	4
3	1	2	2	5	3
4	1	1	1	3	2
5	1	1	1	2	1
6	--	1	1	1	--
7	--	--	--	--	--

## WEAPON STATION LOCATION



## POWER VERSUS SPEED CHART

(per engine)

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	.25	--	--	--	MH
13-18	ML	0.5	--	--	--	ML
7-12	LO	.75	--	--	--	LO
1-6	VL	1.0	--	--	--	VL
Banking FPs		2	3	5	7	
Side Slip FPs		3	5	7	9	

## NOTES AND VARIANTS

### Defensive Gun Coverage

TT: All level to high  
 DG: Rear, level - high  
 L/RG: L/R rear-, level  
 FG: front, low  
 VG: rear, low

FW200C: Developed from long-distance airliner for anti-shipping patrols in the Atlantic. Kondors were not stressed for combat, limiting their bombload. They spotted for U-boats as well as attack themselves. TT&DG are 6:00 high only.

FW200C-1: Available Spring 1940. Single MG15s in F&AD + RV mounts; MG-FF in F Ventral. 3757 lb bombload. 830-hp BMW 132 H engines.

FW200C-3: Most numerous Kondor. Improved engines, added defensive guns. 4 weapon variants U1-U4.

FW200C-8: Late war version. Carried two Hs293 vice bombs; controls filled bay. 1200-hp Bramo 323R-2 engines: +.25 power per engine at LO & VL.

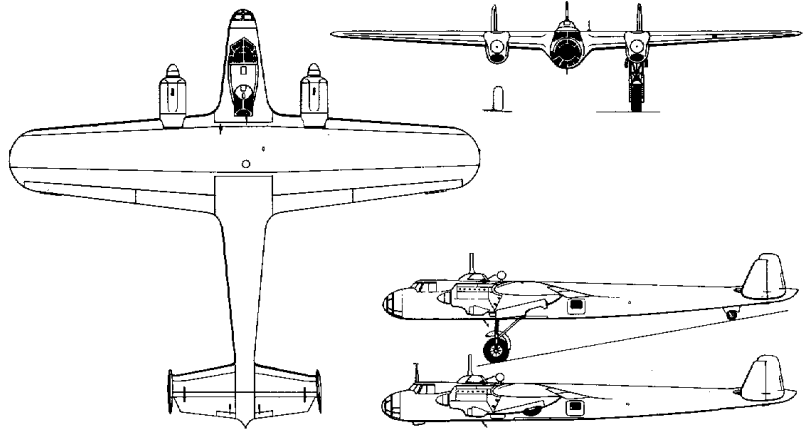
# Dornier Do17M-1

A/C Type: Medium bomber  
 Engine(s): 2 Bramo 323A-1 radial  
 Eng. Pwr: 2x 900-hp. Liquid-cooled.  
 A/C Crew: Pilot, Bombadier (FG),  
 radio-op/gunner

Maximum Speed: 255 mph @ 13,100 ft  
 Maximum Ceiling: 22,900 ft / 20,000 ft / 16,000 ft  
 Defense factor: 6 Size Modifier: +1  
 Damage Factor: 13/20 Endurance: 230  
 Cockpit View: Fair Blind Area: none  
 Protection: Cockpit +0 Engines +0 Fuel +0  
 Climb Dece/ Dive Accel: 2.0 / 1.0  
 Weight and Load Limit: 2205 / 3-7  
 Wpn Stations Weight Allowed Loads  
 1 (bombbay) 2205 bombs

Country: Germany (M-1)  
 Yugoslavia (Kb)

Service Entry Date: 1938  
 1939



Class: M

Victory Points: 5-10

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(2)	Min HT(3)	Min BT(-)	Min ET(-)	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	2.5	4.5	8.5	3.0	4.5	--	--	19-24	MH	300
13-18	ML	2.0	5.0	8.5	3.0	4.0	--	--	13-18	ML	600
7-12	LO	2.0	4.5	8.0	2.5	4.0	--	--	7-12	LO	800
1-6	VL	1.5	4.0	7.5	2.5	3.5	--	--	1-6	VL	900

## FIRE POWER CHART

Guns	Type	Weapons	Ammo	Criticals
M: FG	1x	7.9mm MG-15 mg	5x3	4
D/VG	1x	7.9mm MG-15 mg	5x3	4
K: N1	1x	20mm HS404 cannon	3	2
FG	1x	7.92mm Browning mg	2x5	4
D/VG	1x	7.92mm Browning mg	2x5	4

## GUN ATTACK FACTORS

Range	FG	D/VG	K:N1	FG	D/VG
0	3	4	26	3	4
1	3	3	18	3	3
2	2	2	12	2	2
3	1	1	8	1	1
4	1	1	6	1	1
5	1	1	4	1	1
6	--	--	3	--	--
7	--	--	--	--	--

## WEAPON STATION LOCATION

## POWER VERSUS SPEED CHART

(per engine)

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	1.0	--	--	--	MH
13-18	ML	1.5	0.5	--	--	ML
7-12	LO	2.0	--	--	--	LO
1-6	VL	2.5	--	--	--	VL
Banking FPs		2	3	5	--	
Side Slip FPs		2	4	6	--	

## NOTES AND VARIANTS

### Defensive Gun Coverage

FG: Front, level to high  
 DG: Rear, level to high  
 except 6:00 = high only  
 VG: Rear, low only

Do17M-1: Prewar version used for antipartisan work in 1942. Also given to minor allies: 12 to Hungary in 1940.

