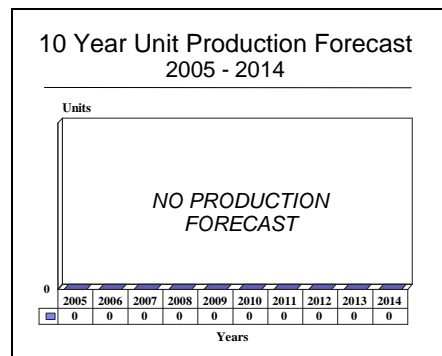


## EGV-702 Berlin - Archived 5/2006

### Outlook

- Both funded ships complete and in service
- No additional construction projected
- Any additional ships will be significantly different in detail design reflecting "lessons learned"
- No prospect for exports



### Orientation

**Description.** Underway replenishment and combat support ships. The German Navy classes these ships as EGV (Einsatzgruppe-Versorgungsschiff, or deployment group support ship).

#### Sponsor

Federal Office of Defense Technology and Procurement  
(Bundesamt für Wehrtechnik und Beschaffung – BWB)  
Konrad-Adenauer-Ufer 2-6  
Postfach 7360  
D-56057 Koblenz  
Germany  
Tel: +49 261 4001  
Fax: +49 261 400 7630; 400 7964  
Telex: 862661 bwb d

**Licensees.** No production licenses have been granted.

**Status.** In service.

**Total Produced.** Two ships have been completed.

#### Pennant List

<u>Number &amp; Name</u>	<u>Builder</u>	<u>Launch</u>	<u>Commissioning</u>
A-1411 <i>Berlin</i>	Flensburger Schiffbau	4/1999	4/2001
A-1412 <i>Frankfurt am Main</i>	Flensburger Schiffbau	2/2001	5/2002

**Mission.** These ships are designed to provide underway replenishment to frigate and corvette task groups. They will support United Nations and European Union peacekeeping operations outside Germany's own territorial waters.

**Price Range.** The unit cost of the two ships averages \$149 million.

## Contractors

Flensburger Schiffbau Gesellschaft, Batteriestraße 52, Flensburg, D-24939 Germany, Prime

Krogerwerft, Rendsburg, Germany, Co-producer

Lürssen Werft GmbH & Co.KG, <http://www.luerssen.de>, Zum Alten Speicher 11, Bremen-Vegesack, 28759 Germany, Tel: 49 421 660 40, Fax: 49 421 660 4443, Email: [info@luerssen.de](mailto:info@luerssen.de), Co-producer

EADS Defence & Security Systems, Dornier, Dornier GmbH, <http://www.eads.net>, An Der B 31, Friedrichshafen, 88039 Germany, Tel: 49 7545 8 00, Fax: 49 7545 8 4411, Co-producer

## Technical Data

	<u>Metric</u>	<u>U.S.</u>
<b>Dimensions</b>		
Length overall	173.7 m	569.9 ft
Waterline	160.8 m	527.6 ft
Beam	24 m	78.7 ft
Draft	7.4 m	24.3 ft
Max depth	11.0 m	36.1 ft
<b>Displacement</b>		
Full load		20,240 tons
Light load		8,575 tons
<b>Military Lift Capacity</b>		
Fuel	9,000 m <sup>3</sup>	9,540 tons
Aviation fuel	600 m <sup>3</sup>	636 tons
Potable water	500 m <sup>3</sup>	450 tons
Boiler feed water	50 m <sup>3</sup>	50 tons
Lubrication oil	100 m <sup>3</sup>	106 tons
Spare parts		100 tons
Provisions		280 tons
Ammunition		160 tons
Containers on deck	32 each (20 ft) (15 reefers)	
<b>Performance</b>		
Speed	37 kmph	20 kt
Endurance	45 days	
Crew	60 ship crew + 50 medical staff + 30 helicopter group + 94 spare	
	<u>Type</u>	<u>Quantity</u>
<b>Weaponry</b>		
Missiles – Surface-to-Air	Stinger Fliegerfaust	2
Guns	Rheinmetall 20 mm Mk 202	4
Helicopter	NH90 or Sea King	2
<b>Electronics</b>		
Radar – Navigation & A/C Control	I-band (make and model TBD)	1
<b>Machinery</b>		
Diesel engines		2x7,194 hp
Auxiliary power generation	Electric generators	4
	Bow thruster	1
Propulsion	Shafts	2
	5-bladed propellers	2

**Design Features.** The original plans for a slightly smaller, single-propeller ship have evolved into the current design. This design offers increased displacement and incorporates a twin-engined two-shaft powertrain. The change reflects the growing emphasis within the German Navy on out-of-NATO-area operations in support of U.N. initiatives. The need to transport sufficient volumes of cargo and other replenishments was a major contributor to the design solution for the current hull.

