

Rpt. DISCLOSED  
SECTION  
No. 562

STEEL

# DIESEL-ELECTRIC ICEBREAKER

Received at London Office 17 MAR 1955

State if Report has been sent on the Freeboard of the Vessel Yes

State if Report is sent on the Machinery of the Vessel Yes

Date of completion of report 15.2.1955. Port of Helsingfors No. 4154 H

Survey held at Helsingfors Date First Survey 11.12.52 Last Survey 12.1. 1955

On the (State if Machinery fitted Aft and if Single, Twin or Triple Screw) QUADRUPLE SCREW DIESEL ELECTRIC ICEBREAKER "KAPITAN BELOUSOV"

State Type (Full Scantling, Complete Superstructure with or without Tonnage Openings) FULL SCANTLING State Type of Erections FORECASTLE

TONNAGE under Tonnage Deck CLASS + 100 FI State if with freeboard as condition of Class Built at Helsingfors

Do. of space or spaces between Tonnage Dk. and Upper Dk. Length from fore part of stem to after part of stern post on summer L.W.L. See Sec. 3 (1a) L 253.50 Launched 15.12.1953 Yard No. 353

Total Breadth (greatest moulded) B 63.65 Builders Wärtsilä-Koncernen AB SANDVIKENS SKEPPSDOCKA

Gross Tonnage 3710.21 Owners U.S.S.R

Net Tonnage 1050.30 Managers (Where necessary to be entered in Reg. Book)

## REGISTERED DIMENSIONS.

83.16M 272.85'  
19.40M 63.65'  
9.50M 31.17'

Length from fore part of stem to after part of stern post on summer L.W.L. See Sec. 3 (1a) L 253.50  
Breadth (greatest moulded) B 63.65  
Depth, at middle of length from top of keel to top of beam at side of uppermost continuous deck. See Sec. 3 (1c) D 31.17  
1st Longitudinal Number (L x D) =  
2nd Numeral L x (B + D) =  
Framing Depth "d," at middle of length. See Sec. 3 (1d) =  
Proportions—Depth to Length—Uppermost continuous deck to top of keel =  
Do. Long Bridge to top of keel =  
Draught Moulded 22.92

Residence  
Port of Registry  
If surveyed while building, afloat, and in dry dock YES (LAST DOCK DATE 14-28.7.54)

