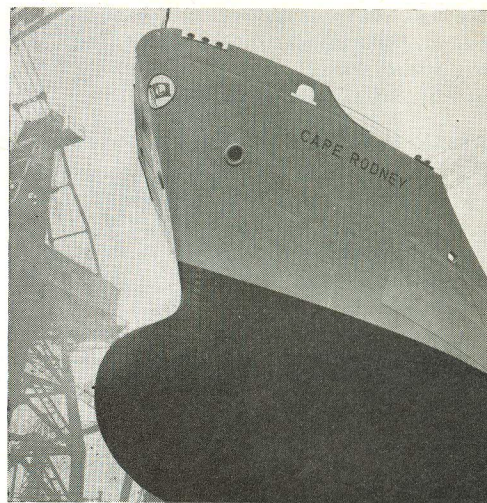


'CAPE RODNEY'

Ram Bow Shows 24 Per Cent Improvement



FURTHER PROOF of the value of the Trident/Lithgow ram bow was given during the trials of the 'Cape Rodney', a 500 ft. bulk carrier with a deadweight of 17,250 tons. On trials, in the ballast condition, the vessel attained a speed of 17.33 knots in adverse weather conditions with the main engine developing 8,530 b.h.p. This follows the very satisfactory results obtained with the 'Orissa' (see *Shipping World & Shipbuilder*, 6 May) and more than confirms the 24 per cent improvement predicted for the ram bow against a conventional bow.

Built by Lithgows Ltd., Port Glasgow, for the Lyle Shipping Co. Ltd., Glasgow, the *Cape Rodney* has been specially designed for the carriage of all types of grain without shifting boards; she is also self trimming. Other types of bulk cargoes, such as coal, iron ore, etc., can be carried in her spacious holds.

The *Cape Rodney* has been built under the special survey and to the highest classification of Lloyd's Register of Shipping for the classification *100 AI, strengthened for heavy cargoes—Nos. 2 and 4 holds may be empty. She also meets the requirements of the Board of Trade, the International Load Line and Safety of Life at Sea, Suez Canal and Panama Canal Regulations.

As can be seen from the general arrangement drawing, the vessel has

a single deck, with a rounded sheer-strake in way of the cargo holds, a well raked stem, cruiser stern and is fitted with the new ram bow designed by the Lithgow technical team. She has a single four-bladed propeller and is fitted with a semi-balanced streamlined rudder of the Simplex type; the stern frame and rudder have been supplied by A/S Stommens Vaerksted. The engine room and all the accommodation are situated aft.

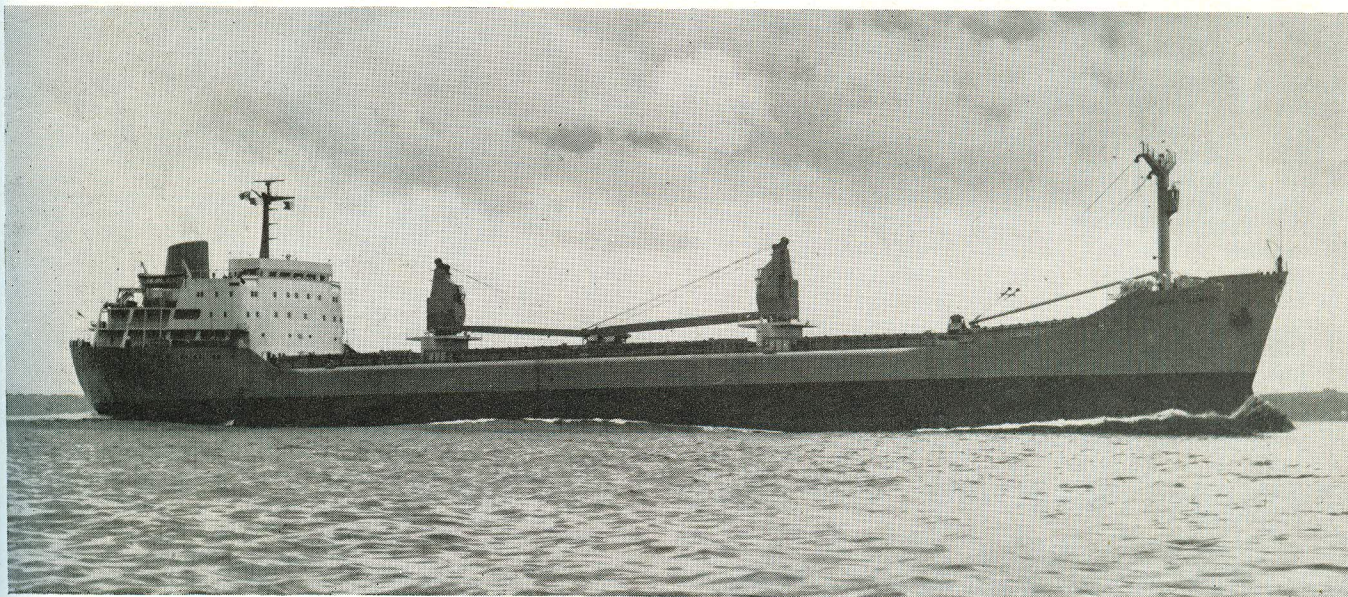
With the exception of two side shell seams, the hull is all welded and is divided into five main cargo holds; the double bottom tanks are carried up the sides to form hoppers. To make the vessel self trimming, top wing ballast or grain tanks, with a 30 deg. slope, are fitted. These tanks are provided with grain hatches.

