

DDR SCHIFFBAU



FREEZER TRAWLER/SEINER type „Atlantik® 333“

VEB Volkswerft Stralsund · Industrial enterprise of VEB Kombinat Schiffbau





VEB VOLKSWERFT STRALSUND

INDUSTRIAL ENTERPRISE OF VEB KOMBINAT SCHIFFBAU ROSTOCK

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As a shipyard specializing in the development and construction of fishery vessels VEB Volkswerft Stralsund in the course of the years has acquired great experience in this field of production, more than 1,300 fishery vessels having been built in our shipyard already.

Catcher vessels as well as factory trawlers have been developed for big series production in cooperation with the USSR fishing ministry, making use of the latest findings in science and technology.


Here we are presenting our newly developed

freezer trawler/seiner type „Atlantik[®] 333“

which is also built in large series and is representing the sixth generation of fishery vessels built at VEB Volkswerft Stralsund.

This type of vessels meets the most extreme requirements and has yielded excellent results on fishing grounds. Due to its considerably improved performance it compares well with ships of similar design.

General characteristic of the vessel

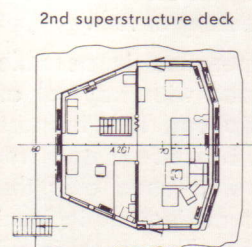
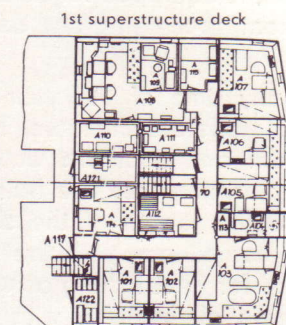
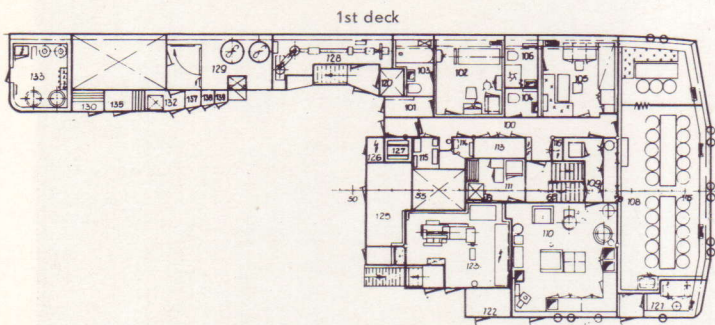
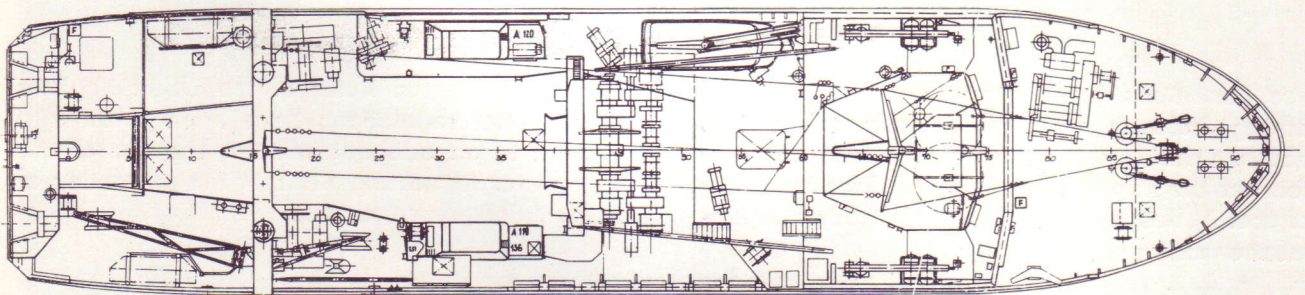
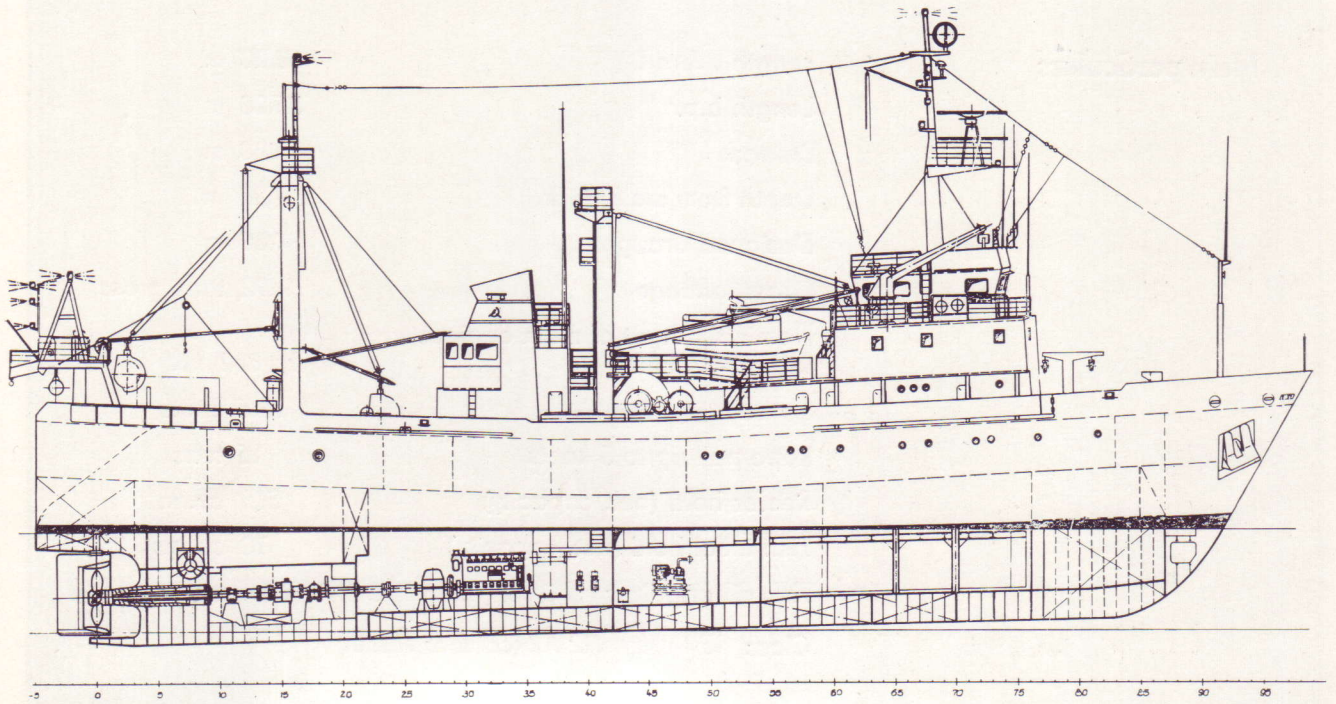
Main particulars	Length overall	62.20 m
	Length b.p.	55.00 m
	Breadth	13.80 m
	Depth from main deck	9.20 m
	Designed draught	4.80 m
	Gross tonnage	1492 tons gross
	Nominal output of main engines with $n = 1 \text{ min}^{-1}$	2 x 882 kW
	Speed	12.5 knots
	Rope pull up to 5 knots	16 tons
	Reefer hold (net. capacity)	507 cu. m
	Fish meal hold (net. capacity)	70 cu. m
	Fish oil and liver oil tank (net. capacity)	22.6 cu. m
	Class KM  Л2 А2 (catcher vessel)	

