Vessel Due Diligence Process

The MV Blue Puttees and MV Highlanders were designed, built, and tested to exceed today’s stringent International Maritime Organization’s (IMO), a regulatory body of the United Nations, international ferry standards for passenger ferries. An extensive amount of technical and project management oversight was involved to ensure vessel modifications were completed in accordance with SOLAS (Safety of Life At Sea), considered the most important internationally accepted convention on maritime safety. The ships hold all necessary certificates from DNV (Det Norske Veritas) Classification Society, a non-governmental organization that establishes and maintains technical standards for the construction and operation of ships and whose inspection criteria are in accordance with SOLAS, as well as Canada’s Regulatory body, Transport Canada. These organizations have certified the ships as safe, stable vessels. Below is an overview of the due diligence taken during the conversion process.

Concept & Design

In 2005, Oceanic Consulting Corporation completed a technical review evaluating the maneuvering with the same characteristics of the MV Blue Puttees. Their report concluded that such a ship is a viable option for Marine Atlantic and in particular is capable of operating in Port aux Basques in high winds.

Marine Atlantic had a 200 meter vessel simulation model developed in conjunction with the Marine Institute (Fisheries and Marine Institute of Memorial University of Newfoundland) to verify the maneuvering characteristics. The model data was entered into the Marine Institute’s state-of-the-art vessel simulator and was eventually used as a training tool for Captains of Marine Atlantic vessels.

The Bergen Ship Design group, who has over 100 years of experience in the ship building industry, did the initial Naval Architect design of the MV Blue Puttees and MV Highlanders. This group completed the conceptual design of the converted vessels.

Deltamarin, one of the largest and most respected Naval Architect firms in the world specializing in consulting, design and engineering completed the Naval Architect component of the conversion and completed the final design of the MV Blue Puttees and MV Highlanders. These drawings are engineered stamped and approved by DNV, one of the world’s largest classification societies that was founded in 1864.

There are two authorities that review and approve the Naval Architect drawings. They are the Classification Society and Flag State. The Classification Society approves all structural & machinery drawings, while the Flag State approves stability drawings & various plans. In Holland, the Flag State has delegated this responsibility to the Classification Society.

Vessel modeling / simulation is completed before the vessel goes to the shipyard. Deltamarin completed numerous loading simulations based on Marine Atlantic traffic patterns and seasonality of the service to confirm stability calculations of the converted vessel.
Vessel Conversion

Stena RoRo, a division of Stena AB and one of the leading innovators of the roll on / roll off vehicle concept and charter vessels all over the world, managed the vessel conversion process with the Lloyd Werft Shipyard. Stena has over 70 years of experience in the Marine Transportation business.

Marine Atlantic retained the services of V. Delta, an international company providing professional services to the cruise and ferry industry, to provide project management and marine technical oversight for the vessel conversion project.

Lloyd Werft, is recognized as a world-class vessel conversion yard and is accredited for first-class quality work, and experienced workers located in Bremerhaven, Germany. The Lloyd Werft shipyard has more than 100 years of experience in repair, conversion, modernization and completion of every kind and almost every size of ship. This includes passenger ships, ro-ro vessels, cargo ships and ferries, bulk and oil carriers, LNG-tankers, chemical product tankers, container ships, refrigerated vessels, crane ships and different types of offshore technology. The yard also carries out maintenance work on destroyers, frigates, mine sweepers and auxiliary vessels of the German Navy.

Daily inspections of all work ongoing in the shipyard were attended by the Classification Society, Stena RoRo Technical Staff, V.Delta Marine Technical Resource, Lloyd Werft Quality Control Officers, Marine Atlantic Staff (when onsite) and the specific sub-contractor completing the work.

During the final phase of construction the shipyard conducted Sea Trials on the vessels. Sea trials are conducted to measure a vessel’s performance and general seaworthiness. Testing of a vessel’s speed, maneuverability, equipment and safety features were conducted. In attendance were technical representatives from the shipyard, DNV, Steno RoRo, V.Delta Marine Technical resources, and Marine Atlantic representatives. A successful sea trial was critically important for certification and Marine Atlantic’s acceptance of the vessels.

Regulatory

Once all the inspections were completed and passed, DNV issued a variety of Vessel Certificates certifying the vessel is safe to operate as a RoPax vessel. DNV in Holland inspected and certified both vessels in accordance to Flag State requirements. Once the vessels arrived in Canada, DNV from Canada also inspected and certified the vessels.

Transport Canada (TC) inspected and certified the vessels. TC certificates include the Safety Inspection Certificate (SIC-16), Certificate of Registry, and Radio Inspection Certificate.
Training and Familiarization

Marine Atlantic crews completed a significant amount of training and familiarization related to the integration of the MV Blue Puttees and MV Highlanders.

- Marine Atlantic crews travelled to Holland for a two-week period to job shadow Stena crews on the vessels in operation;
- Bridge crew received training on the integrated bridge control system;
- Senior Officers participated in the inspection and vessel acceptance process in Germany;
- Senior Officers participated in vessel sea trials and received technical and practical training of the Becker type rudder system;
- Senior Officers made the trans-Atlantic crossing on the vessel;
- Once in Canada, the vessel spent more than two months in familiarization training and participated in the re-flagging process;
- Vessel Practice runs were made between Port aux Basques and North Sydney;
- Stena personnel with significant vessel experience have remained on the vessel as a support mechanism during the transition process. A Stena Chief Engineer will remain on the vessel for a full year;
- Crew received Safety Management System training and other safety training;
- Vessel crew participated in loading/unloading procedures, docking and maneuvering in Port aux Basques and North Sydney and
- External specialists provided Officers with training on the Valmarine Automation Systems for Machinery Control and Monitoring; Becker High Lift rudders; Ramp operations; and NAPA Stability Program.