Principal Particulars

Length o.a.	...	526 ft. 11½ in.
Length b.p.	...	495 ft. 0 in.
Breadth extreme	...	68 ft. 0 in.
Depth, moulded	...	41 ft. 6 in.
Load draught	...	29 ft. 11¼ in.
Corresponding deadweight	...	17,250 tons
Water ballast	...	5,547 tons
Grain capacity	...	878,983 cu. ft.
Bale capacity	...	790,248 cu. ft.
Machinery output	...	9,600 b.h.p.
Corresponding r.p.m.	...	119

The hold bulkheads are corrugated vertically, while the top wing tanks are plane with bulb plate longitudinals scalloped to allow grain to run freely. There is no wood sheathing in the holds, but the tank top plating is suitably increased in thickness. A further Owners' increase has been introduced above the requirements for carrying heavy cargoes.

Paints for the *Cape Rodney* have been supplied by Camrex Paints Ltd., W. J. Leigh Ltd. and Federation Paints Ltd. All steel plates received a coat of Shot-o-kote primer immediately after shotblasting and extensive



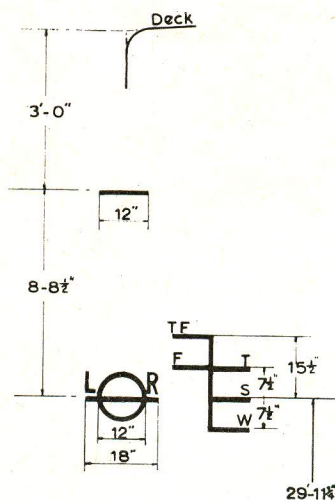
use has been made of epoxy type paints throughout the vessel. This treatment should undoubtedly reflect in reduced maintenance costs.

Equipment

Each hold is served through a large hatchway, fitted with a MacGregor patent single-pull steel watertight cover. Ventilation of the cargo holds is by natural means, ventilators being fitted in each cargo hatch.

The ground tackle comprises three Byer's stockless anchors, each weighing 90½ cwts., 330 fathoms 2½ in. Floryt chain cable, five 110 fathom lengths of 3¼ in. circ. 6/12 steel mooring wire and 130 fathoms of 6 in. circ. 6/24 steel towline.

For handling the anchors there is one Clarke Chapman electrically driven, totally enclosed anchor and mooring windlass. There is also a



Deadweight scale. The "Cape Rodney" carries her full load deadweight of 17,250 tons on a draught of 29 ft. 11¼ in.