The conditions faced at present by the world fishing industry were particularly taken into account during the design phase. For economy reasons the ship has been designed for variability of use. It has been provided with modern equipment ensuring big catches.

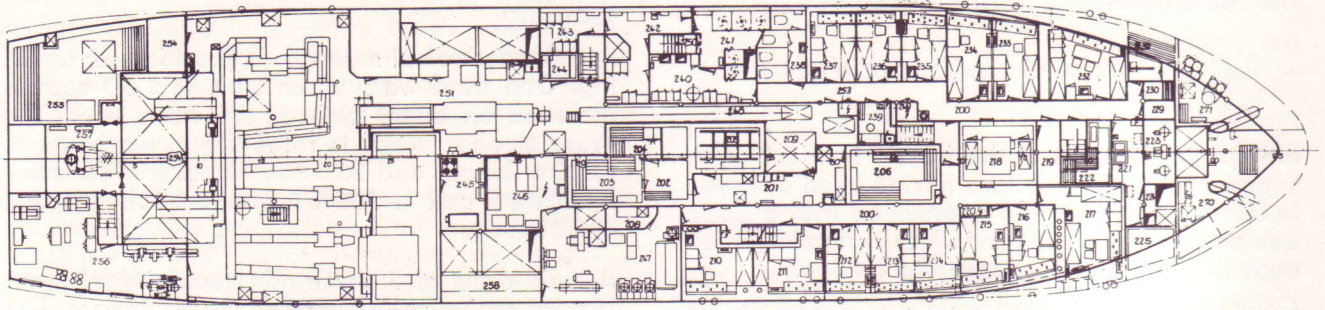
The freezer trawler/seiner of the Atlantik® 333 type is a semiautomated fishery vessel which can be used as a stern trawler as well as a seiner depending on the situation on the respective fishing ground. The vessel is equipped for fishing as well as for the treatment, processing and deep freezing of fish.

Operation is possible any time of the year in areas with tropical and moderate climates. The ship can fish in northern and southern waters in broken-up and freely drifting ice. The hull is strengthened over the entire length of the ship for navigation in ice in compliance with the ice class. The vessel is suited for fleet fishing as well as for autonomous fishing all by itself with an endurance of 30 days.

