

# BUILDING INSTRUCTIONS FOR THE BATTLESHIP "BISMARCK"

Shipbuilding yard: Blohm & Voss, Hamburg  
Launched: 14. 2. 1939  
Commissioned: 24. 8. 1940

## Technical Data:

Class of ship	Battleship
Length at load line	241.5 m
Overall length	251.0 m
Beam	36.0 m
Draught	10.2 m
Displacement	45172 tons
Speed	30.1 knots
Aircraft on board	6 ARADO 196
Catapults	2
Complement	2092 men and officers
Armament	38.0 cm 8 guns in 4 double turrets 15.0 cm 12 guns in 6 double turrets 10.5 cm 16 guns in 8 double mounts 3.7 cm 16 guns in 8 double mounts 2.0 cm 12 guns in single mounts
Ship's boats	16

## The Fate of the "Bismarck"

- May 18, 1941: "Bismarck", together with the heavy cruiser "Prinz Eugen" moved to Norway.  
May 21, 1941: The two ships leave Norway and head towards the Atlantic, to take part in the operation "Rheinübung".  
May 23, 1941: The first contact with the enemy in the form of the English cruiser "Norfolk".  
May 24, 1941: Engagement with the English battle cruiser "Hood", and the English battleship "Prince of Wales". The English battle cruiser "Hood" is hit by several broadsides both from the "Bismarck" and the "Prinz Eugen", and blows up; the "Prince of Wales" is heavily damaged. The "Prinz Eugen" takes leave of the "Bismarck".  
May 26, 1941: The "Bismarck" is hit by an aerial torpedo which damages the rudder, thus disabling the ship.  
May 27, 1941: Five English battleships, 9 cruisers and 2 aircraft carriers move in to attack the "Bismarck". When its guns have been silenced, the burning ship is blown up by its own crew. The "Bismarck" capsizes at about 10:36 a. m. (1977 dead, only 115 survivors).

## Building instructions "Bismarck"

### General:

The building plan comprises 4 individual sheets and is tailored to a construction of the model in wood. If the building kit, Order No. 3620/00 is used, there is no need to build the hull, since this kit contains a pre-fabricated hull made of plastic material, as well as the necessary supplementary plan, Order No. 4620/02. This plan is necessary, since the further construction of the hull using auxiliary frames differs from that applicable when the bread and butter type of construction is employed. The time required for building is considerably shortened and the useful load capacity considerably increased, since the plastic hull is much lighter than the wooden version. For the upper deck with all its superstructures and fittings, the present plan should be used.

Before we begin work, however, we must decide which of the possible versions we wish to build.

1. A table model, in which all the parts of the hull located below the waterline are simply left out (hull built in the bread and butter manner).
2. A complete model showing all the underwater details and with the hull in bread and butter construction.
3. A complete model using the pre-fabricated plastic hull Order No. 3620/02.

In the case of the complete model, we must further consider whether the model is to be

- a. a stand model with true-to-scale underwater details or
- b. a floating model, in which case the rudder in particular must be larger and an appropriate engine and, if applicable, the remote control equipment, must be incorporated within the ship; to provide access to the engine, etc., the main deck, together with its superstructures and fittings, must be removable.

Before making a start on the building work proper, we would recommend that you study the plans carefully to familiarize yourself with them.

- Sheet 1: Side (profile) view, view of the deck, outline
- Sheet 2: Boards for the bread and butter construction
- Sheet 3: Frame profiles and cutting, view of the bows and stern, armament and equipment
- Sheet 4: Deck and longitudinal superstructures, fittings

It is expedient to begin by building the hull and the parts to be fitted inside it. This should then be followed by the deck and the superstructures.

With respect to the numerous fittings, mountings, etc., it is, without a doubt, more expedient to order the ready-made set of fittings, Order No. 3620/01, than to make them yourself.

## Hull in bread and butter construction

The construction of the hulls for versions 1 and 2 differs only in the number of boards employed. In both cases, the superstructures are identical. For the individual boards (layers), we use knot-free, thoroughly seasoned, unwarped boards of obeche, lime, alder or poplar wood having a straight grain. The dimensions are obtained from the parts list. The exact outer and inner contours are carefully traced from the plan onto the boards. The holes marked with crosses for the locating pins (beechwood dowels or steel wire) are first drilled.

In the case of the baseboard A 0, the inside is, of course, not sawn out, but simply hollowed somewhat. The inside area of all the other boards is, however, sawn out, working exactly on the inside lines. In the case of the outer contours, the wood is sawn to leave a certain amount of spare outside the lines. The inside areas can be sawn out with the universally cutting fretsaw "Tornado", Order No. 8090; alternatively, 8-10 mm-large holes can be drilled in the wood and the remainder carefully removed with the aid of a chisel.