## FRAMES, DOUBLE BOTTOM AND BEAMS.

	M/M IN SHIP.	Any Departure from Approved Plans to be Noted.	M/M IN SHIP.	Any Departure from Approved Plans to be Noted.
ES, Spacing amidships.....	800	INT. FRAMES ALSO		
from 1/2 length amidships to Collision bulkhead.....	700	FITTED GIVING 400 & 350% SPACING RESPECTIVELY		
in peaks.....	700			
FRAMING AND INT. FRAMES me Amidships, Angle, E or T	250 90 14			
Extends up to.....	MAIN OR 2ND DECK AND IN CONNECTION WITH 3 DECK ICE STRINGERS AS APPVD			
Frame Amidships, Angle				
Extends up to.....				
Depth of Framing Girder.....	250			
AND INT. FRAMES				
Frames in Uppermost Continuous 'tween Decks, Angle, E or T	150 90 13 AS APPVD			
Second 'tween Decks, Angle, [ or ]				
Third				
AND INT. FRAMES				
from 1/2 len. for'd. to 15% len. from Stem	250 90 14			
AND INT. FRAMES				
in Peaks, Angle or T	250 90 14			
Diameter and Spacing of Rivets through Frame and Shell Plating amidships	WELDED			
State if Frame Joggled	No			
Are the scantlings and arrangements in the Panting Area in accordance with the Rules and/or as approved?	YES			
Are the scantlings and arrangements in way of the Bottom Forward in accordance with the Rules and/or as approved?	YES			
DOUBLE BOTTOM.				
Floors, Depth and thickness at mid-line in Holds.....				
Height of Brackets at side above base line at toe of frame.....				
Middle Line Keelson, on Floors, Angles, [ or ]				
Through Plate or Inter-costal Plate.....				
Foundation Plate on Floors.....				
Flat Plate Keel Angles				
Side Keelsons, No. each side.....				
thickness of Inter-costal Plate.....				
Angles				
DOUBLE BOTTOM.				
Solid Floors, thickness and spacing	9.5 AS APPVD AT 800% RANK			
Are Frame and Reversed Frame joggled?	WELDED			
Bracket Floors, breadth and thickness at middle line				
breadth and thickness at margin plate.....				
Bracket Floors, Frame				
Reversed Frame.....				
Vertical Struts				
Centre Girder, depth and thickness amidships	1800 1/2 AS APPVD			
top Angles	WELDED			
bottom Angles.....	WELDED			
Side Girders, No. each side and thickness	2x10 AS APPVD			
Margin Plate depth (excl. of flange) and thickness	TANK TOP			
Vertical Angle to Tank side Bracket abaft 1/4 len. from stem	PLATING EXTENDS			
Vertical Angle to Tank side Bracket from forward 1/4 len. from stem to Panting Area	TO SHELL			
Gussets, spacing and scantling abaft 1/4 len. from stem.....	AND WELDED			
Gussets, spacing and scantling from forward 1/4 len. from stem to Panting Area	THERETD			
Tank Side Brackets, height above base line at toe of Frame and thickness				
INNER BOTTOM PLATING.				
Breadth and thickness of Middle Line Strake	11-14 AS APPVD			
Thickness of remainder in Holds	PLATED TRANSVERSELY			
Are Rule requirements complied with regarding increases of scantlings in way of double bottom in E. & B. space and framing in Bunkers and Boiler Room?	YES			
BEAMS.				
Uppermost Continuous Deck, amidships	180 90 11			
Wells, Angle, E or T				
in way of Bridge, Angle, [ or ]				
Spacing	EVERY FRAME			
Second Deck, amidships, Angle, E or T	180 90 11			
Spacing	EVERY FRAME			
Third Deck, amidships, Angle, [ or ]				
Spacing.....				
Fourth Deck, amidships, Angle, [ or ]				
Spacing.....				
Poop Deck, Angle, [ or ]				
Spacing.....				
Bridge Deck, Angle, [ or ]				
Spacing.....				
Forecastle Deck, Angle, E or T	180 90 11 AS APPVD			
Spacing.....	EVERY FRAME			



PILLARS AND DECKS.			
M/M	IN SHIP.	Any Departure from Approved Plans to be Noted.	M/M
PILLARS, No. of Rows	2 ROWS		
in 'tween Decks, Size and Spacing	2 LONGIT BLKD AS APPVD		
Centre Line Bulkhead.			
Stiffeners and Spacing			
Plating, thickness of		STRINGER PLATING	
STRINGERS AND DECKS.			
Uppermost Continuous Deck.			
Stringer Plate, breadth and thickness in Wells	1600 x 11	COLTUF FR 50-57	
in way of Bridge			
Angle in Wells	WELDED		
Thickness of Plating abreast Deck openings in way of Wells	9.5		
Thickness of Plating abreast Deck openings in way of Bridge			
Thickness of Plating within line of openings	8.0		
If Sheathed, material and thickness	63% TEAK (EXPOSED) 15% COM. (INTERNAL)		
Second Deck.			
Stringer Plate, breadth and thickness in Wells	1050 x 13		

SHELL PLATING.			
SCANTLINGS.			
STRAKES.	AS IN VESSEL.		ANY DEPARTURE FROM APPROVED PLANS TO BE NOTED.
	AMIDSHIPS.	FORWARD.	AFT.
	Breadth.	Thickness.	Thickness.
Flat Plate Keel	1800	18.0	25.0
Dbg. (if any)			
Bottom Plating, No. of Strakes	15.5	30.0	20.0
Bilge Plating, No. of Strakes	16.0	24.0	20.0
Side Plating, No. of Strakes	26.0	28.0	28.0
Upper Deck, Sheer-strake in Wells	15.0	13.0	16.0
Upper Deck, Sheer-strake in Bridge			
Strake below Sheer-strake in Wells	27.0	27.0	27.0
Strake below Sheer-strake in Bridge			
Poop Side Plating			
Bridge Side Plating			
Forecastle Side Plating		13.0	

