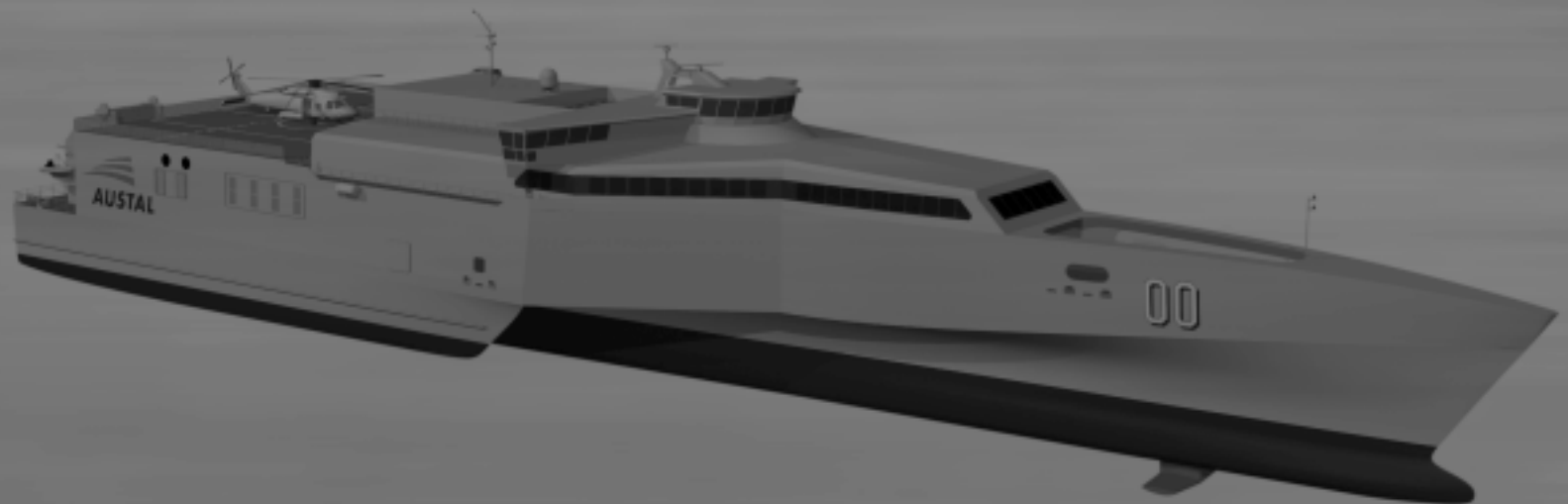




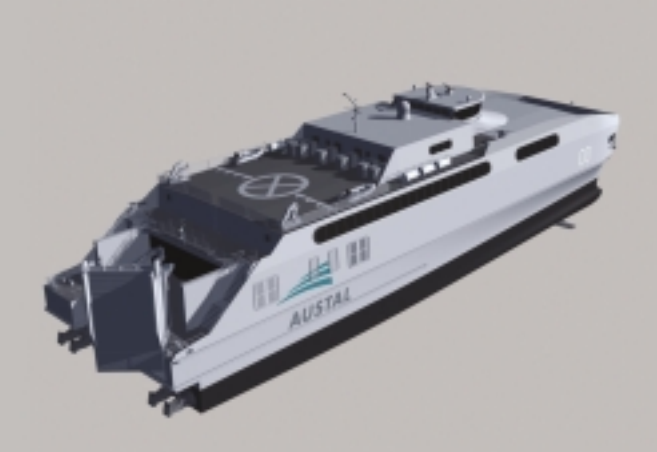
*HIGH SPEED MILITARY SUPPORT VESSELS*



“A FASTER, BETTER AND CHEAPER WAY TO DEPLOY THAN ANY OTHER WE HAVE HAD BEFORE. NOT ONLY HAS “WESTPAC EXPRESS” LIVED UP TO OUR EXPECTATIONS, IT HAS EXCEEDED OUR EXPECTATIONS. THE MORE WE WORK WITH THE VESSEL THE MORE WE FIND WE CAN DO WITH THE VESSEL.”

