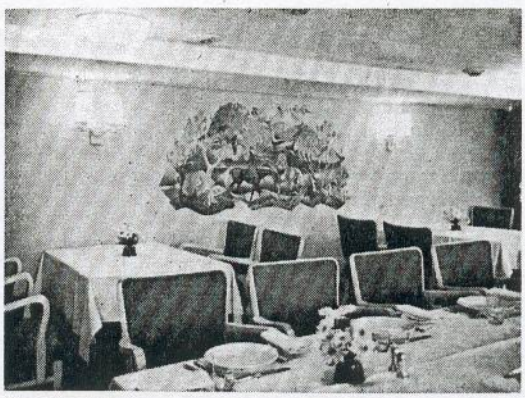


Detail of dining room, showing wall adornment

Largest Tanker under the Netherlands Flag

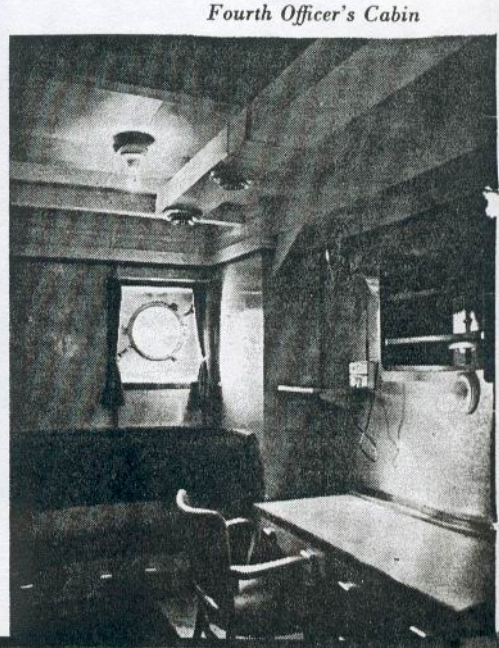
Steam T

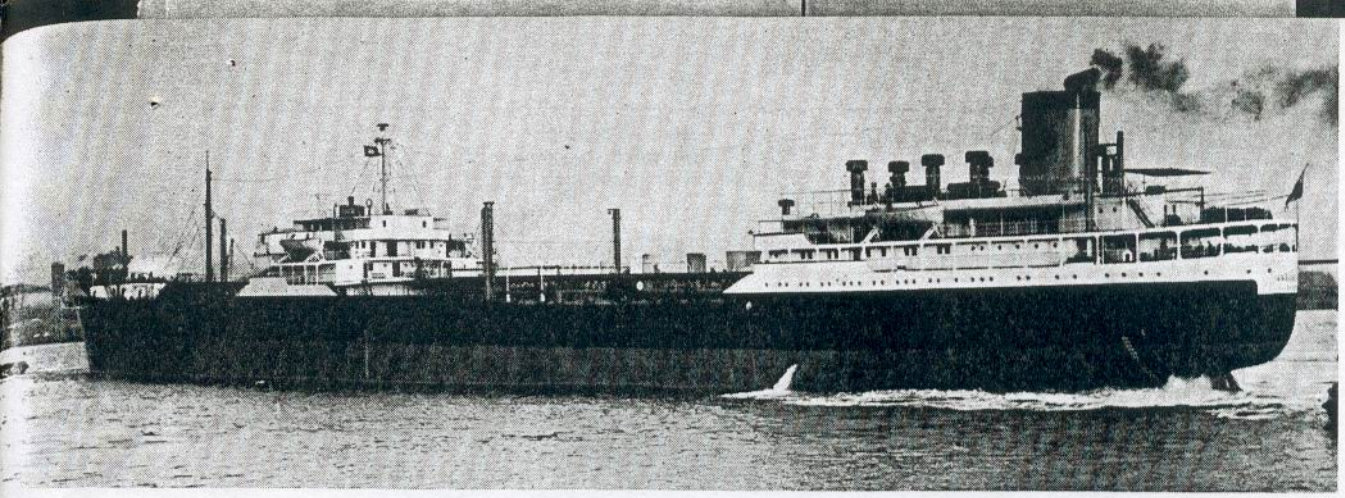
Below: Officers' Dining room

The keel of the 32,000-ton d.w. single-screw turbine tanker *Vasum* was laid down on June 28th, 1954. The ship was launched by H.R.H. Prinses Beatrix of the Netherlands, on January 15th, 1955 and she was delivered to her owners on December 23rd, 1955.