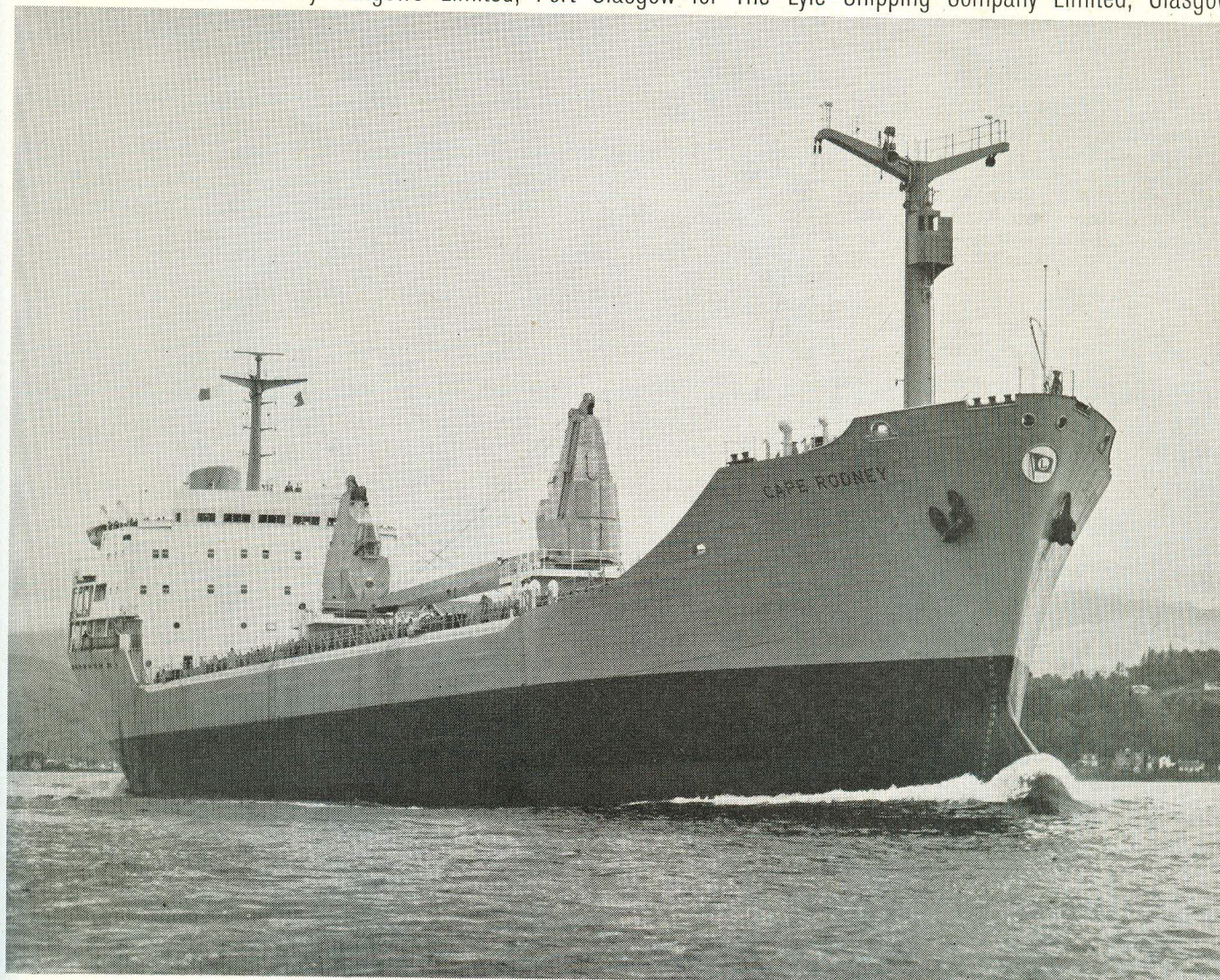
TANK CAPACITIES

Compartment	Capacity in tons				
	W.B.	F.W.	O.F.	DO	LO
No. 1 wing tank P	189				
No. 1 wing tank S	189				
No. 2 wing tank P	247				
No. 2 wing tank S	247				
No. 3 wing tank P	250				
No. 3 wing tank S	250				
No. 4 wing tank P	250				
No. 4 wing tank S	250				
No. 5 wing tank P	249				
No. 5 wing tank S	249				
No. 1 D.B. tank P	461				
No. 1 D.B. tank S	461				
No. 2 D.B. & Hopper P	320				
No. 2 D.B. & Hopper S	320				
No. 3 hopper side P	121				
No. 3 hopper side S	121				
No. 4 hopper side P	119				
No. 4 hopper side S	119				
No. 5 hopper side P	83				
No. 5 hopper side S	83				
No. 5 D.B. tank P	189				
No. 5 D.B. tank S	189				
Fore peak tank	490				
Aft peak tank	101	99			
No. 3 D.B. tank P			202		
No. 3 D.B. tank S			202		
No. 4 D.B. tank P			202		
No. 4 D.B. tank S			202		
No. 5 D.B. tank P			169		
No. 5 D.B. tank S			169		
D.O. D.B. tank P				27	
D.O. D.B. tank S				44	
Overflow tank			9		
H.O. fuel supply S			68		
Purified H.O. tank P			34		
P			34		
Lub. oil drain tank					11
Lub. oil renov. tank					11
Lub. oil renov. tank					11
Lub. oil storage tank					11
Piston water drain tank		6			
Jacket water drain tank		11			
Feed water tank		26			
Fresh water tank P		73			
S		73			
	5547	288	1291	71	44

