

Marine Patriot Bunkering Services



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SEALAND MARINE

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Project Description

Bunkering services is not new to Guyana's marine economy but it's significantly underutilized. International bunker market is characterized by high volumes and low margins; it's challenging to deliver heavy fuel oil safely, efficiently, and in compliance. Because of these challenges, you have only one real way to improve your profitability: sell more fuel. Conversely local bunker markets are high margin but heavily regulated.

Sealand Marine aims to provide a bunker service that moves quickly to accommodate as many customers as possible, whilst minimizing risks of environmental pollution.

Our bunkering process will utilize manual measurement techniques but with a trained staff we aim to ensure efficiency, reduce lengthy onboard time and curtail safety risks. Additionally, these methods will reduce opportunities of human errors, costly and time-consuming client disputes.

Sealand Marine will conduct bunkering in ports and at sea under normal weather conditions. It is our expectation to be able to perform ship to ship (STS) bunkering, where one ship acts as a terminal whilst the other moors. Also stern line bunkering, although risky during bad weather, our crew is skilled and knowledgeable to perform this task. In terms of our bunker we intend to begin supplying two principal types of bunkers i.e. diesel fuel and fresh water. The current bunkering vessel in our fleet, the Marine Patriot is licensed to carry 700,000 litres of diesel fuel. Additionally, the vessels tanks to facilitate storage of fresh water exceeds 100,000 litres.



Marine Patriot is manned by a seven (7) member crew. Safety of our crew, vessel and environment is paramount for the management of Sealand Marine. Given the need to ensure the integrity of our bunkering services, we have established an array of safety measures that must be rigidly adhered to by our crew.

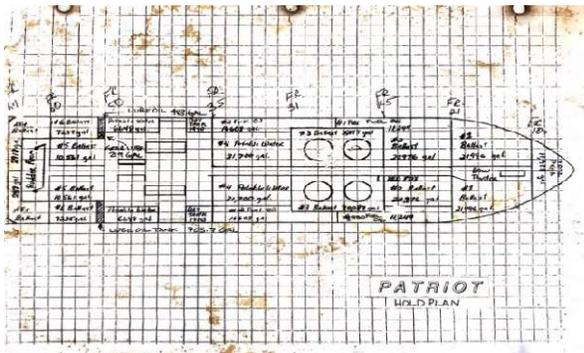
With today's ultra-efficient marine engines, bunker quality is critical to efficient fuel consumption and minimizing engine wear and tear. All vessels receiving bunker from Sealand Marine can be assured of the quality and quantity of bunker, as well as safe and efficient delivery.

Project Design

Location

Sealand Marine will be operating in the Essequibo River, although there are many competitive suppliers within those waters, we expect that our services will be able to aggressively operate within all ports along and within that river.

Our vessel will be moored 2 miles in from the mouth of Essequibo River, within the Hydronic, Parika area.



The Vessel

The Marine Patriot, owned by Sealand Marine, was first commissioned in 1973. The vessel is 166ft Long, 40ft Wide with a 12ft Draft. It has ten (10) compartments for bunker storage of which six (6) will be used for fuel storage and four (4) for fresh water storage.

Transfer equipment

Quality of equipment is very important to ensure safety of the crew, vessel and the environment. Sealand Marine will require the receiving vessel to have installed efficient and safe emergency shutdown systems. The hoses on Sealand Marine vessels are equipped with a drip-free quick coupling and a breakaway unit, which, in case of an emergency, breaks off without any spill.

Maintenance of Vessel

Marine Patriot, Sealand Marine's lone vessel in available for bunkering services currently will undergo regular and constant monitoring of operating systems in order to verify its smooth working. The monitoring aspect would involve checking of the installed equipments and their continuity in operations. Sealand Marines bunker ship will ensure all fuel spill detection equipment on our vessel is certified and in good condition.

The fuel bunkers follow the protocol of saving and preserving the marine ecosystem by minimizing and not wasting even a single drop of fuel. This is done by making sure that the bunkers that are used for fuel bunkering are not over-used. As in case of any over-used equipment, it would mean more input of fuel and thereby more amount of exhaust and other harmful substances into the river atmosphere.

It is therefore important that necessary precautions are taken while providing marine bunkering services, both at sea and at ports.

Project Size

Capital Investment

The marine patriot is already equipped with relevant measuring equipment and storage facilities on the vessel. The vessel which was first commissioned in 1973, throughout its life operated as a supply vessel. Upon acquisition, the vessel was equipped with Furuno brand navigational



equipment. Sealand Marine has invested an additional \$25,000 USD to upgrade and further enhance the equipment acquired with the vessel.

\$17,000 USD was spent on inspection of the vessel to ensure sea worthiness and operational capacity for Guyana's waters. Sealand Marine intends to expend a further \$58,000 USD, to improve the efficiency and operational capacity of the Marine Patriot.

Crew/Staffing

The Marine Patriot will be staffed by a crew of seven (7). The crew will include a captain, an engineer, a cook with training in emergency medicine and four (4) deck crewmen.

Bunkering Capacity

The Marine Patriot will carry an estimated 500,000 litres of diesel fuel and 100,000 litres of fresh water as bunker supply. Those supplies would be sold via vessels within the Essequibo River, Storage Tanks along the Essequibo River, in open waters and Trucks at various ports along river (once properly equipped to safely accept bunker).

Plan to Mitigate Environmental Impact

1. The first thing that has to be established before any bunkering procedure is to identify the person in charge (P.I.C) for both the receiving and the delivering vessel. Those people must have full control over the vessel during the transfer.
2. Prior to bunkering, usually a pre-bunkering meeting with all individuals involved is held, in order to identify risks, discuss plans and agree upon a fixed set of operating procedure. Before the process begins, it must be ensured that all the associated individuals are adequately prepared and have been allocated to their designated jobs. Furthermore, one individual from the team should be held responsible for providing safe access / passage to and from the barge.
3. The P.I.C, which in most cases is the Chief Engineer, is responsible for the preparation of the bunkering plan. It includes estimated filling grades and respective quantities, designated filling tanks, filling sequences, topping-up, emergency procedures and crew responsibilities.
4. Crew members assigned to bunkering operations should not have any other duties during operation. It's critical to emphasize to the crew that if anything seems to be out of order, they have a responsibility to stop or even to shut down the bunkering operation and inform the Officer in charge.
5. The ship must be ready for any fuel transfer before the actual process. All associated pipes and tanks should be sounded and prepared. Warning signs must be placed and the vessel's personnel to be briefed. Both the bunker station and its trays must be cleaned, and the deck scupper must be plugged. All necessary overboard valves should be closed, and oil absorbing material should be placed at different strategic / key locations. All tank ventilation and sounding piping system should be checked for being open and closed respectively and all the high-level alarms on each tank are functional.
6. After an initial compatibility check of the ships, a mooring study is done, and a checklist of all procedures is followed and ticked off by the respective crew.

7. When mooring and fendering arrangements are agreed upon, by captains of both vessels. Bunker vessel is positioned alongside the receiving ship and the final procedures are checked and ticked off.
8. The hose is then connected, a leak test is performed, the water curtain installed, and the emergency shutdown systems are re-checked. After this the bunker operation may commence. After the operation is completed, the hose and equipment need to be purged before they are disconnected.
9. The hose should be properly supported to avoid undue strain on manifolds and rails. **Pressure gauge and tank levels** must be closely monitored, and associated valves be operated with low flow rate during changing over tanks.
10. The quantity and flow rate of fuel oil is monitored throughout the process from the control room. On completion of loading, all hoses and lines should be drained to the tank or if applicable, back to the barge, prior to disconnection.