Take care not to damage the exterior!

General remark: If you intend to build a floating model, the walls of the hull should be kept as thin as possible when the model is finished, so that the weight of the ship is kept to a minimum. Here, the ready-made plastic hull should always be given preference. In the case of a stand or table model, the weight is not so important, and the walls should be left thicker for increased strength and stability. If weight is of no importance at all, you need not hollow out the hull at all, but leave it solid.

First of all, board A 8 is glued to A 7. Securing pins prevent any lateral movement, while the boards are clamped together, sandwich-like, between two flat pieces of wood, using screw clamps. For gluing, it is recommended that white glue, such as Ponal or UHU-coll be used, which dries quickly and is waterproof. Allow adequate time for thorough drying, and then proceed in the same manner with the following boards in the sequence of their numbers.

Since the "Bismarck" has a marked deck sheer (upward slope of the hull towards the bow), this "elevation" of the bows must be produced by using the short board Af8/A9.

When the entire hull has thoroughly dried and the clamps have been removed, our hollow hull is complete.

The work that now follows must be carried out with the greatest care!

With the aid of cardboard templates, the outside of the hull is now worked over with plane, file and, finally, sandpaper, until the steps have disappeared and the hull is uniformly smooth and rounded. Finally, the now superfluous supports and the steps inside the stern part of the hull are removed.

## Building the superstructures and fittings

The superstructures are built in the sequence of the capital letters B to O, and for each letter, in the order of the numbers.

At first, the large number of parts might be confusing. When, however, the parts have been sawn out and fitted together, or placed one on top of the other, any problems can be quickly resolved with the aid of the plan.

The supports under the platforms, for example, D 4 or E 6, should be made out of the 1 x 7 mm obeche strip supplied. In the same way, the parts of the deck fittings, for example, companion ways or breakwater should be made from the appropriate obeche strips.

Here, the following general remark might be made: Every single part must be painted and then provided with railings and fittings, etc., before being glued into place, since such parts are often very difficult to "get at" subsequently, and a deck smeared with paint does not look particularly attractive! This remark is intended primarily for overenthusiastic beginners!!

The final overall appearance of the ship can be improved considerably by "sheathing" the wood of the superstructure with thin card which, when painted, better simulates smooth metal plates. If you are building a floating model, it is recommended that the large superstructures be hollowed out somewhat to make them lighter and thus keep the point of gravity of the ship as low as possible.

### Colours:

Hull, below	dark reddish brown
stripe at load line	grayish-black to black
hull above load line	light gray
superstructures and masts	light gray
decks, boat decks,	
smaller superstructures	
and platform	mid-gray
gun muzzles, waterways,	
anchor chains, anchors	black
stack top	silver-gray



Do not use high gloss paints to finish the ship, as they look very unnatural. Semi-matt or matt paints give a much more realistic finish. The best results are obtained by applying several thin coats, one thick coat can spoil the whole effect.

### Trimming floating models

The correct depth of immersion of the hull (load line) is achieved by adjusting the position of the batteries and, if necessary, by inserting plates of sheet lead into the hull. When the ship has been correctly trimmed, it will right itself again from a 40 degree list.

## PARTS LIST "BISMARCK"

Part	Quantity	Description	Material	Dimensions in mm
<b>Wooden hull</b>				
A 0 ) to ) A 7 )	1	plank	obeche	
A 8	1	bow plank	obeche	
A 9	1	stern plank	obeche	
A 10	1	forecastle deck	plywood	
A 11	1	upper deck	boats deck No. 7517/07	
A 12	1	after deck	boats deck No. 7517/07	
A 13	2	deck trimmings	flexible wooden strips	
A 25	2	bilge keels	lime wood	

The items A 0 to A 25, are not contained in the building kit.

### Plastic hull

1	1	hull	plastic	ready-made item
	2	frame covers	No. 3620/02 plywood	
2	1	frame	plywood	
3	1	frame	plywood	
5	1	forecastle deck	obeche	
4, 6 to 19		rudder and engine parts for radio control, see additional plan, Order No. 4620/02		
20	4	strips	pine	
21	3	lubricators	brass tubing	
22	1	'tween deck	plywood	
23	2	deck trimmings	flexible wooden strips	
24	1	upper deck	boats deck No. 7517/07	
25	2	bilge keels	plastic, deep-drawn part on the hull	

From here onwards, there is no difference between the wooden and plastic hull.

