

THE AMAZON

The Amazon region of Brazil has experienced a marked increase in shipping activity in recent years on account of the exportation of products such as iron ore, bauxite and grains, especially soyabeans and corn.

As this region with its complexities due to sheer size and the peculiarities of its various ports and terminal is still basically unknown, or at least confusing to most, Williams Brothers has prepared this report covering the major ports and some aspects of the Amazon region to provide some useful, basic and clarifying information for those whose vessels will trade in these ports. However this information may change without notice, not only because of authorities but in view of the changing river conditions, and therefore all information should be considered as a general guideline only and must be confirmed with local agents before vessels arrive in these ports.

The map of the Amazon region below is our point of departure for this report:



ENTERING THE AMAZON

All vessels must enter the Amazon River through the North Bar (called Barra Norte in Portuguese) and proceed to the Fazendinha Pilot Station which is 174nm from the North Bar. The position of the Fazendinha pilot station is: Lat. 00 04'30"S and Long. 051.06'3"W.

Vessels are not obliged to use pilots from the North Bar to Fazendinha (as per present regulations) and if they have up to date Nautical Charts on board (200, 201, 202, 203, 204, 205, 206 e 210) they will not normally encounter any problems. Information is also provided by the Brazilian Navy regarding the last updated position of buoys for the entrance to the Amazon River (Canal Grande do Curuá – Great Channel of Curua). This channel is usually marked with pairs of lateral light buoys.

As per official information, the tidal current at the North Bar flow towards the SW during the flood tide and to the NE during the ebb tide, at about 5.5 spring knots. About 5 hours after the high tide or low tide, the current flows in the NW and SE directions respectively.

Also in accordance with present regulations, pilotage is compulsory for navigating the entire river after Fazendinha and two river pilots board at the pilot station there as they work in pairs to provide around the clock assistance to Master.

The mouth of the Amazon River is approx. 320 kilometers wide and Marajo Island, stretching across the mouth, is larger than Switzerland (area of the island = 49,600 sq km) while the mouth of the Para River, giving access to the ports of Belem and Vila do Conde, is east of Marajo Island.

As per Brazilian Navy information, the maximum draft to cross the North Bar (normally when leaving the Amazon) is 11.50 meters.

EXCHANGE OF BALLAST WATER AND BUNKERS

Vessels entering the Amazon must change ballast water twice as per local regulations. The first exchange must be made at least 200 nm from the Brazilian coast and on passing the North Bar channel all vessels must immediately start the second exchange until fully completing the exchange of salt water for fresh water.

On the Amazon, bunkering is only available at Belem or Manaus.

INSPECTION BY AUTHORITIES

Brazilian authorities inspect all vessels entering the Amazon at the Fazendinha pilot station. The authorities work commercial hours, that is from 08:00 to 12:00 hours LT and from 14:00 to 17:00 hours LT.

Those vessels that do not arrive within these working hours must anchor in the nearby Macapa anchorage until being inspected and cleared by authorities to proceed their voyage.

PORT OF SANTANA

The port of Santana is located about 6 nm from Fazendinha and shipments of iron ore in bulk were loaded 24/7 all year round from the Anglo American Terminal until two years ago, in 2014, when the river bank where the iron ore was stocked collapsed and most of the shiploader fell into the river, which resulted in the loss of 6 lives. The terminal has never been rebuilt and another company which continued shipping iron ore from the Santana commercial berth has since gone bankrupt.

Recently shippers called Fiagril have started operations at the public CDSA Terminal to ship soyabeans and corn cargoes from this port. To the writing of this report, only one vessel has actually loaded a cargo of 25,000 MT of cargo in early September 2016.

The maximum draft of this terminal is 11.50 meters.

PORT OF SANTAREM

The port of Santarem is located 474 nm from the North Bar at the confluence of the Tapajós and Amazon Rivers.

Besides general cargo, soyabeans, soyabean meal and corn are shipped by Cargill Agricola from their private terminal which commenced operations in 2003. An average of 7 vessels load grain products at this terminal per month, where the maximum depth is 11.50m.

PORT OF JURUTI

The port of Juruti is located on the right margin of the Amazon River 609 nm from the North Bar and is dedicated to the shipment of Metallurgical Grade Bauxite in Bulk

The port is owned and operated by Alcoa and consists of one berth which is 220 meters long equipped with mooring dolphins and fenders.