The ship was built on the same berth where the Netherlands Dock- and Shipbuilding Company constructed the Norwegian flagship *Oslofjord*, launched by H.R.H Crown Princess Martha of Norway, on April 2nd, 1949.

Fourth Officer's Cabin





s.t.s. Vasum
(Photo N.P.B.)

urbine Tanker «Vasum»

The s[illegible]m turbine tanker *Vasum*, recently handed over by her builders, the Netherlands Dock and Shipbuilding Company, Amsterdam, to the N.V. Petroleum Maatschappij "La Corona" (Royal Dutch/Shell Group), is the first super tanker of this Group to be operated under the Netherlands flag. She is the first of two sisterships to be commissioned, and one of 9 similar ships ordered by the Group. Of these, five were ordered from British yards, two in France and two in the Netherlands. The first of the French-built 31,000-tonners is the *Isanda*, the first of the British-built ships the *Vexilla*.

The new ship incorporates several new features which show the intention of the owners to limit turnround in port to the minimum. In view of the fact that the cost of one hour's delay in port for a ship like the *Vasum* is upwards of 400 guilders, this is not to be wondered at. In her construction, the size of the centre tanks and of the wing tanks has been arranged so that the discharge of cargo and the loading of water ballast can be carried out simultaneously. The ballast is carried in tanks which will not normally be used for heavy petroleum products.

The p[illegible]ping and pipeline installation has been designed with a view of the carriage of crude and other black oils, the wing tanks being used for ballast.

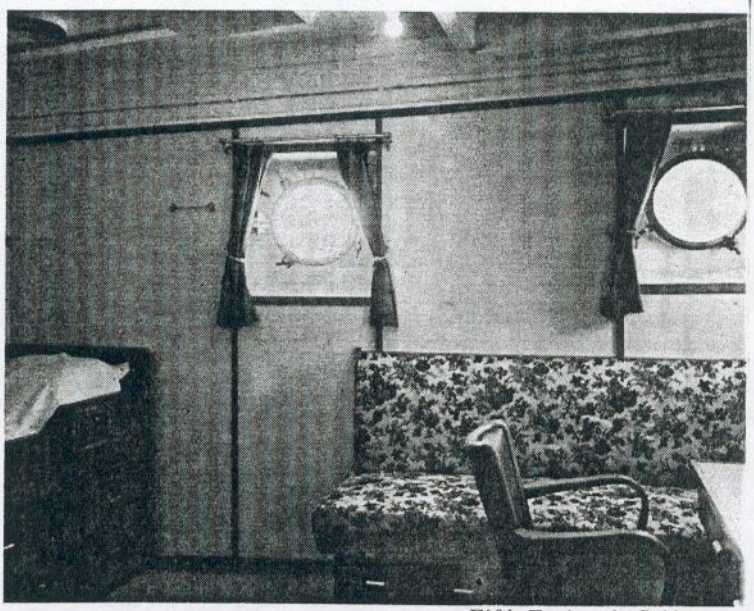
The principal particulars of the *Vasum* are as follows:

Length overall	660 ft.	(201.16 m.)
Length b.p.	635 ft.	(193.54 m.)
Breadth moulded	84 ft. 3 in.	(25.68 m.)
Depth moulded to upperdeck	46 ft. 3 in.	(14.10 m.)
Draught	34 ft. 9 in.	
Deadweight	32,150 tons	
Gross tonnage	20,685 tons	
Block coefficient	0.78	
Displacement	40,600 tons	
Cargo capacity	1,275,000 cu.ft.	
Horsepower: 13,000 s.h.p. at 105 r.p.m. and 14,500 at 109 r.p.m.		
Service speed	16½ knots	
Steel weight at launch	7,600 tons	

The *Vasum* has been constructed on the combined longitudinal and transverse system of framing and is of fully welded construction. The ship has been built under the special survey of Lloyd's Register of Shipping, class 100 A1, "carrying petroleum in bulk".

The hull is subdivided into forepeak, chainlocker, forehold and deeptank, cofferdam, ten triple cargo tanks, main pumproom, wing bunkers, machinery space with double bottom and after peak. There is a pumproom built in at the after end of the forward deeptank to house a horizontal duplex steam pump for the transfer of fuel and a similar pump for general service purposes. The deeptank has a capacity of 1500 tons and the hold forward is arranged for the carriage of gasoline in drums.

The wing fuel bunkers have settling tanks built in. They are arranged at the forward end of the main pumproom and have a total capacity of 950 tons, the total capacity of the settling tanks being 350 tons.



Fifth Engineer's Cabin

Cargo-Handling Arrangements. The main pumproom of the *Vasum* is fitted with 3 turbo-driven, vertical, single-stage centrifugal cargo pumps, each having a capacity of 1,600 tons per hour of seawater against a differential pressure of 140 lbs/sq. in. In addition, there is a similar pump, which is used for the handling of ballast.

Heating coils are fitted in all the cargo tanks and bunkers. The ship is arranged for Butterworth tank cleaning. A steam smothering systems is fitted to all the cargo compartments and the pumprooms.

The *Vasum* has been fitted with a "Guardion" cathodic protection scheme in both starboard and port wing tanks to combat corrosion in these tanks. The scheme makes use of magnesium alloy anodes, and a total of 296 anodes of 200 lbs each and 512 anodes of 17 lbs each have been installed.
As is known, the principle of this system is that whilst the tanks are in ballast the anodes dissolve slowly, creating an electrolytic cell in which the steel is cathode and the magnesium alloy anode. Since the cathode in an element is passive the corrosion of the steel is prevented. Moreover, in seawater applications of this scheme a deposit of calcareous salts is formed on the steel, which gives protection during the unballasted periods as well.
Derricks for handling hoses and stores are fitted to steel samson posts fitted port and starboard in the after well. The hose derricks, on the forward sides of the posts, have a lifting capacity of 5 tons and the stores derricks of one ton; a similar derrick is fitted to each of the samson posts in the after well.
A steam windlass, two steam capstans, each with a pull of 12 tons at a speed of 25 m. per minute are fitted for mooring purposes. Two steam winches with extended shafts and warping heads of 26 x 22 in. are fitted, one of which serves the port and starboard samson posts. Both winches are arranged as warping winches. The steering engine is of the electro-hydraulic four-ram type with two independently operating electric pumps. The control mechanism is of the dual type, the engine being controlled from the bridge by way of the Sperry duplex system. The engine is also fitted for direct operation from the boat deck aft.
Lifesaving equipment consists of four light alloy lifeboats placed on the boat decks amidships and aft. Three of these lifeboats are arranged for seating 42 persons, and the fourth, which is a motor boat, 40 persons. This later boat is fitted with a Coventry Victor engine of the water cooled type, and have an output of 9-11 h.p. The engine is fitted with 2 :1 reduction gear.
The boats are placed under two sets of "Normal Deck" type gravity davits, fitted with boatwinches of the "Hand Power" type and a portable electric motor.
Navigation aids are of the most up-to-date type, the ship being fitted among other things with a Sperry Mark 14 gyro compass with two bearing repeaters, a steering repeater, a course recorder and rudder indicator.