Deadweight Scale				
Free Board	Draft	Deadweight		Tons per inch
		Salt Water	Fresh Water	
6				
7	32			70.25
8	31	177.69	172.50	69.75
9	30	172.50	170.00	69.25
10	29		160.00	68.83
11	28	160.00	150.00	68.33
12	27	150.00		67.75
13	26	140.00	140.00	67.33
14	25	130.00	130.00	66.83
15	24	120.00	120.00	66.50
16	23	110.00	110.00	65.92
17	22	100.00	100.00	65.58
18	21	90.00	90.00	65.08
19	20	80.00	80.00	64.83
20	19	70.00	70.00	64.50
21	18	60.00	60.00	64.25
22	17	50.00	50.00	63.92
23	16	40.00	40.00	63.58
24	15	30.00	30.00	63.17
25	14	20.00	20.00	62.83
26	13	10.00	10.00	62.50
27	12	0.00	0.00	62.25
28	11			61.92
29	10			61.50
30	9			60.92
31	8			60.33
32	7			59.75

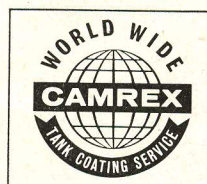
Clarke Chapman electrically driven, totally enclosed warping winch with two warping ends. Two Clarke Chapman 7½-ton electrically driven level luffing grabbing type deck cranes are fitted, one between Nos. 2 and 3 hatches and one between Nos. 4 and 5 hatches. These units are complete with grabs and are capable of working through an angle of 360 deg. The vessel is also fitted with a Velle crane and for operating this unit there are three Clarke Chapman electrically driven totally enclosed cargo winches

m.v. CAPE RODNEY Built by Lithgows Limited, Port Glasgow for The Lyle Shipping Company Limited, Glasgow



STEM-TO-STERN TRUCK-TO-KEEL PROTECTION BY CAMREX

All tank coatings were applied by Camrex Contracts Division, supervised by Camrex Technical Service Division.



All paints, compositions and tank coatings used on the m.v. Cape Rodney have been supplied by Camrex. The steelwork was pre-shotblasted and immediately primed with CAMREX SHOT-O-KOTE. Special advanced systems used throughout the vessel include

BOTTOM: Camrex D.T. Kote pitch epoxy coating followed by special Camrex Longlife Anti-fouling Composition.

BOOTTOPPING & TOPSIDES: A four coat system of Camrex Camolite.

MAIN WEATHER DECKS: Four coat system of Camrex Camolite slip retardent deck coating.

ALL UPPER WING TANKS FOR THE CARRIAGE OF GRAIN. Camrex D.T. Kote pitch epoxy tank coating.

ALL WATER BALLAST TANKS - UNDER WOOD DECKS BEHIND ACCOMMODATION LININGS AND HOLD CEILINGS. Camrex Non-Oxidising-Preservatives.

