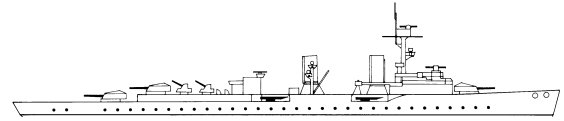


Kriegsmarine Lt Cruiser - Köln Class

First Launch: 1936	No. Built: 3
Displacement: 6,650 tons	Crew: 850
Length & Beam: 571 x 50 ft	Max Speed: 32 knots

Hit Capacity: 425

Victory points: 105



Offensive and Defensive Equipment

9 x 5.9" inch (3 turrets)	3x AAA Directors
12 x 21 inch TT (4 triples)	2x Searchlights
6 x 88mm AA (3 turrets)	
8 x 37mm AA (4 mounts)	
4 x 20mm AA (4 mounts)	

Boiler vs. Speed Table

Boilers Left	=	4	3	2	1	0
Max Speed	=	2/3	1/2	1/4	1/6	DIW
Defense Str	=	14	12	11	10	10

AAA: Opscale 2-2-1

Loc.	Battery	Type	Dir.	Arcs
Bow	20-1	Single 20mm Flak 30	-	12 - 04
SM	20-2	Single 20mm Flak 30	-	02 - 05
PM	20-3	Single 20mm Flak 30	-	08 - 12
Stern	20-4	Single 20mm Flak 30	-	07 - 10
Bow	37-1	Twin 37mm Flak 37	-	08 - 12
Stern	37-2	Twin 37mm Flak 37	-	06 - 10
Bow	37-3	Twin 37mm Flak 37	-	12 - 04
PM	37-4	Twin 37mm Flak 37	-	02 - 06
Stern	88-1	Twin 88mm AA	A	02 - 06
Stern	88-2	Twin 88mm AA	B	04 - 08
Stern	88-3	Twin 88mm AA	C	06 - 10

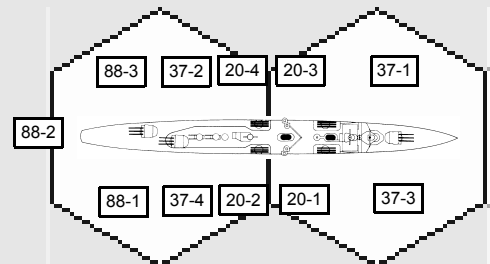
Counter/Size = CL/2

Direct Hit Areas:	<u>Bow</u>	<u>Stern</u>
D10 roll to hit:	3	3
Flight Deck Armor	0	
Main Deck Armor	1	(Light)
Main Side Armor	1	(Light)
Torpedo Protection	0	
Command Teams:	4	
Damage Control Teams:	14	

Aircraft Handling Data

Aircraft Carried	2 seaplanes (Ar196A-3)
A/C Catapults:	1
A/C Cranes:	1
RDC	2

AAA Location Guide



Notes

Karlsruhe was sunk 9-Apr-40, by the submarine HMS *Truant* in the Kristiaansand. The *Königsberg* was sunk 10-Apr-40 by FAA Skuas, the first major warship to be sunk by aircraft. The *Köln* performed various missions in 1941-42 in the Baltic and Norway. It was a test platform for the Flettner Kolibri helicopter. It was decommissioned for a year and then called back into service in 1944 for service in the Baltic; sunk in Wilhelmshaven 31-Mar-45.

AAA Firepower vs. Range Table

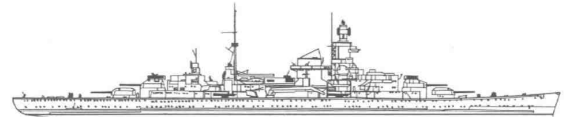
AAA Type	Max. Rng.	Crits	0-2	3-5	6-8	9-12	13-16	17-21	22-27	28-35	36-45	46+
Single 20mm Flak 30	27	2	9	7	5	3	2	2	1	--	--	--
Twin 37mm Flak 37	45	1	21	16	11	7	5	4	3	2	2	--
<u>Twin 88mm Turret DP (1/1)</u>	46+	3 ea	--	--	6	6	6	6	6	6	6	6

Kreigsmarine *Hipper* Cruiser - *Hipper* Class

First Launch: 1938 **No.Built:** 3
Displacement: 12,000 tons **Crew:** 1300
Length & Beam: 675.5 x 69.8 ft **Max Speed:** 32 knots

