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COAST GUARD RESPONSE TO

KATRINA

SEMPER PARATUS

Also in this issue:



Reflagging the *WestPac Express*

Partnerships at work.



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On charter to the U.S. Navy Military Sealift Command, the 101-meter, high-speed catamaran Theatre Support Vessel *WestPac Express* has successfully undergone reflagging into the U.S. fleet. The conversion of this foreign-built and flagged high-speed vessel challenged everyone involved to find partnerships that work. The *WestPac Express* stands as an example of what the marine industry and the U.S. Coast Guard can accomplish, working together.

Designed and built by Austal Ships of Western Australia (Figure 1), and originally designed and con-

structed to international commercial standards, the vessel is now operated by Hornblower Marine Services of Indiana. It has been deployed to provide logistical transport for the Third Expeditionary Force (IIIEMF) of the U.S. Marine Corps, based in Okinawa, Japan

The *WestPac Express* was designed and constructed in accordance with the International Code of Safety for High-Speed Craft (HSC Code) in force at the time of keel lay in August 2000. It was registered in the Republic of Panama on completion in July 2001 (Table 1).



Figure 1: The 101-meter, high-speed catamaran Theatre Support Vessel *WestPac Express*.

Military Deployment

Although originally designed and constructed with an expectation that the vessel would ultimately be employed in commercial ferry service in Europe, the *WestPac Express* was chartered by the U.S. Navy Military Sealift Command as the first Theatre Support Vessel to transport U.S. Marine Corps and their equipment to exercises in the Western Pacific (Figure 2).

The vessel is based in Naha, on the Japanese island of Okinawa. It was initially chartered for a seven-month proof of concept charter to establish the viability of moving troops and equipment by high-speed craft. Previously, the Marines relied upon airlifts to move battalions from one island to another—a process that could take up to two weeks.

fully deploy one battalion, via aircraft, as each aircraft can only carry a limited number of troops. This extended deployment period also meant that time was wasted, while troops waited to get to, or return from, exercises. The ship-based approach means that the Marines are able to travel with their equipment, instead of flying separately and having to meet up with their equipment on site.

Birth of the Theatre Support Vessel

Unlike normal commercial ferry services, where crewmembers are rostered on and go ashore each night; operation in a military role requires that the vessel and its crew undertake extended voyages of up to 36 hours. In other words, the vessel needs to be manned and operated in a similar way to most ocean-going vessels, requiring the addition of accommoda-

tions onboard for the crew. This involved a redesign, adding sleeping cabins in a modified area forward, with additional cabins located amidships, where the duty free shop had previously existed, and a number of rest cabins aft.

Most high-speed ferries operate on regular routes to designated ports and terminals, where link-spans or ramps are provided to avoid the need to fit the vessel with more than a watertight door.

However, in the case

of the *WestPac Express*, there was a need for the vessel to have the flexibility to operate to very basic facilities in locations far from established ports and infrastructure. A large folding ramp was designed and fitted to the stern, to enable loading and discharge of vehicles and cargo (Figure 3).

The Challenge: Reflagging to the United States

As a condition of the three-year charter, Austal was required to reflag the vessel from Panama to the United States. Because this vessel is chartered to the Military Sealift Command, it is a merchant vessel that falls within the jurisdiction of the U.S. Coast Guard and is manned by a civilian crew.



Figure 2: The *WestPac Express* transports U.S. Marine Corps and their equipment to exercises in the Western Pacific.

There are many U.S. military bases on Okinawa, including those of IIIMEF. Thus, although approximately 17,000 Marines are stationed on the island, almost all regular training exercises are conducted off-island, at regular training locations on mainland Japan, Korea, Guam, the Philippines, and Thailand.

Training is a vital element in retaining battle readiness. For the Third Expeditionary Force, this has been characterized by high costs of over \$20 million per year, to engage the U.S. Air Mobility Command strategic lift aircraft to mobilize Marines and their equipment. These deployments typically require 14 to 16 days to

The Vessel

Conversion Process

Following an initial review of the Coast Guard regulatory structure and likely requirements, Austal held a meeting with the Marine Safety Center in Washington, D.C., to introduce the project and the vessel and to identify the magnitude of the tasks involved in reflagging. About 24 persons attended the meeting, including representatives of the Marine Safety Center, Coast Guard Headquarters, and the Coast Guard National Maritime Center. In addition, there were two representatives from Austal USA, two from Germanischer Lloyd, and two observers from the charterer, Military Sealift Command.

One aspect that concerned the Coast Guard was the ability of the vessel to perform its military role, while still operating within the constraints of the HSC Code. Austal and the Military Sealift Command presented a plan that would clearly define the role of the vessel and types of cargo carried.

