

Date of writing report 29/3/63 Received London - Port Hannover No. 134
 Survey held at Hameln No. of visits in shop 6 First date 14/12/62 Last date 7/2/63

FIRST ENTRY REPORT ON MAIN ENGINE REDUCTION GEARING

Name of Ship Owners
 Hull built at Elmshorn by Messrs. DW. Kremer & Sohn, Schiffswerft Yard No. 1100 Year
 Main engines made at Köln-Deutz by Messrs. Klöckner-Humboldt-Deutz AG., Engine No. Year Type WUö
 Reduction gearing made at Hameln by Messrs. Eisenwerke Reintjes GmbH., Gear No. 30542+43 Year 180/3.5:1
 Type of engine with which gearing is to be used SBA 8 M 517 State if for Class 1 or 2 ice strengthening

The following particulars are to be given as fully and clearly as possible. Wording not applicable should be cancelled by a black line.

Description of gearing, including reversing arrangements and

clutches, if any, and No. of sets (state if ball or roller bearings)
 Single reduction:- Spur wheel geared
 multiple disc clutch operated by oil pressure.
 Reverse side:- Planet bevel geared and band brake operated by oil pressure.
 Oil pump:- Driven by gearing.

Bearings:- Roller and ball.

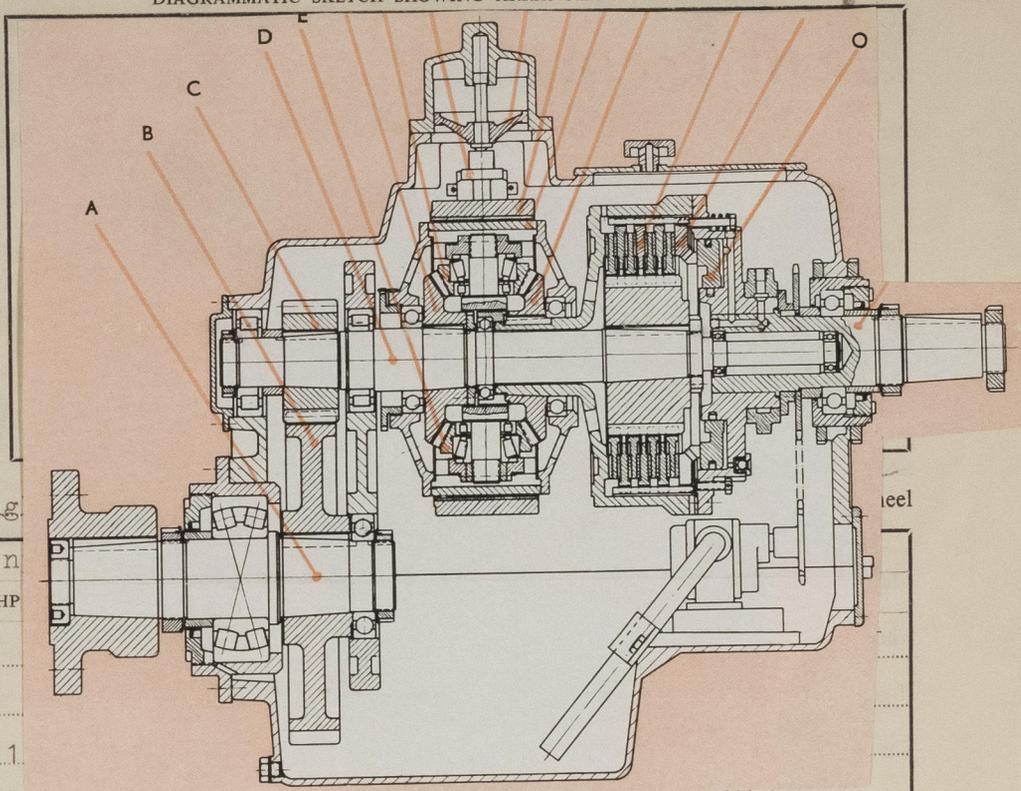
Type and If single helical, what is the position of the gear thrust bearing?

Self aligning roller bearings on output shafts.

Helix angle, primary 20° secondary

Type of involute tooth form corrected pressure ang

DIAGRAMMATIC SKETCH SHOWING ARRANGEMENTS OF GEARING



PINIONS

Maximum S.H.P. to be delivered to primary pinions ...		
Revolutions per minute ...		
Diameter of pitch circle, inches/mm. ...	11	
No. of teeth ...		
Total width of face, parallel to axis, inches/mm. ...	84	80
Width of gap, inches/mm. ...		
Diameter of shaft at bearings, inches/mm. ...	82, at top of cone for separate coupling	85
No. of bearings ...		
Span of bearing centres, inches/mm. ...		
Material, state nominal composition and heat treatment shafts forged	C 45	C 45
gear wheels case hardened		EC 80
Tensile strength, tons per sq. in./kg. per sq. mm. ...		

QUILL SHAFTS

Diameter, inches/mm. ...	
Material, state nominal composition ...	
Tensile strength, tons per sq. in./kg. per sq. mm. ...	

