

Rpt. 4e

Date of writing report 24/4/63 Received London -- Port HANNOVER No. 137
Survey held at Hameln No. of visits in shop 6 First date 14/12/62 Last date 28/3/63

FIRST ENTRY REPORT ON MAIN ENGINE REDUCTION GEARING

Name of Ship Owners
Hull built at Elmshorn by Messrs. Kremer & Sohn, Schiffswerft Yard No. 1109 Year 63
Main engines made at Köln-Deutz by Messrs. Klöckner-Humboldt-Deutz AG. Engine No. Year
Reduction gearing made at Hameln by Messrs. Eisenwerke Reintjes GmbH. Gear No. 30546-47 Year 63
Type of engine with which gearing is to be used Deutz SBA SH 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 dish clutch operated by oil pressure.
Reverse side:- Planet bevel geared and band brake operated by oil pressure.
Oil pump:- gear driven
Roller and ball bearings.

If single helical, what is the position of the gear thrust bearing?
Self aligning roller bearing on output shaft

Helix angle, primary secondary

Type of involute tooth form

PINIONS

Maximum S.H.P. to be delivered to primary pinions ...
Revolutions per minute ...
Diameter of pitch circle, inches/mm. ...
No. of teeth ...
Total width of face, parallel to axis, inches/mm. ...
Width of gap, inches/mm. ...
Diameter of shaft at bearings, inches/mm. ...
No. of bearings ...
Span of bearing centres, inches/mm. ...
Material, state nominal composition and heat treatment

Shafts forged
gear wheels case hardened
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

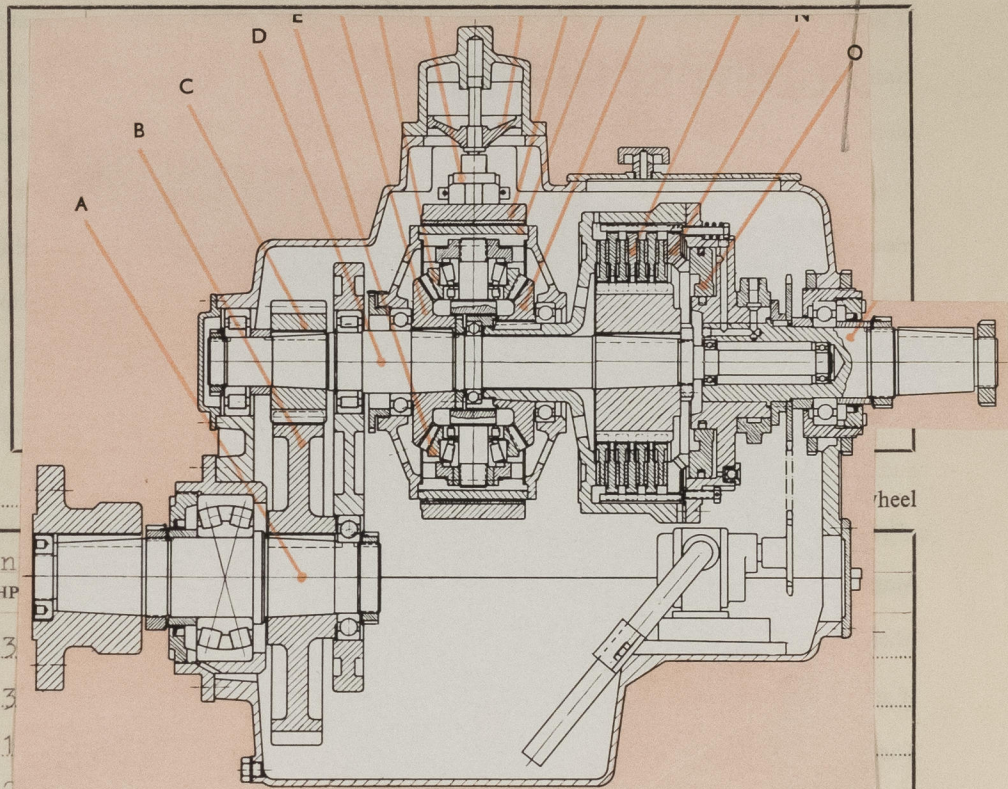
Type of coupling ...
Material, driving member...
Tensile strength, tons per sq. in./kg. per sq. mm. ...
Material, driven member ...
Tensile strength, tons per sq. in./kg. per sq. mm. ...

Do couplings permit axial float of pinions? no Have primary pinions been dynamically balanced? no
Have secondary pinions been dynamically or statically balanced? no

WHEELS

Revolutions per minute ...
Diameter of pitch circle, inches/mm. ...
No. of teeth...

DIAGRAMMATIC SKETCH SHOWING ARRANGEMENTS OF GEARING



In HP			
23			
13			
11			
2			
84			80
82 at top of cone	65		85
C 45	C 45		C 45
	EC 80		
multiple dish clutch			
C 35			
GG 22 (cast iron)			
minimum 22			

PRIMARY			MAIN
HP	MP	LP	

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, forged

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, solid Are radial or axial dowels fitted? --

If shrunk, has the shrinkage allowance been checked and found as approved? -- How were the teeth cut? by hobbing

If hobbled, name and serial no. of hobbing machine Walzautomat URS 1 What post-hobbing process was applied? grinding

Name and serial no. of machine used for finishing process Type UR 1000 Nr. 10 189 If teeth are surface hardened, state method case hardened Were teeth cut under conditions of temperature control? --

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? -- 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) 0.20 and 0.22 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, of Elmshorn, Yard No. 1100, 11

The foregoing description of reduction gearing is correct.

EISENWERKE REINTJES GMBH

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.

These main reversible reduction gears have been constructed under special survey in accordance with the requirements of the Rules, approved plans and Secretary letters. The material used was tested and the workmanship satisfactory. The gears would be eligible for the notation + LMC (with date) when the whole machinery has been satisfactory fitted on board and tried under full working condition.

Survey fee

Expenses

Date when a/c rendered

Engineer Surveyor to Lloyd's Register of Shipping

IDENTIFICATION MARKS

Gearing No. 30546
LLOYD'S HNO
25/3/63 HB

No. 30547
LLOYD'S HNO
28/3/63 HB

PRIMARY PINIONS

Input shafts: 657-658 LLOYD'S KLN 1927 HL 6.11.62 KN

PRIMARY QUILL SHAFTS

Coupling covers: 659 LLOYD'S KLN 1927 HL 22.11.62 FK

Intermediate shafts: 556 LLOYD'S KLN 1927 HL 6.11.62

SECONDARY PINIONS

Output shafts: 554 LLOYD'S KLN 1927 HL 6.11.62 FK

SECONDARY QUILL SHAFTS

Coupling flanges prop.side: 957 LLOYD'S HNO E 50 KN 13.12.62 FK

FLEXIBLE COUPLINGS

Bevel gear wheels: 226 LLOYD'S DSF 43 156 T 14126/146513 BV HS 29.11.62 HB

PRIMARY WHEEL RIMS

Spur gear wheels: 227 LLOYD'S DSF 43 187 T 14168/668 O.K. 40847 SW 29.11.62 HS

PRIMARY WHEEL SHAFTS

228 LLOYD'S DSF 43 187 T 14168/40847 SW 668 O.K. 29.11.62 HS

MAIN WHEEL RIM

MAIN WHEEL SHAFT

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 MONDAY 27 APR 1964

DECISION

Su Han 13424

Engineer Surveyor to Lloyd's Register of Shipping

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Foundation