

Date of writing report 6th June, 1963 Received London Port HANNOVER No. 1411

Survey held at No. of visits in shop 6 First date 27.11.62 Last date 27.5.63

FIRST ENTRY REPORT ON MAIN ENGINE REDUCTION GEARING

Name of Ship Owners Hull built at Bremen-Hemelingen by Rolandwerft GmbH. Yard No. 904 Year 1963 Main engines made at Köln by Klöckner-Humboldt-Deutz AG Engine No. Year Reduction gearing made at Hameln by Eisenwerke Reintjes GmbH Gear No. 30581/82 Year Type WUö 260/3.5:1 Type of engine with which gearing is to be used SBF 12 M 716 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 disk clutch operated by oil press. Reverse side: Planet bevel gear and band bracke operated by oil press. Oil pump: gear driven.

Ball and roller bearing

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

Self-aligning roller bearing on output shaft

Helix angle, primary 18° secondary

Type of involute tooth form corrected press. angl

PINIONS Shaft and wheels case

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

bevel and spur 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? Have primary pinions been dynamically

balanced? Have secondary pinions been dynamically or statically balanced?

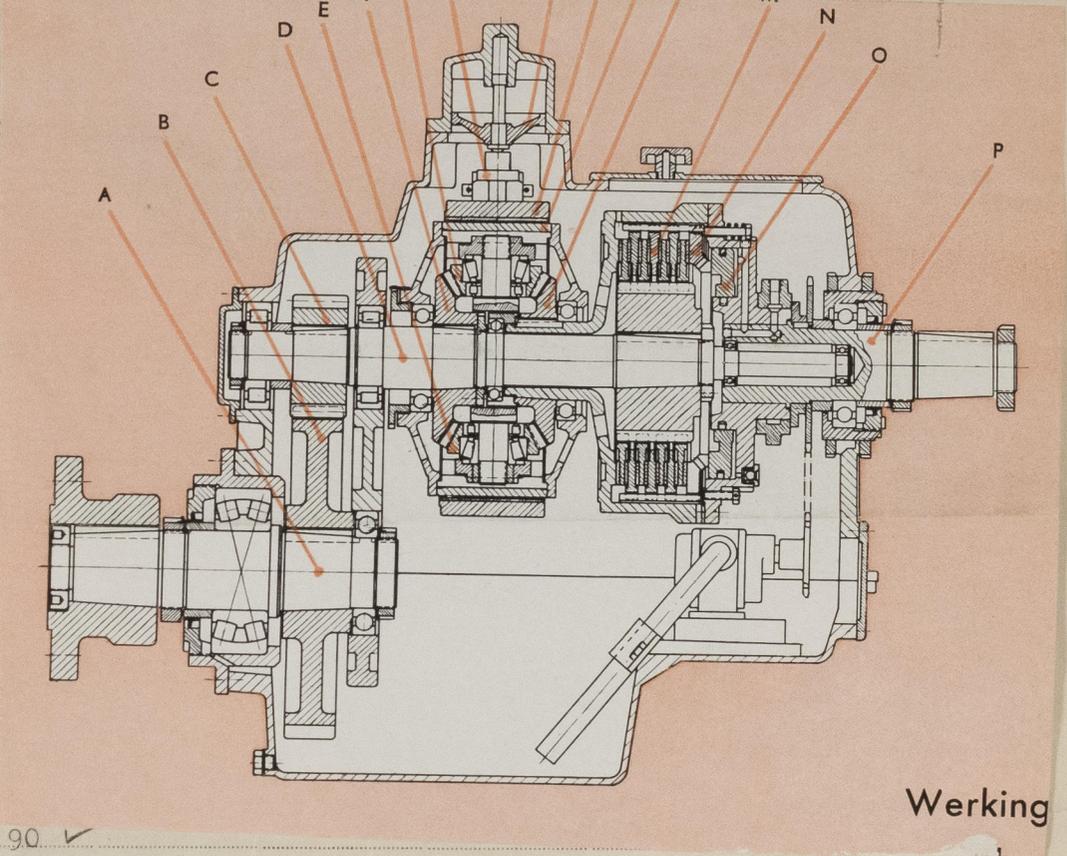
WHEELS

Revolutions per minute ...