Lt. General Wallace C. Gregson  
Commanding General, III Marine Expeditionary Force, and Commander, Marine Forces, Japan, 2001 - 2003.





Just as they have successfully changed the face of the commercial ferry industry, Austal's high speed aluminium vessels can clearly enhance the speed at which the world's militaries respond to current and emerging threats. Theatre Support Vessels (TSV) have already proved a highly reliable method of transportation that is faster and more versatile than existing sealift and airlift while simultaneously reducing capital and operating expenditure. Drawing on its unrivalled experience in high speed aluminium vessels including purpose-designed naval craft, Austal is extending the TSV's impressive logistics attributes to create multi-role vessels that precisely meet commanders' latest needs for capacity and capability. Designed from the keel up to meet military and logistical requirements, all of these vessels are derived from well-proven technology that has seen constant evolution through in-service experience in both ferry and military applications. As a result they simultaneously deliver a low risk, high performance solution to a variety of operational challenges faced by both defence forces and other government agencies, making them a truly national asset.

## *TSV - TRANSFORMING THE WAY THE MILITARY MOVES*

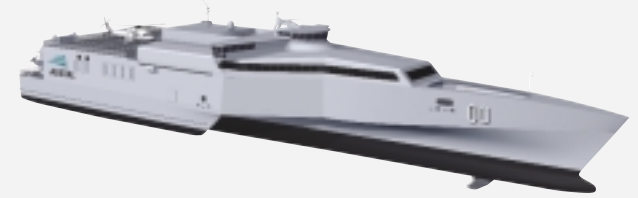
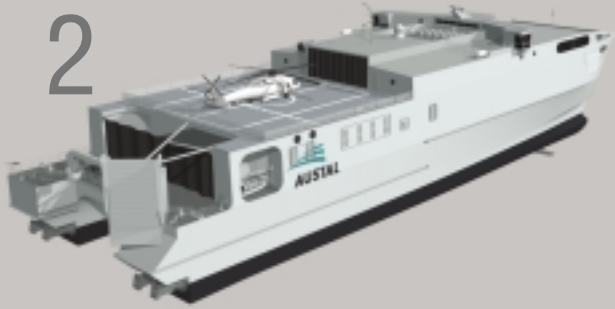
The Theatre Support Vessel puts transformational concepts into action. TSVs are the perfect complement to military forces which have to be highly responsive and agile. They have the capability to fully support the mission, giving the operational commander unprecedented flexibility with time and space considerations. Providing far reaching force projection and intra-theatre capabilities, TSVs can support every stage of the operational plan, enabling commanders to precisely and efficiently move, control and sustain significant combat power into areas that alternative transportation methods are unable to reach, and be on time.

Travelling at least twice as fast as conventional sealift ships, Austal's shallow draught TSVs can get closer to the fight. Their ability to rapidly load and unload troops, vehicles and equipment without shore-based infrastructure eliminates the conventional ship's dependence on deepwater ports or landing craft. This littoral environment is where the TSV excels, directly discharging troops and equipment in ports that traditional deep draught ships cannot enter. Even lagoons and beaches are ports for the TSV. These features create a force multiplier for the commander, especially in places where airlift is limited by the size and quality of landing sites available, or in instances where airlift simply cannot deliver the volume needed in time for conducting effective operations.

This ability to land forces in locations where they are least expected creates winning logistical and tactical advantages in warfighting situations. The qualities that make TSVs such a useful operational asset also provide benefits during times of peace, providing transport and logistics support for training exercises, equipment and troop redeployment and rapid response to humanitarian and other crises requiring delivery of aid or evacuation. TSVs make the ideal platform for a mobile hospital and emergency medical teams.



