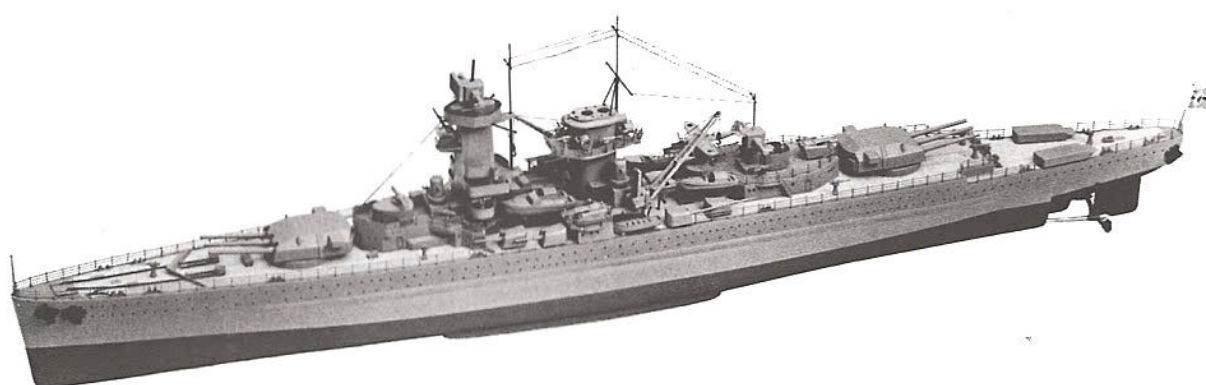


Bestell-Nr. 4600/00

GRAF SPEE

Panzerschiff



Bauanleitung

Building Instructions

Description d' Assemblage

Descrizione della Costruzione

Descripcion de Montaje

**aero-
naut**

**-Modellbau
D-7410 Reutlingen 1**

West-Germany

The Pocket Battleship "Admiral Graf Spee"

Built at the navel shipyards in Wilhelmshaven

Launched on 30. 6. 34

Commissioned on 6. 1. 36

Technical data

Class of ship	Pocket battleship
Length at load line	181.7 metres
Overall length	186.0 metres
Width	21.7 metres
Draught	7.34 metres
Displacement	16,200 tons
Speed	28 knots
Aircraft on board	2 Arado 196
Aircraft catapult	1
Shipyard	KM-Werft (Navel Shipyard) Wilhelmshaven
Size of crew	1000 men and officers
Armament	28.0 cm 6 guns in triple turrets 15.0 cm 8 guns in single turrets 10.5 cm 6 guns in three double mounts 3.7 cm 8 guns in 4 double mounts 2.0 cm 14 guns in 14 single mounts 53.3 cm 8 torpedo tubes in 2 units of four each
Ship's boats	11

Brief history of the Admiral Graf Spee

The "Admiral Graf Spee" was launched on 30. 6. 34, as the third ship in its class (sister ships: "LÜTZOW ex DEUTSCHLAND", "ADMIRAL SCHEER"). After being taken into commission on 6. 1. 36, squadron flagship; numerous voyages to foreign countries were undertaken. On 21. 8. 39, the Admiral Graf Spee left harbour for South America under the command of Captain Langsdorff; after the outbreak of war, navel action in the South Atlantic. Nine ships having a total tonnage of 50,080 were sunk. 13. 12. 39 engagement off the Rio de la Plata with the British cruisers "EXETER", "AJAX" and "ACHILLES". To repair damage sustained during this engagement, the ship sailed into the Montevideo harbour. The government of Uruguay gave leave for only a few days stay. Since it was assumed that the return route home would be blocked by powerful English navel forces, the ship was scuttled by its own crew on 17. 12. 1939.

Building description for the "ADMIRAL GRAF SPEE"

The building plan comprises 3 individual sheets and is tailored to a construction of the model in wood. If the building kit, Order No. 3600/00 is employed, 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. 4600/02. This plan is necessary since the further construction of the hull using auxiliary frames differs from that needed when the "layer-wise" (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 and all its superstructures, the present plan should be used.