RIVETING.			
EDGES.			
BUTTS.			
SINGLE OR DOUBLE.			
RIVETS.			
Diam.			
Spacing			
No. of Rows of Rivets.			
RIVETS.			
Diam.			
Spacing			
ELECTRICALLY WELDED SEAMS & BUTTS			

WATERTIGHT BULKHEADS.			
Total No. of W.T. BULKHEADS in Vessel	6		
Extending to Upper Deck (Sec. 3 c)	1		
Deck next below	4		
As per Rule			
STIFFENERS.			
Plating Thickness.	VERTICAL.		HORIZONTAL.
	Scantlings.	Spacing.	Scantlings.
MIDSHIP BULKH'D, Upper 'tween decks	7.0	90 x 75 x 81	400/800
" " Second "			
" " Third "			
" " Holds			
COLLISION (in Hold)	8.5-18.0	178 x 89 x 121	610/650
AFTER PEAK	8-12	128 x 89 x 101	600/800
Manufacturer's Name or Trade Mark of the Steel used in the construction of the Vessel (state process of manufacture)			
STEEL.	SIEMENS OPEN H		
Has the Steel been tested as required by the Rules?			
YES			

EQUIPMENT No. 2373			
LETTER V			
ANCHORS.			
3	1st Bower	2600	43820
2	2nd "	2609	43946
4	3rd "	2571	43425
5	Collective weight	7780	7425
6	Stream	599	660
7	Kedge	312	94
CHAIN CABLES.			
Length and size supplied.	Test per Certificate.	WEIGHT OF CHAIN CABLE.	Length and size per Table 53.
Length.	Diam.	Supplied.	Per Rule.
508.4	50.5	72300	10130
54	50.5	72300	10130
2x165	114	58000	165
ELECTRO-HYDRAULIC (DONKIN) ELECTRIC CONTROLL			
Alternative Means of Steering STAND BY MOTOR			
Windlass ELECTRIC CAPSTAN TYPE (CLARKE & CHAPMAN)			
Cargo Battens, thickness, material and spacing			
Thickness of Hatches STEEL 10 mm			
Hatchways.-(Upper Deck) STEEL CORMINGS 11% THICK			
Hatchways No. 1 (Fwd.) 2100x3000 No. 2 2100x3000 No. 3 No. 4 No. 5 No. 6			
er of Shifting Beams for Fore and Afters			

Builder's Signature *Wärtsilä-koncernen A/B*

DECLARATION. It should be stated (a) whether the vessel (if not a motorship) is fitted for the carriage and burning of oil used as fuel. Diesel elect. (b) whether the vessel, not being an oil tanker, is fitted for carrying oil as cargo. NO. The positions in which oil is carried as fuel or cargo should be indicated, together with the flash point (where required to be inserted in the Notation).

A ship has been built under Special Survey in conformity with the Society's Rules and Regulations, and Secretary's letters. The scantlings and arrangements of the ship are as given in the Report and as shown and amended on the approved plans now forwarded. All modifications additions to the original approved arrangements made during construction have been indicated in the plans, and have been approved as being in accordance with, or by standards equivalent to Rule requirements. The plans of midship section and profile and decks showing the ship as built are forwarded herewith, have been checked with the approved arrangements and found in accordance. The material and workmanship are good.

Peak and center tanks, all double bottom and wing deep tanks for oil fuel and water ballast, bilge tanks, P.W. tanks and cofferdams have been tested as required by the Rules and found satisfactory. The weather decks bulkheads and W.T. doors have been tested satisfactorily. Windlass, steering gear and bilge pump arrangements have been tested and found in order. assigned freeboards have been marked on the ship's sides, verified and cut in.

Oil Tanks are indicated on Drawing No. 353-C-10.

FORGINGS AND CASTINGS.			
KEEL, Bar	FLAT PLATE KEEL	DAISBRUK	
STEM	STEEL CASTING AS APPVD	DAISBRUK	
STERN FRAME	Propeller Post	STEEL CASTING AS APPVD	DAISBRUK
Rudder		STEEL CASTING AS APPVD	DAISBRUK
Speed of Vessel	16.5		
RUDDER-Type	ORDINARY PLATE RUDDER		
" A x D	10.68M x 1.688M		
" Diam. of head	400		
" Mainpiece at top pintle	CASTING AS		
" " heel	APPVD		
" how constructed	CAST RUDDER		
" double or single plate coupling, vertical or horizontal	50MM		
"	HORIZ.		
SIEMENS OPEN H			
Col 3 Ice Breaker			
St. for Nav. in Ice.			
Lloyds A & C			
+LMC 1.55 - Subject.			
2 DB 142 lb.			
CL.			
Oil Eng. & Elect. Motors.			