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## MULTI-MISSION PLATFORMS

TSVs already provide large volume, high speed and endurance. By incorporating a range of additional features Austal is enhancing the basic TSV to meet requirements for high speed platforms that are able to undertake and support an even wider range of military operations. The capabilities of these multi-mission platforms include:

- > Deployment and support of helicopters and Unmanned Aerial Vehicles (UAVs) for reconnaissance, combat, search and rescue, vertical replenishment, special warfare support, airborne mine countermeasures and other military activities.
- > Amphibious assault operations using small boats and amphibious vehicles.
- > Rapid deployment of troops and military hardware including tanks.
- > Co-ordination and command of other vessels including Unmanned Underwater and Surface Vehicles (UUVs and USVs).
- > Reconnaissance, surveillance and patrol duties.
- > Afloat support of smaller vessels including connected replenishment.
- > Deployment of police and customs teams and their supporting vehicles and logistics.
- > Disaster and humanitarian relief operations including the provision of medical facilities, supplies and evacuation of personnel and equipment.

### Meeting specific capacity and capability requirements

While large high speed vessels have already changed the face of transportation for United States forces, nations with other demanding requirements can also derive immeasurable benefits from the use of vessels based on the same proven Austal technology.

Recognising that not all countries will have a requirement for vessels capable of transporting tanks and a whole battalion in a single lift, Austal offers high speed military vessels, both TSVs and multi-role platforms, across a broad range of capacities and capabilities. Austal will custom design and build the vessel to meet the specific requirement – from a TSV to transport a small special forces unit and its equipment through to multi-mission ships able to deploy in excess of 1000 troops, vehicles and helicopters. Command and control suites can be developed and installed to meet the needs of each customer. Installation of high capacity civil and military communications systems ensures these vessels can become part of a nation's overall capabilities to meet a wide range of contingencies.

### Choice of hullforms

Austal offers platforms based on both catamaran and trimaran hullforms. The catamaran platform dominates the commercial fast ferry market and Austal's highly developed hullform is recognised as the market leader. The more recently developed trimaran has been applied to both ferry designs and the US Navy's major Littoral Combat Ship (LCS) program. Consolidating the best seakeeping qualities of monohulls and catamarans, the Austal trimaran offers improved operability in high sea states. This is particularly relevant where long open water transits or operations involving the launch and recovery of vessels or aircraft in exposed conditions are envisaged. Both hullforms provide low resistance, excellent strength and durability and greater deck space than monohull alternatives.





## “WESTPAC EXPRESS” - A TRANSFORMATION SUCCESS STORY

When the United States contracted a large high speed vessel for military support for the first time it selected the 101 metre Austal catamaran “WestPac Express”. The TSV was contracted in July 2001 for operations throughout the Western Pacific supporting the Third Marine Expeditionary Force (III MEF) of the United States Marine Corps based in Okinawa, Japan.

Capable of sustaining loaded speeds of 36 knots, the vessel rapidly transports a complete battalion of more than 950 Marines and up to 550 tonnes of vehicles and equipment in one lift. In fact almost every piece of equipment in the Marine Corps inventory has been carried including Amphibious Assault Vehicles (AAVs), Light Armoured Vehicles (LAVs), High-Mobility Multipurpose Wheeled Vehicles (HMMWVs - ‘Humvees’) and AH-1W Cobra, UH-1N Huey and CH-46 Sea Knight helicopters.

“WestPac Express” has demonstrated that it can complete the overall transportation task substantially faster than the airlift alternative, accomplishing in a single voyage of little more than a day what typically takes multiple C-17 flights spread over a 14 to 16 day period. This in turn saves some 250 flights, and millions of dollars, each year.