The tanker *Vasum* is fitted with complete radiotelegraphy and radiotelephony equipment and a radar, installed by Radio-Holland N.V. The radio equipment consists of the new "Marconi" transmitter type "Globespan", two receivers H3L7U and AR 88 LFA, the emergency transmitter, manufactured by Marconi and named "Reliance".
The "Globespan" is designed to comply with the appropriate British General Post Office Specification and the Atlantic City regulations for a high-power transmitter providing radio telegraphy on M.F. and H.F., with radiotelephony on I.F. and H.F. A total of seventy crystal-controlled spot frequencies is available and any one of these frequencies may be selected. An outstanding feature is that a maximum of four controls only, need be operated to change frequency, including a change of band.
Simplex, duplex and voice-operated carrier facilities are provided from the local and remote operating positions, whilst C.W. and M.C.W. may be transmitted from the local position only.
The "Globespan" transmitter is contained in an attractively styled bench mounted alloy cabinet. The following frequency ranges are provided:

Medium frequency	410-525 kc/s
Intermediate frequency . .	1,6-3,8 Mc/s
High frequency W/T . . .	4, 6, 8, 12, 16 and 22 Mc/s
R/T . . .	4, 8, 12, 16 and 22 Mc/s

The power output to the aerial is on the medium frequency 275 Watts, on the intermediate frequency 100 Watts and on the high frequency 400 Watts.
By means of a power supply the transmitter is directly fed from the ship's mains: 3 x 115 V, 60 cycles.
The equipment is also provided with a local speaking unit and a remote speaking unit for remote control and "intercom" working.
The emergency transmitter "Reliance" has a power output of approx. 100 Watts to aerial circuit on C.W. and approx. 120 Watts on M.C.W. and a frequency range of 365-525 kc/s and is provided with six spot frequencies within the band.
The receiver AR 88 LFA has a frequency range from 73-550 kc/s and from 1480-30500 kc/s and the receiver H3L7U from 15-23000 kc/s.
The radar "Radiolocator IV" has 4 ranges namely 1 mile, 3 miles, 10 miles and 40 miles.
The automatic alarm equipment is of Marconi "Seaguard" type. The ship is fitted with a "Redifon" aerial system.

Accommodation. The living accommodation on the *Vasum* is spacious, as could be expected in a ship of her size, and quarters and public spaces are up to a high standard. The general layout of the accommodation is as follows:
The wireless operator's room, and pilot cabin are arranged on the navigating bridge, in addition to the wheelhouse, chartroom, wireless office, toilet and fan room.
On the upper bridge deck there are 3 two-berth cabins, each with separate lavatory. In addition, there is the captain's suite consisting of dayroom and bedroom, toilet and shower bath. Here, also is the hospital with separate bathroom and toilet. An interior stairway leads to the navigating bridge above and the bridgedeck below.
On the bridge deck are located the chief officer's cabin with separate toilet, 2nd and 3rd officers' cabin chief-steward and assistent stewards' cabins. On the same deck are 3 two-berth cabins for the apprentices, washplaces and toilets, chief officer's office, officers' lounge and pantry, linen and oilskin lockers.
The accommodation aft comprises the chief engineer's dayroom, bedroom, toilet and bathroom, a single-berth cabin with toilet and bathroom for the 2nd engineer, a single-berth cabin for the 3rd engineer, and office, all of these on the boatdeck. The same deck accommodates also the ship's laundry and the permanent, open-air swimming pool.
On the poopdeck are located single-berth cabins for 5 engineer officers and 3 two-berth cabins for apprentice engineers. There is also an engineers' washplace and toilet. The officers' smoke room, lounge and pantry, the P.O.'s smoke dining rooms, the crew's messroom and pantry, a dining room for the members of the catering staff, a single-berth cabin for the second cook, the second steward and the assistent steward are to be found on the same deck.
The P.O.'s quarters are arranged in the forward part of the space under the poopdeck. All of them are housed in single-berth cabins. Here also are, a drying room, oilskin locker, P.O.'s toilet and washplace.
At the starboard side there are the cabins for the A.B.'s, four for ordinary seamen, two for servants, a two-berth cabin for boys and washplace for the ratings of the deck department.
At the portside are a washplace for the ratings of the

machinery department, a crew's recreation room, 8 single-berth cabins for oilers and firemen and one for the chief steward.