Diameter of pitch circle, inches/mm. ...

No. of teeth ...

DIAGRAMMATIC SKETCH SHOWING ARRANGEMENTS OF GEARING



Working

Table with 3 columns and 10 rows detailing gear specifications. The columns correspond to different gear stages. The rows list: Diameter of shaft at bearings (97, 74.6, 107), Material (C 45, C 45, C 45), and Tensile strength (C 45 = 60-72, EC 80 = 60-61, HCR). The table also includes a section for flexible couplings with details like 'Multiple disc clutch', 'C 35', and 'GG 22 (cast iron)'.

Handwritten notes: 'Noted', 'Me', '7/8/63'

Summary table for wheels. It has columns for PRIMARY (HP, MP, LP) and MAIN. The rows are empty, intended for recording the number of teeth and RPM for each gear.



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FIRST ENTRY REPORT ON M

Name of Ship

Hull built at Bremen-Hemelingen

Main engines made at Köln

Reduction gearing made at Hameln

Type of engine with which gearing is to be used SBF 12

The following particulars are to be given as fully and clearly as possible

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 disk clutch operated by oil

press. Reverse side: Planet bevel gear

and band bracke operated by oil press.

Oil pump: gear driven.

Ball and roller bearing

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

Self-aligning roller bearing on out-

put shaft

Helix angle, primary 18° secondary

Type of involute tooth form corrected press. angle

Approved maximum total S.H.P. 320 at 1300 R.P.M. of main wheel

Shaft and wheels case

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

bevel and spur 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?

Have primary pinions been dynamically

balanced? Have secondary pinions been dynamically or statically balanced?

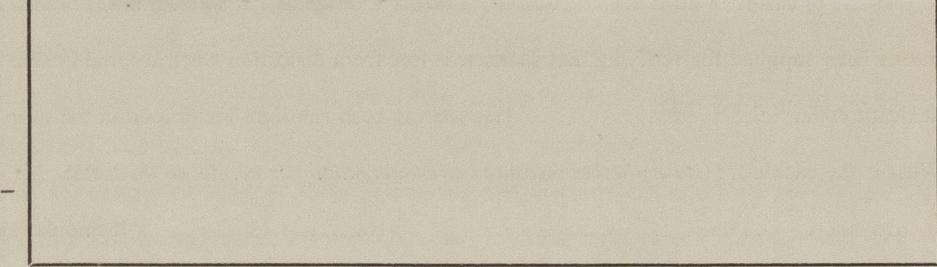
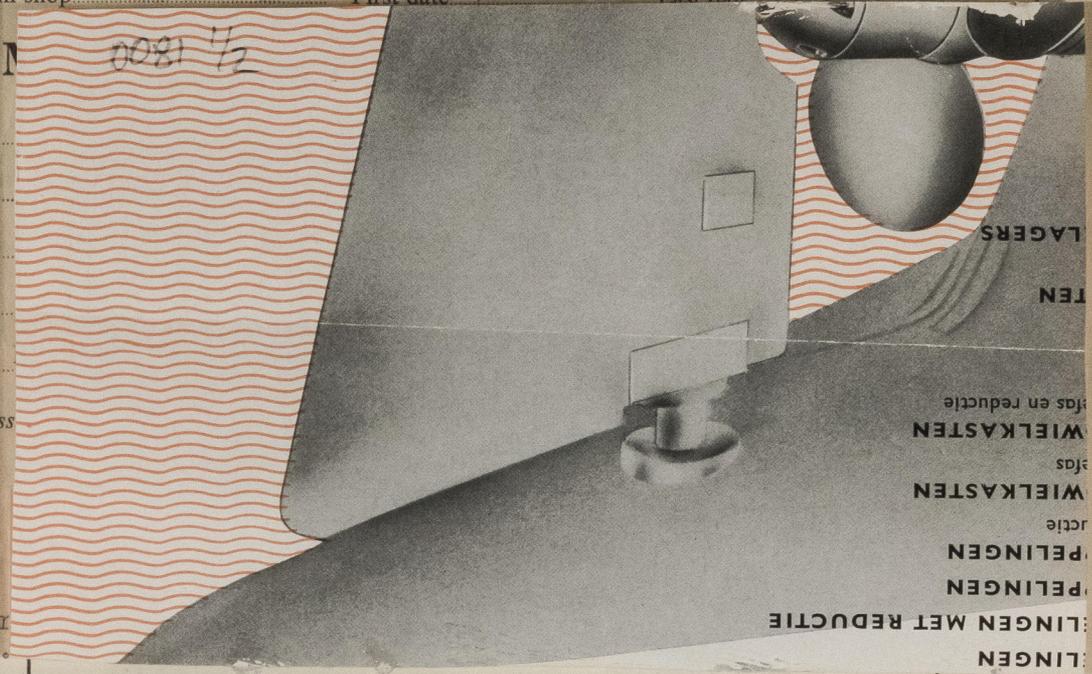
WHEELS