Hit Capacity: 560

Victory points: 140



Offensive and Defensive Equipment

8x 8"/55 (4 turrets) 1941: FuMO 27 radar
 12x 21" torpedo tubes 4x AAA Directors
 12x 105mm DP (6 turrets) 4x Searchlights
 12x Twin 37mm AA (6 turrets)
 6 x 20mm Flak 30 AA

Boiler vs. Speed Table

Boilers Left	=	4	3	2	1	0
Max Speed	=	2/3	1/2	1/4	1/6	DIW
Defense Str	=	14	12	11	10	10

AAA Early war: Opscale 6-3-2

Loc.	Battery	Type	Dir.	Arcs
Bow	20-1	Single 20mm AA	-	09 - 03
Mid	20-2	Single 20mm AA	-	07 - 11
Mid	20-3	Single 20mm AA	-	01 - 05
Bridge	20-4	Single 20mm AA	-	02 - 10
Mid	20-5	Single 20mm AA	-	06 - 10
Mid	20-6	Single 20mm AA	-	02 - 06
Bow	37-1	Twin 37mm AA	-	08 - 12
Mid	37-2	Twin 37mm AA	-	07 - 11
Stern	37-3	Twin 37mm AA	-	06 - 10
Bow	37-4	Twin 37mm AA	-	12 - 04
Mid	37-5	Twin 37mm AA	-	01 - 05
Stern	37-6	Twin 37mm AA	-	02 - 06
Mid	105-1	Twin 105mm DP turret	A	08 - 12
Mid	105-2,3	Twin 105mm DP turret	A	05 - 09
Mid	105-4	Twin 105mm DP turret	B	12 - 04
Mid	105-5,6	Twin 105mm DP turret	B	03 - 07

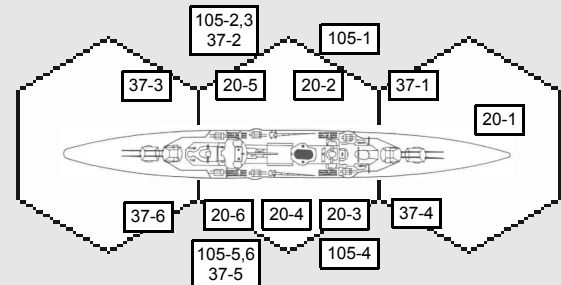
Counter/Size = CA/3

Direct Hit Areas:	Bow	Mid	Stern
D10 roll to hit:	3	4	3
Flight Deck Armor	0		
Main Deck Armor	1	(Light)	
Main Side Armor	2	(Medium)	
Torpedo Protection	0		
Command Teams:	4		
Damage Control Teams:	21		

Aircraft Handling Data

Aircraft Carried	3 seaplanes (Ar196A-3)
A/C Catapults:	1
A/C Cranes:	1
RDC	3

AAA Location Guide



Notes

Hipper was damaged during the invasion of Oslo, rammed by HMS *Glowworm*. After a couple actions off Norway, she was sent to the Baltic. *Blücher* was sunk by shore batteries and torpedos in Oslo harbor. *Prinz Eugen* was dispatched with *Bismarck*, but safely reached Brest. In Feb-42, she ran the Channel with *Scharnhorst* and *Gneisenau*. She was then sent to the Baltic. *Lützow* was sold to the Soviet Union in 1940, where work was slowed. 70% complete in Jun-41, her guns were used to defend Leningrad

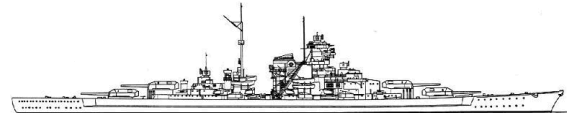
AAA Firepower vs. Range Table

AAA Type	Max. Rng.	Crits	0-2	3-5	6-8	9-12	13-16	17-21	22-27	28-35	36-45	46+
Single 20mm Flak 30	27	2	9	7	5	3	2	2	1	--	--	--
Twin 37mm Flak 37	45	1	21	16	11	7	5	4	3	2	2	--
Twin 105mm Turret DP (1/2)	46+	3 ea	--	--	9	9	9	9	9	9	9	9

Kriegsmarine Battleship - Bismarck Class

First Launch: 1941 **No. Built:** 2
Displacement: 42,900 tons **Crew:** 2,650
Length & Beam: 813 x 118 ft **Max Speed:** 29 knots

