JetBrief

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Location: United States of America **Service**: Passenger Ferries **Waterjet Model:** Various HM

HamiltonJet Firmly Established in US Fast Passenger Ferry Sector

In a propulsion market previously dominated by European waterjet manufacturers, HamiltonJet's larger HM range of waterjets have become the preferred propulsion option for busy fast passenger ferry services around the world.

This JetBrief Application Review features four recent additions to the HamiltonJet powered fast ferry family operating in the US. The quartet of catamaran vessels may encompass three different designers, four different boat builders and four different owner/operators, but they all have one thing in common – Hamilton HM Series waterjets.

When ferry operators require greater efficiency and performance from their busy fleets, together with less maintenance and downtime, they know the best option is waterjet propulsion.

Hamilton Waterjets have proven their benefits many times over, with the likes of Famille Dufour II (JB266/267) and CNM Evolution (JB295) giving long-term success for their operators. The performance shown by new-generation US ferries, including FriendshipV (JB279), Jet Cat Express (JB340), Mendocino (JB343) and Athena (JB345), Condor Express (JB355), Catalina Express (JB341), the repowered Vallejo (JB361) and the many NY Waterway ferries (JB364), continues to enhance this reputation.

BENEFITS OF WATERJET PROPULSION FOR FAST PASSENGER FERRIES:

- High-speed efficiency
- Superior performance over a wide range of operating loads
- Greater manoeuvrability at all boat speeds – including 'zero-speed'
- Improved docking control
- Reduced maintenance requirements
- No risk of engine overload
- Drive-train flexibility
- Safety around marine life
- Shallow draft
- Reduced noise & vibration levels

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Hamilton Waterjets Ideal for 40m Atlanticat's Dual Roles

A whale watch tourist ferry in Maine during summer and a commuter ferry in Key West Florida during winter – Atlanticat performs both roles with ease, style and comfort.

NAME:
Atlanticat
SERVICE:
Whale Watch Passenger Ferry
LENGTH:
39.80 metres (LOA)
BEAM:
10.97 metres
DRAUGHT:
1.83 metres
WEIGHT:
59.5DWT
CONSTRUCTION:
Aluminium
CAPACITY:
442 passengers
SPEED:
35 knots
WATERJETS:
Quad HamiltonJet Model HM651
ENGINES:
Quad Cummins Diesel engines Model KTA-50, each 1332kW (1800hp) @ 1900rpm
GEARBOXES:
Quad ZF 4600D
OWNER/OPERATOR:
Arcadian Whale Adventures, Bar Harbor, ME, USA
DESIGNER:
Crowther Design, Sydney, Australia
BUILDER:
Blount Boats, Warren, RI, USA
HamiltonJet DISTRIBUTOR:
HamiltonJet Inc, Seattle, WA & Atlantis Marine Gear Supply, Topsfield, MA, USA

Fulfilling the dual services of whale watching and passenger ferrying requires a degree of propulsive flexibility only waterjets can provide. Quadruple Hamilton HM651 waterjets help Atlanticat operate in a wide variety of load and sea conditions, whether cruising at 35 knots or holding position close to marine mammals. The vessel is also fitted with Seastate active T-foils and active trim tabs to improve ride performance.

The Crowther Design catamaran hull carries a total of 442 passengers, split over three levels, with a bow specially designed for whale watching. Like many quadruple engine catamarans, where the engine room is very narrow, the 1800hp Cummins diesels are mounted inline, and specially narrowed Astern Deflectors were fitted to each waterjet to ensure they fitted close together and did not extend beyond the width of the hull.

NAME:
Big Cat Express
SERVICE:
Whale Watch Passenger Ferry
LENGTH:
46.04 metres (LOA)
BEAM:
10.37 metres
DRAUGHT:
1.37 metres
WEIGHT:
55.9DWT
CONSTRUCTION:
Aluminium
CAPACITY:
378 Passengers
450 Nautical Mile Range
SPEED:
37 knots (maximum)
35 knots (cruise)
WATERJETS:
Quad HamiltonJet Model
GEARBOXES:
Quad Nico RGN122H

NAME:
Grey Lady III
SERVICE:
Passenger Ferry
LENGTH:
43.70 metres
BEAM:
10.60 metres
DRAUGHT:
2.00 metres
CONSTRUCTION:
Aluminium
CAPACITY:
300 Passengers
SPEED:
36 knots (with 40 DWT)
WATERJETS:
Quad HamiltonJet Model HM651
ENGINES:
Quad Cummins Diesel engines
Model KTA-50 M2, each
1340kW (1800hp) @ 1900rpm
GEARBOXES:
Quad Reinjtes WVS730D
OWNER/OPERATOR:
Hy-Line Cruises, Hyannis, MA, USA
DESIGNER:
Incat Designs, Sydney, Australia
BUILDER:
Gladding-Hearn Shipbuilding,
Somerset, MA, USA
HamiltonJet DISTRIBUTOR:
HamiltonJet Inc, Seattle, WA &
Atlantis Marine Gear Supply,
Topsfield, MA, USA

Grey Lady III – Nantucket Flyer

The propulsion system on a single ferry service that operates for over 5,000 hours each year needs to be reliable as well as having some redundancy in the event of a breakdown. That's why Hy-Line Cruises chose Hamilton HM-Series waterjets for their latest fast ferry.