In addition to these considerable strategic and cost advantages “WestPac Express” has proved to be always mission-ready. Thanks to Austal's thoroughly professional approach to vessel design, construction, equipment selection and in-service support the TSV has delivered operational availability of an incredible 99.9%. This is particularly impressive considering the vessel covers approximately 75,000 nautical miles per year under rigorous military service conditions and through waters that are often beset with typhoons and tropical storms.

Not surprisingly given this track record, “WestPac Express” has not merely met III MEF's expectations but greatly exceeded them, establishing itself as the Marines' preferred means of transport.

“THE DEPLOYMENT OF  
“WESTPAC EXPRESS” MAKES  
STRATEGIC SENSE.  
IT MAKES OPERATIONAL SENSE.  
IT MAKES ECONOMIC SENSE.  
IT'S A TRANSFORMATION  
SUCCESS STORY.”

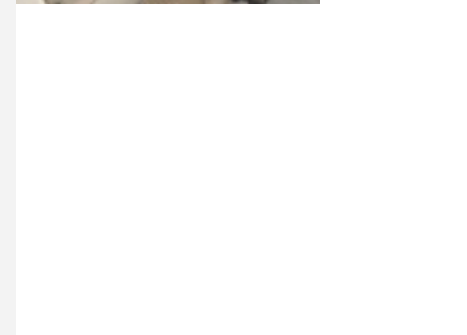
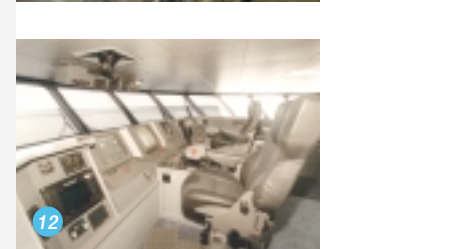
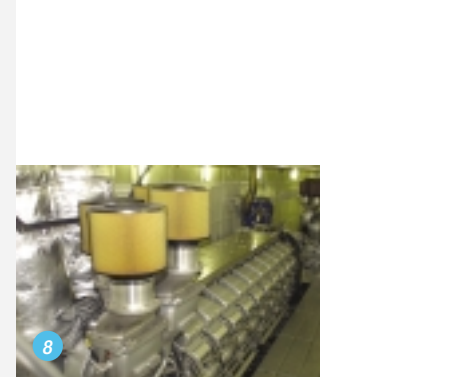
Lt. General Wallace C. Gregson,  
Commanding General,  
III Marine Expeditionary Force and  
Commander, Marine Forces, Japan,  
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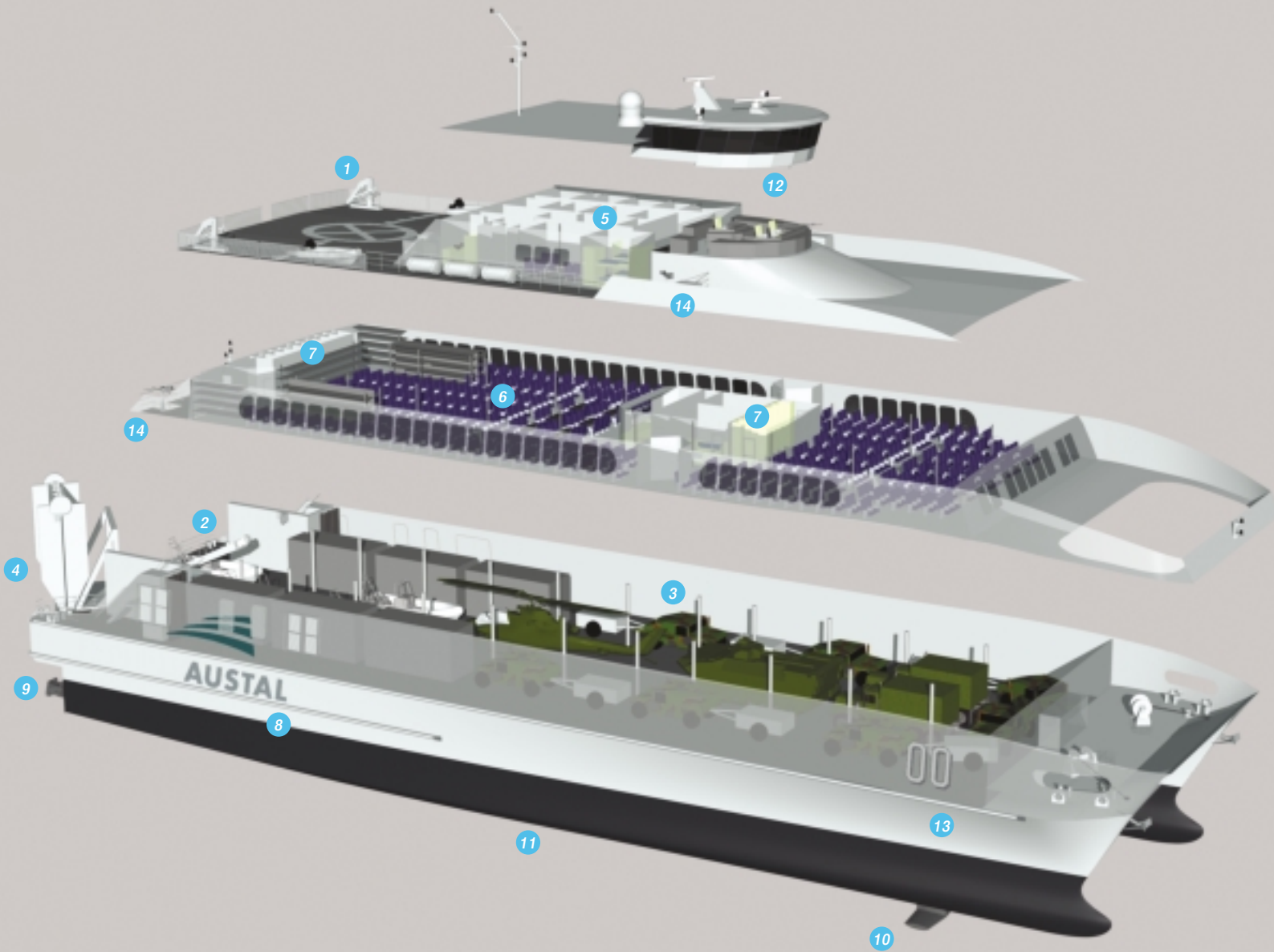