The Review Process

Coast Guard regulations require that all materials and equipment installed on U.S. flag ships must be Coast Guard approved or comply with U.S. standards. A literal interpretation of this requirement would have meant the extensive replacement of materials, fittings, and equipment already onboard—a very expensive and time-consuming process.

Austal gathered comprehensive supporting documentation with regard to the design standards of the *WestPac Express*, since the vessel was designed and built with operation in a European region in mind. So although Austal's records and documentation for the ship were extensive, they were largely based on Australian and European standards such as BS and DIN. This created a significant hurdle, namely trying to identify U.S. standards that were equivalent to the Australian and European standards. In many cases, Austal contacted the original suppliers and manufacturers to assist in identifying equivalencies. Where this was not possible, extensive documentation and

Principal Dimensions

Length Overall	101.00 meters
Length (Immersed hull)	88.70 meters
Beam (Moulded)	26.65 meters
Depth (Moulded)	9.40 meters
Hull Draft (Approx.)	4.20 meters

Vehicle Deck Clear heights

Center Lanes	4.60 meters
Side Lanes	2.70 meters
Mezzanine Lanes	2.00 meters

Payload & Capacities

Passengers	970
Vehicles 152 HMMWVs or 12 AAPs and 20 LAVs
Maximum Deadweight	750 tons

Maximum Axle Loads

center lanes (dual wheels)	15.0 tons
(single wheels)	12.0 tons
side lanes	3.0 tons
mezzanine lanes	1.2 tons
Fuel	160,000 liters
Long Range Tanks	240,000 liters

Propulsion

Main Engines	4 x Caterpillar 3618 4 x 7,200 kW @ 1,050 rpm
Gearboxes	4 x Reintjes VLJ 6831
Waterjets	4 x KaMeWa 125 SII

Performance (with Ride Control Fitted)

Speed (500t DWT, 90% MCR)	36 knots
Fuel Consumption (approx.) @ 90% MCR	5.3 tons/hr

Table 1: Principal particulars of *WestPac Express*.

¹ HMMWV (High Mobility Multipurpose Wheeled Vehicle); AAPV (Amphibious Armoured Vehicle - Personnel); LAV (Light Armoured Vehicle).

extracts from standards and manufacturers' technical data were submitted with the drawings.

Similarly, most of the materials and equipment installed on the vessel carried certification from various classification societies or under the EU Wheelmark approval regime and, in some cases, Australian or European test authorities. In the majority of cases, the Coast Guard did not automatically accept these approvals. However, given the unique circumstances involving an existing vessel that was fully classed, acceptance was in some cases granted on a for-this-ship-only basis.

FEACT

The U.S. Coast Guard Far East Activities (FEACT), located on Yokota Air Base near Tokyo, Japan, performed the role of the Officers in Charge, Marine Inspection (OCMI) for this project, a role it undertakes with most Coast Guard matters within the Far East and Australasian region.

The OCMI's principal role in this case was to undertake inspections of the vessel to verify conformance with the plans that had been reviewed by the Marine Safety Center. Coast Guard inspectors took a particular interest in the *WestPac Express*, because it was a high-speed ferry, operating according to the requirements of the HSC Code, and because of its role transporting U.S. Marines.

This was reflected in the requirement that the operator, Hornblower Marine Services, had to develop a joint operating agreement (JOA) to be accepted by all parties involved in the operation of this vessel.



Joint Operating Agreement

The intent of this JOA was to join together all of the principal parties involved in the operation of the *WestPac Express*—AAA Shipping No 1 LLC (the ship owner), Austal Ships (the bareboat charterer from the owner), Hornblower Marine Services (operator and owner's representative), the Coast Guard, Military Sealift Command, Military Sealift Command Far East, and III Marine Expeditionary Force.

While each party is expert in its own field, each did not necessarily understand the limitations and constraints associated with the operation of a high-speed craft under the HSC Code. Hence, the OCMI insisted that there be an agreement, signed by all parties, that clarified their shared responsibilities for the operation of the *WestPac Express*.

Although the JOA is in place, it is intended as a living document that can change, as the operation requires, subject to the mutual agreement of all parties. However, matters related to the regulatory requirements, safety, and security of the vessel may not be changed.

The JOA totals 18 pages and covers a number of operational topics, including

- chain of command;
- master's authority;
- voyage planning;
- vessel operating parameters;
- design characteristics and limitations;
- route restrictions;
- refuge;
- emergency evacuation procedures;
- work and rest periods;
- emergency support procedures;
- cargo operations and other operating parameters; and
- review by the Military Sealift Command and the Coast Guard, together with a communications matrix that lists the relevant representatives of each party.