Hit Capacity: 1140 (T: 1160) Victory points: 285



Offensive and Defensive Equipment

8 x 15 inch (4 turrets) 1941: FuMO 21 search radar
 12 x 5.9 inch (6 turrets) 1944: Würzburg radar AA dir
 16 x 105mm AA (8 turrets) 4x AAA Directors
 x 37mm AA (8 turrets) 4x Searchlights
 12 x Flak 30 20mm

Boiler vs. Speed Table

Boilers Left	=	5	4	3	2	1	0
Max Speed	=	2/3	1/2	1/3	1/4	1/6	DIW
Defense Str	=	12	10	9	8	8	8

Bismarck AAA: Op-scale 8-4-3 Tirpitz AAA: Opscale 10-0-19

Loc.	Battery	Type	Dir.	Arcs
L Bow	20-1	2x 20mm Flak 30 AA	-	08-12
L Mid	20-2	2x 20mm Flak 30 AA	-	07-11
L Stern	20-3	2x 20mm Flak 30 AA	-	06-10
R Bow	20-4	2x 20mm Flak 30 AA	-	12-04
R Mid	20-5	2x 20mm Flak 30 AA	-	01-05
R Stern	20-6	2x 20mm Flak 30 AA	-	02-06
L Bow	37-1	Twin 37mm AA	-	08-12
L Mid	37-2,3	Twin 37mm AA	-	06-11
L Stern	37-4	Twin 37mm AA	-	06-10
R Bow	37-5	Twin 37mm AA	-	01-04
R Mid	37-6,7	Twin 37mm AA	-	01-06
R Stern	37-8	Twin 37mm AA	-	02-06
L Mid	105-1,2	Twin 105mm DP turret	A(R)*	07-12
L Mid	105-3,4	Twin 105mm DP turret	C(R)*	06-11
R Mid	105-5,6	Twin 105mm DP turret	B(R)*	12-05
R Mid	105-7,8	Twin 105mm DP turret	D(R)*	01-06
Tirpitz 1944 (vice 37mm AA)				
L Bow	Quad-1	2x Quad 20mm Flak 38	C (R)	08-12
L Mid	Quad-2,3	2x Quad 20mm Flak 38	C (R)	06-11
L Stern	Quad-4	2x Quad 20mm Flak 38	C (R)	06-10
R Bow	Quad-5	2x Quad 20mm Flak 38	D (R)	12-04
R Mid	Quad-6,7	2x Quad 20mm Flak 38	D (R)	01-06
R Stern	Quad-8	2x Quad 20mm Flak 38	D (R)	02--06

* Radar available 1944.

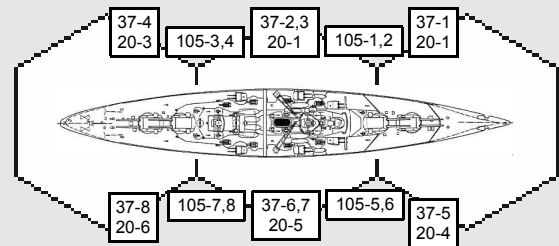
Counter/Size = BB/3

Direct Hit Areas:	<u>Bow</u>	<u>Mid</u>	<u>Stern</u>
D10 roll to hit:	6	7	6
Flight Deck Armor	0		
Main Deck Armor	2	(Medium)	
Main Side Armor	4	(Xhvy)	
Torpedo Protection	75		
Command Teams:	6		
Damage Control Teams:	42		

Aircraft Handling Data

Aircraft Carried	3 seaplanes (Ar196A-3)
A/C Catapults:	1
A/C Cranes:	1
RDC	3

AAA Location Guide



Notes

Bismarck broke out of the North Sea with *Prinz Eugen* in May-41, causing the Royal Navy to scramble everything available after her. Swordfish from *Victorious* and *Ark Royal* wounded fatally *Bismarck*.

Heavier *Tirpitz* was given beefed up AAA. She waited in Aalfjord for the opportunity to attack a convoy, but it never came. *Tirpitz* was the target of several raids by the Fleet Air Arm and minisubs. She was finally done in by Lancasters with 12,000 lb bombs.