## TYPICAL TSV FEATURES

- 1 **Vertical Replenishment (VERTREP) Deck:** Facilitates use of helicopters for the transfer of materiel/personnel to or from the vessel as well as supporting operations with Unmanned Aerial Vehicles (UAVs). Folding cranes are used to transfer cargo between the VERTREP and mission decks and for over-side cargo handling.
- 2 **Boat launcher:** For launch and recovery of small boats and unmanned underwater and surface vehicles while underway.
- 3 **Mission Deck:** Provides space for a range of military hardware including wheeled vehicles, tanks, amphibious vehicles, helicopters and small boats. Containerised and palletised cargo can also be transported on the deck. Hoistable mezzanine decks can be fitted if large numbers of lighter vehicles are to be carried.
- 4 **Stern ramps:** A slewing quarter ramp enables rapid and efficient loading and offloading of the mission deck, either astern or to the side, even in rudimentary ports. Amphibious vehicles can be launched and retrieved directly to and from the water via the ramp.
- 5 **Crew facilities:** Permanent cabins for ship operating personnel, mess/recreation areas and toilet, shower and laundry facilities. Ship's office for administration and planning.
- 6 **Troop seating:** Business class quality reclining seats with armrests and tray tables for troops or survivors/evacuees. Sections of seating can be replaced by temporary berths.
- 7 **Troop amenities:** Dedicated galley and separate troop servery, first aid room, troop showers, toilets and storage for personal equipment and weapons.
- 8 **Machinery spaces:** Choice of medium speed diesel engines, gas turbines or combination arrangements. Spaces are unmanned for optimal manning.
- 9 **Waterjets:** Steerable waterjets deliver high propulsion efficiency and extreme manoeuvrability and also contribute to shallow draught.
- 10 **Motion control system:** Computer-controlled T-foils and interceptors to minimise vessel motion, thus maximising operability and onboard habitability.
- 11 **Fuel capacity:** Tankage sufficient for long open sea transits. Vessels are capable of receiving and providing fuel via connected replenishment.
- 12 **Wheelhouse:** Raised for maximum visibility and designed for three person operation with additional Commander's position. Latest equipment for navigation, communication and monitoring and control of all critical operating systems. Bridge wing stations can be fitted.
- 13 **Structure:** All aluminium structure designed and built to highest international standards results in high strength, light weight and maximum durability.
- 14 **Weapons mounts:** Fitted to maintain vessel security including protection against attacks from small boats.