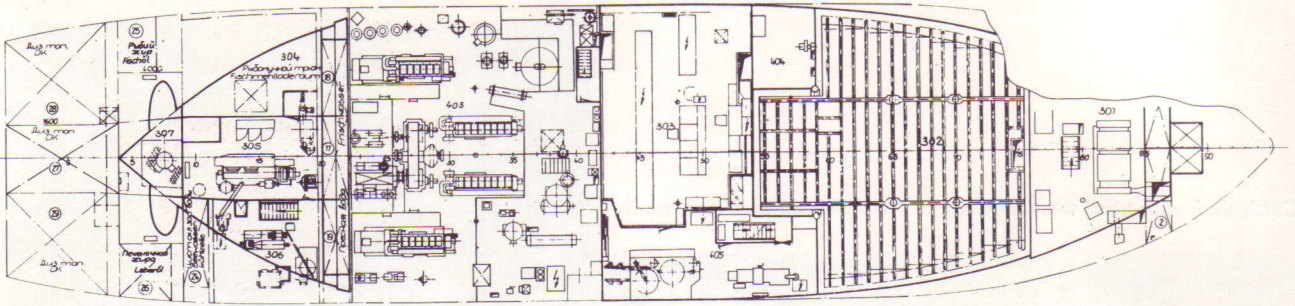
In addition to the Rules of the USSR Register international regulations have been taken into account to an adequate extent. The use of our bilge water separating plant for the prevention of oil pollution deserves special mentioning.