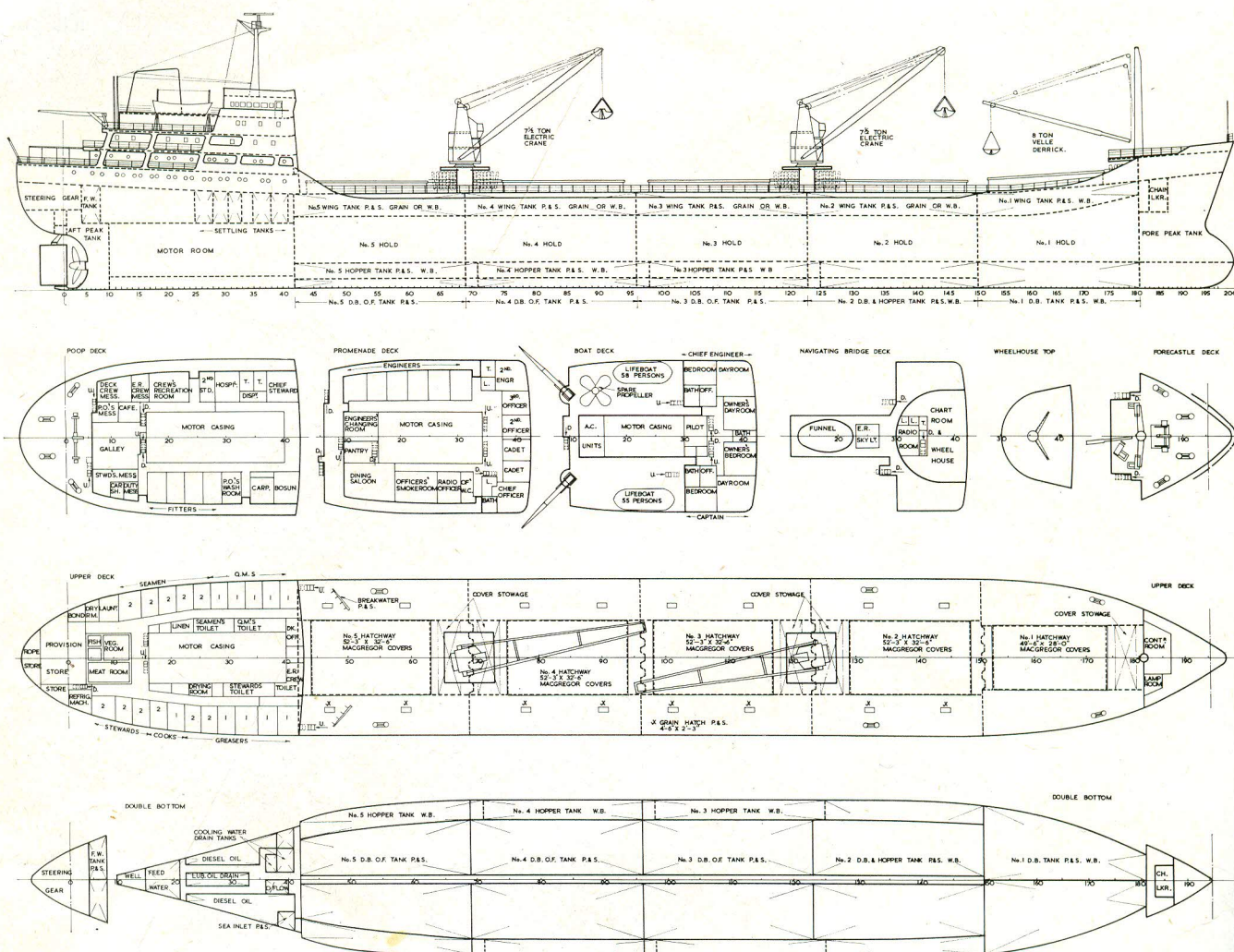
ALL ACCOMMODATION - HOLDS - ENGINE ROOMS, etc. are painted throughout with Camrex Marine Paints.

CAMREX PAINTS LIMITED

MARINE DIVISION

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MANUFACTURING IN CANADA, FRANCE, GERMANY, ITALY, JAPAN, INDIA AND UNITED STATES OF AMERICA.



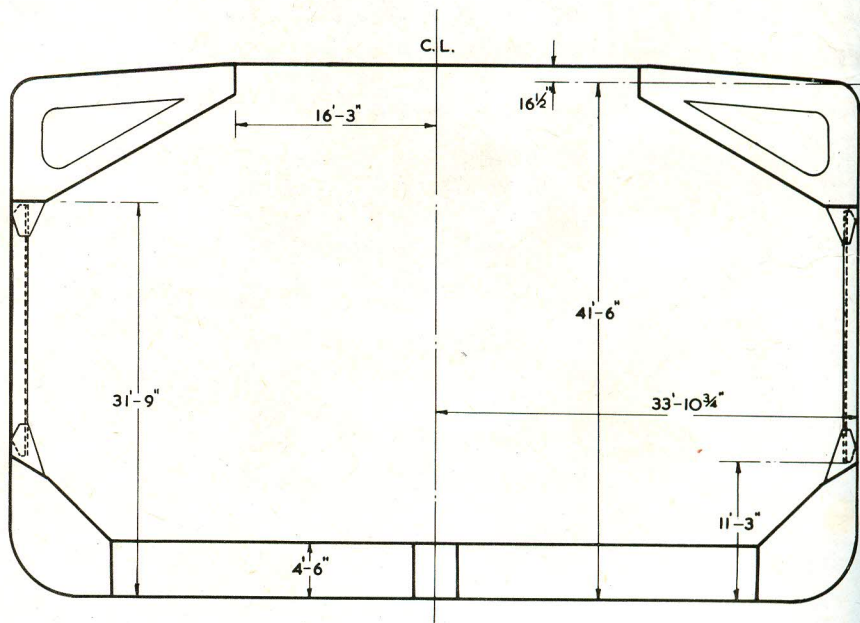
General arrangement of the "Cape Rodney". She has a single deck and cargo is carried in five self-trimming holds.

situated on the forecastle deck. They comprise one 8-ton hoisting winch, one 5-ton topping winch and one 5-ton slewing winch. Located on the boat deck aft, are two 1-ton stores cranes of the new design ram hydraulic winch type manufactured by McLachlan Davits Ltd.