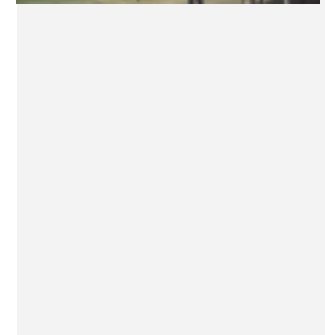




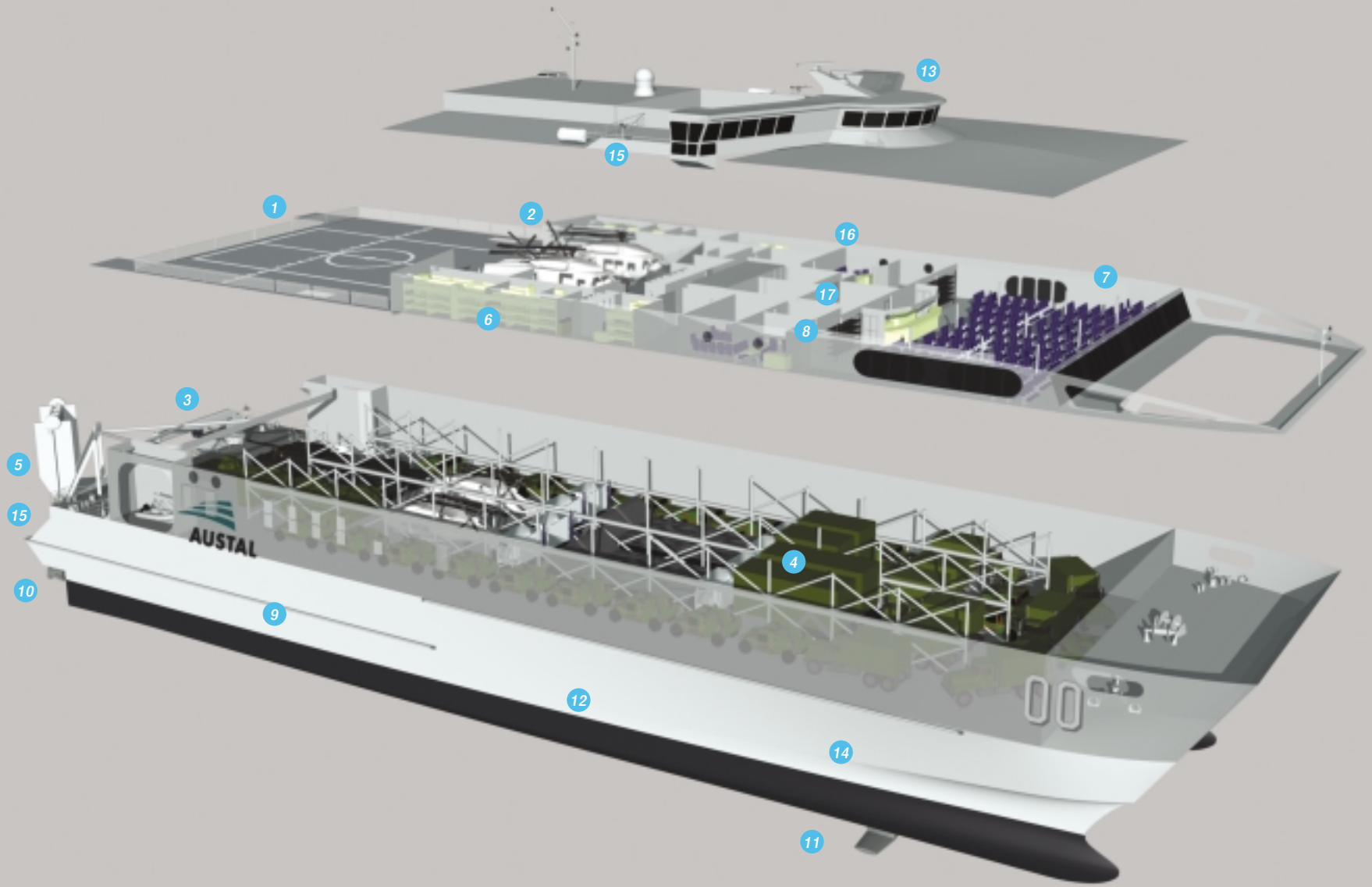
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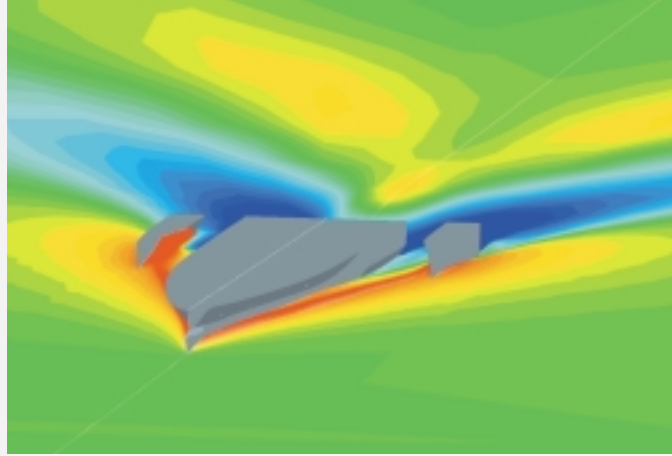
## TYPICAL MULTI-ROLE VESSEL FEATURES