2nd deck

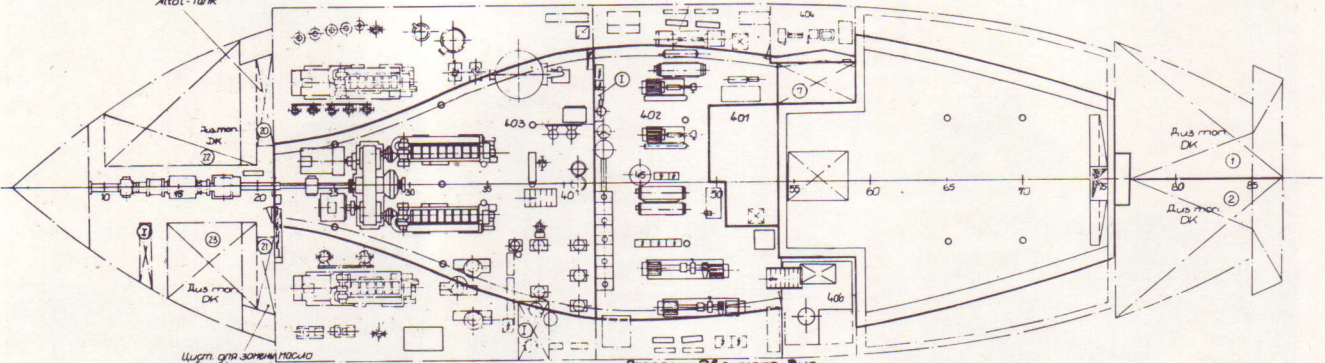


under 2nd deck



Waste oil tank

Чист отработ. масло
A1101-tank



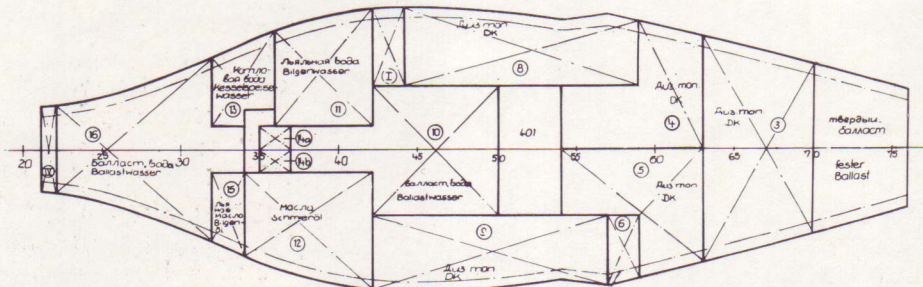
Чист отработ. масло
A1101-tank

Oil changing tank

Отсеки двойного дна

Stowage

Stowage plan



A 201	Wheel house	205	Meat room
A 100	Passageway	206	Store room for fruit, vegetable and potatoes
A 101—		208	Refrigeration unit room (provisions)
A 102	Single-berth cabin	209	Cargo hatchway
A 103	Master's living room	210—	
A 104	Master's sanitary room	216	Two-berth cabin
A 105	Two-berth officer cabin	217	Four-berth cabin
A 106—		218	Air cooler room
A 107	Single-berth cabin	219	Room for refrigeration plant fittings
A 108	Radio room	220	Electric equipment store
A 109	Telex room	221	Laundry
A 110	Transmitter room	222	Linen room
A 111	Transformer room	223	Anchor capstan motor room
A 112	Radar room	224	Ventilator room
A 113	Electric equipment store	225	Drying room
A 114	Single-berth cabin	229	Room for dirty linen
A 115	Broadcasting room	230	Fire extinguishing inventory
A 116—		232	Four-berth cabin
A 117	Electric equipment store	233—	
A 119—		237	Two-berth cabin
A 121	Ventilator room	238	WC
A 122	Storage battery room	239	Electric equipment store
100	Passageway	240	Dressing room
101	Anteroom	241	Shower room
102	Isolation station	242	Dressing room
103	bathing room of isolation station	243	Dress changing room (engine room staff)
104	WC	244	Drying room
105	Chief engineer's living room	245	Hydraulics room for refrigeration plant
106	Chief engineer's sanitary room	246	Winch switchboard room
108	Messroom	247	Fishing operation hydraulics room
109	Pantry	248	Belt conveyor tunnel
110	Galley	249	Electric equipment store
111	Day's provisions room	250	Store
113	Room for battery-charging panel	251	Fish processing room
114	Shower room	252	Fish processing control room
115	Telephone exchange	253	Electric equipment store
116	Electric equipment store	254	Workshop
120	Ventilator casing	255	Net room
121	Cinema projection room	256	Hydraulics and equipment room
122	Refrigerant room	257	Steering flat
123	Emergency generator set room	258	Funnel hatch
124	Starter battery room	259	Ventilator room
125	Ventilator room	270	Boatswain's store
126	Shore connection	217	Paint store
127	Drying room	301	Air conditioning plant
128—		302	Hold
129	Ventilator room	303	Engine control centre
130	Damage control inventory	304	Fishmeal hold
131	Trawlmaster's store	305	Fishmeal plant
132	Emergency exit from fish processing room	306	Fish oil plant / Liver oil plant
133	Liquefied-gas fire-extinguishing plant	307	Fittings room
135	Store for electric spare parts	401	Hydroacoustics room
136	Ventilator room	402	Foreward engine room
137—		403	Rear engine room
139	Gas bottle room	404	Sewage treatment plant room
140	Electric equipment store	405	Workshop and receiver room
200	Passageway	406	Store
201	Anteroom of provisions spaces		
202	Beverage store room		
203	Room for dairy products		
204	Store for meal and dry provisions		

Fishing gear

The two options

- fishing with ground trawl and pelagic trawl
- fishing with purse seine

are special features of the freezer trawler/seiner, superior technical solutions having been achieved in this respect. The ship is provided with a basic equipment for both options which is supplemented each time for the respective application.

Changing of equipment from one option to the other is preferably carried out in port or at sea in cooperation with a supply vessel.

Trawling

A catch deck of 21 m length is provided for trawling. One trawl warp winch type K LW 90 each is mounted on either side of the catch deck. The drum of each winch is rated for a wire rope of 2,200 m length and 26.5 mm diameter. The maximum rope pull is 108 kN with a hauling speed of 72 m/min.

A multi-drum auxiliary winch type 1 MHW is arranged at the forward end of the catch deck. This winch has been newly developed by VEB Klement-Gottwald-Werk Schwerin for the freezer

Catch deck with trawl warp winches and multi-drum auxiliary winch



trawler/seiner and it consists of a combination of 10 drums:

- 2 cable/net drum halves for pelagic trawls
- 2 cable drums for ground trawls
- 2 Hercules rope drums for hauling and whip operation
- 2 tipping drums for the tipping-out of the cod-end
- 2 gyn drums for hauling the cod-end on board

The trawl warp winches and the multi-drum auxiliary winch are operated from control platforms arranged in the aft area of the round view bridge – the trawl bridge.

Purse-seining

The equipment for the seiner option is designed for the operation with a purse seine of a maximum dimension of 1,200 x 200 m.

The following main refitting operations are required on the freezer trawler/seiner for the changing from trawling to purse-seining:

- preparing of the depositing place for the purse seine ("purse seine berth")
- slinging-up and putting into service of the power block and the depositing block
- fitting of the water separator
- fitting of an additional pulley on the net drum of the multi-drum auxiliary winch and reeling-up of the drag rope

Preparing the purse seine for setting



For the preparing of the net depositing place the slip hatch provided in the upper area of the slip is tilted upwards and locked in position. In addition, the hinged Stbd. bulwark of the slipway is swung aft and locked in position. A purse-seine depositing area of 60 sq. m. is thus obtained.

For the setting of the purse seine an automatic hook is fitted on the Stbd. side of the trawl gangway. A drag anchor is hanging outboard. The releasing of the setting process for the purse seine is remote-controlled from the wheelhouse.

The automatik hook is slipped, the drag anchor is dropped into the water, thus pulling the purse seine out of the net depositing place. Setting of

Hauling of the purse seine by means of the power and depositing blocks



the purse seine is completed by driving the ship circularly around the fish shoal.

A working boat provided on the P. side of the 1st superstructure deck is used for aiding some of the purse-seining operations.

A seiner winch is provided on the fore body for the hauling and lowering of the lacing line and the fishing line. It is operated from a control desk on the Stbd. bridge wing.

A quick completion of the lacing process is ensured by the rating of the seiner winch. The remote-controlled couplings and dosable brakes provide for a material-preserving operation.

The purse seine is hauled in by means of a power block and a depositing block developed at VEB Volkswerft Stralsund for the freezer trawler/seiner.