P 1	2	rudder plate	obeche	
	2	rudder posts	round wood	
Pf 1	2	rudder plates, complete		
Q 1	1	tail-shaft bracket, port	lime wood	
Q 2	1	tail-shaft bracket, starboard	lime wood	
Qf 1	1	tail-shaft bracket, port	lime wood	
Qf 2	1	tail-shaft bracket, starboard	lime wood	
	3	ship's screws		ready-made item
	88 *	portholes	No. 5005/15	ready-made item
	6 *	ladders	No. 5740/02	ready-made item

### Longitudinal superstructures

B 1	2 *	low pivot	plastic	ready-made item
B 2	2 *	high pivot	plastic	ready-made item
B 3	1	base	obeche	
	22 *	portholes	No. 5005/15	ready-made item
	2	tubing	brass wire	
	2 *	ladders	No. 5740/02	ready-made item

Part	Quantity	Description	Material	Dimensions in mm
B 4	1	deck	plywood	
	138	railing stanchions	No. 5603/06	ready-made item
	4	bulwarks	card	
	2	double tube	round wood	
	2	tube supports	plywood	
B 5	2	panelling	obeche	
B 6	1	base	obeche	
	22 *	portholes	No. 5005/15	ready-made item
	12	tubes	brass wire	
	2	doors	card	
	2 *	companionways	No. 5740/21	ready-made item
	2 *	lifebuoys	No. 6065/04	ready-made item
B 7	2	panelling	obeche	
B 8	1	flight deck	lime wood	
	2 *	companionways	No. 5740/21	ready-made item
B 9	1	flight deck	lime wood	
B 10		catapult		
	1	middle section	lime wood strip	
	2	side sections	obeche strip	
B 11	2	ventilators	obeche	
			plywood	
B 12	2	ventilators	obeche	
			plywood	
			plywood	

### Superstructures

C 1	1	base	obeche	
	8 *	portholes	No. 5005/15	ready-made item
	4	doors	card	
C 2	1	upper section	obeche	
	14 *	portholes	No. 5005/15	ready-made item
	84 *	handrails	No. 7790/31	brass pins
C 3	1	deck	plywood	
	18 *	railing stanchions	No. 5603/06	ready-made item
	3	bulwarks	card	
C 4	1	bridge	obeche	
	8 *	portholes	No. 5005/15	ready-made item
	4	doors	card	
C 5	1	deck	plywood	
	22 *	railing stanchions	No. 5603/06	ready-made item
	2	bulwarks	card	
C 6	1	rangefinder, base	obeche	
	1 *	ladder	obeche	
	10 *	ventilators	No. 5740/02	ready-made item
	2	doors	No. 5005/15	ready-made item
			card	
C 7	1	foredeck	obeche	
	2 *	ladders	No. 5740/02	ready-made item
C 8	1	bulwark	card	
C 9	2	bridges	obeche	
	2	bridge supports	obeche	
	8 *	railing stanchions	No. 5603/06	ready-made item
C 10	1	ventilators	obeche	
			plywood	
C 11	1	ventilators	obeche	
			plywood	
C 12	1	panelling	plywood	
C 13	1	panelling	plywood	

### Fighting mast

D 1	1	base	obeche	
	4 *	portholes	No. 5005/15	ready-made item
D 2	1	deck	plywood	
	2	bulwarks	card	
	19 *	railing stanchions	No. 5603/06	ready-made item
	2 *	companionways	No. 5740/21	ready-made item
D 3	1	fighting mast	obeche	
	30 *	handlines	No. 7790/31	brass pins
	2	doors	card	
	1 *	ladder	No. 5740/02	ready-made item