This new 43m, 300 passenger catamaran, has a top speed of over 36 knots when fully loaded thanks to its quad Hamilton HM651 jets and 1340kW Cummins engines. With a service speed of 31 knots, that extra power will be invaluable in the event of mechanical problems – with the vessel able to maintain service speed on only three engines and waterjets.

Speed loss is also minimised through a Vosper/MDI motion control and auto-pilot system, which utilises twin trim tabs to reduce vessel motion by up to 60%.

Grey Lady III is the 27th high-speed catamaran built by Gladding Hearn. She fulfils a year-round passenger service between Hyannis and Nantucket Island.

Florida's "Big Cat Express"

The new high capacity, high speed, tourist ferry operating between Ft. Myers and Key West, Florida, exhibits many qualities that its name suggests. Big Cat Express is certainly big at 46 metres, but she is also fast, nimble and powerful, providing tourists with an enjoyable whale watching experience.

Gulf Craft shipyard and HamiltonJet have a history of success with waterjet-powered oil rig crewboats, including the Keith G and Milton R McCall vessels. But Big Cat Express is the first fast catamaran passenger ferry built by Gulf Craft and using Hamilton waterjets, in this case quad HM651 jets each driven by a 1330kW Cummins engine. At the time she was also the largest catamaran designed by Crowther Design of Australia.

With a top speed of 37 knots and a cruising range of 450 nautical miles (at 35 knots) Big Cat Express will operate on a 180km route between Ft. Myers and Key West, Florida, and allow its owner, Sea Key West Express, to offer a year-round service with its three ferries.

Big Cat Express is an ideal example of the benefits of using quadruple waterjets in a hard-working fast passenger ferry. Not only do the waterjets require less maintenance than conventional propeller systems, they provide greater efficiency under varying load and speed conditions. Also, with four waterjets as opposed to just two larger units, there is a level of propulsive redundancy available in the event of mechanical failure.

The waterjets work very well with the Maritime Dynamics ride control system, and together provide a smooth, quiet and vibration-free trip for Big Cat Express's compliment of up to 378 passengers.

ENGINES:
Quad Cummins Diesel engines
Model KTA-50 M2, each
1330kW (1800hp) @ 1900rpm
OWNER/OPERATOR:
Sea Key West Express, FL, USA
DESIGNER:
Crowther Design, NSW, Australia
BUILDER:
Gulf Craft, Patterson, LA, USA
HamiltonJet DISTRIBUTORS:
HamiltonJet Inc, Seattle, WA
& Sewart Supply, Harvey, LA, USA

HM651

Versatility Key Factor in Choice of Waterjets for New York Ferry

Ability to operate efficiently at high and low speeds, together with reliability and passenger comfort and safety, were important factors that led to the selection of quad Hamilton Waterjet propulsion for New York's finest tourist excursion and function ferry – Zephyr.

NAME:
Zephyr
SERVICE:
Passenger Ferry
LENGTH:
43.50 metres
BEAM:
11.50 metres
DRAUGHT:
3.50 metres
CONSTRUCTION:
Aluminium
CAPACITY:
600 passengers
SPEED:
29.0 knots (maximum)
WATERJETS:
Quad HamiltonJet Model HM571
ENGINES:
Quad Cummins Diesel engines Model KTA-38 M2, each 895kW (1200hp) @ 1800rpm
GEARBOXES:
Quad Reintjes WVS440DL
OWNER/OPERATOR:
Circle Line – Statue of Liberty Ferry Inc, New York, NJ, USA
DESIGNER/BUILDER:
Austal Ships, Mobile, AL, USA
HamiltonJet DISTRIBUTORS:
HamiltonJet Inc, Seattle, WA, USA & Atlantis Marine Gear Supply, Topsfield MA, USA

For their first high speed ferry, Circle Line – Statue of Liberty Ferry Inc of New York demanded a vessel customised to their unique requirements. The 43m Austal-designed Zephyr fits the bill, with the flexibility to carry up to 600 passengers at a variety of speeds for harbour cruises and special events, as well as enhancing the company's future growth opportunities.

Zephyr's propulsion system was a key design issue, with both waterjets and props considered. However, the vessel's unique versatility requirements – 29 knots for ferry and cruising services and 10 knots for sightseeing harbour excursions – meant waterjets were the only feasible option. With its quad Hamilton HM571 waterjets and 1200hp Cummins engines, Zephyr is designed to run on either four or two engines, providing two distinct service speeds to match the vessel's varied operating profiles. The waterjets also contribute to the extremely low noise and vibration levels on board, even at high speed.

Other special features of Zephyr include a large expanse of skylight in the main saloon, offering unparalleled views of the Manhattan skyline, and a circular dance floor set below the skylight.

Zephyr uses Hamilton's MECS electronic control system to coordinate waterjet steering and ahead/astern control with the ship's engine and gearbox, and autopilot, both from the main helm station and from each of the two wing stations.

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