But, before we start to work, we must first 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 water line are simply left out (hull built as a bread-and-butter construction).
2. A complete model showing all the underwater details and with the hull in the bread-and-butter construction.
3. A complete model using the pre-fabricated plastic hull Order No. 3600/02

If we decide in favour of the complete model, we must then 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, in particular the rudder must be larger, and an appropriate motor and, if desired, also the remote control equipment, must be incorporated within the ship. In addition, to provide access to the motor, etc., the main deck, together with its superstructures, must be removable.

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

- Sheet 1 Boards for the bread-and-butter construction
Deck and longitudinal superstructures
Sheet 2 View of the bows and stern, armament and equipment
Sheet 3 Side (profile) view, view of the deck, line waterline and frame views

It is most expedient to start by building the hull and the parts intended to go inside the hull. This should then be followed by the deck and the superstructures.

With respect to the numerous fittings, mountings, etc., it is, without a doubt, most expedient to order the ready-made set of fittings, Order No. 3600/01, than to make them yourself.

Hull in bread-and-butter construction

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

In the case of the base board A 8, the inside is, of course, not sawn out, but simply hollowed somewhat. The middle area of all the other boards is, however, sawn out, working exactly on the inside lines. In the case of the outside lines, the wood is sawn to leave a certain amount of spare wood 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 remaining wood carefully removed with the aid of a chisel.

Take care not to do any damage to the exterior!

General remark: If the model is intended as a floating version, the walls of the hull should be kept as thin as possible when the model is finished in order to keep the weight of the ship at a minimum. Here, the ready-made plastic hull is always to be preferred. 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 no importance is attached to weight at all, the hull need not be hollowed out, but may be left completely solid.

The first step is to glue board A 2 to A 3. Secure the dowel pins against any lateral movement by clamping the two boards together, sandwich-like, between two flat boards 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 an adequate period of time for thorough drying, and then proceed in the same way with the following boards in the order of their numbers. Care must be taken with the deck "shoulder" at frame 7. Carefully observe the drawing and "cut".

Since the "ADMIRAL GRAF SPEE" has a deck sheer (upward slope of the hull towards the bow), this "elevation" of the bows must be produced by employing the short board A 1 b.

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

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 equipment

The superstructures are built in the order of the capital letters B to E and for each letter, in the order of the numbers. In the construction kit box, the individual parts are packed in separate bags, each of which is marked appropriately. Before starting to build the model, mark the item numbers on the individual stamped parts using a pencil. To make this easier for you, the stamped parts are reproduced minified in the building instructions.

At first, the large number of parts is 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.

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

The final appearance of the ship can be improved considerably by "sheathing" the wood of the superstructures 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 brownish-red
	Stripe at load line	grey-black to black
	Hull above load line	light grey
	Superstructures and masts	Light grey
	Decks, boat decks, smaller	
	superstructure decks and platforms	mid-grey
	Gun muzzles, waterways, anchor	
	chain, anchor	black

Do not use high-gloss paint to finish the ship, as it will then 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 ensured 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° list.

Parts List "ADMIRAL GRAF SPEE"

Part	Quantity	Designation	Material	Dimensions in mm
Hull made of wood				
A 1	1	Superstructure deck	Boat deck No. 7517/07	620 x 105 x 2
A 1 a	1	Upper deck	Boat deck No. 7517/07	190 x 80 x 2
A 1 b	1	Sheer	Abachi	315 x 110 x 8
A 2	1	Board	Abachi	770 x 112 x 8
A 3	1	Board	Abachi	740 x 110 x 10
A 3 a	1	Board	Abachi	200 x 80 x 8
A 4	1	Board	Abachi	935 x 108 x 6
A 5	1	Board	Abachi	930 x 112 x 8
A 6	1	Board	Abachi	920 x 116 x 12
A 7	1	Board	Abachi	870 x 114 x 10
A 8	1	Board	Abachi	700 x 108 x 10
A 9	2	Deck trimmings	Pine strips	700 x 2 x 3
A 9 a	2	Deck trimmings	Pine strips	360 x 2 x 3

The items A1 to A 9 a are not provided in the kit.