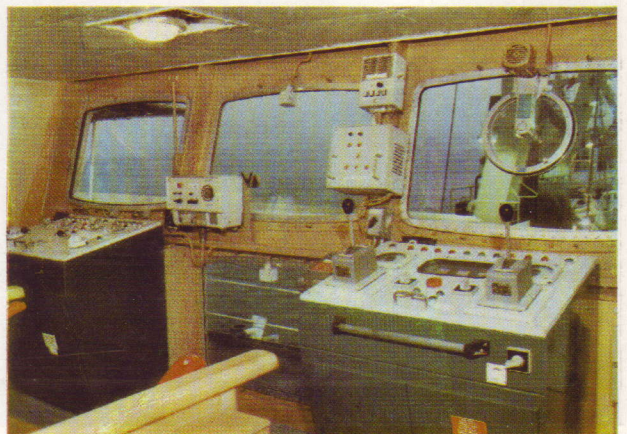


Fore body with seiner winch

Working boat



Round-view bridge with winch control platform for trawl warp winches and winch control platform for multi-drum auxiliary winch



Fish treatment and processing

Both blocks are matched with regard to capacity, permitting a swift hauling of the purse seine with simultaneous depositing of the net (appr. 25 m/min.).

Before the fish is removed from the laced purse, its volume is reduced by means of cage rollers. The laced net is emptied by means of a submersible fish pump. For this purpose the pump is lowered into the laced purse by means of the starboard cargo-handling gear. The fish passes to the water separator via a hose and then it goes on to the precooling bunker. The fish may also be taken out with a catcher.

The vessel is provided with fish handling equipment for the production of block frozen products for

- untreated whole fish
- beheaded and gutted fish
- fish fillet

and with fish processing plants for the production of

- fish meal,
- fish oil and liver oil.



Set-out purse seine

A 143 kW lateral thruster with two fixed-pitch propellers is provided in the after body to ensure the steerability of the drifting vessel during purse-seining operations.

Fish treatment

The vessel is equipped with two fish precooling bunkers of a total capacity of appr. 25 t of fish and appr. 23 cu. m. of sea water for the precooling of the catch down to about 1 °C. The fish is fed from the catch deck to the fish bunkers via flush-deck hatches.

The fish are taken from the fish bunkers via one elevator each. It passes over two chutes onto the trunk conveyer and from there onto the sorting conveyer.

For the freezing of whole fish the fish is fed onto four feed conveyers. It passes a shower bath (sea-water) on its way to the feeding bunkers of the freezers.

A processing line for the manual processing of different species of fish into unskinned and skinned fillet and gutted and beheaded fish is arranged on the P. side of the vessel. The processing line consists of

- one bevel cut beheading machine
- two filletting devices (splitters) for fish of 28 to 80 cm length
- two fin cutters
- two scaling devices
- four gutting tables with douching devices
- two liver removal tables
- belt conveyers, collecting troughs and bins

By the shifting of individual units it is possible to suitably adapt the processing line to the technological flow of the desired production.

Two freezers of the type FPG 25-3 with a total capacity of 30 t/23 h whole fish with a feeding temperature of $+10^{\circ}\text{C}$ max. and a core temperature of the fish blocks of -25°C are provided for the freezing of fish into blocks of 800x250x60 mm.

It is a special feature of these freezers that the frozen products are taken out without defrosting aids and passed on automatically to the adjoining thick-layer glazing device.

