NON-PROPELLED BUCKET DREDGER

Rpt. 4b/4f (Inst) (Sheet 1) REPORT ON **INSTALLATION OF INTERNAL COMBUSTION MACHINERY**
FOR CONSIDERATION BY THE COMMITTEE OF LLOYD'S REGISTER OF SHIPPING

Received London -2 [illegible] 66

Ship's Name "STEENBOK" Port GREENOCK

Processing Number: LR 652111 Date of completing rpt. 5.1.66 Rpt. No. 27804

Gross tons 736.62 Place of survey, if different from above Port Glasgow

No. of visits:
~~In shops~~ ~~First date~~ ~~Last date~~

On ship 32 First date 27/5/65 Last date 23/12/65

Owners South African Railways Port of registry Durban

			Yr.	Mo.
Ship built by Ferguson Bros. (Port Glasgow) Ltd.	Yard No. 443	When	1965	12
~~Main engines~~ made by Mirrlees National Ltd.	Engine No. 6054/1	When	1965	12
~~Gearing made by~~	~~Gear No.~~	~~When~~		
~~Aux./donkey boilers made by~~	~~Boiler No.~~	~~When~~		
Machinery installed by Ferguson Bros. (Port Glasgow) Ltd.		When	1965	12

Particulars of service of ship if limited for classification: 100A1 Dredger for Service in Durban Harbour and within harbour limits from Walvis Bay on West Coast to Portugese East African Border on East Coast.

~~Particulars of vegetable oil or other special cargo notation, if required~~

~~If ship is to be classed for navigation in ice, state whether class 1, 2 or 3~~ Domestic

~~Is ship an oil tanker?~~ Is refrigerating machinery fitted? Yes

~~If so, is it for cargo purposes?~~ Type of refrigerant Freon 12

Is the refrigerating machinery space isolated from the ~~propelling~~ machinery space? Yes

~~Is the refrigerated cargo installation to be classed?~~

No. of ~~main~~ engines One

No. of propellers

Brief description of propulsion system: Diesel Engine drives 290 K.W. Generator, 250 Kw Alternator, 60 Kw Generator & An exciter.

JSW 4-3.66

Fee £80. 0. 0. ✓ Rh ~~Expenses~~

MAIN INTERNAL COMBUSTION RECIPROCATING ENGINE

To be reported on Rpt. 4b (Cons) Port Manchester Rpt. No. 1092

~~**MAIN GAS TURBINES**~~

~~To be reported on Rpt. 4f (Cons)~~ ~~Port~~ ~~Rpt. No.~~

~~**ELECTRIC PROPULSION** (Internal combustion reciprocating engines or gas turbines)~~

~~Electrical particulars to be reported on Rpt. 4d~~ ~~Port~~ ~~Rpt. No.~~

~~**REDUCTION GEARING** (Internal combustion reciprocating engines or gas turbines)~~

~~To be reported on Rpt. 4c~~ ~~Port~~ ~~Rpt. No.~~

	MAIN	AUX.
*Are flame guards or traps fitted to crankcase relief devices? Yes		
No. of lub. oil coolers	1	1
*~~Is a torsional vibration damper or detuner fitted to the shafting?~~		
Is engine fitted directly on tank top, ~~or on a built-up seating?~~ open floors	Yes	
*~~Where positioned?~~		
*Can engine/~~turbine~~ be reversed?	No	
*~~If not, how is reversing effected?~~		
*~~Type~~		

Is the engine equipped to operate on heavy fuel? No

Cooling medium for CYLINDERS: Freshwater

	MAIN	AUX.
No. of fresh water coolers	1	1

PISTONS: Oil Splash FUEL VALVES: None

H. K. Taylor.
Surveyor to Lloyd's Register of Shipping

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6m,9/64 (MADE AND PRINTED IN ENGLAND)

014501-014512-0315 1/3

CLUTCHES, FLEXIBLE COUPLINGS, &c. If a clutch or other flexible connection is fitted between engine/turbine and gearing, or between engine and tail shafting, give Makers' name, brief description and, for clutches, state how operated.

One Holset flexible coupling between 290 K.W. generator and alternator and one Holset flexible coupling between alternator and 60 K.W. generator.

If main engine can be used for purposes other than propulsion when declutched, state what purpose also at what maximum B.H.P. & R.P.M.