The ship is built in merchant ship standards to save costs, and features a double hull to reduce the risk of environmental spill in case of grounding or a collision.

The hull has a long forecastle, a sharply raked stem with bulbous forefoot, a transom stern, and five continuous decks. It is transversely divided by nine main bulkheads, and the bridge and machinery are arranged three-quarters aft.

At the aft end of the superstructure block is a built-in two-helicopter hangar that opens out onto a flight deck at the stern. An MBB-FHS helicopter handling system is included.

Characteristic for a replenishment ship, the silhouette also includes a sliding-stay Replenishment-at-Sea (RAS) beam structure amidships and two electro-hydraulic cranes for containers, cargo, and refueling. The two arm cranes are positioned forward and aft of the RAS, likewise serving both sides of the ship.

The ship also includes tank space for receiving waste, including oil, ballast, water, sanitary waste, etc., from the ships serviced.

The first ship of the class is fitted with a modular hospital unit, comprised of 26 interconnected containers that are mounted on the main deck in two layers. The unit is equipped with two operating theaters, an X-ray station, an intensive care unit, dental treatment rooms

and laboratories, a pharmacy, a clinical and microbiological lab, and a sterilization facility. The complex used on the ship is based on the German Army Medical Service's 200-bed TransHospital mobile field hospital system, supplied by Dornier.

**Operating Characteristics.** The primary task of these combat support ships, or tenders, is to provide technical and logistics support for the German Navy's patrol boat and mine-clearing flotillas. Functionally, these ships will be replacements for the older Rhein class units. They are also projected to support U.N. or other humanitarian and crisis/rescue operations outside German territorial waters.

The main mission of these ships is to supply a frigate or corvette task group with oil, fuel, provisions, water, stores, and ammunition. Consequently, the operating range of those ships is extended from 21 days to up to 45 days.

The MERZ (Marine-Einsatzrettungszentrum) is a containerized mobile rescue center for the first-of-class that allows hospital functions to be performed on board the ship. Up to 50 injured personnel can be treated at any one time. The two operating theaters can be used simultaneously by two surgical teams.

The hospital unit's related bed area is located in the inner medical section of the ship, but receives its oxygen from the MERZ complex. On the other hand, potable water and power, as well as wastewater systems, are provided by the ship's own circulation.

Onboard helicopters, as well as the search-and-rescue (SAR) helicopters operating in conjunction with the ship, fly the injured persons from remote ships to the rescue centers on board these vessels or to land-based hospitals. The MERZ complex can also be deployed on land – for instance, in peacetime humanitarian operations. The German Army uses a similar structure for its medical emergencies in the field.

## Variants/Upgrades

KSV 90. Original concept name for the program when first laid out around 1990.

MERZ. The MERZ (Marine-Einsatzrettungszentrum), a containerized mobile rescue center, is to be installed on the first ship of the class. It is a modular structure that consists of 26 interconnected 20-foot containers arranged in two layers to optimize patient flow and permit the treatment of up to 50 injured personnel at a time. The rescue center will provide facilities for emergency surgery and intensive care, as well as internal and dental capabilities.

The MERZ system allows flexibility in the configuration of the ship, and makes the fitting of different ships possible according to needs prioritized for each unit based on its operating location and assigned tasks. Thus, it allows simultaneous operation of different versions of the ship, depending on their missions.

Schwarzwald. Before the name "Berlin" was finalized, the class was believed to be called Schwarzwald. The remaining three ships were to be named the DMS *Sauerland*, *Hartz*, and *Grünwald*.

EGV-702. Official nomenclature for this class in the German Navy.



EGV-702 Berlin

Source: German Navy

## Program Review

**Background.** Work on this class started in the early 1990s and envisioned the construction of four combat support ships in two batches of two each. The ships were intended to replace the remaining Klasse 701C depot ships in the German Navy. From the beginning, the process of approving this program was controversial. The primary cause of debate centered on the constitutional implications of joining international peacekeeping efforts under the auspices of the United Nations and the European Union. While there was willingness, at least in principle, to support such operations, the lack of suitable replenishment vessels made this more of a well-intentioned gesture than an action with real substance.

Eventually the German constitution was amended to allow the nation to participate in international peacekeeping efforts outside Germany's own borders. This required the provision of the capability to support such operations. In naval terms, this meant building ships that could be used both for underway replenishment of friendly naval ships (frigate and corvette task groups) and for delivering fuel, provisions, and water in humanitarian emergencies.