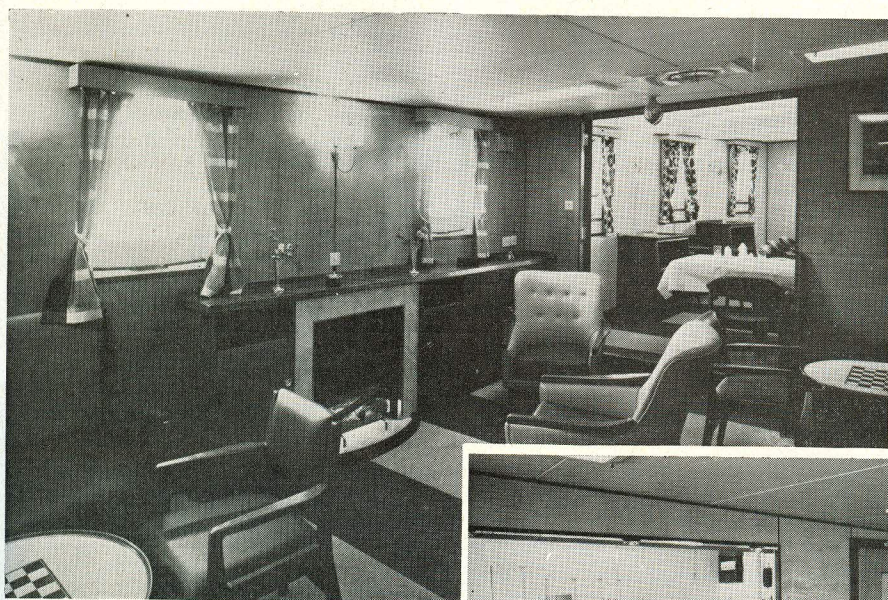
The steering gear is of the four ram hydraulic type, manufactured by John Hastie & Co. Ltd. The gear is arranged for a Brown/Hastie combined steering console and is suitable for use with the gyro pilot.

For life saving purposes there are two glassfibre lifeboats, one of which is motor propelled and the other is fitted with Viking hand propelling gear. The boats are certified for 55 and 58 persons respectively and they have both been supplied by the Viking Marine Co. Ltd.; they are carried in gravity davits supplied by Marine & Allied Industries (C & I) Ltd.

A combined chartroom and wheelhouse is located on the navigating bridge and is equipped with a wide range of up-to-date navigating instruments, including Brown/Hastie com-



Typical section through the cargo holds. The top wing ballast or cargo holds have a 30 deg. slope.



These three illustrations give some indication of the high standard of accommodation in the "Cape Rodney". The officers' smokeroom is illustrated to the left, while the photographs reproduced below illustrate the dining saloon and the captain's dayroom respectively.

bined steering console, Arma-Brown gyro compass, Marconi radar, direction finder and echo sounder and Decca navigator.