AAA Firepower vs. Range Table

AAA Type	Max. Rng.	Crits	0-2	3-5	6-8	9-12	13-16	17-21	22-27	28-35	36-45	46+
Single 20mm Flak 30	27	2	9	7	5	3	2	2	1	--	--	--
Quad 20mm Flak 38	27	2	60	45	30	20	14	10	8	4	--	--
Twin 37mm Flak 37	45	1	21	16	11	7	5	4	3	2	2	--
<u>Twin 105mm Turret DP</u> (1/2) Radar controlled 1944	46+	3 ea	--	--	9	9	9	9	9	9	9	9

Kreigsmarine Battleship - Scharnhorst Class

First Launch: 1937 **No.Built:** 2
Displacement: 31,487 tons **Crew:** 1,850
Length & Beam: 754 x 98 ft **Max Speed:** 32 knots

Hit Capacity: 917

Victory points: 235



Offensive and Defensive Equipment

9 x 11.1"/54 (3 turrets) 1941: FuMO 21 search radar
 12 x 5.9"/55 (4 twin, 1 single) 1944: Würzburg radar AA dir
 14 x 105mm DP (7 turrets) 4x AAA Directors
 8 x Twin 37mm AA (8 turrets) 4x Searchlights
 10 x 20mm Flak 30 AA

Boiler vs. Speed Table

Boilers Left	=	5	4	3	2	1	0
Max Speed	=	2/3	1/2	1/3	1/4	1/6	DIW
Defense Str	=	12	10	9	8	8	8

Scharnhorst AAA: Opscale 7-4-3

Loc.	Battery	Type	Dir.	Arcs
Bow	20-1	Single 20mm AA	-	08 - 04
L Mid	20-2	Single 20mm AA	-	08 - 11
L Mid	20-3	Single 20mm AA	-	06 - 10
L Stern	20-4	Single 20mm AA	-	06 - 10
L Stern	20-5	Single 20mm AA	-	06 - 10
R Mid	20-6	Single 20mm AA	-	01 - 04
R Mid	20-7	Single 20mm AA	-	02 - 06
R Stern	20-8	Single 20mm AA	-	02 - 06
R Stern	20-9	Single 20mm AA	-	02 - 06
Bridge	20-10	Single 20mm AA	-	02 - 10
L Bow	37-1	Twin 37mm AA	-	08 - 12
L Mid	37-2,3	Twin 37mm AA	-	06 - 11
L Stern	37-4	Twin 37mm AA	-	06 - 10
R Bow	37-5	Twin 37mm AA	-	12 - 04
R Mid	37-6,7	Twin 37mm AA	-	01 - 06
R Stern	37-8	Twin 37mm AA	-	02 - 06
L Mid	105-1,2	Twin 105mm DP turret	A	07 - 12
L Mid	105-3	Twin 105mm DP turret	A	06 - 11
R Mid	105-4,5	Twin 105mm DP turret	B	12 - 05
R Mid	105-6	Twin 105mm DP turret	B	01 - 06
Stern	105-7	Twin 105mm DP turret	A/B	03 - 09

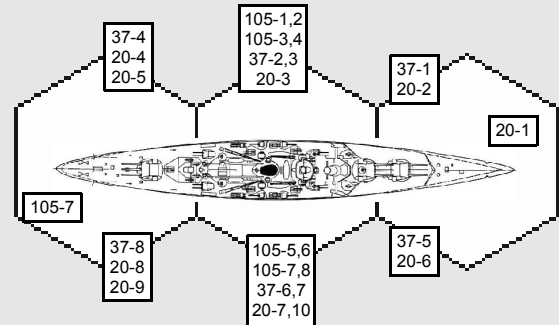
Counter/Size = BB/3

Direct Hit Areas:	Bow	Mid	Stern
D10 roll to hit:	5	6	5
Flight Deck Armor	0		
Main Deck Armor	2	(Medium)	
Main Side Armor	4	(Xhvy)	
Torpedo Protection	60		
Command Teams:	6		
Damage Control Teams:	30		

Aircraft Handling Data

Aircraft Carried	3 seaplanes (Ar196A-3)
A/C Catapults:	1
A/C Cranes:	1
RDC	3

AAA Location Guide



Notes

Use this SDC for the *Scharnhorst* and *Gneisenau*. Both vessels, after a raid in to the North Atlantic, stayed in Brest for a while under frequent air attack. In Feb-42, *Scharnhorst* and *Gneisenau*, along with *Prinz Eugen*, made a daring dash through the English Channel and along the Dutch coast back into German waters.