Vessels calling at Juruti must conform to the following port limitations to be always afloat:

- Maximum LOA of vessel: 242m
- Maximum beam of vessel: 32.2m
- Maximum draft: 11.58m
- Maximum DWT: 81,600 MT

No tugboats are available at this terminal to assist with berthing and unberthing operations and all such manoeuvres are only permitted in daylight.

The terminal operates 24hrs SHINC and the final cargo loaded for the B/L is by draft survey.

Part of the bauxite cargo shipped from Juruti is stocked in the open and part of this cargo is not washed and may contain a larger quantity of clay which retains more water, leading to high TML.

According to the Cargo Declarations issued by shippers Alcoa, the bauxite shipped from this port is a Group A cargo as per the IMSBC Code, with TML of 14.27% and a moisture content of 12.50%. The stowage factor is between 0.6–0.7 cubic meter per ton. The angle of repose non applicable.

The loading operation at Juruti is by means of a conveyor belt system and an automatic shiploader and the bauxite cargo is stocked in an unpaved and open stockyard.

Surveyors are allowed to enter the stockyard to visually inspect the stockpiles prior to loading operations, however they are not allowed to dig into the piles of cargo to collect samples for safety reasons. Samples may be collected from the automatic sampler on the shiploader during the loading operation.

If Owners or the Club should require further analysis of cargo samples at an independent laboratory, due to the weight of samples required for TML testing, they must be sent by boat to Santarem and then to the only independent qualified laboratory in the region at Santana by plane to Belem and then back to Santarem. This takes in the region of three days.

To reach Juruti to attend a vessel, our surveyors must travel from their base in Santana to Santarem by plane and then take a 5 hour trip by motor launch to Juruti. The motor launch leaves for Juruti once a day at 5 am.



Berth and shiploader at Juruti



Shiploader



Bauxite stocked in open unpaved stockyard



Condition of the stockyard



Close up of the bauxite cargo



Close up of the bauxite cargo

PORTO TROMBETAS

The Porto Trombetas Bauxite Terminal is situated on the right bank of the Trombetas River which is a tributary on the left bank of the Amazon River. This terminal is located 606 nm from the North Bar and 60 nm from the confluence.

There is only one berth at Trombetas, located on the Trombetas River, a tributary of the Amazon. the operations are uninterrupted and while one vessel is loading, the next vessel is authorized to come up the river and anchor off the port. The bauxite is loaded by shiploader.

The maximum allowable LOA of vessels loading at Trombetas is normally 245 m and breadth 40m.

The maximum sailing draft from Trombetas is also 11.58m.

The only cargo loaded at Trombetas is bulk bauxite cargo, which the shippers and owners of the port (MRN-Mineração Rio Norte) separate into “wet” and “dry” bauxite.

The bauxite arrives at the port in train cars and the cargo is previously processed (crushed and washed) at the mines far back in the jungle to remove dirt and other foreign materials. The wet bauxite is stocked in piles in the open and exposed to the elements. This cargo is usually destined to Brazilian and Chinese ports.

The dry cargo is dried mechanically and stocked in enclosed warehouses in the port and this drier cargo is normally destined to ports in the USA, Canada and Europe. The dried cargo is also eventually used to improve the condition of the "wet" bauxite by loading the drier cargo on top of wetter cargo in stow when the MC is above allowable limits.

MRN normally state that the maximum MC of the bauxite loaded is 10%, with FML of 12% and TML of 11%, however in a recent attendance at that port, our surveyors learned that the laboratory of shippers MRN is not certified by the DPC to issue either MC or TML certificates for their cargo. In that particular case, the shippers had to reissue the cargo certificates when it was observed that they had classified their cargo as Group “C”, but that as per the IMO Code, it was actually a Group “A” cargo.

Our surveyors have only succeeded in obtaining authorization to enter this port in recent years as MRN owns the port and town of Trombetas and all those arriving in the town by plane or boat must have previous written permission from MRN. Without this authorization, the visitor must return to Belem immediately on the same plane, which arrives and leaves Trombetas once a day.

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Porto Trombetas bauxite loading berth



Sampling tower on shiploader

PORT OF ITACOATIARA

The Hermasa Terminal operated by shippers Amaggi is located in Itacoatiara which is about 270 km from Manaus by road and is 108 nm downriver from Manaus. This port is 924 nm from the North Bar.