In early 1994, the program was cut back from four units to one. However, a second unit was restored in the 1996 German defense budget. According to the 1994 plan, the completion dates of the ships would have been 1998, 1999, 2005, and 2006.

Approval to build the first of the Berlin class Klasse 702 deployment group support ships (Einsatzgruppe Versorgungsschiffe, or EGVs) was granted in October 1996. It was agreed that the program would be built by the consortium of Flensburger Schiffbau Gesellschaft mbH (FSG), Lürssen Werft, and Krögerwerft.

This would be followed by a second ship, contingent on funding. Plans still exist to also build two follow-on ships, but no funding for construction is programmed until after 2010.

The order for the first ship was officially placed on October 15, 1997, and for the second on July 3 the following summer. Technically, the contract was awarded to Lürssen, which then subcontracted the building of the hull to FSG. Part of the superstructure is supplied by Krögerwerft.

First steel was not cut until September 24, 1998, and the first keel was laid down four months later, on January 4, 1999. The first-of-class was launched on April 29, 1999. The new modular hospital system was ordered for the first ship in November 1999. The installation of that complex was completed in the fall of 2001. A second hospital complex was ordered in April 2001.

The lead ship of this class was commissioned in April 2001; the second followed at the end of May 2002. At that time, it was noted the first ship of the class had still to enter full operational service, being held up by problems with the software in her computer systems. At

the commissioning ceremony for the *Frankfurt am Main*, the Commander of the German Navy, Vice Admiral Lutz Feldt, stated that the requirement for the German Navy to deploy two mixed task groups to conflict areas meant that a third ship of the Berlin class would be required.

As of mid-2005, there was no further news of any additional contracts for ships of this class. However, German naval plans still include two projected hulls intended to enter service in 2011. Even if this schedule is to be maintained, the ships need not be ordered before 2007.

## Funding

The program is funded by the German government using construction funds normally allocated through the German defense budget's naval section. A second pair is unlikely to be funded until well beyond the end of the decade.

## Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Flensburger Schiffbau GmbH (FSG)	156.9	Oct 15, 1997 – First ship ordered.
FSG	141.2	Jul 3, 1998 – Order for second ship.
Dornier	10.5	Nov 1999 – Order for first ship's mobile hospital unit (MERZ).
Dornier	10.5	Apr 2001 – Order for second ship's mobile hospital unit (MERZ).

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Early	1994	Program cut from four ships to one
FY	1996	Budget restores second ship to the program
Oct	1996	Approval granted for Flensburger Schiffbau-led consortium to build the first ship
Oct	1997	First-of-class ordered
Jul	1998	Order for second ship
Sep	1998	First steel cut
Jan	1999	Keel laid down on first-of-class (FOC)
Apr	1999	Launch date for DMS <i>Berlin</i>
Nov	1999	Mobile hospital unit ordered for the FOC
Jan	2001	Second ship launched
Apr	2001	First ship commissioned
Oct	2001	Hospital modules installed on first ship
May	2002	Second ship commissioned

## Worldwide Distribution

**Germany.** Two ships in service.

## Forecast Rationale

There is still no additional information available on the proposed construction of two additional Berlin class ships. The German government position appears to be that funding for these ships will not be made available until after 2010, while the German Navy is still expecting a second pair of ships in (or shortly after) 2011. The consensus of independent opinion is that the

serious funding problems in the German military budget over the next few years preclude any construction that does not fall into the 'absolutely-essential' class. A pair of fleet replenishment ships does not qualify. Therefore it seems probable that the construction of the Berlin class has ended.

It is now approaching three years since the last of these ships was completed and, by now, enough differences in component availability will have arisen to make an exact repeat of the Berlin class improbable. In addition, any future design will be modified to incorporate lessons learned from the first pair of ships. Thus, it is most improbable that any future construction will be repeats of the Berlins. In any case, it is unlikely that the German Navy will be called upon to support several long-distance power-projection operations at once; if that contingency arose, it would probably be as part of a Pan-European deployment where French and/or British support would also be available. Therefore, on those

grounds as well, additional Berlin class construction appears improbable.

Export prospects are equally limited. The EGV-702 class is a fairly standard small- to medium-size underway replenishment (unrep) ship. For all their capability and flexibility, the EGV-702 class remain tankers and can be built in any suitable shipbuilding yard. These considerations being the case, it appears most unlikely that any additional ships of this class will be built within the forecast period. We are thus recording a null forecast for this class. If there are no additional developments, this report will be archived next year.

## Ten-Year Outlook

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No additional construction is forecast.

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