Hull made of plastic

1	1	Hull	Plastic No. 3600/02	
2	1	Frame	Plywood	82 x 70 x 3
3	1	Frame	Plywood	108 x 68 x 3
4	1	Frame	Plywood	92 x 72 x 3
5	1	Stern	Abachi	12 x 20 x 5
6	1	Bow block	Abachi	165 x 80 x 14
7	4	Strips	Pine	600 x 5 x 3
7 a	2	Strips	Pine	200 x 5 x 3
8	2	Deck trimmings	Pine strips	750 x 2 x 3
9	2	Deck trimmings	Pine strips	190 x 2 x 3
10	1	Deck cover	Plywood	585 x 114 x 3
11	1	Deck cover	Plywood	195 x 80 x 3
12	1	Superstructure deck	Boat deck No. 7517/07	585 x 106 x 2
13	1	Upper deck	Boat deck No. 7517/07	186 x 76 x 2
14	2	Deck trimming	Pine strips	120 x 2 x 3
14 a	1	Bow piece	Plywood	50 x 38 x 1,5
15	1	Forward superstructure deck	Boat deck No. 7517/07	120 x 70 x 2
16	1	Deck extension fitting	Abachi	60 x 30 x 8
17	1	Deck for extension	Boat deck No. 7517/07	65 x 30 x 2

Part	Quantity	Designation	Material	Dimensions in mm
Hull				
18	1	Rudder plate	Lime wood	31 x 22 x 4
19	1	Rudder post	Dowelling	2 ϕ x 40
20/21/22		Rudder parts for radio control, see supplementary plan		
23/24/25/25a		Motor parts for radio control, see supplementary plan		
26	2	Bilge keel	Flexible beech strip	225 x 3 x 8
	2	Ship's screws		Ready made
Port	1	Tail-shaft bracket	Lime wood	22 x 22 x 12
Starboard	1	Tail-shaft bracket	Lime wood	22 x 22 x 12
	372 *	Portholes	No. 5005/15	Ready made

Forward superstructure

B 1	1	Substructure	Abachi	98 x 62 x 12
B 2	1	Substructure	Abachi	106 x 40 x 12
	2	Side structures	Abachi	32 x 6 x 8
	2	Protective plate	cardboard	45 x 12 x 1
	2	Breakwaters	Plywood	13 x 4 x 1,5
	26 *	Portholes	No. 5005/15	Ready made
	6	Doors	Cardboard	
	2	Ventilators	Cardboard	10 x 8 x 1
	6	Windows	Black card	
	2 *	Stairways	No. 5740/31	Ready made
B 3	1	Side deckhouse	Abachi	22 x 28 x 12
B 4	1	Side deckhouse	Abachi	20 x 28 x 12
B 5	2	Deck beams	Plywood	18 x 3 x 1
B 5a	1	Deck reinforcement	Plywood	35 x 18 x 1,5
B 6	1	Deck	Plywood	220 x 122 x 1
B 7	1	Deck elevation	Plywood	80 x 58 x 1,5
B 8	1	Deck elevation	Plywood	80 x 62 x 1
B 9	1	Deck elevation	Plywood	32 x 46 x 1,5
	1	Bulwark	Card	
B 10	1	Fire control centre	Abachi	32 x 27 x 12
			Dowelling	3 ϕ x 35
			Card (doors)	
B 11	1	Lift housing	Abachi	8 x 7 x 10
	2 *	Stairways	No. 5740/31	Ready made
	1 *	Ventilator	No. 5720/18	Ready made
	2 *	Derricks	No. 5890/03	Ready made
	2 *	10.5 cm twin flack guns	No. 6221/00	Ready made
	2 *	3.7 cm twon flack guns	No. 6203/01	Ready made
B 11	64 *	Railing stanchions	No. 5603/07	Ready made
	4 *	Cable winches	No. 5819/01	Ready made