Operations

Since the reflagging of the vessel to the United States, Indiana-based Hornblower Marine Services, Inc. has assumed the role of crewing, logistics, technical management, and day-to-day management of the vessel.

Manning

One of the first challenges in manning this vessel was the subject of high-speed craft type rating. Typically, in

foreign flag fleets, this becomes a function of the attending class society. However, as a U.S. flagged vessel, those high-speed craft endorsements would be a function of the U.S. Coast Guard Merchant Marine licensing system.

Based on the guidance found in National Maritime Center (NMC) Policy Letter 06-01, "Qualifications for issuance of type rating endorsements authorizing service on high-speed craft," the first hurdle was going to be the lack of a commercially available NMC-approved high-speed craft training program. Compounding this challenge, the existing guidance had not taken into account a nontraditional role for a high-speed vessel. The guidance was created to accommodate traditional ferry operations with established routes, not open ocean deployment.

The operators at HMS had to develop, and the staff at the NMC needed to approve, a prototype program. This significant project was going to set the standard for high-speed vessels to follow.

The next step was for Hornblower Marine Services to submit the program, along with its trainers and evaluators, to NMC for approval. The first draft of a high-speed craft training course, based on HSC 18.3, NVIC 5-95 and NVIC 6-97 was offered to NMC in March 2003. On May 20, 2003, the first open waters High-Speed Craft Training Program was approved by the Coast Guard. The speed at which this program was approved was largely due the work of the evaluators at NMC. They were willing to collaborate with HMS in the revision process, and they gave clear, concise, and consistent comments through the evaluation and editing process.

The vessel now operates with a U.S. crew complement, holding Coast Guard licensing, Standards of Training, Certification, and Watchkeeping (STCW) endorsements, and High-Speed Craft Type Rating Certificates, appropriate for an unlimited tonnage and unlimited horsepower ocean-going vessel.

The complement of 13 persons, stated on the Certificate of Inspection, is comprised of:

- one Master;
- one Chief Officer;
- three Deck Officers;
- one Chief Engineer;
- one 2nd Engineer;
- one Engineering Officer;
- three Able Bodied Seamen; and
- three Qualified Members, Engine Department.



Figure 3: As part of a redesign, a large folding ramp was fitted to the stern of the *WestPac Express*, to enable loading and discharge of vehicles and cargo.

The vessel's machinery plant is fully monitored and controlled from the engineer's console on the bridge as an unmanned engine room installation. Route lengths for the deployments vary from 500 to 3,000 nautical miles and are within the bounds stated on the ship's Permit to Operate, including the HSC Code requirement that the vessel should not operate more than four hours from a safe haven. Because of the prolonged operations required, the crew maintains a four-hour on, eight-hour off watchkeeping regime, to ensure continuity of safe operations.

This manning level is typical for similar ferries operating in commercial services and ensures adequate onboard resources to respond to any emergency scenario and to perform all mooring and berthing activities. Typically, these vessels have large supernumerary staffs that provide customer service functions. In times of emergencies, they augment the hard navigation crew in the areas of crowd control and evacuation. To duplicate this on the *WestPac Express* would have required an additional eight full-time crewmembers, which would have created a large burden on the owners and operators. In this area, the Coast Guard and the operator were able to find acceptable safe alternatives in operating the survival craft.

The vessel is equipped with four marine evacuation stations (MES), each outfitted with three inflatable life rafts. If the vessel is carrying a full load of passengers, it is necessary to be able to deploy all four stations, each requiring four persons to coordinate the evacuation.

To achieve this requirement, two selected passengers

(Marines) are co-opted into a ship's platoon, to assist the ship's crew at each station. These Marines receive basic safety training, including familiarization with all details of the MES equipment, plus details of emergency routes and procedures for passenger assistance. During times of emergency, they are identified with a green safety vest and are assigned to a specific MES station.

A Successful Conclusion

From the start of the reflagging process in July 2002, until the American Flag was raised aboard the *WestPac Express* on September 15, 2003, there had been a constant and intense effort to achieve the reflagging. More than 3,000 letters, emails, and faxes were exchanged in this process. A very large number of Coast Guard personnel at MSC, HQ, NMC, National Vessel Documentation Center (NVDC) and FEACT involved in the project provided the willing cooperation and assistance.

This effort was also assisted by the design and build quality of the vessel and the very extensive documentation that was available from Austal. As the end user of the vessel, IIMEF was very understanding and tolerant in scheduling work and inspections. Finally, the U.S. crew and the ship manager, HMS, were essential ingredients in the successful re-flagging of the vessel. They worked to maintain Coast Guard requirements and responded quickly to Coast Guard requests during marine inspections. All in all, this process was a great team effort!

About the author: Mr. Greg Brown is the vice president of marine operations at Hornblower Marine Services.