- 1 **Helicopter Deck:** For helicopters including twin rotor medium lift assault helicopters and the latest attack helicopters. Also supports operations with Unmanned Aerial Vehicles (UAVs).
- 2 **Helicopter Hanger:** Configured to carry and support a detachment of two multi-mission military helicopters such as the Sikorsky MH-60S in a weather-tight hanger space. Dedicated helicopter control station.
- 3 **Crane:** Used to launch and recover small boats and unmanned underwater and surface vehicles while underway. Also used to transfer equipment between the helicopter and mission decks and for over-side/stern cargo handling.
- 4 **Mission Deck:** Provides space for a range of military hardware including wheeled vehicles up to semi-trailer size, tanks, amphibious vehicles, helicopters and small boats. Containerised and palletised cargo can also be transported on the deck. Hoistable mezzanine decks can be fitted if large numbers of lighter vehicles are to be carried.
- 5 **Stern ramps:** A slewing quarter ramp enables rapid and efficient loading and offloading of the mission deck, either astern or to the side, even in rudimentary ports. Amphibious vehicles can be launched and retrieved directly to and from the water via the ramp.
- 6 **Crew facilities:** Permanent cabins for ship's personnel, separate mess/recreation areas for officers and enlisted crew. Toilet, shower and laundry facilities.
- 7 **Troop seating:** Business class quality reclining seats with armrests and tray tables for troops or survivors/evacuees. Sections of seating can be easily replaced by temporary berths to configure the vessel for different mission manning profiles.
- 8 **Troop amenities:** Dedicated galley and separate servery. Showers and toilets shared with enlisted crew. First aid room and storage for personal equipment.
- 9 **Machinery spaces:** Choice of medium speed diesel engines, gas turbines or combination arrangements. Spaces are unmanned for optimal manning.
- 10 **Waterjets:** Steerable waterjets deliver high propulsion efficiency and extreme manoeuvrability and also contribute to shallow draught.
- 11 **Motion control system:** Computer-controlled T-foils and interceptors to minimise vessel motion, thus maximising operability and onboard habitability.
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- 13 **Wheelhouse:** Raised for maximum visibility and designed for three person operation with additional Commander's position. Latest equipment for navigation, communication and monitoring and control of all critical operating systems. Bridge wing stations included for maximum vision during berthing evolutions.
- 14 **Structure:** All aluminium structure designed and built to highest international standards results in high strength, light weight and maximum durability.
- 15 **Weapons mounts:** Fitted to maintain vessel security including protection against attacks from small boats.
- 16 **Command and control:** Dedicated secure spaces for command and control requirements including a secure planning and conference area.
- 17 **Administration:** Dedicated and separate administration offices to meet the needs of the onboard team.









## ABOUT AUSTAL

Austal has been designing and building high performance aluminium vessels since 1988 and has delivered vessels for operation across the globe. With three shipyards in Australia and one in the United States it provides one of the most substantial product bases of any shipbuilder worldwide.

Initially concentrating on the fast ferry market, the company quickly established itself as the world's leading manufacturer of 40 metre passenger catamarans and was equally successful when it applied its expertise to larger ferries capable of carrying passengers, cars, buses and trucks at speeds well in excess of 40 knots.

While continuing to position the company at the forefront of the fast ferry market, Austal's proven leading-edge technology is now also delivering benefits to ship operators in other fields.

In addition to applying ferry technology to the development of specialised high speed military vessels such as TSVs and sophisticated combat ship platforms, Austal has established itself as a leader in the defence market through a number of high profile patrol boat projects for leading international navies and other law enforcement agencies.

For commercial applications Austal designs and builds passenger and vehicle-passenger ferries and vessels for the cruise, tourism and offshore industries. Highly customised private vessels are also part of the company's portfolio.

Austal's industry leadership in the specialist field of lightweight aluminium vessels has been achieved through:

- > Extensive, experienced in-house design department developing vessels that exactly meet individual customer requirements.
- > Large, highly skilled workforce utilising world best practices in purpose-built shipbuilding facilities to ensure high quality construction and maximum production efficiency.
- > Track record of on-time, on-budget and on-specification deliveries.
- > Ongoing research and development to ensure Austal vessels remain at the forefront of performance.
- > Global product support and an emphasis on producing vessels that can be easily maintained to ensure operational reliability.
- > Financial strength and sound ISO 9001-certified management practices including a policy of continuous improvement across all aspects of the business.

“INSTEAD OF A TWO WEEK PROCESS TO DEPLOY BY AIRLIFT, “WESTPAC EXPRESS” MOVED THE UNIT’S 843 MARINES, 63 VEHICLES AND 27 CONTAINERS OF BAGGAGE AND CARGO IN 30 HOURS. INSTEAD OF A PRICE TAG OF OVER HALF A MILLION DOLLARS FOR A ONE-WAY TRANSIT REQUIRING AT LEAST 16 C-17 LIFTS, THE HIGH SPEED CATAMARAN DID THE ENTIRE LIFT FOR US\$ 130,000.”

Chief Warrant Officer 5 Gene Rose, USMC, “WestPac Express” Operations Officer, 2001 - 2003



**AUSTAL**

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