Either DG or VG can fire each turn.

Do17P-1: Available 1938. Recon version of M-1. Still in use over France in May 1940. Cameras instead of bombs, longer range: End = 300.

Do17Kb-1: Yugoslavian version: 70 available 1940. About 1/3 destroyed on the ground on 6 April 1941 many other destroyed in unescorted attacks. Used 980 hp Gnome-Rhone 14Na/2 engines; had fixed 20mm in nose. In 1942, some were given to Croatian Air force.

# Junkers Ju52/3m g7e

Country: Germany

Service Entry Date: 1939

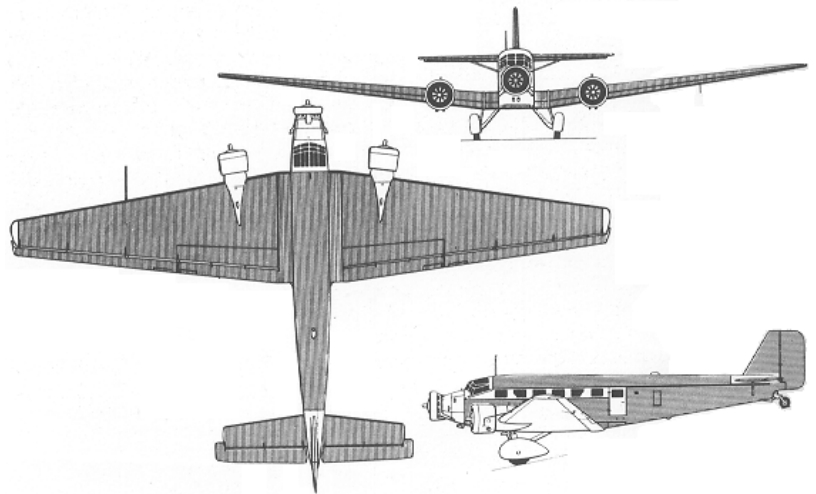
A/C Type: Transport / bomber  
 Engine(s): 3 BMW 132T-2 radial  
 Eng. Pwr: 3x830-hp. air-cooled.  
 A/C Crew: Pilot, Co-pilot, gunner,

Maximum Speed: 178 mph @ 4,590 ft  
 Maximum Ceiling: 18,400 ft / 14,000 ft / 10,000 ft  
 Defense factor: 6 Size Modifier: +1  
 Damage Factor: 10/15 Endurance: 330  
 Cockpit View: Fair Blind Area: rear, low  
 Protection: Cockpit +0 Engines +0 Fuel +0

Climb Dece/ Dive Accel: 2.0 / 1.0

Weight and Load Limit: 1800 / 2-5

Wpn Stations	Weight	Allowed Loads
cargo bay	3600	cargo/paratroops
1 (3m - 1936-38)	1102	500kg bombs



Class: M

Victory Points: 2-4

## AIRCRAFT PERFORMANCE CHART

Altitude Levels	Bands	Minimum Speed	Maximum Speed	Maximum Dive Spd	Min TT(1)	Min HT(2)	Min BT(-)	Min ET(-)	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	--	--	--	--	--	--	--	19-24	MH	--
13-18	ML	2.0	3.0	6.5	3.5	5.0	--	--	13-18	ML	200
7-12	LO	1.5	3.5	6.5	3.0	4.5	--	--	7-12	LO	400
1-6	VL	1.5	3.5	6.0	3.0	4.0	--	--	1-6	VL	600

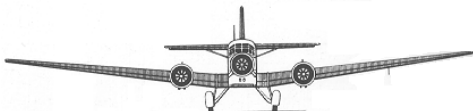
## FIRE POWER CHART

Guns	Type Weapons	Ammo	Criticals
DG	1x 7.62mm MG15 mg	5x3	4
LG	1x 7.62mm MG15 mg	5x3	4
RG	1x 7.62mm MG15 mg	5x3	4

## GUN ATTACK FACTORS

Range	DG	LG	RG
0	4	4	4
1	3	3	3
2	2	2	2
3	1	1	1
4	1	1	1
5	1	1	1
6	--	--	--
7	--	--	--

## 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	--	--	--	--	HI
19-24	MH	--	--	--	--	MH
13-18	ML	0.5	--	--	--	ML
7-12	LO	1.0	--	--	--	LO
1-6	VL	1.25	--	--	--	VL
Banking FPs		2	3	5	7	
Side Slip FPs		3	5	7	9	

## NOTES AND VARIANTS

### Defensive Gun Coverage

DG: Rear-, high      LG&RG positions were local options: 2- on D10  
 LG/RG: L/R Rear-, level      On some later models, DG was an MG131 MG.

Ju52: The Ju52/3m was developed in the early 1930s and served through the war as a transport with few major changes. Ju52s fought in Spain as bombers briefly before being used only as transports. Ugly, slow, but highly serviceable even in rough conditions from Norway to the Sahara. Before WW2, used 750-hp engine: -.25 power.

The Soviets captured 80 Ju52s at Stalingrad that they refurbished and used. The Swiss Air force had a few examples flying into the early 1980s.