Aft superstructure

C 1	1	Substructure	Abachi	104 x 60 x 12
C 2	1	Substructure	Abachi	8 x 40 x 12
	2	Side box	Plywood	10 x 6 x 3
C 3	2	Deck beams	Plywood	22 x 12 x 1
C 3a	1	Deck reinforcement	Plywood	36 x 22 x 1,5
C 4	1	Deck	Plywood	132 x 68 x 1
C 4a	1	Deck elevation	Plywood	60 x 45 x 1,5
C 5	1	Command centre	Abachi	40 x 24 x 4
C 6	1	Deck	Plywood	40 x 24 x 1
	1	Bulwark	Cardboard	
	1	Compass	Dowelling	4 ϕ x 13
C 7	1	Range-finder stand	Abachi	22 x 10 x 10
	1 *	Range-finder	No. 6310/02	Ready made
	2 *	3.7 cm twin flack guns	No. 6203/01	Ready made
	1 *	10.5 cm twin flack guns	No. 6221/00	Ready made
	2 *	Stairways	No. 5740/31	Ready made
	40 *	Railing stanchions	No. 5603/06	Ready made
	2	Doors	Cardboard	
	22	Windows	Black card	

Part	Quantity	Designation	Material	Dimensions in mm
Funnel				
D 1	1	Funnel substructure	Abachi	65 x 30 x 14
		Ventilator	Plywood	40 x 14 x 1
D 2	1	Funnel	Abachi	45 x 35 x 23
D 3	1	Funnel cap	Plywood	42 x 30 x 3
D 4	1	Funnel head	Plywood	23 x 35 x 1,5
D 5	1	Funnel platform	Plywood	66 x 52 x 1
			Plywood	10 x 20 x 1
			Plywood	10 x 10 x 3
	10	Stanchions	Cardboard	20 x 4 x 1
	4	Stanchions	Cardboard	15 x 15 x 1
	25 *	Railing stanchions	No. 5603/06	Ready made
	4 *	Searchlights	No. 5667/02	Ready made
	4 *	2 cm flack gun	No. 6201/00	Ready made
	2	Range-finders	Dowelling	10 ϕ x 20
			Dowelling	2 ϕ x 18
D 6	1 *	Mast	Brass tubing	2 ϕ x 50
			Steel wire	1 ϕ x 144
			Steel wire	0,5 ϕ x 25
			Brass wire	1 ϕ x 100

Fighting mast

E 1	1	Fighting mast	Abachi	76 x 38 x 26
E 2	1	Platform	Plywood	10 x 5 x 1
	2 *	Stairways	No. 5740/31	Ready made
	4 *	Railing stanchions	No. 5603/06	Ready made
E 3	1	Extension	Abachi	25 x 10 x 8
E 3a		Extension	Abachi	20 x 14 x 6
E 3b		Extension piece	Plywood	22 x 16 x 1,5
	1	Range-finder	Dowelling	10 ϕ x 20
			Dowelling	2 ϕ x 18
E 4	2	Range-finder platforms	Plywood	23 x 20 x 1
		Bulworks	Cardboard	
	6	Stanchions	Cardboard	22 x 3 x 1
	2 *	Range-finders	No. 6321/15	Ready made
E 5	2	Platforms	Plywood	31 x 18 x 1
	2	Superstructure	Abachi	12 x 10 x 10
	4	Stanchions	Cardboard	15 x 3 x 1
		Bulwarks	Cardboard	
E 6	1	Platform	Plywood	38 x 20 x 1
	4	Stanchions	Cardboard	15 x 3 x 1
	8 *	Railing stanchions	No. 5603/06	Ready made
		Bulwarks	Cardboard	
E 7	2	Platforms	Plywood	23 x 20 x 1
	6	Stanchions	Cardboard	10 x 2 x 1
		Bulwark	Cardboard	
E 8	1	Searchlight platform	Plywood	23 x 16 x 1
	2	Stanchions	Cardboard	16 x 5 x 1
	8 *	Railing stanchions	No. 5603/06	Ready made
	1 *	Searchlight	No. 5667/02	Ready made
E 9	1	Mast support	Plywood	20 x 10 x 1
	2	Supports	Cardboard	20 x 4 x 1
	1	Extension piece	Abachi	10 x 4 x 4
E 10	1	Upper platform	Plywood	45 x 36 x 1
	14	Supports	Cardboard	10 x 3 x 1
		Bulwarks	Cardboard	
	1 *	Antenna	Steel wire	0,5 ϕ x 130
E 11	1	Substructure for range-finder	Abachi	35 x 12 x 8
	1 *	Range-finder	No. 6310/02	Ready made
E 12	1 *	Mast	Brass tubing	2 ϕ x 52
			Steel wire	1 ϕ x 100
			Steel wire	0,5 ϕ x 35
	12 *	Portholes	No. 5005/15	Ready made
	4	Doors	Cardboard	
	20	Windows	Black card	