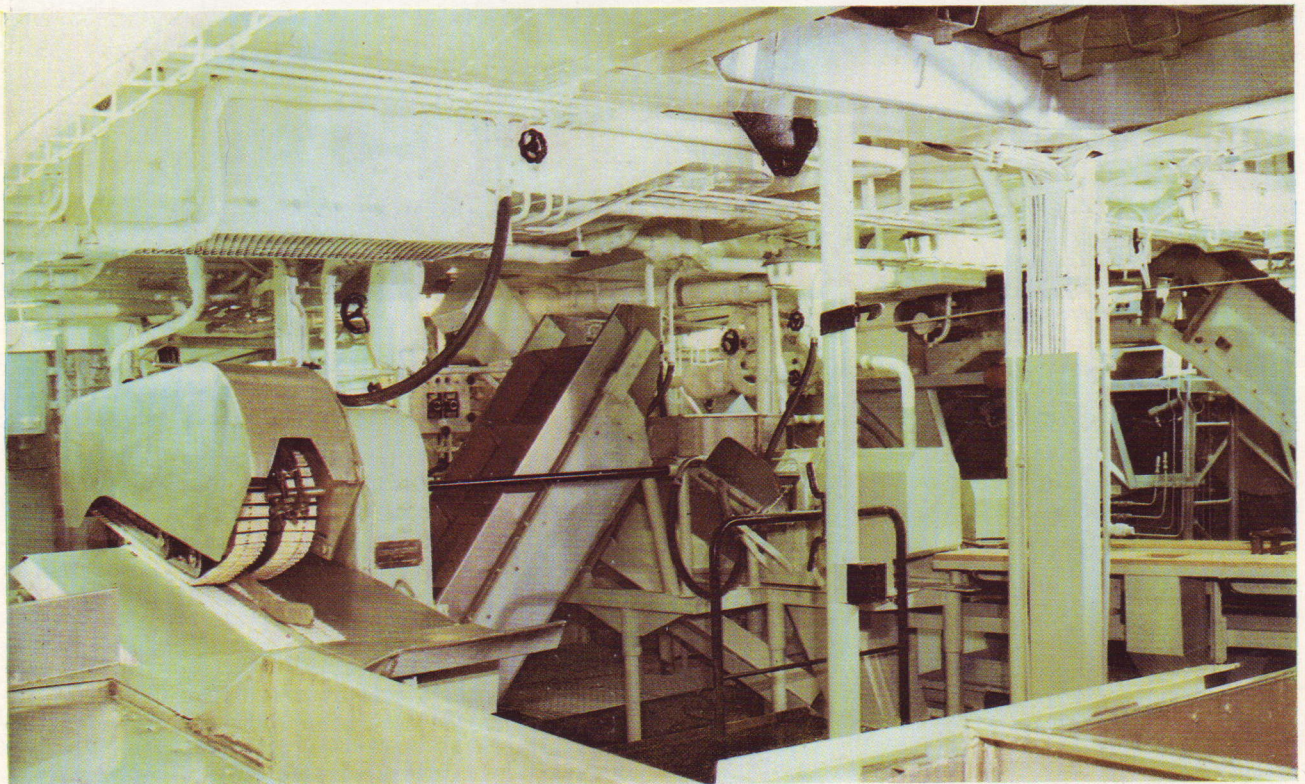
The glazed fish blocks are packed by hand with the aid of a packing device. This fish blocks then pass into the holds via a portable roller conveyer system with counter and via stationary chutes. The hold has a temperature of -28°C .

Fish processing

The semi-automated fish meal and fish oil plant type VF/MÖ 3/1 with a throughput of 10-12 t raw material/24 h is used for the processing of offal and of species unfit for human consumption into fish meal and fish oil. The plant is operating by the wet method with a screw extruder.

A liver oil plant type VL/Ö 200 is provided for the processing of fish liver into the intermediate product "liver oil for medical purposes". The throughput capacity is 4.4 t raw material in 22 h. The plant is operating on the principle of decomposition by heat.

Fish processing room



Navigational, fish locating and radio installations

The bridge control station is serving as the controlling and monitoring centre for the operation of the ship. Propeller adjustments required for maneuvering and during fishing operations are also made from this central station. The most important units included are:

- hand gear and gyro-pilot
- engine telegraph transmitter with propeller pitch set-point generator
- command and signal insert for the remote control of the main propelling plant
- admission and r.p.m. indicator receiver
- automatic fog signal
- upper-deck switchboard



Forward part of bridge with bridge control stand, radar and fish locating installations

- switchboard for navigating lanterns

For radio navigation the vessel is equipped with

- 1 radio direction finder
- 2 radar installations
- 2 radio navigation installations

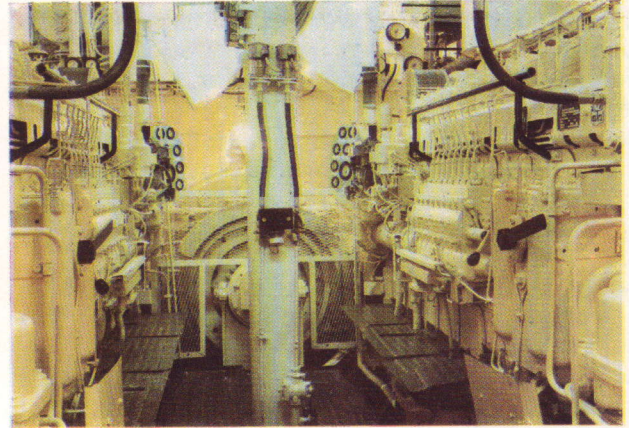
The fitted gyro-compass installation is connected to 4 repeaters, the hand gear and gyro-pilot and to several radio navigation installations.

The following installations are provided for the locating of fish:

- horizontal and vertical echo sounder
- vertical echo sounder
- vertical echo sounder for fishing and navigation
- wire-bound net sounder with cable winch
- wireless net sounder with shooting device and winch for dragged receiving device

The radio installation permits the wireless transmission of informations in the short-wave, intermediate-wave and medium-wave bands for telegraph, telephone and telex communication. One radio room, one telex room and one broadcasting room are provided for the mounting of the equipment.

Main propelling plant



Main engines

A double-engine main propelling plant is arranged in the after engine room, the main engines type 8 VD 26/20 AL-2 being connected by high-flexibility couplings to the double-reduction gear driving one shaft-driven three-phase generator, one shaft-driven d.c. generator and the V.P. propeller which is operating in a nozzle. Two medium-speed four-stroke trunk-piston engines with exhaust-gas turbo-supercharger and charging-air, fresh-water and lube-oil cooling and with direct injection are used as main engines. The main engines have a nominal output of 2 x 882 kW with a nominal speed of 1000 r.p.m. The manufacturer is VEB Schwermaschinenbau „Karl Liebknecht“ Magdeburg.