Part	Quantity	Description	Material	Dimensions in mm	
D 4	1	platform	plywood		
	2	platforms	obeche		
	4	bulwarks	card		
	24 *	railing stanchions	No. 5603/06	ready-made item	
	4	supports	obeche		
	4	supports	obeche		
	1	supports	obeche		
	2	bracings	obeche		
	4	bracings	brass wire		
	2	bracings	brass wire		
	2	bracings	brass wire		
	D 5	1	command station	obeche	
	D 6	1	mast section	obeche	
	D 7	1	mast section	obeche	
D 8	1	mast support	lime wood		
D 9	1	platform	lime wood		
	4 *	railing stanchions.	no. 5602/04	ready-made item	
D 10	1	platform	plywood		
	16 *	railing stanchions	No. 5602/04	ready-made item	
	1	bulwark	card		
	4	bracings	brass wire		
	1 *	companionway	No. 5740/21	ready-made item	
	3	antennas	brass wire		
D 11	1 *	signalling horn	No. 5682/09	ready-made item	
	1	deck	plywood		
	1	bulwarks	card		
	1 *	companionway	No. 5740/21	ready-made item	
	6	supports	obeche		
	2	supports	obeche		
	3	supports	obeche		
	2	antennas	brass wire		
	D 12	1	mast	round wood	
	1	mast section	brass wire		
1	yard	brass wire			
1	yard	brass wire			
D 13	1	rangefinder, base,, forward part	obeche		
	1	rangefinder, base, aft part	obeche		
	7 *	railing stanchion	No. 5602/04	ready-made item	
	4 *	ventilators	No. 5005/15	ready-made item	
	1	door	card		
1 *	ladder	No. 5740/02	ready-made item		
<b>Stack</b>					
E 1	1	stack	obeche		
	180 *	hand lines	No. 7790/31	brass pins	
E 2	6	tube	brass wire		
	1	aft ventilator	plywood		
E 3	1	ventilator, starboard	obeche		
	1	ventilator, port	plywood		
E 4	1	ventilator, port	obeche		
	1	ventilator, port	plywood		
E 5	1	platform	plywood		
	4	supports	obeche		
E 6	1	platform	plywood		
	22 *	railing stanchions	No. 5602/04	ready-made item	
	6	supports	obeche		
E 7	4	supports	obeche		
	2	ventilator knees	obeche		
	2	panellings	card		
	2	supports	obeche		
	2	supports	obeche		
E 8	1	stack plate	plywood		
	3 *	stack opening	No. 5005/30	ready-made item	
E 9	1	stack ring	obeche		
	32	valves	round wood		
E 10	1	stack top	card		
E 11	1	grid	plywood		
E 12	1	derrick	plywood		
	1	derrick	obeche		
			round wood		

Part	Quantity	Description	Material	Dimensions in mm
E 13	2	sheds	plywood	
		2 sidewalls	plywood	
		2 narrow walls	plywood	
		2 roofs	plywood	
	2	doors	card	
E 14	3	boathouse roof, left	plywood	
E 15	3	boathouse roof, right	plywood	
E 16	3	boathouse roof, above	plywood	
E 17	3	boathouse roof, above	plywood	
E 18	3	boathouse inside	plywood	
E 19	3	boathouse inside	plywood	

#### Aeroplane hangar and mast

F 1	1	hangar	obeche	
	1	large door	plywood	
F 2	2	ventilator	obeche	
			plywood	
F 3	1	ventilator, starboard	plywood	
F 4	1	ventilator, port	plywood	
F 5	6	boathouses	plywood	
F 6	3	boathouses	plywood	
F 7	3	boathouses	plywood	
F 8	2	catwalk	plywood	
F 9	1	mast	round wood	
	1	mast, upper section	round wood	
	1	mast, upper section	brass wire	
	1	yard	brass wire	
	1	yard	brass wire	
	1 *	ladder	No. 5740/02	ready-made item
	2	tubes	brass wire	
F 10	2	antenna arms	lime wood	
	1	antenna jibs	brass wire	
	1	middle strut	brass wire	
	1	jib	brass wire	
	1	antenna yard	brass wire	
F 11	1	observation platform	plywood	
	2	signalling platforms	obeche	
	3	bulwarks	card	
	12 *	railing stanchions	No. 5602/04	ready-made item
F 12	2	supports	obeche	
F 13	1	observation platform	plywood	
	4 *	railing stanchions	No. 5602/04	ready-made item
F 14	1	signalling platform	plywood	
F 15	1	rudder angle indicator	card	

#### Aft superstructures

G 1	1	superstructure	obeche	
	2	floor of stack gun station	card	
	2	bulwarks	card	
	2	tubes	round wood	
	4	tube supports	obeche	
G 2	1	deck	plywood	
	2	bulwarks	card	
	24 *	railing stanchions	No. 5603/06	ready-made item
	2	companionways	No. 5740/21	ready-made item
	2	boxes	obeche	
G 3	1	superstructure	obeche	
	7 *	portholes	No. 5005/15	ready-made item
	2	doors	card	
	4	boxes	obeche	
	2 *	cable drums	No. 5819/01	ready-made item
G 4	1	deck	plywood	
	1	observation platform	card	
	1	bulwark	card	
	20 *	railing stanchions	No. 5603/06	ready-made item
	1 *	companionway	No. 5740/21	ready-made item
G 5	2	ventilators	obeche	



