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Sent: Mon, 12 Feb 2024 16:26:29 -0500
To: rtw3contest@gmail.com
Subject: RTW3 Design Contest 2 Submission

Category 1: Light Cruiser

Berlin-Class

Design Date: 1937

Ships in Class: *SMS Berlin, SMS Bremen, SMS Stettin, SMS Pillau, SMS Nürnberg, SMS Strassburg, SMS Köln, SMS Breslau*

Ship design - 1941

Turret axis: 30

Ship type: CL - Light cruiser

Class name: Berlin

Developed from: 10% change, Berlin

Displacement: 10000

Freeboard: Normal

Speed: 32

Horsepower: 90,087

Engine priority: Normal

Belt: 3

Belt coverage: Normal

Deck extended: 2

Upper belt: 0

Deck: 1.5

Deck extended: 1

Conning tower: 3.5

Turrets: 3

Turret top: 2

Secondary guns: 0

Armour scheme: All or nothing

Torpedo defence: 0

Accommodation: Normal

Complement: 737

Colonial service:

Weight: 2,065

Cost: 7,708

Range: Medium

Machinery weight: 2,872

Unit machinery:

Magazine box:

Inclined belt:

weight: 99

weight: 0

weight: 1,046

weight: 111

weight: 65

Total amount: 2,218

Cost: 7,551

15% Amament: 1,437

Cost: 8,703

TPS weight: 0

Accommodation space: 462

Incidental costs: 2,101

Total: 9,791

Cost: 41,824

Weight remaining: 209

Time, monthly cost: 22

Cost: 1,901

Guns: Additional armament | Graphics

Main guns: Calibre 6 | Quality 0

Position	Guns/turret	Weight/turret
A - Forward	3	214
Y - Aft	3	214
W - Aft centreline	3	214
X - Aft superimposed	3	255
B - Forward superimposed	3	267