Particular attention has been paid to the standard of the accommodation, in which such materials as Vynide have been used to a large exent. Foamrubber has been used in the upholstery of the chairs.

Ventilation and heating of the accommodation is in three separate groups, namely the bridge deckhouse, crew's quarters in the poop, officers' and crew's above the poop-deck. For this purpose three steam-heated fan units are installed. Air conditioning is fitted in the dining rooms, messrooms, smoke rooms, pantries and the hospital. The store rooms aft, those of the bridge deckhouse and the tonnage hold are connected to the ventilating system.

The galley is fitted with stainless steel dressers and similar eqpipment. Galley equipment is all-electric and consists of a range with 3 ovens with a capacity for 80 persons, a baking oven, a steam oven, a hot water boiler, grill, a potato peeler and food mixer with attachments.

Cold and hot water is laid on to the whole of the accommodation. The hot water system serving the accommodation aft is fed by a steam boiler with a capacity of 180 litres and that of the bridge deckhouse by an electric boiler of 90 litres, both boilers delivering 450 and 270 litres of hot water an hour, respectively.

Two water treatment units, each consisting of a dechlorinator and a water filter are installed in a pressurised system between pump and hydrophor, suitable for a working pressure of 125 lbs/sq. in. Each unit is capable of treating 2 tons of water per hour; filters and tubes are fitted with a special lining to prevent corrosion and deterioration.

The cold storage chambers consist of a meat and a vegetable room. The capacity of the meat room is 24.4 cu.m. (860 cu.ft.) and that of the vegetable room 42.5 cu.m. (1,500 cu.ft.). The refrigerating machinery serving these spaces consists of two Freon-compressors of the vertical-cylinder type.

The laundry is fitted with a washing machine, a centrifugal dryer and a mangling machine. Each of these machines is driven by an A.C. motor, 3-phase, 440 volts. The drying room is fitted with an electrically-driven steam-heated fan unit.

Machinery Installation. The *Vasum* is propelled by a single screw, actuated by a geared Parsons turbine propulsion unit consisting of one ahead H.P. turbine of the all-impulse type and one L.P. turbine of the single-flow impulse-reaction type. The normal output of the propulsion machinery is 13,000 s.h.p. at 105 r.p.m. and the maximum output 14,500 s.h.p. at 109 r.p.m.

The turbines, which were constructed by the N.D.S.M. under licence, work in conjunction with two Babcock & Wilcox watertube boilers of the integral furnace type, also built by the N.D.S.M. under licence. The boiler pressure is 42 kg/sq.c.m. and the steam pressure at superheater outlet is 850 deg. F.

For astern working there is one H.P. astern turbine of the impulse type. It is arranged at the forward end of the H.P. ahead turbine. In addition, one L.P. astern turbine is incorporated in the L.P. ahead turbine casing.

Electricity for power and lighting is supplied by two turbo-generators, each having an output of 550 kW. A 150 kW diesel alternator generating at 450 volts, 3 phase, 60 cycles is installed for emergency duties.

Further engine room equipment includes:

A "Vavac" evaporating plant consisting of two evaporator units, each having a capacity of 40 tons per 24 hours, a Michell thrust block for a shaft diameter of 22.1/8 in. fo a normal thrust load of 233,000 and a maximum load o 254,000, Michell tunnelshaft and aftermost bearings, H.P and L.P. bearings;

Two De Laval lubricating oil separators;

One Caird & Rainer steam/steam generator of 35,000 lb an hour, one heater of 130 tons per hour for the Butter worth system:

A Weir main closed feed system comprising: 2 electrically driven vertical condensate extraction pumps; two steam jet air ejectors, one combined L.P. heater and drain cooler one "Optimur" type de-aerator, 2 H.P. feed water heaters two electrically-driven centrifugal drain tank pumps.

