



Coal Terminal Information at Nacala-a-Velha

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1. Introduction

The information contained herein is merely intended to acquaint agents, ship owners, operators and masters with the facilities and general conditions at Vale's Ports.

This information neither substitutes nor alters other regulations included in official Mozambican or international publications referring to navigation.

The Terminal is not responsible for any accident or damage resulting from the information given herein. While the information given herein is based on design data and field surveys, the Terminal is not responsible for any errors or omissions.

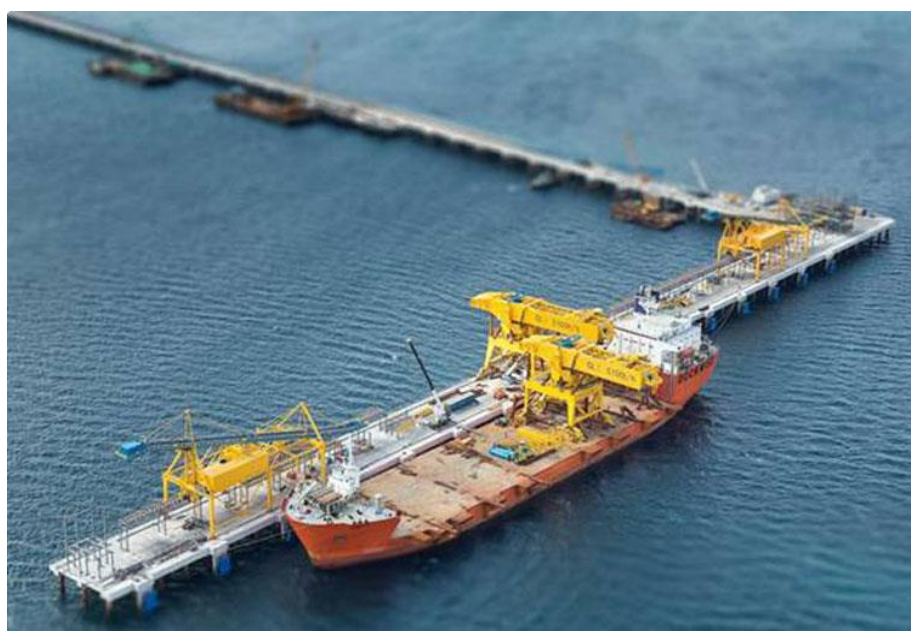
2. Terminal Development background

Vale started coal mining project in Moatize, Mozambique, in 2009. To transport the product, resources were invested in the construction of two railways, Linha-de-Sena and the Nacala Corridor, and deepwater port in Nacala-à-Velha.

The railway connecting the Moatize mine to the port in Nacala-à-Velha has extension of 912 km and capacity to handle 18 million tons of coal / year.

In 2015 began operations in Nacala-à-Velha Coal Terminal for the export of metallurgical and thermal coal.

3. Nacala-à-Velha Coal Terminal Overview Panoramic



4. Port Infrastructure

4.1. Location

The Nacala-à-Velha Coal Private Terminal is located in the city of Nacala-à-Velha, 160 km (100 miles) northeast of Nampula and 60 km (40 miles) north Mozambique Island.

It is located in the geographical coordinates:

Latitude: 14° 31,46' South Longitude: 040° 39,34' East

Latitude: 14° 31,69' South Longitude: 040° 39,29' East

4.2. Nautical Chart

The region is located where the Nacala-à-Velha Coal Terminal is represented in the following Nautical Charts:

- Chart 16311 published by the Instituto Nacional de Hidrografia e Navegação (INAHINA);
- British Admiralty Charts nº 649.

4.3. Weather Conditions

The climate type is tropical with an average temperature of 77.9°F and variation throughout the year from 54.5°F to 99.7°F. The average air relative humidity is 79.5%.

The average annual rainfall is 843 mm, with more rainfall in summer than in winter.

The predominant wind direction is Southeast from March to September and from October to February is the Northeast.

4.4. Currents, Tides and Waves

The currents in the Nacala-à-Velha Coal Terminal region are influenced by the South Equatorial Current, which when approaching the coast of Africa, is divided by the Mozambique Channel between Madagascar and the mainland, and along the east coast of Madagascar. These currents have southwest, reaching speeds up to 5 knots.

According to Chart No. 16311, published by INAHINA, the tides in Nacala Port are semidiurnal and the heights above Chart Datum are (meters):



Ship/Terminal

CHANNEL 13

4.5.2. Pilotage and Tugs

The pilot and tugs application are mandatory during maneuvers at Nacala-à-Velha Coal Private Terminal.

4.6. Anchorage

4.6.1. Outer Anchorage

The outer anchorage is located in the northwestern portion of the Bay of Fernão Veloso in location with reference depth ranging between isobathics 10 and 40 meters, as indicated in rectangular polygon (1 mile wide and 2 miles long).