Secondary guns: Calibre 4 | Number 8 | Quality 1

Guns / turret: 2 | weight: 80

Rounds per gun: 200 | weight: 72

Turret era: Dreadnought | Sponson radius: 6

Tertiary guns: Calibre 3 | Number 0 | Quality 1

Guns / turret: 1 | weight: 0

Rounds per gun: 220 | weight: 0

Turret era: Dreadnought | Sponson radius: 0

Light AA guns: 4 | 4 | 8 | CIWS

Medium AA guns: 7 | 22 | 44 | Radar di

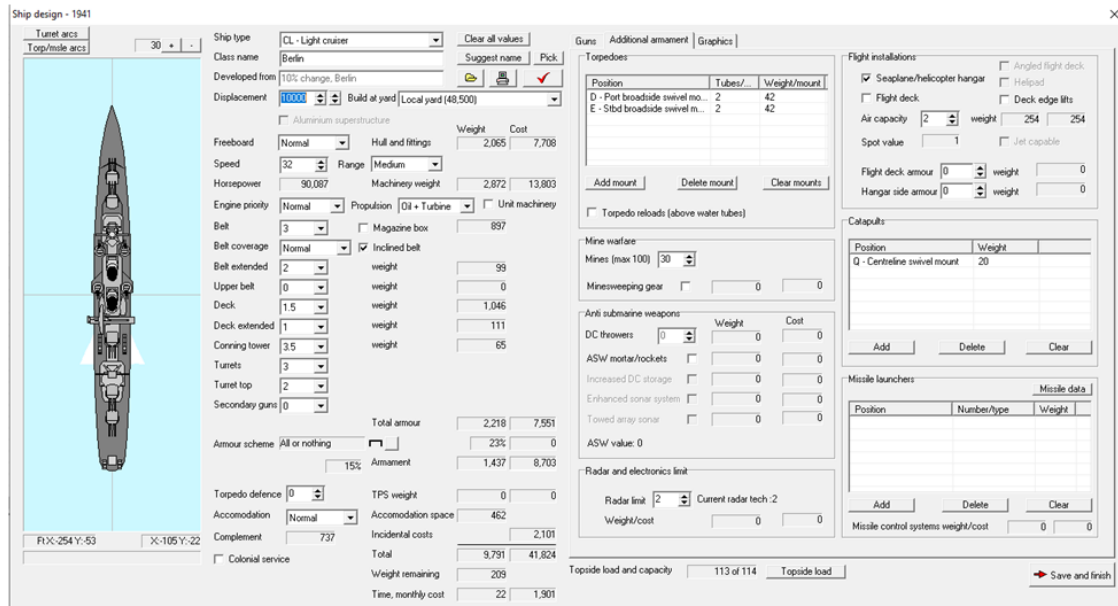
AA directors: 2 | 48 | 96

HAA factor: 17

Topside load and capacity: 113 of 114

Topside load

Save and finish



The *Berlin*-class light cruiser is the Kaiserliche Marine's follow-on class to the successful *Kolberg*-class (8,000 tons, 8x6" guns in ABXY twins, 31 knots, designed in 1924). The *Kolberg*-class was the first German light cruiser to use multi-gun turrets and turrets all on the centerline, and had given good service in the 1934 war against France and Britain – though four of the eight ships were lost in that conflict. The *Berlin*-class was designed to take what made the *Kolbergs* powerful and emphasize that. At the time they were built their fifteen 6" guns made them the most powerfully armed light cruisers in the world, and even now in 1941 they are only matched by a handful of British and Austrian cruisers – there are still none which exceed their firepower. The class was envisioned as a fleet cruiser, capable of scouting for the fleet, screening the capital ships against enemy light vessels, and operating independently against enemy cruisers – and in the currently ongoing war against the Soviet Union and Italy, all eight ships have performed admirably in all three roles. In order to aid in scouting, they carry a pair of seaplanes with a catapult to launch them, extending the fleet's eyes well beyond the horizon. In the screen role, their fearsome 6" armament will make any destroyer or light cruiser think twice about closing to torpedo range, and their four twin 10.5cm dual purpose mounts allow them to contribute to the air defense of the battle line as well. Their firepower and floatplanes also serve them well when operating in the more independent cruiser roles, as does their 32 knot speed, which is equal or superior to all but a few of her contemporaries. A pair of twin deck-mounted torpedo tubes give them a punch above their weight as well, and have been used to finish off crippled enemy capital ships and to participate in deterrence torpedo runs. Their 3" inclined belt offers reasonable protection, and she is immune to fire from her own guns from 8000 yards or further. Her turret protection and torpedo defense does leave something to be desired, however, though these weaknesses have yet to prove fatal of any of the ships.

The class makes up the 3rd and 7th Light Cruiser Divisions, both of which have served in the Baltic against the Soviet fleet since the Soviet surprise invasion of the German-controlled Baltic states. Notably, the 3rd

Light Cruiser Division, consisting of SMS *Bremen*, SMS *Stettin*, SMS *Pillau*, and SMS *Nürnberg* (filling in for the usual fourth member of the division, SMS *Berlin*) was detached in March 1941 to escort a convoy carrying iron ore from Sweden to Germany. A force of four Soviet light cruisers attempted to intercept the convoy, and Konteradmiral Kettner, commander of the division, immediately turned to attack. The Soviets, with one cruiser separated from the other three, turned to flee, and the lone cruiser was trapped against the Swedish coast and destroyed. SMS *Bremen* took a torpedo hit from the dying foe, but managed to reduce her flooding to survivable levels and eventually make it safely to Libau, though she would take no further part in the battle. As night fell, the German ships used their newly fitted surface search radar sets to search the seas for the remaining Soviet cruisers, but found nothing – until morning revealed they had in fact managed to slip around the German ships and place themselves between the convoy, now off the coast of Gotland, and its protectors. KADM Kettner immediately charged, and despite daybreak revealing the Soviet ships in visual range of the convoy, the vigorous attack managed to drive them off. One Soviet cruiser was badly damaged and the escorting destroyers were detached to finish her off, while the remaining cruisers pursued the fleeing enemy. In the end, all four Soviet cruisers were sunk, for no serious damage to any of the German ships save *Bremen*, and the vital convoy made it safely to German ports – thanks to the aggressive actions of Konteradmiral Kettner and to the impressive firepower and speed of the *Berlin*-class cruisers.