AAA Firepower vs. Range Table

AAA Type	Max. Rng.	Crits	0-2	3-5	6-8	9-12	13-16	17-21	22-27	28-35	36-45	46+
Single 20mm Flak 30	27	2	9	7	5	3	2	2	1	--	--	--
Twin 37mm Flak 37	45	1	21	16	11	7	5	4	3	2	2	--
<u>Twin 105mm Turret DP (1/2)</u>	46+	3 ea	--	--	9	9	9	9	9	9	9	9

Kriegsmarine Fleet Carrier - Graf Zeppelin

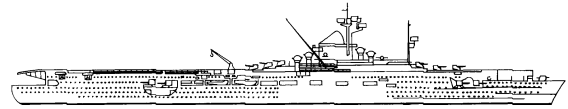
First Launch: 1941 **No. Built:** 1
Displacement: 24,000 tons **Crew:** 2,400
Length & Beam: 825 x 105 ft **Max Speed:** 33.8 knots

Offensive and Defensive Equipment

42 Aircraft 2x AAA Directors
 16 x 5.9 inch (8 turrets) 12 x 4x Searchlights
 105mm AA (6 turrets) Possible: 1942+
 22 x 37mm AA (11 mounts) Würzburg AS radar
 25 x 20mm AA

Hit Capacity: 820

Victory points: 205



Boiler vs. Speed Table

Boilers Left	=	5	4	3	2	1	0
Max Speed	=	2/3	1/2	1/3	1/4	1/6	DIW
Defense Str	=	12	10	9	8	8	8

Graf Zeppelin AAA: Opscale 6-6-7

Loc.	Battery	Type	Dir.	Arcs
Island	105-1,2,3	Twin 105mm DP turret	A	08 - 04
Island	105-4,5,6	Twin 105mm DP turret	B	02 - 10
Bow	37-1	Twin 37mm AA	--	08 - 12
Mid	37-2,3	Twin 37mm AA	--	07 - 11
Stern	37-4,5	Twin 37mm AA	--	06 - 10
Bow	37-6	Twin 37mm AA	--	10 - 02
Bow	37-7	Twin 37mm AA	--	12 - 04
Mid	37-8	Twin 37mm AA	--	01 - 05
Stern	37-9,10	Twin 37mm AA	--	02 - 06
Stern	37-11	Twin 37mm AA	--	04 - 08
Bow	20-1:3	Single 20mm AA	--	07 - 11
Mid	20-4:7	Single 20mm AA	--	07 - 11
Stern	20-8:10	Single 20mm AA	--	07 - 11
Bow	20-11:13	Single 20mm AA	--	01 - 05
Mid	20-14:15	Single 20mm AA	--	01 - 05
Stern	20-16:18	Single 20mm AA	--	01 - 05
Island	20-19:20	Twin 20mm AA	--	09 - 03
Island	20-21:22	Twin 20mm AA	--	03 - 09
Island	20-23	Twin 20mm AA	--	07 - 11

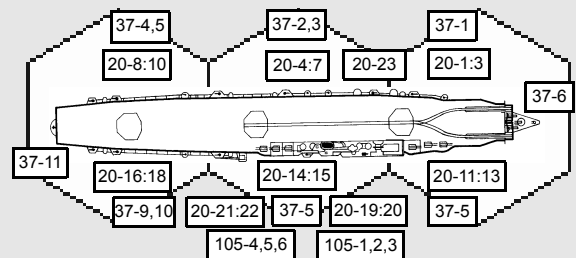
Counter/Size = CV/3

Direct Hit Areas:	Bow	Mid	Stern
D10 roll to hit:	5	5	5
Flight Deck Armor	0		
Main Deck Armor	1	(Light)	
Main Side Armor	2	(Medium)	
Torpedo Protection	55		
Command Teams:	6		
Damage Control Teams:	39		

Aircraft Handling Data

Normal Air Wing	42 aircraft		
FDC (Max / Normal):	22/33	27/40	22/33
EDC (Elevator cap.)	3	3	3
HDC (Hangar cap.)	7	20	13
A/C Cranes/Catapults:	2/2		

AAA Location Guide



Notes

The *Graf Zeppelin* was completed, but never became operational due to disagreements about whether the Kriegsmarine or the Luftwaffe would control the air wing. The air wing was expected to be two staffeln of Bf109Ts and 1 staffel of Ju87Cs. The 1942 Würzburg radar was used on other German capital ships for air defense and fighter direction.

AAA Firepower vs. Range Table

AAA Type	Max. Rng.	Crits	0-2	3-5	6-8	9-12	13-16	17-21	22-27	28-35	36-45	46+
Single 20mm Flak 28	27	2	16	12	8	5	4	3	--	--	--	--
Twin 20mm Flak 30	27	2	19	14	9	6	4	3	2	--	--	--
Twin 37mm AA	45	1	21	16	11	7	5	4	3	2	2	--
<u>Twin 105mm DP Turret (1/2)</u>	46+	3 ea	--	--	9	9	9	9	9	9	9	9