AIR COMPRESSORS AND RECEIVERS

State No. of independently driven air compressors, also capacity of each and whether a separator or filter is provided between each compressor and the air receivers, type of prime mover, position in ship, Port and No. of cert.

One - 34 C.F.M. driven by hand started diesel engine
Port Engine Room. Southampton Cert. No. D.26109. ✓

One - 33 C.F.M. driven by Electric Motor.
Port Engine Room. Southampton Cert. No. D.26156. ✓

A filter is fitted between each compressor and the Air Receivers.

State No. of starting air receivers, both main and auxiliary, capacity of each, position in ship, Port and No. of cert.

Two each of 23 cubic feet capacity. Aft engine Room.
Leeds Certs. Nos. 48820 & 48821 ✓

How are air receivers first charged?	By Compressor driven by hand started diesel engine.	Are the safety devices in accordance with the Rules?	Yes
		Are bursting discs or flame arresters fitted at the starting air valves on each cylinder?	Yes
Maximum working pressure of starting air system	350 P.S.I.	Has the starting of the main engines been tested and found satisfactory?	Yes

STEAM INSTALLATION

No. of aux./donkey boilers (*see Key to R.B.*) burning oil fuel		Can the exhaust heated boilers deliver steam directly to the steam range or do they operate only as economisers in conjunction with oil-fired boilers?	
Working pressure		Port and rpt. or cert. Nos. for aux./donkey boilers	
Type			
Position			
Is a superheater fitted?		Is steam essential for the operation of the ship at sea?	
Are these boilers also heated by exhaust gas?		If so, are any steam pipes over 3 ins. bore?	
No. of aux./donkey boilers (*see Key to R.B.*) heated by exhaust gas only		What is their material?	
Working pressure		For oil-fired boilers, is the arrangement of pipes, valves, controls, &c., in accordance with Rules?	
Type			
Position		No. of oil-burning pressure units	
		No. of steam condensers	
		No. of evaporators	

Rpt. 4/4a/4b/4f (Inst)
(Sheet 2)

Ship's Name "STEENBOK" Port GREENOCK Rpt. No. 27804

Date of approval of torsional vibration characteristics of the ~~propelling~~ machinery system with:— 16/7/64

(a) ~~Working propeller~~

(b) ~~Spare propeller~~

~~Particulars of barred speed range(s) if imposed, with~~:—

(a) ~~Working propeller~~

(b) ~~Spare propeller~~

STRAIGHT SHAFTING

Max. BHP/SHP approved for each line of shafting

Corresponding RPM of propeller

MN

THRUST SHAFT. Separate or integral with crank, wheel or electric motor shaft?

Thickness of liner between bearings

How is the after end of the liner made watertight in the propeller boss?

Diameter adjacent to collar

Material of screw/tube shaft

Material

Minimum approved tensile strength

Minimum approved tensile strength

Is an oil gland fitted?

INTERMEDIATE SHAFT Diameter

What type?

If an approved type, state name

Material

Minimum approved tensile strength

Length of bearing next to and supporting propeller

SCREWSHAFT. Dia. of cone at large end

Material of bearing

Is screwshaft fitted with a continuous liner?

Material of sterntube

TUBE SHAFT (*if separate*) Diameter

Is sterntube fabricated?

Is tube shaft fitted with a continuous liner in way of stern tube?

In multiple screw ships, is the liner between sterntube & "A" bracket continuous? If not, is the exposed length of shafting between liners readily visible in drydock?

Thickness of screw/tube shaft liner at bearings

PROPELLER

If of special design, state type

State method of control

Is it of reversible pitch type?

If so, is it of approved design?

PROPELLER	BLADE MATERIAL	TENSILE STRENGTH	BUILT OR SOLID	LEFT HAND (LH) or RIGHT HAND (RH)	NO. OF BLADES	DIAMETER	PITCH	TOTAL DEVELOPED SURFACE
Working								
Spare								

PROPELLER	DESIGN MOMENT OF INERTIA OF PROPELLER (DRY)	FOR ICE STRENGTHENING ONLY					
		CLASS 1, 2 OR 3	THICKNESS OF BLADES			LENGTH OF BLADE SECTION AT 25% RADIUS	RAKE OF BLADES
			AT TOP OF ROOT FILLET	AT 25% RADIUS	AT TIP		
Working							
Spare							

OIL FUEL TANKS

No. and position of oil fuel settling or service tanks not forming part of ship structure: None

LUBRICATION

No. of lub. oil pumps and how driven: 1 - M.E. Driven
1 - Standby
Driven by Electric Motor

Can normal supply be maintained with any one pump out of action? Yes

Is an emergency supply automatically available as per ~~Rule 7 (turbines only)~~

Is an alarm device fitted to indicate failure or reduction of supply from the pumps? Yes

No. of oil coolers: 1 Main 1 Aux.