Part	Quantity	Designation	Material	Dimensions in mm
Catapult				
	1	Pivot	Abachi	22 ϕ x 12
	1	Platform	Plywood	32 x 25 x 1
	1	Rotating turntable	Plywood	18 ϕ x 1,5
	1	Catapult	Plywood	70 x 6 x 4
	2	Support blocks	Dowelling	2 ϕ x 24
	10 *	Railing stanchions	No. 5602/04	Ready made
	1 *	Airplane ARADO 196	No. 6340/00	Ready made
Ship's boats				
	4	Forward boat cradles (Drawing Sheet 2, Section E-F)	Plywood	120 x 4 x 1
			Brass wire	1 ϕ x 130
	2	Midship boat cradles (Drawing Sheet 2, Section C-D)	Plywood	80 x 4 x 1
			Brass wire	1 ϕ x 300
	2	Aft boat cradles (Drawing Sheet 2, Section A-B)	Plywood	126 x 6 x 1
			Brass wire	1 ϕ x 120
	4	Boat's davits	Brass wire	2 ϕ x 25
			Plywood	10 x 3 x 4
	1 *	Dinghy	No. 6001/00	Ready made
	3 *	Cutters	No. 6003/00	Ready made
	2 *	Motor dinghies	No. 6006/00	Ready made
	2 *	Motor pinnaces	No. 6007/00	Ready made
	3 *	Passenger boats	No. 6009/00	Ready made
Deck equipment				
	4 *	Anchors	No. 5621/21	Ready made
	2 *	Capstans	No. 5800/08	Ready made
	2 *	Anchor chains	No. 5627/0.4	Ready made x 200
	6 *	Securing chains	No. 5627/0.3	Ready made x 15
	4 *	Hawse	No. 5792/11	Ready made
	1	Breakwater	Plywood	80 x 5 x 1,5
	1	Deck box	Abachi	18 x 5 x 4
	4 *	Double bollards	No. 5441/12	Ready made
	4 *	Double cross-shaped bollards	No. 5446/12	Ready made
	4 *	Lip	No. 5421/00	
			or. 5423/15	Ready made
	2 *	28 cm Triple turrets	No. 6229/00	Ready made
	8 *	15 cm Single turrets	No. 6224/00	Ready made
	7 *	2 cm flack gun	No. 6201/00	Ready made
	1 *	Bow flagstaff	No. 5705/04	Ready made
	1 *	Stern flagstaff	No. 5705/07	Ready made
	4 *	Double bollards	No. 5446/12	Ready made
	1 *	2 cm flack gun	No. 6201/00	Ready made
	2 *	Groups of 4 torpedo tubes	No. 6247/04	Ready made
	2	Deck boxes	Abachi	6 x 5 x 3
	2 *	Stairways	No. 5740/31	Ready made
	2 *	Cable winches	No. 5819/01	Ready made
Railing				
	9 *	Railings	Railing strips No. 5603/07	Ready made x 250

The items marked with an asterisk (*) are contained in the set of fittings, Order No. 3600/01.