Power generation plant

The ship's mains is a three-phase system with a voltage of 380 V and a frequency of 50 cps. The following plants are provided for power generation:

- 2 ship's mains power generating sets type 6 VD 26/20 AL-2 with an output of 710 kVA each at a rated speed of 1000 r.p.m., made by VEB Schwermaschinenbau „Karl Liebknecht“ Magdeburg
- 1 shaft-driven three-phase generator with an output of 800 kVA, made by VEB Elektromotorenwerk Dessau
- 1 shaft-driven d.c. generator with an output of 325 kW, made by VEB Sachsenwerk Dresden-Niedersedlitz

In the case of failure of the ship's main power supply an emergency power generating plant is automatically started and raised. Its output is 70 kVA.

An auxiliary boiler with three draughts and large water space made by VEB Dampfkesselbau Dresden-Übigau is arranged in the after engine room for the generation of steam. The rated amount of steam is 1,200 kg/h.

Control and monitoring equipment and automated equipment

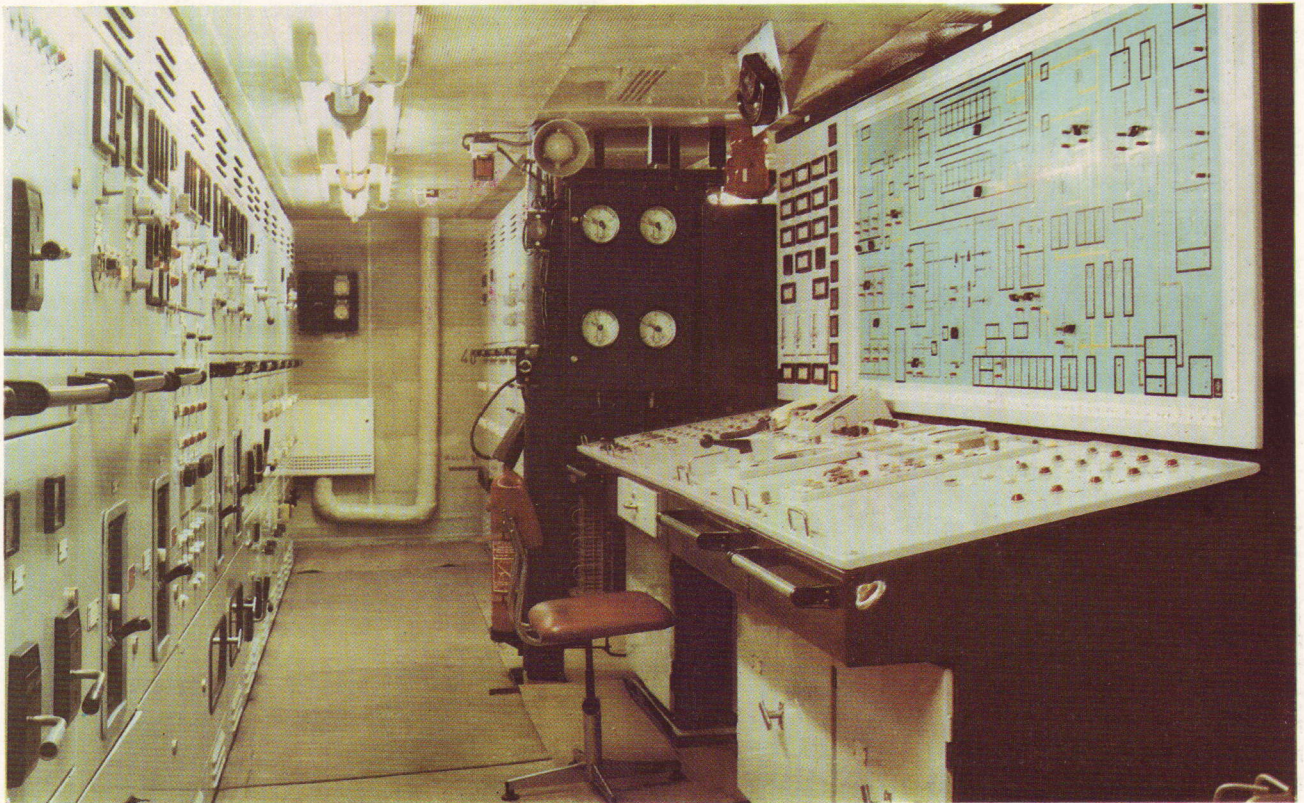
The ship has the automation class A 2. The high degree of automation of the most important equipment in the engine area permits 16 hours unmanned and maintenance-free operation.

All switching, controlling and monitoring operations required for power generation, power distribution, main drive and automated equipment or units of the engine area can be made from the sound-insulated and air-conditioned central control arranged in the tweendeck of the forward engine room.