The cargoes shipped from this terminal is soyabean products, including soyabeans, soyameals/pellets and soyaoil, and corn.

Loading is around the clock SHINC.

The depth of the terminal can reach up to 42 meters during flooding and Panamax vessels can berth alongside, however to cross the North Bar on leaving the Amazon, the maximum draft is 11.50m.

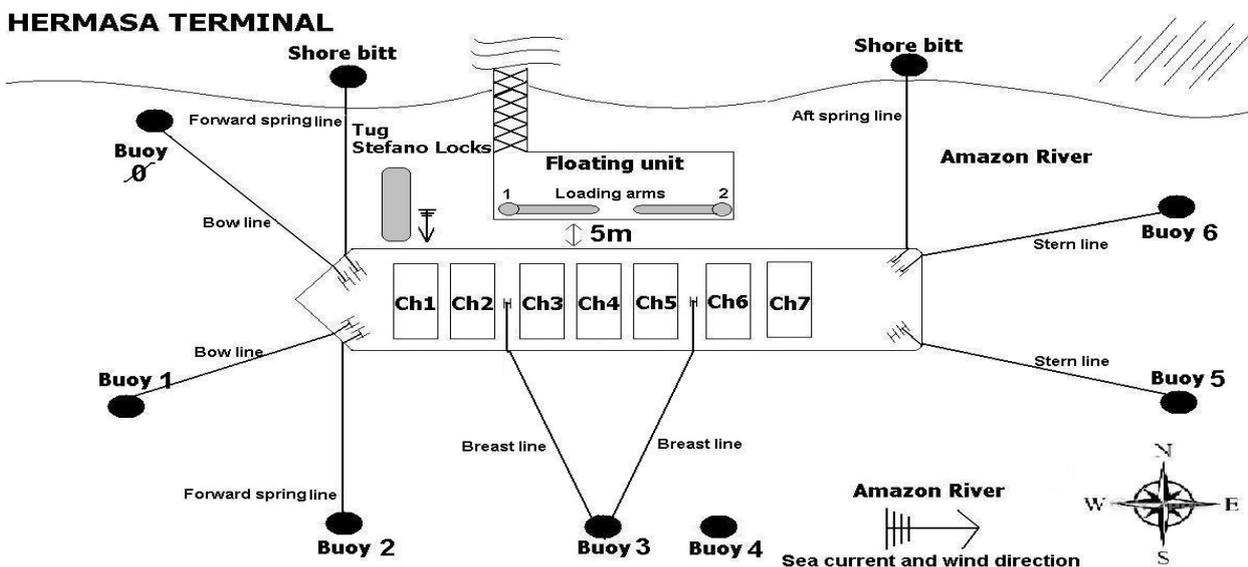
In this terminal, the cargo is loaded aboard either from river barges or from warehouses ashore by two fixed shiploaders and a conveyor system. The barges berth under the shiploader structure of the terminal and the cargo is then transferred to the vessel by the conveyor belt system of the shiploader. From the warehouses, the cargo is transferred by conveyor belts to the floating pier, which measures 32m x 90m, where a fixed shiploader is mounted.

