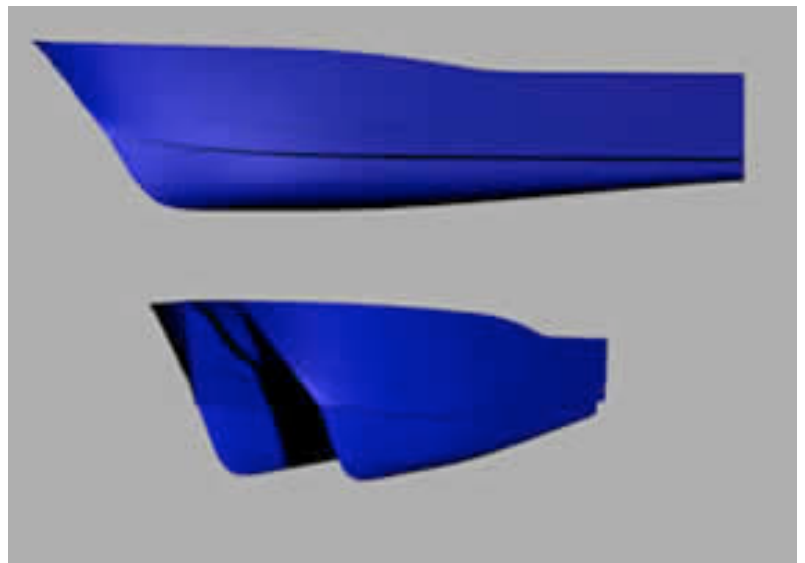


Powercat Hull shape principles:

Balancing fuel economy vs. ride, comfort and draft issues became determining factors for choice of a new hull shape. Our experience offshore for many thousands of miles was the long slim canoe body displacement hull form of yesteryear was not ideal in many conditions. Research has driven the large Australian Powercat design firms to wider hull forms for commercial ferry work in rough water as it ensures a more sea-going hull yet still provides good economy. More beam in the hull provides better fuel-load capacity and ride dampening and engine servicing along with less draft, less pitching and less tunnel slamming. Tunnel slam has been researched extensively and the use of wider tunnel chine's and fuller above water bow sections has been included in both Adventure Bays 2 hull options.

Rather than trying to get 1 hull form to operate efficiently from 10-40 kts, it has been necessary to offer 2 hull choices to get the best efficiency. 1 hull can't do both low and high cruise speeds efficiently.

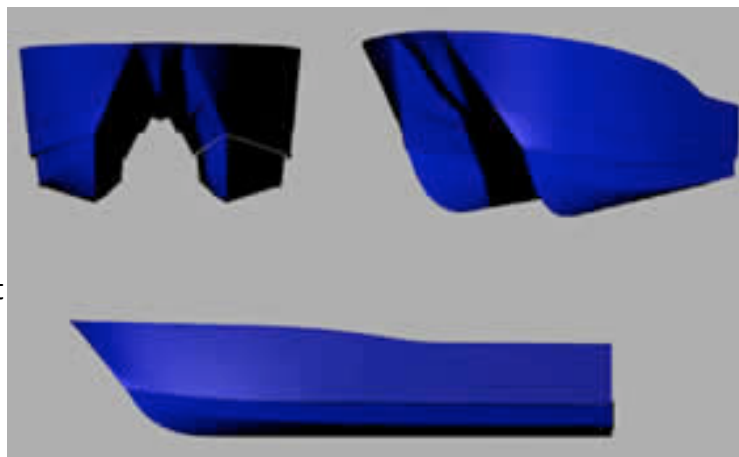
Displacement hulls with soft chines, deep forefoot, gentle rocker aft and shafts protected or exposed are selected when excellent efficient cruising between 8-20 kts and top speed around 25 knots is needed. Long range passagemaking of 2000nm for the 46 Powercat and 3000nm+ for the 56 Powercat is achieved on these hulls due to their wide form and ability to carry fuel and stores.



The 46 Powercat requires only requires 220-260hp/side to reach 20 kts and around 315-350 hp/side for 25 kts *. The 56 Powercat 315-350 hp/side for 20 kts and around 440-480hp/side for 25 kts*.

From our experience of ocean cruising, we would do many day trips at around 18-20 knots to arrive in unfamiliar anchorages with good daylight overhead to see rocks. Very long ocean crossings would typically be at 7-9 kts. For passages under 1500nm we sometimes would run 9 knots by night and 18 knots by day, making an average 14-15 kts. This is very efficient way to get a high average cruise speed and yet be safer at night. It means a 1000 nm passage can be done in 3 days instead of the usual 7-9 days for yachties and trawler cruisers! Weather windows can be safely predicted for 3-4 days so when the good weather comes, you know it will be there the entire voyage, a great safety and comfort factor.

Planing Hulls are selected when faster cruise speeds are sought. Designed with harder chines and fuller aft sections to prevent squatting with higher horsepower and less forefoot for less wetted surface. Propulsion with Zeus Pod drives with Joystick docking, shafts or Waterjets with Joystick docking, with and without foils for extra lift and speed. This still allows good efficiency in the 8-20kt range but has the capacity to cruise very efficiently in the 20-35kt range with Cummins-Zeus Pod Drives.



Hamilton Waterjets combined with a 12" wide Stainless Steel foil shaped wing foil between the hulls can reach mid 40 kt range.

The 46 Powercat only requires 315-350hp/side to reach around 30 kts and around 440-480 hp/side for 35 kts, 600 hp/side for around 40 kts or 600hp with waterjets and foils for 42-45 kts*

For the 56 Powercat 350 hp/side for 20 kts and 480hp/side for 25 kts, 600hp/side for 30-35 kts and 800-900 hp/side for 40-45 kts depending on Waterjets/Foils combined.*

*Results vary depending on engine models and amount of weight of options selected.

Foils are a narrow wing (approx 1 ft wide) that bridges the keels close to mid-ships. Precisely sized along with 2 strategically placed fins at the stern, this gives greater lift which means a higher tunnel clearance and less drag so the economy improves at speed. Also ride is improved as the foil acts like a leaf spring on a car, softening the downward motion and eliminating a lot of the tunnel slam some cats suffer at speed. The main plus side of the foil assisted hull is fuel economy and ride is very good at speeds over 25 knots.



Waterjets: The smooth delivery of power, lower maintenance and shallow water confidence of waterjets is a very appealing feature. Grounding on a sandbar usually has no damage to running gear, compared to the \$20-\$40K repairs often needed for unprotected propeller installations. Collision with logs, marine or human life has much less impact to the object in water and the manoeuvrability is unbelievable in tight quarters. If an object is sighted in the water, crash stops in 2 boat lengths are no concern for waterjets. The manufacturer's claim they can take full thrust in reverse instantaneously and having been shown this personally, was glad to be holding on. Similar to standing on the brakes in a bus at 30mph- brings a large craft to a stop very quickly!