	SUCTION	PRESSURE
No. of duplex oil strainers	None	1

Are the strainers of magnetic type? No

H. K. Taylor

Surveyor to Lloyd's Register of Shipping

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INDEPENDENT PUMPS

Name below each essential pump and state its position. Give capacities of bilge pumps

SERVICE FOR WHICH EACH PUMP IS CONNECTED TO BE MARKED THUS ×

	SUCTION									DELIVERY						
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel Tanks	Condenser Extraction	Sea	F.W. Feed Tanks	F.W. Cooler	L.O. tanks	Boiler Feed	Main Condenser	Oil Fuel Burners	Oil Fuel Tanks	Fire Main	Overboard	Main Engine
1-General service pump Port Eng. Rm. 40 T.P.H.	x	x	x			x								x	x	
1-Bilge Pump. Port Eng. Rm. 40 T.P.H.	x	x	x			x								x	x	
1 - Standby F.W. Pump Port Eng. Rm.							x	x								x
1-Oil Fuel Transfer Pump Port Eng. Rm. Ford				x									x			
1-Standby L.O. pump Stbd. Eng. Rm.									x							x
1-Standby S.W. Pump Stbd. Eng. Rm.						x										x
1-Oily Bilge Pump Port Eng. Rm.			x													
1-Emergency Fire Pump Stbd. Store Ford.						x								x		

L.O.Tks x
Coolers x
O.W.Sep x

BILGE SUCTIONS

No. and size in each hold, deep tank, cofferdam and pump room

1-2" Bore Dry Space Well End
1-2" " " " Port
1-2" "Hold Port Fwd.
1-2" "Chain Locker Port
1-2" "Store Fwd Port
1-2" "Cofferdam "Aft
1-2" " "Ctre
1-2" " "Fwd
1-2" "Chain Locker Aft
1-2" "Bore Stbd Dry Space
1-2" " Stbd Hold
1-2" " "Store Fwd.
1-2" " Stbd Cofferdam (A)
1-2" " " " (C)
1-2" " " " (C)
1-2" " Hold Aft (Port)
1-2" " " " (Stbd)

No. and size connected to main bilge line in:—

Main engine room

2-2½" Bore

Aux. engine room

Boiler room

Tunnel

Oily

Sizes and positions of direct suctions in machinery spaces

1 - 4" bore Port Aft

1 - 4" Bore Stbd. Mid Length.

Sizes and positions of emergency suctions in machinery spaces

None

Are all suctions of non-return type? Yes

Has the bilge or ballast system means for separating oily water on the overboard discharge side ? Yes

Do the pumping arrangements comply with the Rules, including special requirements for oil tankers, ships classed for carrying cargo oil, or classed for navigation in ice Class 1, 2 or 3? (*Strike out words not applicable*) Yes

If to be classed for navigation in ice, state means provided for clearing ice from ship's side valves

STEERING GEAR. (State type, also No. of steam engines, electric motors, hydraulic pumps and other particulars, including particulars of the alternative means of steering) None

Rpt. 4/4a/4b/4f (Inst)
(Sheet 3)

Ship's Name "STEENBOK" Port GREENOCK Rpt. No. 27804

STEAM AND OIL ENGINE AUXILIARIES

REF	POSITION OF EACH	TYPE	MADE BY
a	Centre of Engine Room	FSS A 5	Mirrlees National Limited
b	Non Propelling Engine		
c	Starboard Engine Room	ER4MA	Blackstone & Co. Ltd.
d			
e			
f			
g			
h			