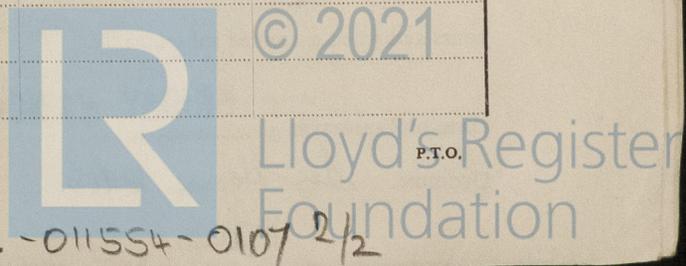
FLEXIBLE COUPLINGS

Type of coupling ...	multiple disc clutch
Material, driving member ...	C 35
Tensile strength, tons per sq. in./kg. per sq. mm. ...	50 - 60
Material, driven member ...	GG 22 (cast iron)
Tensile strength, tons per sq. in./kg. per sq. mm. ...	minimum 22

Do couplings permit axial float of pinions? Have primary pinions been dynamically balanced?
 Have secondary pinions been dynamically or statically balanced?

WHEELS

	PRIMARY			MAIN
	HP	MP	LP	
Revolutions per minute ...				
Diameter of pitch circle, inches/mm. ...				
No. of teeth ...				



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WHEELS (continued)

	PRIMARY			MAIN
	HP	MP	LP	
Material of rims, state nominal composition ...				
Tensile strength, tons per sq. in./kg. per sq. mm. ...				
Diameter of shaft at bearings, inches/mm. ...				
Material of shaft ...				
Tensile strength, tons per sq. in./kg. per sq. mm. ...				

Have wheels been statically balanced? yes Are wheel bodies of cast or welded construction? no

Are wheel bodies connected to the shafts by bolts? no Material of wheel bodies --

Are rims shrunk on, or bolted to bodies, or attached by welding? no Are radial or axial dowels fitted? on coupling cover

If shrunk, has the shrinkage allowance been checked and found as approved? yes, input shaft and coupling cover How were the teeth cut? by planing and hobbing cover

If hobbed, name and serial no. of hobbing machine Wälzautomat RS 1 What post-hobbing process was applied? grinding

Name and serial no. of machine used for finishing process Type UR 1000 No. 10189 If teeth are surface hardened, state method case hardened Were teeth cut under conditions of temperature control? yes

Is gearcase of cast or welded construction? cast iron If welded, has it been stress relieved? -- Have trammels or other means been supplied for verifying that gearcase is free from distortion when secured in ship? Have Diameter of shaft at thrust collar Has gearing been run light/under load in the shop and the tooth contact found satisfactory? yes

What is the backlash? (state whether measured circumferentially or normal to the teeth) 0.17 - 0.18 mm

If undulation records were taken, state maximum height from crest to trough and wave length, pinions wheels

Maximum adjacent pitch error normal to teeth, if measured, pinions wheels Date of approval of plans 5/11/62 and 11/1/63

If gearing is a duplicate of a previous case, state name of ship Messrs. Kremer & Sohn, Schiffswerft, Elmshorn, Yard No. 110

The foregoing description of reduction gearing is correct.

EISENWERKE REINTJES GMBH
[Signature]
 Manufacturer

GENERAL REMARKS

State if the gearing has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. This report should be forwarded to the Head Office with the First Entry report on the machinery. When gearing is made at a Port other than the Port of installation, the Surveyors at the former should send this report to the Surveyors at the Port of installation as soon as possible after completion of the gearing. The latter should complete the Declaration below and send the report to the Head Office with their First Entry report on the machinery.

Survey fee
 Expenses.....
 Date when a/c rendered

IDENTIFICATION MARKS Gearing No. 30542 Gearing No. 30543 Engineer Surveyor to Lloyd's Register of Shipping
 LLOYD'S HNO HB 7.2.63 HB LLOYD'S HNO FK 30.1.63 FK

PRIMARY PINIONS					
Input shafts	657	LLOYD'S KLN 1927	HL	6.11.62	
PRIMARY SHAFTS					
Coupling covers	659	LLOYD'S KLN 1927	HL	22.11.62	
SECONDARY PINIONS					
Intermediate shafts	655	LLOYD'S KLN 1927	HL	6.11.62	
SECONDARY SHAFTS					
Output shafts	653	LLOYD'S KLN 1927	HL	6.11.62	
FLEXIBLE COUPLINGS					
Coupling flanges prop. side	957	LLOYD'S HNO E 50	FK	13.12.62	
PRIMARY WHEELS					
Bevel gear wheels	226	43156 T 14169	146513	HS LLOYD'S DSF 29.11.62	HS
SECONDARY WHEELS	225		524907		
Spur gear wheels	227	43181 T 14168	40847	HS LLOYD-S DSF 29.11.62	HS
MAIN WHEEL	228	43187 T MAIN WHEEL	66810 K		

DECLARATION TO BE COMPLETED AND SIGNED BY THE SURVEYOR AT THE PORT OF INSTALLATION

The above reduction gearing has been fitted on board the at
 in a proper manner and found satisfactory when tested on the (date) under full-power working conditions for
 hours and when examined subsequently.

DATE OF COMMITTEE **FRIDAY - 1 NOV 1963**

DECISION See Annex 12986

