Specification of Vessel

MV NACC ARGONAUT

IMO No. 9287302
Built in 2003 by Kyokuyo Shipyard, Japan
Converted in 2017
Pneumatic Cement Carrier
Owner: a subsidiary of NovaAlgoma Cement Carriers Ltd.
Great Lakes fitted
Fitted for the carriage of cement, fly ash, and ground granulated blast furnace
Classification Society: RINA
Flag: Canada
Max Summer Cargo Deadweight: 12,576 MT fresh water metric tons
Summer draft salt water: 8.36 m
Fresh Water summer draft: 8.54 m
Cargo hold volume (100%): 10,105 cubic meters

No. 1 Cargo hold – 2,256 cubic meters
No. 2 Cargo hold – 3,025 cubic meters
No. 3 Cargo hold – 2,641 cubic meters
No. 4 Cargo hold – 2,184 cubic meters

Loa: 136.43 m
Lbp: 126.40 m
Estimated GT: 9,255
Estimated NT: 3,517
Breadth: 21.20 m
Depth: 11.30 m
4 Cargo Holds
Main Engine: Wartsila 6L36B / 4,250 kW at 600 rpm
Shaft Generator fitted
Bow thruster fitted: 525 kW

CEMENT HANDLING SYSTEM

Supplier/Maker:
VAN AALST MARINE & OFFSHORE BV, the Netherlands
Main Components of Handling System:

- 4 x re-loader tanks with integrated filter system
- 6 x air compressors
- 4 x vacuum pumps
- 4 x blowers units for fluidizing
- 2 x loading hoppers

Additional details:

- The system is able to transfer the cargo from holds No.1 or No. 2 to holds No. 3 or No. 4 or vice-versa. The system is able to transfer the cargo to and from ALL holds; no limitations on where cargo can be transferred.
- Loading and discharging process is fully automated, controlled by a PLC (Programmable Logic Controller).

LOADING & UNLOADING OPTIONS

LOADING:

1) Mechanically, by loading conveyor belt from shore:
   - Loading rate: up to 1,000 MT per hour
   - Dimension of connecting flange: 750 DIN
   - Can load from High Hopper or Low Hopper (Main source of loading)

2) Pneumatically, through pipeline from shore:
- Number of lines: 1xPS & 1xSB
- Pipe diameter: 12”
- Loading rate: up to 300 MT per hour (1 line per side)

3) Via bulk trucks to the cargo holds:
- Number of lines from shore: 16 X PS & 16 x SB
- Pipe diameter of each line: 4”

4) Mechanically, by loading conveyor belt from shore:
- Loading rate: up to 1,000 MT per hour
- Dimension of connecting flange: 750 DIN
- Can load from Low Loading Ports (1 Port Aft / 1 Stbd Aft / 1 Port Fwd / 1 Stbd Fwd)

UNLOADING:

1) Pneumatically, through pipelines to shore facilities:
- Unloading rate: 700 TPH (350TPH/Line)
- Number of Lines on shore: 2xPS & 2xSB
- Pipe diameter: 12”
- Dimension of connection flange: 300 DIN

2) Pneumatically, through pipeline to shore:
- Number of lines: 2 on Port Side Aft Boat Deck (Lafarge Trade Discharge)
- Pipe diameter: 10”
- Unloading rate: 175TPH line 1 - 210TPH line 2 Max 385TPH depending on port facilities

3) Pneumatically, through pipeline to shore:
- Number of lines: 1 on Stbd Midship Main Deck (used for Corner Brook)
- Pipe diameter: 12”
- Unloading rate: up to 350 MT depending on port facilities

4) Mechanically, via bulk chute boom:
- Number of bulk chute boom: 1
- Bellow diameter: tba
- Unloading rate: 1000 ton per hour

Note A: discharging rates are based on short horizontal and vertical distances (beginning of pipes to top of Silo up to max 45 m / length of shore pipes up to max 60 m) and no restrictions on receiver’s side and subject to the capacity of shore dust collectors/filters

SPEED & CONSUMPTION in navigation (MDO in ECAs)

About 12.0 knots on about 12.4 MT MDO
About 11.0 knots on about 10.6 MT MDO
About 10.0 knots on about 9.3 MT MDO

The above figures include the shaft generator in operation. With the shaft generator disconnected a daily consumption of about 1.0 MT MDO is to be considered. Should the Vessel be required to run with a low main engine load, it is necessary to increase main engine load at 85% for minimum one hour every twelve hours of low speed as per maker recommendation.

CONSUMPTION IN PORTS

1) **IDLE**: about 1.0 MT MDO per day

2) **WORKING**:

i) During Loading Operations:

- Mechanically (by gravity), via loading conveyor belt from shore: 0.07 MT MDO per hour.
- Pneumatically, through pipeline from shore: 0.07 MT MDO per hour.
- Via bulk trucks to cargo holds: 0.07 MT MDO per hour.

When the cargo is shifted from a cargo hold to another the involvement of at least 2 x air compressors plus 1 x vacuum pump plus blowers is needed. Estimated extra consumption for cargo shifting: 0.25 MT MDO per hour.

ii) During Unloading Operations:

Pneumatically, through pipelines:

a) With 6 x air compressors and 2 x vacuum pumps in operations: 0.50 MT MDO per hour (estimated in Toronto)
b) With 4 x air compressors and 2 x vacuum pumps in operations: 0.38 MT MDO per hour (estimated in Buffalo and Cleveland)
c) With 2 x air compressors and 2 x vacuum pumps in operations: 0.27 MT MDO per hour (estimated in Oswego)

Mechanically, via bulk chute boom:

a) 0.48 ton MDO per hour

Note B:

(i) Speed and consumption figures in navigation are based on good weather conditions, i.e. wind force Beaufort scale maximum 4 (four), Douglas sea state 3 (three), no negative influence by swell/adverse current and with the shaft generator connected.

(ii) Fuel consumption figures during unloading operations may vary from terminal to terminal and from time to time due to back pressure or shore restrictions.

(iii) All above figures, including those related to speed, consumption (in navigation as well as during loading operations) and fuel types utilized, are given in good faith and are to be considered “about” (where “about” means +/- 5%). Owners will comply with all applicable regulations (including environmental regulations) with, if necessary, applicable revisions to the Vessel warranty provisions to be made as required in order to maintain such compliance.