REF	PORT & No. OF REPORT OR CERTIFICATE	DRIVEN MACHINERY (for electric generators state kw, volts & amps)
a	Manchester Rpt. No. 1092	290 K.W. Generator 400V. 725 A. 250 K.W. Alternator 380V. 474A. 60 K.W. Generator 220 V. 273 A. Exciter 27 V. 190 A.
b		
c	London Rpt. No. 153532	125 KVA Alternator 380V. 190 A.
d		
e		
f		
g		
h		

If electric current is used for essential services at sea, state the minimum No. and capacity of generators required (1) So that the ship may operate at sea (2) For refrigerated cargo purposes

Has the spare gear required by the Rules been supplied? Yes

Has all the machinery been tried under full working conditions & found satisfactory? Yes

Date & duration of full-power sea trials of main engines? 4/11/65 & 1/12/65 6 hours

~~Has the manoeuvring of the main engines been tried and found satisfactory?~~

DECLARATION TO BE SIGNED BY INSTALLING ENGINEERS

To the best of our knowledge this machinery has been installed in conformity with the Rules, Regulations and requirements of Lloyd's Register of Shipping, and the foregoing particulars of main and auxiliary machinery and pressure vessels (as shown on sheets 1, 2 & 3) are correct.

FERGUSON BROTHERS (PORT-GLASGOW) LTD.

J. A. Conn MANAGING DIRECTOR

6th January, 1966 (date) (signature)

~~A previous similar case was for (name)~~ ~~Port and Rpt. No.~~

IDENTIFICATION MARKS (copies of certificates to be forwarded)

Thrust shaft

Intermediate shafts

Screw and tube shafts

Propellers

Other important items

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DATES OF APPROVAL OF PLANS

~~Straight shafting~~		
~~Air receivers~~		
~~Clutch~~		
~~Reversing gear & control~~		
~~Flexible coupling~~		
~~Separate fuel tanks~~		
General pumping arrangements	6/11/64	
Bilge, ballast & oil fuel pumping arrangements in the machinery space	Original	1/3/65
	Final	28/12/65
Oil fuel piping & fittings at settling & service tanks	Original	1/3/65
	Final	28/12/65
~~Cargo oil pumping arrangements~~		
~~Oil burning arrangements~~		
Compressed air system	Original	1/3/65
	Final	28/12/65
~~Main steam pipes~~		
~~Boiler feed system~~		
~~Main boilers~~ L.O. System	Original	1/3/65
	Final	28/12/65
F.W.& S.W.	Original	1/3/65
	Final	28/12/65
~~Superheaters~~		
~~Aux. boilers~~		
~~Donkey boilers~~		
~~Feed water economisers~~		
~~Steam heated steam generators~~		
~~Propeller (including spare, if supplied)~~		
~~Stern gear~~		
~~Oil-retaining gland (if not shown on shafting plan)~~		

DATES OF EXAMINATION OF:—

~~Fitting of stern tube~~	
~~Fitting of propeller~~	
Completion of sea connections	26/8/65
Alignment* of crankshaft on board	24/9/65 (Light)
~~Alignment* of turbines/ engines & gearing~~	
Holding down bolts & chocks	24/9/65
~~Alignment* of straight shafting~~	
Testing of pumping arrangements	23/9/65
Oil fuel lines	30/8/65
~~Boiler supports~~	
~~Steering machinery~~	
~~Windlass~~	

*State if aligned when ship in light, ballast or loaded condition

† The machinery reported above has been constructed and installed under Special Survey in ~~accordance with the Rules~~, approved plans and Secretary's letters. The materials and workmanship are good, the spare gear required by the Rules has been supplied and ~~the machinery~~ is eligible, in my opinion, ~~to be classed~~. ‡ the machinery arrangements are in accordance with the Rules for Class 100A1 Dredger restricted service non propelled ship.

H.K. Taylor.

Surveyor to Lloyd's Register of Shipping

Date of Committee GLASGOW 19 MAR 1966

Minute See minute on Rpt. 1

† (*a*) If the installation contains any features of a novel or experimental nature, give particulars.
(*b*) If centralised and/or bridge control is fitted for main propelling and/or essential auxiliary machinery, state on a Rpt.-(cont.) where the control room is situated, the machinery controlled from it and give a brief description of the control system, including any automatic system for controlling essential auxiliary machinery.

‡ Include any special notation to be assigned.

NOTE.—Where existing machinery is submitted for classification, the circumstances are to be explained as fully as possible, and the recommendation should be suitably amended.