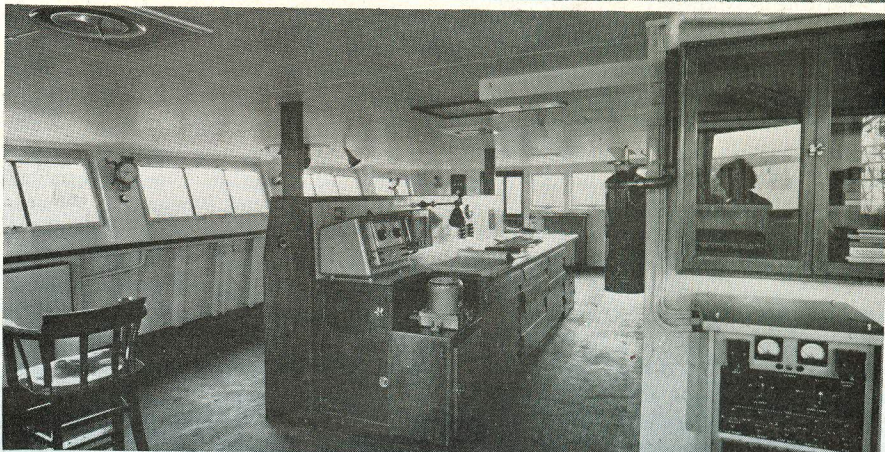
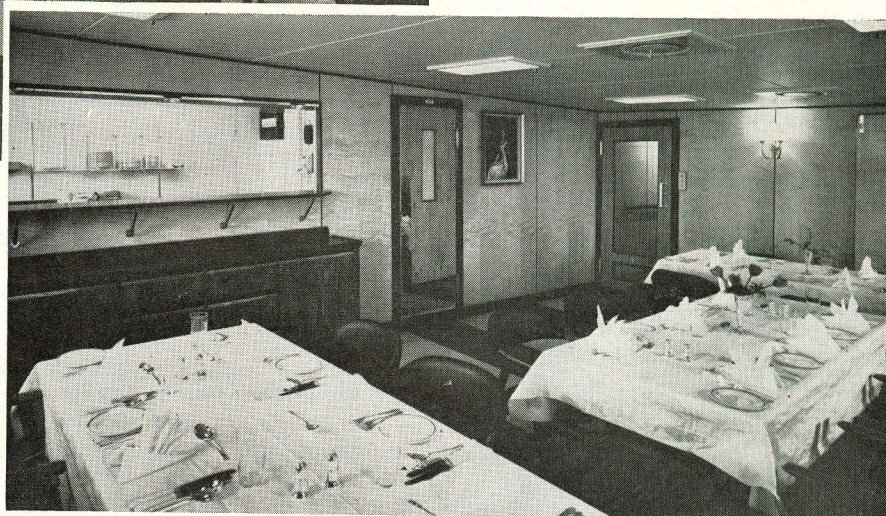
Accommodation

All the accommodation is arranged aft and it complies fully with the Board of Trade Regulations. The captain's, chief engineer's and owners' suites, together with a room for the pilot are located on the boat deck. Arrangements are made on the promenade deck for the chief officer, second engineer, radio officer, cadets and the remaining deck officers and engineers. Also located on this deck are the officers' smoke room, dining room and pantry, as well as the engineers' washplace and changing room.

On the poop deck are the chief steward's, petty officers' and fitters' accommodation. Here also are the hospital and dispensary, crew's recreation room, engine room crew, deck crew and petty officers' messes, cafeteria, galley, stewards' mess and recreation room and the engineers' duty mess. The deck and engine room crew and the catering staff, together with their washplaces, provision store, bonded locker, laundry and refrigerated storerooms are located on the upper deck aft.

Full height polished veneered timber has been chosen for the officers' smoke room and dining room, weathered sycamore and Australian walnut being used in the smoke room and toned Australian maple in the dining room.

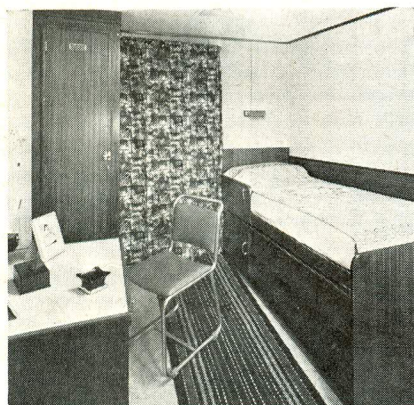
The senior officers' accommodation and junior officers' cabins have been



The combined wheelhouse and chart-room is illustrated at the right.

tastefully decorated with patterned soft plastics, and these, together with the contrasting upholstery and contemporary furniture give a pleasing modern appearance. The passageway in the senior officers' accommodation is finished with a timber veneered dado with vynide above, while the passageways throughout the junior officers' accommodation are finished in full height vynide on both sides. Vynide has also been chosen for the petty officers' and crew's cabins and the passageways on the cabin side. Full height hard plastic in pastel shades has been used in the pantries, crew's messrooms and recreation rooms. The upholstery and deck covering in the accommodation has been the responsibility of Rowan & Bowden Ltd.

The accommodation is air conditioned throughout, the equipment having been supplied and installed by Thermotank Ltd.



Typical crew cabin.

A group of insulated store rooms with a total capacity of 1,805 cu. ft., is subdivided into rooms for meat, fish, vegetables and handling. The insulation work in these spaces has been carried out by Newalls Insulation Co. Ltd., and temperatures are maintained by a refrigerating plant manufactured by J. & E. Hall Ltd.