GENERAL REMARKS—(The Surveyor should state the Number of Report and Name of any Sister Vessel. Plans showing Vessel as built should be forwarded and a List of the Plans should be embodied.)

The requirements of Section 20 of the Rules where applicable for the carriage of oil fuel having a flash point above 150°F have been complied with. The oil fuel is carried in the Tanks indicated on the drawing No. 353-C-10, "Tank Plan".

This vessel is the first of this type to be built.

The following drawings and certificate copies have been forwarded under separate cover:—

Approved Plans

"As fitted" Plans

Certificate Copies.

Re. P 403 steel: All plates marked "C" on the Drawing No. 353/54-S-8 are Coltuf.

I herewith enclose a copy of the Interim Certificate No. 449/54 H.

PARTICULARS OF ELECTRIC WELDING (if employed) Vessel electrically welded excepting minor details of structure, which are riveted.

Electrodes used: ESAB OK 48

SPECIAL NOTATIONS:—Either as part of the vessel's class or for record in the Register Book

ICE BREAKER CRUISER STERN DIESEL ELECTRIC MACHINERY ELECTRICALLY

WELDED. ECHO SOUNDING Device (OTHER EQUIPMENT SUCH AS DIRECTION FINDER GYRO COMPASS, RADAR ETC. NOT FITTED UNTIL VESSEL ARRIVES TO RUSSIAN PORT)

RADAR Equipment (State if fitted) No

State Type or Pattern No.

State } Maker  
Name } and/or  
of } Supplier

Particulars of Drop Test of Cast Steel Anchors, viz.:—  
Weight, Surveyor's Initials, Number of Certificate, Date of Test.

1st Bower	4,6 mtr.	122609 kg.	E.W.	Cert. No. 3982	27.9.54
2nd "	4,6 "	122600 "	E.W.	" 3983	27.9.54
3rd "	4,6 "	17962571 "	E.W.	" 3984	27.9.54.

See letter dated 27.7.55

PARTICULARS FOR RECORD in the REGISTER BOOK.—Length of Poop — ft., R.Q.D. — ft., Bridge — ft., Forecastle 106

(in feet and tenths). When the Poop or Forecastle are joined to the B.D., this should be distinctly stated.

Official No. Signal Letters Extreme Breadth over Belting No belting Over-all Length 272.85 ft. 83.16 m

No. and Material of Decks 2 decks in steel

Parts of Bottom of Vessel coated with cement or approved composition. The aft Peak Tank and Nors. 1 & 3 Double bottom tanks cemented on bottom.

Particulars of composition (if fitted) and of approval

PARTICULARS OF WATER BALLAST:—(Comprising all tanks which may be used for Water Ballast. (Circ. 1284) Wells are not to be included in the lengths of the tanks, but Cofferdams and Dry Tanks (if tested) are to be included.)

Where Fitted.	Length.	Water Capacity.	Where Fitted.	Length.	Water Capacity.
	Feet. M	Tons.		Feet. M	Tons.
Double bottom, aft,			Fore peak tank,	13.5	16
Double bottom, under Engines and Boilers,			After peak tank,	5.6	15
Double bottom, under Engines only,	40.80	Na 5 (224) (Fr 37-51)	Deep tank, aft, (Fr 13-19)	4.40	5
Double bottom, under Boilers only,		No. 9 37 (Fr 19-24)	Deep tank, forward, (Fr 70-75)	3.50	5
Double bottom, forward,			Other tanks, if fitted, (Fr 75-81)	4.20	5
Total length (if continuous) and Capacity	40.80	322	PLEASE SEE ATTACHED SKETCH		
	133.8	11 OF 11	(If necessary furnish further information by sketch.)		

11.12.52 - 12.1.55.

Order for Special Survey No.

Date

Dates of Surveys held while building



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Total No. of Visits

No 5.5.0.1. available.