The following pumps were installed:

One Weir electrically-driven centrifugal main boiler feed pump with a capacity of 150,000 bls/h; one "Weir" turbine-driven main boiler feed pump of the same capacity; one "Weir" turbine-driven harbour pump with a capacity of 50,000 lbs/h; two "Weir" steam generator feed pumps, each with a capacity of 35,000 lbs/h;

two "Drysdale" centrifugal main circulating pumps, each with a capacity of 7500/5000 gallons p.m. and driven by 55/80 h.p. motors;

2 Drysdale upright centrifugal auxiliary circulating pumps, each with a capacity of 3,000 gallons a minute and driven by 39-h.p. motors;

Two vertical "Houttuin" lubricating oil pumps, each with a capacity of 109 cu.m. an hour.

EQUIPMENT ON BOARD THE "VASUM"

(Partial List)

A. de Hoop, Rotterdam: Clear view screen;
Bronswerk, Amsterdam: Ventilating system;
Bruyn, Firma Gerard de, Rotterdam: Weir's closed feed system, various Weir and Drysdale pumps, Dobbie McInnes "Teledep" pneumatic tank depth and capacity indicators;
Davit Company N.V., Utrecht: Two sets of "Normal Deck" gravity davits with boatwinches and portable electric motor;
Franse, T., Amsterdam: Coventry Victor boat engine;
Grootenhuis, William C., Rotterdam: Chadburn mechanical revolution counter, K.D.G. hydrostatic tank gauges, Willett-Bruce electric whistle control gear; 8 Blakeborough steam strainers of various sizes; "Yorcalbro", condenser tubes, copper tubes for various pipelines; tubes and fittings for downcomers and risers to cargotank heating coils;
Groenpol, Amsterdam: Electrical installation;
Hobart N.V., Rotterdam: Electric food mixer with attachments, electric potato peeler;
Het Anker, Neder-Hardinxveld: Ports;
Houttuin's Machinefabriek, Utrecht: Vertical lubricating oil pumps;
Internationale Navigatie Apparaten N.V., Amsterdam: "Redifon" aerial system;
Janszen, Ir. J., The Hague: Caird & Rainer, evaporating and distilling plants, steam/steam generator, heater for Butterworth system;
Koninklijke Demka Staalfabrieken N.V., Utrecht: Rudder bearings, hawsepipes and ancillary parts, various pipeline components;
Lips, Drunen: Propellers;
Maters, Beverwijk: "Sihi" hydrophors;
Merrem & la Porte N.V., Amsterdam: Concessionaires for Holland & Belgium for the "Guardion" cath. prot. system;
Koopman & Co., Amsterdam: Two De Laval separators;
Nautisch Technische Handel Mij. P. J. Feteris N.V., The Hague: Sperry nautical installation;
Nedalo N.V., Hengelo: Complete galley equipment;
Observator N.V., Rotterdam: Magnetic Kelvin & Hughes compasses and further nautical instruments;
Radio Holland N.V., Amsterdam: Complete wireless equipment and radar;
Stroomer's Handelsonderneming, Rotterdam: "Goodwill" foam-rubber;
Trost & Co., L., Rotterdam: Vynide for walls and upholstery;
Vaillant & Sluyterman, The Hague: Hayward Tyler pumps and Michell bearings; Robinson Selsyn electric telegraph;
Verhoef, Aalsmeer: Accommodation ladders and lifeboats;
Waterzuiverings Mij. Amsterdam, N.V., Amsterdam: Watertreatment units.