Propelling Machinery

Built by Fairfield Rowan Ltd., to Lloyd's survey and requirements, the propelling machinery comprises one Fairfield-Rowan Sulzer, type RD, six cylinder single acting, two stroke, direct reversible, supercharged oil engine. The main engine has bedplate and columns of fabricated steel construction. It has a cylinder diameter of 760 mm. and a stroke of 1,550 mm. and is designed to develop a maximum continuous output of 9,600 b.h.p. (metric) at 119 r.p.m. The engine drives, through line shafting, a single four bladed manganese bronze propeller of Heliston design, which has

been manufactured by Stone Mangane-se Marine Ltd.

Two Brown-Boveri turbo-chargers, of the VTR 630 type, exhaust gas driven from the main engine and complete with air filters and silencers, are fitted for dealing with the first stage of the compression work. The engine employs the cross scavenge principle through ports in the cylinders, the air being supplied by the turbo-chargers which operate on the pulse system and are independent of the crankshaft. Starting air for the main engine is stored at a pressure of 425 p.s.i.g. in two cylindrical storage tanks, which are charged by two Hamworthy vertical motor driven two-stage air compressors.

The main engine is suitable for operating on oil fuel with a viscosity not exceeding 3,500 seconds Redwood No. 1 at 100 deg. F. It is of the cross-head type with complete separation between cylinder and crankshaft, thus eliminating any risk of contaminating the crankcase lubricating oil with the products of combustion.

Fresh water is used for cooling the cylinder heads and jackets, and it is circulated in a closed system by Hamworthy non self-priming vertical spindle centrifugal pumps. The pistons are also fresh water cooled, two Hamworthy self-priming pumps being fitted. All crankcase bearings, cross-heads and guides are lubricated through a forced lubricating oil system, which is supplied by Stothert & Pitt vertical spindle type pumps. A separate lubricating oil system is fitted for the turbo-blowers. Each system is complete with all the necessary storage and header tanks, coolers and filters, etc.

The oil fuel for the main engine is purified by two De Laval self-cleaning

units arranged for series operation. One De Laval purifier is provided for diesel oil purification, and is arranged to act as a standby for the heavy oil purifiers. In addition, one De Laval purifier is installed for dealing with the lubricating oil.

Three phase 60 cycles alternating current, at a tension of 440v. is supplied to the motor-driven auxiliaries by three Allen 300 kW self contained diesel alternators running at 720 r.p.m. The main breakers and circuit breakers for the electric motor-driven auxiliaries, together with switches, fuses, preference trips and paralleling instruments are accommodated on a common main switchboard of the 'Dead Front' type. The entire electrical installation has been carried out by the Sunderland Forge & Engineering Co. Ltd.

Steam Plant

Steam for domestic purposes, fuel oil heaters, feed pumps, etc., is supplied at a pressure of 100 p.s.i.g. by one Cochran vertical oil fired boiler and one Cochran vertical exhaust gas boiler.

Fresh water is produced by one Nirex fresh water generator which has a capacity of 10/15 tons/24 hours and utilises heat from the main engine cylinder cooling water as a heating medium.

Other auxiliary machinery includes two Hamworthy motor-driven vertical spindle non self-priming sea water pumps and two Hamworthy general service pumps, each with a capacity of 115/75 tons/hour, two Hamworthy ballast pumps each with a capacity of 600 tons/hour and one Simplex Turbulo oily water separator, capable of passing 50 tons/hour.

CARGO CAPACITIES

Compartment	Length ft. in.	Frames	Capacity in Cu. Ft.	
			Grain	Bale
No. 1 hold	69 9	150-181	113,405	108,644
No. 2 hold	73 9	123-150	172,451	168,949
No. 3 hold	74 3	96-123	175,369	171,811
No. 4 hold	74 3	69- 96	175,369	171,811
No. 5 hold	74 3	42- 69	172,719	169,033
Total holds			809,313	790,248
No. 2 wing tank P	73 9	123-150	8,631	
No. 2 wing tank S	73 9	123-150	8,631	
No. 3 wing tank P	74 3	96-123	8,739	
No. 3 wing tank S	74 3	96-123	8,739	
No. 4 wing tank P	74 3	69- 96	8,739	
No. 4 wing tank S	74 3	69- 96	8,739	
No. 5 wing tank P	74 3	42- 69	8,726	
No. 5 wing tank S	74 3	42- 69	8,726	
Total wing tanks			69,670	
Grand total			878,983	790,248

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TABLE 2

Week No.
Coal
Scrap ..
Ores ..
Sugar ..
Chemicals
TOTALS

Grain ..

* The total