Part	Quantity	Description	Material	Dimensions in mm
G 6	2	ventilators	obeche plywood	
G 7	1	ventilators	obeche	
G 8	1	ventilators	obeche	
G 9	1	superstructure section	obeche	
G 10	1	searchlight platform	plywood	
	2 *	companionways	No. 5740/21	ready-made item
	20 *	railing stanchions	No. 5603/06	ready-made item
G 11	1	rangefinder, base	obeche	
	1	doors	card	
	1 *	ladders	No. 5740/02	ready-made item
	2 *	ventilators	No. 5005/15	ready-made item
<b>Armament</b>				
H 1	2 *	38.0 cm twin turrets	No. 6231/00	ready-made item
	2 *	38.0 cm twin turrets	No. 6232/00	ready-made item
H 2	2 *	15.0 cm twin turrets with rangefinder	No. 6225/00	ready-made item
H 3	4 *	15.0 cm twin turrets	No. 6225/00	ready-made item
H 4	8 *	10.0 cm twin flak guns	No. 6221/00	ready-made item
H 5	8 *	3.7 cm twin flak guns	No. 6203/01	ready-made item
H 6	12 *	2.0 cm flak guns	No. 6201/00	ready-made item
<b>Aircraft on board</b>				
I 1	1 *	Arado 196	No. 6340/00	ready-made item
<b>Derricks</b>				
K 1	2 *	large derricks	No. 5890/03	ready-made item
	2 *	hooks	No. 5350/00	ready-made item
K 2	4	boat davits	brass wire	
	2	bow cranes	brass wire	
	2	stern cranes, large	brass wire	
	2	stern cranes, small	brass wire	
<b>Ship's boats</b>				
	2 *	dinghies	No. 6000/00	ready-made item
	4 *	cutters	No. 6004/00	ready-made item
	1 *	motor jolly boat	No. 6006/00	ready-made item
	4 *	motor pinnaces	No. 6007/00	ready-made item
	2 *	large working boats	No. 6008/00	ready-made item
	3 *	passenger launches	No. 6009/00	ready-made item
<b>Rangefinders</b>				
N 1	1 *	rangefinder, fighting mast	No. 6310/03	ready-made item
N 2	1 *	rangefinder, bridge	No. 6310/01	ready-made item
N 3	1 *	rangefinder, aft	No. 6310/02	ready-made item
N 4	2 *	rangefinder in armoured turret	No. 6325/03	ready-made item
N 5	1	flak gun command station		ready-made item
	1	base	round wood	
	1	platform	plywood	
	1	panelling	card	
	1	rangefinder, base	round wood	
	1 *	rangefinder	No. 6321/20	ready-made item
	7 *	railing stanchions	No. 5603/06	ready-made item
	1 *	ladder	No. 5740/02	ready-made item
N 6	1	flak gun command station		
	1	base	round wood	
	1	platform	plywood	
	1	panelling	card	

Part	Quantity	Description	Material	Dimensions in mm
	1	rangefinder, base	round wood	
	1 *	rangefinder	No. 6321/20	ready-made item
	7 *	railing stanchions	No. 5603/06	ready-made item
	1 *	ladder	No. 5740/02	ready-made item
N 7	4 *	rangefinder	No. 6321/15	ready-made item

### Searchlights

O 1	5 *	searchlights	No. 5667/02	ready-made item
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### Deck fittings

	2 *	anchors	No. 5621/24	ready-made item
	1 *	bow anchors	No. 5621/24	ready-made item
	1 *	stern anchors	No. 5621/24	ready-made item
	2 *	anchor chains	No. 5627/06	ready-made item
	2 *	anchor chains	No. 5627/04	ready-made item
	2 *	anchor capstans	No. 5802/00	ready-made item
	1	forward breakwater	obeche	
	15	supports	obeche	
	2	aft breakwater	obeche	
	8	supports	obeche	
	2 *	companionways	No. 5740/21	ready-made item
	1	companionways	obeche	
	1	companionways	obeche	
	1	companionways	obeche	
	2	companionways	obeche	
	2	companionways	obeche	
	2	companionways	obeche	
	7	double skylights	obeche	
	12	single skylights	obeche	
	1	large skylight	obeche	
	4	hatch covers	card	
	2	tubes	round wood	
	4	tube supports	obeche	
	4 *	double cable drums with hand wheel	No. 5819/01 wire/plywood	ready-made item
	2 *	cable drums	No. 5819/00	ready-made item
	14 *	cable winches	No. 5819/01	ready-made item
	13 *	double bollards	No. 5441/12	ready-made item
	6 *	lips	No. 5421/00	ready-made item
	11 *	railing sections	or No. 5423/15	ready-made item
	2 *	flagstaff	No. 5603/07	ready-made item
			No. 5705/04	ready-made item

All items marked with an asterisk (\*) are contained in the Set of Fittings, Order No. 3620/01.