

CASE STUDY: CATERPILLAR MARINE ENGINES POWER VERSATILE PATROL BOAT FOR AUSTRALIA

CUSTOMER	LOCATION	DEALER	SEGMENT	SCOPE OF USE	SOLUTION
Austal	Australia	Energy Power Systems Australia (EPSA)	Defense (Patrol Boats)	Low-speed towing and fast intervention applications	Cat 3516C Engine

POWER PACKAGE SOLUTION MEETS CAPE CLASS PATROL BOATS' DYNAMIC NEEDS

MEETING STRICT REQUIREMENTS FOR HIGH-PERFORMANCE NAVAL OPERATIONS

Navies and coast guards play a vital role in maritime security. Modern patrol boats enable both military branches to perform a wide range of functions, making efficiency and reliability paramount.

As a global defense prime contractor, Austal enjoys a longstanding reputation for designing, constructing and supporting advanced commercial and defense vessels. When Australia decided to replace its Bay Class Patrol Boats, Austal led the construction of the new Cape Class Patrol Boat fleet. Austal delivered the first set of eight vessels to the Australian Border Force (ABF), with two additional boats delivered to the Royal Australian Navy (RAN). The Cape Class Patrol Boats' performance led to RAN awarding Austal a contract to build a variant of the vessel, named the Evolved Cape Class.

Cape Class Patrol Boats have reliable, high-performance propulsion systems to fulfill a variety of naval operations. The 58-meter vessels not only have an aluminum hull that supports high speeds but also possess sufficient torque to tow other vessels at low speeds. With a range of up to 4,000 nautical miles and a 400-ton displacement, the patrol boats' design facilitates prompt maintenance intervals to reduce downtime and maximize time deployed at sea.

DELIVERING ADVANCED MARINE PROPULSION SOLUTIONS AND COMPREHENSIVE SUPPORT EXTENDING MILES

With a track record of delivering over 360 commercial and defense vessels for more than 120 operators in 60 countries during the past 30 years, Austal has deep expertise in selecting marine power systems that help optimize performance and efficiency.

Austal turned to Cat dealer Energy Power Systems Australia (EPSA) and the broad range of Caterpillar Marine solutions for a comprehensive power package that featured the Cat 3516C High Displacement (HD) marine propulsion engine. The 3516C engine's specifications aligned with Austal's requirements for the Cape and Evolved Cape Class Patrol Boats, which helped ensure the vessels could meet the power and performance demands of varied naval applications.

EPSA provided full ship sets for each Cape Class Patrol Boat, including two 3516C main engines, two C9.3 marine generator sets (for the Evolved Cape Class Patrol Boat) and one C4.4 emergency diesel generator. The Cat engines combine a favorable power-to-weight ratio, low-speed torque capabilities and 1,650 - 3,386 bhp for dynamic, robust performance. Additionally, the power solutions use widely available parts, which facilitates maintenance for these strategically important vessels.



EPSA's Marine Excellence Centre (MEC) played a pivotal role in the effort, furnishing turnkey solutions as well as technical and marine classification, project management, documentation, commissioning and sea trials. EPSA also offered crucial parts, service and technical knowledge after vessel delivery.

ENHANCING MARITIME SECURITY WITH THE MOST MODERN PATROL BOATS AVAILABLE

Austal, EPSA and Caterpillar Marine are collaborating to deliver more than 20 Cape Class and Evolved Cape Class Patrol Boats to the ABF, RAN, and Trinidad and Tobago Coast Guard. The full power package of Cat engines, marine generator sets and an emergency diesel generator builds engine room redundancy and supports uptime. EPSA's on-demand feasibility studies and consultations continuously help identify potential upgrades that can increase the onboard propulsion system's longevity. Considering the wide scope of operations the vessels fulfill, the extensive Cat dealer network helps ensure highly skilled technicians address service needs quickly to maintain operational readiness.

As Australia continues to expand its patrol fleets and enhance capabilities for maritime surveillance and security, advanced solutions are increasingly critical. New achievements in design, materials and propulsion systems enable greater versatility for vessels like Cape Class Patrol Boats. Collaborative efforts between shipbuilders, Cat dealers and Caterpillar Marine can unlock new value and capabilities for naval operators to address their evolving and unique needs.