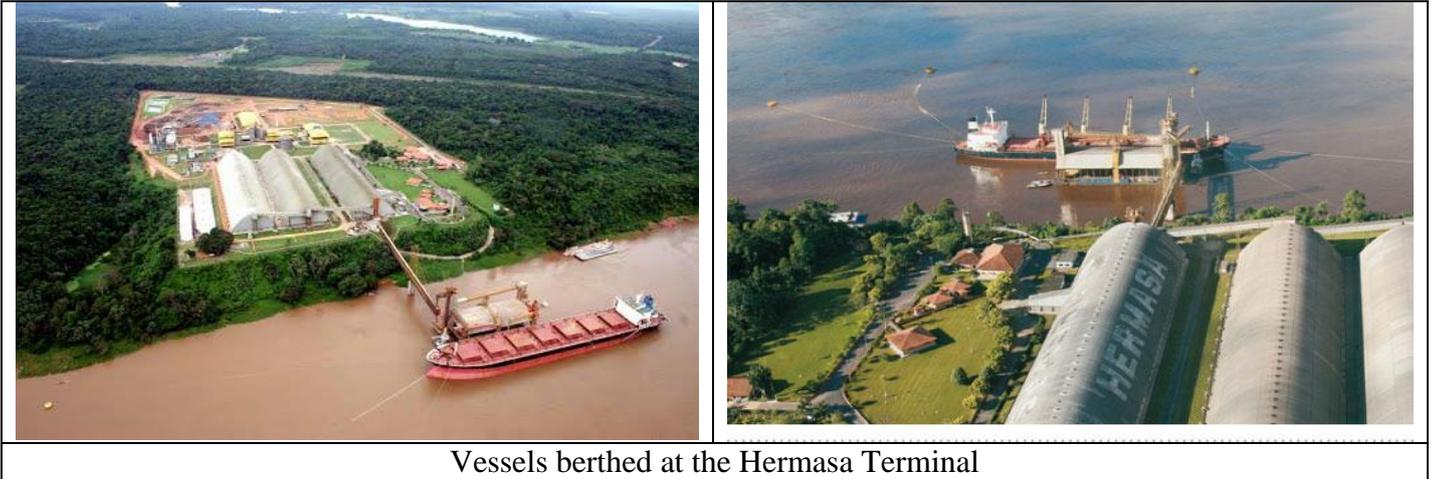
The shiploader has two arm arms, one has an outreach of 25m (No.1) and the second has an outreach of 28m (No.2). Both can move 30° up/down and swivel 180 degrees on the base. The maximum loading rate is 1,500 MT/hour. In the case, all of the cargo was loaded from barges.

Considering the huge variation in the level of the Amazon River (30m to 50m depending on the rainy/dry seasons), the shiploader was built on top of a floating unit which is kept steady by six anchors and is linked to shore by a bridge.

To comply with the cargo plan, vessels may need to shift forward and aft by the mooring ropes during the operation. During the rain/flooding season from November to June, river currents are recorded to be an average of 3 knots, although they may peak at 4-5 knots in the area of the terminals.

While vessels are loading, they do not actually berth alongside the floating unit but rather they moor starboard side to about 5-10 meters away from the floating unit to a system of seven buoys and two bitts ashore. A tugboat stands by full time with a line passed to the vessel's bow, as per the sketch below:





Amaggi has also recently started operating a new floating loading berth in the river west of the Hermasa Terminal to provide a second berth and increase capacity which is called Maquira Terminal II, located west of the Hermasa Terminal, as per the photo below. The barges come alongside and the cargo is transferred to the ship by the crane on the floating berth equipped with a grab. The vessel must shift alongside during the operation to reach all holds.



Surveyors attend from their base in Manaus which is about 5-6 hours by car from Itacoatiara.

PORTS OF BELEM / VILA DO CONDE/BARCARENA

Access to the above three ports is through the Pará River channel where the minimum depth during low tide is 10.5m. The Espardarte pilot station is located at the mouth of the Pará River and all tanker vessels are required to pick up a pilot at this pilot station to proceed to Belem, Vila do Conde/Barcarena. All other vessels, unless restricted by draft, may proceed on their own towards the Mosqueiro pilot station farther down the Pará River channel where they are also required to pick up the pilot to continue onto the mentioned ports.

The port of Belem is located 120km from the Atlantic Ocean and vessels calling at this port normally operate general cargoes and containers.

The port of Vila do Conde is located in the town of Barcarena, about 2 hours by car from Belem. There are seven berths distributed in three piers with internal and external berths. Pier 1 (berths 101 and 102) operates general cargo. Bauxite cargo loaded at the port of Trombetas for receivers Alunorte is discharged at external berth 101 while alumina is shipped from internal berth 102. Pier 2 (berths 201 and 202) also operate general cargo. Pier 3 includes berths 301 and 302. External berth 301 is the preferential berth for containers and internal berth 302 is destined to smaller vessels, especially livestock carriers.

In October 2015, a livestock carrier called the Haidar sank alongside berth 302 with 5,000 head of cattle on board and to this time the wreck has still not been removed after it was abandoned by its owners so that this berth is still interdicted.

Separate from the port of Vila do Conde are three grain terminals located in Barcarena: TGPM, Bunge and Hidrovias Terminals. Each has one berth and operates soy products and corn.

Forest products (logs, wood chips, etc.) are also normally shipped from most Amazon ports (except Trombetas and Juruti).