The following units are fitted in the central control:

- engine control desk with illuminated diagram
- main switchboard
- control cabinets for the automated remote control of the main engines, couplings and the V.P. propeller as well as for the automated controls of the engine plant
- control cabinets of the central engine monitoring system
- cabinets for the automated power generation plant

Central control



Furnishing

The ship is equipped with the following automated installations and systems:

- automated remote control system – AFA – for the controlling, regulating and required protective circuits of the main engines, clutches and the V.P. propeller
- automated control assembly for power generation – ASA – with the following functions:
 - synchronization and parallel connection of the ship's main power supply generators and the shaft-driven three-phase generator
 - active load balance of the ship's main supply generators
 - logging of the generator load and signalization at 90 % active power
- automated remote control for diesel engines of main power supply generator sets – AFB – with the following functions:
 - remote starting, remote stopping and protective circuits for the ship's mains diesel generator sets
 - periodical pre-lubrication in regular intervals of the ship's mains diesel generator sets
 - automatic starting of the stand-by ship's mains diesel generator set in the case of mains black-out
- protective gear for the diesel generator sets – AGS – with protective functions for all generators.

Other parts of machinery are automated too. An engine monitoring system is provided for the control and monitoring of the technical parameters in the engine area.

The accommodation, social and service rooms in the ship are furnished according to modern requirements, offering a high degree of comfort and agreeable working and living conditions for the 40 crew members. The following rooms are provided:

- 2 combined day- and bed-rooms with adjacent sanitary room for captain and chief engineer
- 4 single-berth cabins for officers
- 13 two-berth cabins for crew
- 2 four-berth cabins for crew

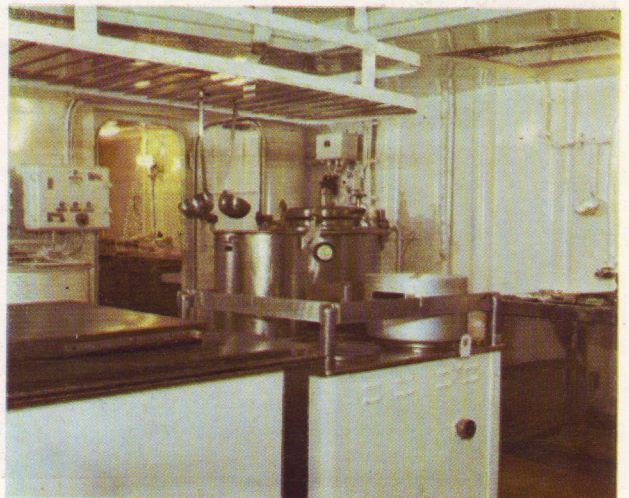
The messroom for officers and crew is seating 27 people. Adjacent to the messroom there is a galley with pantry and day's provisions room. A comfortable climate in summer as well as in winter operation is provided in all accommodation and service rooms by means of an air-conditioning plant. Sanitary facilities are arranged in sufficient quantity.

An isolated station with swing bed and separate sanitary room is provided for medical attendance.

Messroom



Galley





garanti



View of the shipyard and of ships being under construction

More than 1300 fishing vessels of our production have continually proved their quality under hard conditions on all oceans.

We have produced, among other vessels,

594	drifters		
	length over all	31.15	m
	moulded breadth	7.30	m
	main engine power	400	hp
172	off-shore trawlers		
	length over all	50.80	m
	moulded breadth	8.80	m
	main engine power	540	hp
10	reefer ships		
	length over all	82.40	m
	moulded breadth	13.00	m
	main engine power	1300	hp
86	freezer trawlers type „Tropik“		
	length over all	79.80	m
	moulded breadth	13.20	m
	main engine power	1340	hp
	freezer capacity	30	t/d
147	freezer trawlers type „Atlantik“		
	length over all	82.00	m
	moulded breadth	13.60	m
	main engine power	2300	hp
	freezer capacity	45	t/d
7	freezer trawlers type „Atlantik“ with research equipment		
	length over all	82.00	m
	moulded breadth	13.60	m
	main engine power	2300	hp
	freezer capacity	22.5	t/d
7	„Atlantik“ training ships		
	length over all	82.00	m
	moulded breadth	13.60	m
	main engine power	2300	hp
	freezer capacity	45	t/d
195	„Atlantik-Supertrawler“ type 464 (state per 31. 12. 1982)		
	length over all	abt. 102.00	m
	moulded breadth	15.20	m
	main engine power	2855 kW/3880	hp
	freezer capacity	65.5	t/d
6	Training ships on the basis „Atlantik-Supertrawler“		
4	freezer trawler/seiners type „Atlantik® 333“ (state per 31. 12. 1982)		

Our production programme

Cargo vessels

Fishing vessels

Special service vessels

Passenger vessels

Inland vessels

Marine propulsion plants

Freezing and refrigeration plants

Ship management and navigational aids

All kinds of ship's equipment

Designing and research activities

Licences



SCHIFFSCOMMERZ

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