Category 2: Heavy Cruiser

Fürst Bismarck-class

Design Date: 1924

Ships in Class: SMS *Fürst Bismarck*, SMS *Prinz Adalbert*, SMS *Friedrich Carl*, SMS *Scharnhorst*

Ship design - 1941

Ship Design Parameters:

- Ship type: CA - Heavy cruiser
- Class name: Fürst Bismarck
- Developed from: 10% change, Fürst Bismarck
- Displacement: 15000
- Freeboard: Normal
- Speed: 29 Range Medium
- Horsepower: 67,806
- Engine priority: Normal
- Belt: 6
- Belt coverage: Normal
- Deck: 2
- Corning tower: 6
- Turrets: 8
- Turret top: 2.5
- Secondary guns: 0

Weight and Cost Summary:

Total armour	3,732	13,050
Armour scheme All or nothing	27%	0
21% Amament	2,881	15,689
TPS weight	484	968
Accommodation space	532	
Complement	853	3,141
Total	13,821	57,792
Weight remaining	1,179	
Time, monthly cost	25	2,312

Main Guns:

Position	Guns/turret	Weight/turret
A - Forward	2	596
Y - Aft	2	596
X - Aft superimposed	2	695
B - Forward superimposed	2	727

Secondary Guns:

- Calibre: 4
- Number: 12
- Quality: 1
- Guns / turret: 2
- weight: 120
- Rounds per gun: 180
- weight: 90
- Director: DP

Tertiary Guns:

- Calibre: 3
- Number: 0
- Quality: 1
- Guns / turret: Casemat
- weight: 0
- Rounds per gun: 200
- weight: 0
- DP:

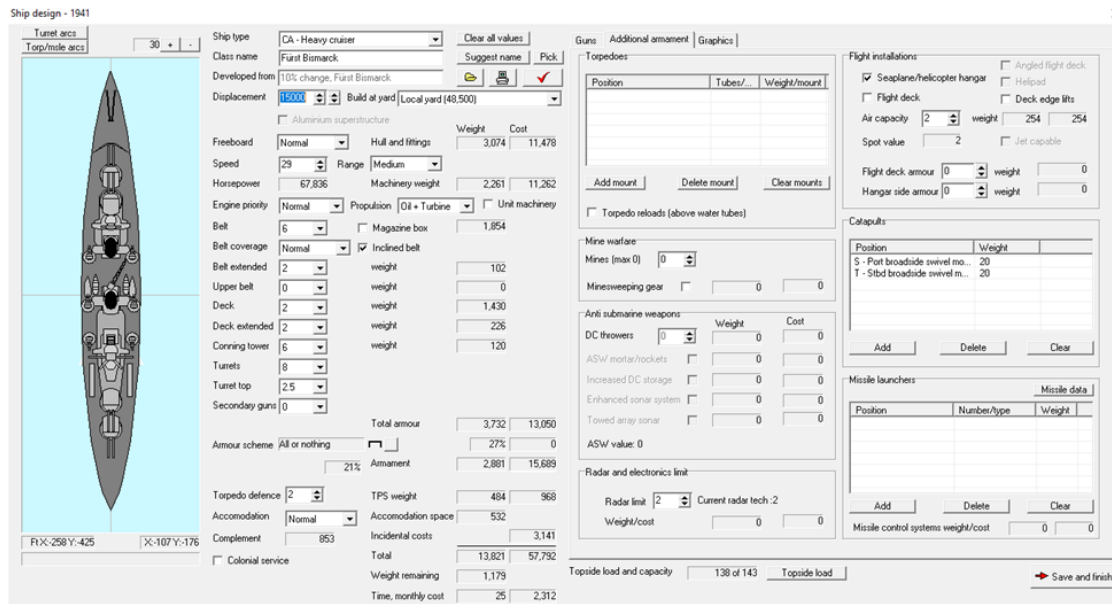
Additional Amenament:

- Medium and light anti aircraft guns: Weight Cost
- Light AA guns: 12 13 26
- Medium AA guns: 12 38 76
- AA directors: 2 52 104

HAA factor: 24

Topside load and capacity: 138 of 143

Save and finish



Note: design shown after the 1936 refit, which added newer directors, dual purpose secondary guns, AA directors, and medium AA guns

As the dreadnought race drove larger and larger classes of battleships and battlecruisers, the Kaiserliche Marine identified a gap developing in the fleet's capabilities – other navies were beginning to field large cruisers with 8"-10" armament, which could threaten the Empire's far-flung colonies. While these ships were no match for a proper battlecruiser, they were more than a match for the navy's light cruisers, and against a serious European opponent the battlecruisers were needed in the main fleet and could not be detached for duty hunting cruisers abroad. So, a class of ships of the same type was ordered to operate far from home in defense of the Kaiser's colonial holdings, and as a threat to similar enemy holdings. To this end, the *Fürst Bismarck*-class was given an armament of four twin 10" guns, the equal or better of any similar cruisers at the time they were laid down, and armor capable of resisting similar enemy guns at medium range or longer. Their design speed of 29 knots was fast enough to at least keep pace with any enemy cruisers they might encounter and to keep their distance from any contemporary battlecruisers. As they were intended to operate far from friendly scouting elements, each was equipped with a pair of floatplanes and catapults. They were given reasonably deep magazines, as they would be the primary combatants in their intended role, and good torpedo protection to make up for potentially limited friendly screening forces.

Despite their age, the *Fürst Bismarck*-class has seen little action. They were stationed in Southeast Asia during two short wars against Britain and France in 1931 and 1934, but only took part in general patrols, never engaging an enemy warship in either conflict. As tensions increased with the Soviet Union, they moved from Southeast Asia to the Indian Ocean, in preparation to support an attack from German-held Djibouti into Italian Eritrea, as Italy was allied to the Soviets. On Italy's entry into the war, they did indeed support a landing in Eritrea, which was unopposed by the light Italian forces on station. However, the German plans did not account for the aggressive deployment of the Italian battlefleet,

which largely abandoned the Mediterranean, transited the Suez canal (an incident which caused a strong protest from the German ambassador in London, which went ignored) into the Indian Ocean, supported the successful repulse of German troops from Eritrea and counter-invasion of Djibouti, and then swept into a base in Italian-held Cochin China to launch an invasion of German Tonkin. The *Fürst Bismarck*-class have done their best against stiffer than expected opposition – while they have not won major victories which the papers can trumpet like the *Berlin*-class, they have engaged forces which included Italian capital ships and survived – including an attack on an Italian convoy which intelligence suggested would be vulnerable, but was in fact guarded by an equivalent force of better-armed Italian heavy cruisers, as well as a strong escort of light cruisers and destroyers, and a pair of battlecruisers. Despite these odds, Konteradmiral Speiss of 1st Cruiser Division managed to sink one of the Italian cruisers and successfully preserve all of his ships, despite being unable to do more than temporarily disperse the convoy.

As these ships are showing their age and their nearly 20 year old engines struggle to reach speeds needed to choose their engagements, a follow on design, the *Prinz Eugen*-class, was finalized in 1938, with the first ships just entering service in late 1941. These ships offer a 31 knot speed and three triple 10" gun mounts on the same displacement, with armor of equivalent thickness but improved performance. Even these newer ships cannot challenge the overall might of the Italian battlefleet alone, and discussions are still ongoing as to whether they will reinforce their older fellows, or deploy to the Baltic in order to help finish off the Soviet fleet and leave the venerable *Fürst Bismarck*-class to fight their distant war alone.

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-Richard



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