Revolutions per minute

Diameter of pitch circle, inches/mm

No. of teeth

	PRIMARY			SECONDARY		
	HP	MP	LP	HP	MP	LP
Maximum S.H.P. to be delivered to primary pinions	320 ✓					
Revolutions per minute	1300 ✓					372 ✓
Diameter of pitch circle, inches/mm	136, 288 ✓					463, 712 ✓
No. of teeth	18 ✓					63 ✓
Total width of face, parallel to axis, inches/mm	90 ✓					87 ✓
Width of gap, inches/mm						
Diameter of shaft at bearings, inches/mm	97		74.6			107
No. of bearings						
Span of bearing centres, inches/mm						
Material, state nominal composition and heat treatment	C 45		C 45			C 45
Shafts forged	EC 80					EC 80
bevel and spur gear wheels case						
hardened						
Tensile strength, tons per sq. in./kg. per sq. mm.	C 45 = 60-72		EC 80 = 60-61			HCR
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					



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



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?

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

Are rims shrunk on, or bolted to bodies, or attached by welding?

Are radial or axial dowels fitted?

If shrunk, has the shrinkage allowance been checked and found as approved? no, solid How were the teeth cut? by hobbing

If hobbled, name and serial no. of hobbing machine Walzautomat RS 2 What post-hobbing process was applied? grinding

Name and serial no. of machine used for finishing process Z SWZ 500 No. 118-4 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?

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 110 mm Has gearing been run light/under load in the shop and the tooth contact found satisfactory?

What is the backlash? (state whether measured circumferentially or normal to the teeth) 0.35 mm and 0.29 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; 5.12.62; 9.11.63

If gearing is a duplicate of a previous case, state name of ship Abeking & Rasmussen, Bremen Yard No. 5892, 5893

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's 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 satisfactorily fitted on board and tried under full working condition.

Survey fee

Expenses

Date when a/c rendered

J. Beunhilt

Engineer Surveyor to Lloyd's Register of Shipping

IDENTIFICATION MARKS Both Nos. 30581-82 LLOYD'S HNO 27.5.63 HB

PRIMARY PINIONS 220 43188 T 14471 524907 LLOYD'S DSF 11.62 H.S.

PRIMARY ~~QUICK~~ SHAFTS 446 LLOYD'S KLN 1926 6.11.62 HL

SECONDARY PINIONS bevel: 226 43 167 T 14341 146513 BV LLOYD'S DSF 29.11.62 HD

SECONDARY ~~QUICK~~ SHAFTS ✓ 656 LLOYD'S KLN 1926 6.11.62 HL

FLEXIBLE COUPLINGS flanges: Output: ✓ 956 HNO E 3139 KN 13.12.62

PRIMARY WHEEL RIMS

PRIMARY WHEEL SHAFTS

524927 11.62 HS ✓

MAIN WHEEL RIM 221 LLOYD'S DSF 43188T 14471, MAIN WHEEL SHAFT 650 LLOYD'S KLN 1926 6.11.62 HL

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

The above reduction gearing has been fitted on board the M.S. "IWTA FARIDPUR" at Lemwerder

in a proper manner and found satisfactory when tested on the (date) 9.4.64 under full-power working conditions for 4 hours hours and when examined subsequently.

DATE OF COMMITTEE FRIDAY 30 OCT 1964

DECISION see Bmn 7189