This area is limited by a rectangle in the following coordinates:

A) Latitude: 14° 23,5' South Longitude: 40° 42,3' East

B) Latitude: 14° 22,8' South Longitude: 40° 41,5' East

C) Latitude: 14° 21,3' South Longitude: 40° 42,8' East

D) Latitude: 14° 21,9' South Longitude: 40° 43,6' East

4.6.2. Inner Anchorage

The location of internal anchorage providing security and adequate depth to Nacala-à-Velha Coal Terminal will be set in agreement between the Master of the ship and the pilot of the maneuver. It is forbidden to navigation and anchoring in Nacala Bay without assistance local pilot station. The recommended position for ships of light draft, in ballast, waiting berthing at the Terminal is:

Latitude: 14° 23,12' South Longitude: 040° 39,28' East

4.7. Access Channel

The navigable safe way to Nacala-à-Velha Coal Terminal has extension of 5.5 nautical miles in direction south south west (SSW).

The average width of the channel in almost the entire length, it is 800.00 m, and the minimum width found is 450.00 meters.

The minimum natural depth of channel is 22.00 meters.

4.7.1. Turning Basin

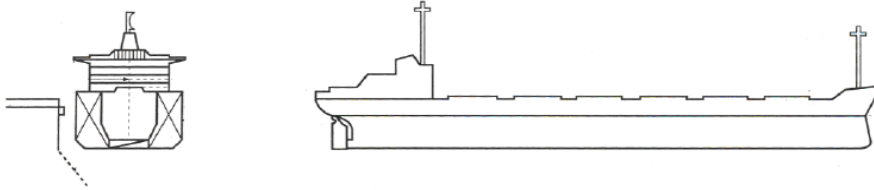
The turning basin is bounded to west by the line mooring and measures 350.00 meters radius. The minimum natural depth is 22.00 meters.

4.8. Berth

4.8.1 Operational Characteristics

Length of pier: 435.00 meters

Maximum length of berth: 360.00 meters



Ship`s Limits

Length Overall: 302.00 meters

Maximum Beam: 51.00 meters

Maximum draft: 18.70 meters

5. Environment

5.1 Marine Environment

Vessels must observe the rules of coexistence and preservation of the marine environment described in the relevant legislation, during ship`s stay at port.

Diving services for cleaning the hull or propellers are not allowed.

5.2 Ballast Water

Discharge of clean ballast water is allowed in the Port area provided the Master complies with following procedures:

- Management of ballast must be in compliance with the guidelines for controlling and management of ship's ballast water as per International Convention for the Control and Management of Ships' Ballast Water and Sediments.
- Master must have full acknowledgement about the good quality of the water, free of any kind and quantity of oil and without any pathogenic organisms or bacteria and/or exotic/unwanted species.
- Ballast water cannot be discharged on the quay, shiploader railway or electrical facilities.
- Master must assure that the vessel is provided with necessary protection in the top side tank outlets in order to avoid any kind of damage or stoppage on loading operation.

5.3 Sewage

The discharge of sewage directly into the sea is prohibited. The sewage treatment system should be kept operating during the ship's stay at Port.

6. Security

This Port operates in accordance with international norms and standards of safety ISPS (International Ship and Port Facilities Security Code).

7. Personal Protective Equipment

The use of personal protective equipment (PPE) is required.

Attach 1: Consolidated framework of terminal & ship

PIER

CHARACTERISTICS		COMMENTS
Length of pier	435.00 meters	Concrete pier extension
Maximum berth length	360.00 meters	Extension between fenders
Ship's air draft	21.00 meters	Maximum air draft allowed
Maximum tide	+ 4.32 meters	Nautical Chart
Medium tide	+ 2.25 meters	Nautical Chart
Minimum tide	+ 0.26 meters	Nautical Chart

VESSEL

CHARACTERISTICS	RANGE OF VESSEL'S SIZE (°)	
	FROM	TO
Overall length	180.00 meters	302.00 meters
Beam	30.00 meters	51.00 meters
Summer Deadweight	30,000 metric tons	210,000 metric tons
Sailing draft	12.00 meters	18.70 meters
Arrival draft	5.40 meters	8.50 meters
Free board (minimum)	5.00 meters	5.00 meters
Free board (maximum)	12.60 meters	16.50 meters
Air draft: Maximum admitted (HAT Reference)	17.10 meters	21.00 meters
Depth Extreme	18.00 meters	25.00 meters
Berthing Displacement (in ballast) (°)	30,000 metric tons	131,250 metric tons
Berthing Displacement (extreme) (°)	50,000 metric tons	218,750 metric tons
Sailing Displacement (extreme) (°)	50,000 metric tons	218,750 metric tons
Cargo Hold's Volume (maximum)	50,000 m ³	205,000 m ³
Cargo Weight (maximum)	40,000 metric tons	184,500 metric tons (°)
Cargo Handling characteristic	Coal specific weight: 900 kg/m ³ (average estimated)	
<p>Observations:</p> <p>(1) Clarification: Vessel's type represents a great variety characteristics of pure bulk carrier fitted for loading at Nacala Coal Terminal – Mozambique.</p> <p>(2) The displacement refers to ship's total weight, including light ship, consumables, cargo and ballast.</p> <p>(3) With full usage of cargo space, stowage factor reduction not considered.</p> <p>Others:</p> <p>a) Maximum age of vessel should not exceed 25 years old;</p> <p>b) Hatch coaming minimum dimension: Length 12.00 m with total area of 140 sq meters.</p>		