production has resulted in Flightship expanding its manpower and facilities. In addition to its operational and maintenance base located close to Cairns Slipways, the company has also taken space to relocate the marketing, administration and training divisions at NQEA’s site, also in Cairns. Currently employing 24 full-time staff, Flightship anticipates significant growth in staff numbers during the course of the next six months.

Managing director John Leslie said: “I am very impressed with the tremendous commitment of our team at Flightship and the very high skill standards available to us within the Cairns area. We expect that over the next three years our team will grow to the extent that, with over 200 employees, Flightship will be one of the largest employers in the Cairns region.”

The production of the FS8 WIG follows more than 70 hours of trials and operations including instructor training and sales demonstrations of a prototype craft which covered over 7,000km up and down the Queensland coast (Speed at Sea, April 2002). This craft was designed and built by Fischer Flugmechanik and AFD in Germany before being dismantled and shipped to Australia in 2001. The craft was awarded a certificate of class by Germanischer Lloyd in December 2001 and by Lloyd’s Register in May 2002, and has completed a rigorous safety and construction survey by the Queensland Transport Department.

The FS8, designated ‘Dragon’, is designed to be registered, operated and maintained at low marine craft overheads. By virtue of its aerodynamic form, sustainable free flight (as achieved by an aircraft) is not possible outside of the ground effect envelope. Under IMO legislation, ground effect craft are recognised universally as marine vessels.

Its overall length is just over 17m. Air draft is 4m.

In flight the FS8 Dragon is extremely stable, says Flightship. Sea state and wave action have only a very minor effect when the craft is airborne at its operating altitude, which is up to roughly 50 per cent of the craft’s wingspan. In general, the larger the WIG and its wingspan, the higher the surface clearance and its wave height capability. The FS8 Dragon has a maximum water surface clearance of 2m over the crests of 2m waves.

For low speed manoeuvres the craft is fitted with retractable electric thrusters housed in the wing tip floats. A three-point retractable undercarriage is fitted to allow access to ramps and slipways. If required, the FS8 can operate without wharf or landing strip infrastructure enabling operations in under-developed regions and locations inaccessible to other transport.

Noise levels are a maximum of 75 dBA at 100m in full cruise mode, comparing favourably with a heavy diesel truck (90 dBA) and an aircraft taking off (125 dBA). Normal operating range for this variant is 200 nautical miles. The main construction material is FRP composites to return a dry craft weight of 3.42 tonnes. Maximum payload is 650kg allowing capacity for two crew members and six passengers.

A cargo variant is offered for freight operations. Large gull-wing doors facilitate easy access for freight and a dedicated system of purpose built lightweight plastic moulded containers and nylon roller tracks can be installed. Alternatively a patrol craft version with reduced payload but fitted with long-range fuel tanks and communications and surveillance equipment is also available. Another potential use is in the role of medivac ambulance with the interior space outfitted for two full-size medical stretchers, together with ancillary equipment and specialised medical lighting.

On the drawing board is a larger Flightship WIG, the type FS40 Dragon Clipper. Designed for up to 40 passengers in the commuter variant or an equivalent payload of 5 tonnes in alternative configurations. This larger craft has a length of 30m, and a wingspan of 25m which can be reduced to 20m on onshore handling by folding ‘winglets’. Main construction material is aluminium, and Pratt & Whitney Turboprop diesel engines developing 1,000kW will increase performance to 120 knots cruising speed.

Maximum take-off wave-height is 1.2m and the increased wingspan allows over-water operation in 4m seas. A rear loading roll-on/off modular payload configuration of 150m³ is designed to provide highly

WIGs are suited to niche opportunities

At its current level of technical development, the WIG concept is not yet globally applicable because of its limitations, and is better suited to niche opportunities, according to Graham Taylor of Hypercraft Associates, speaking at the 18th Fast Ferry Conference in Nice in February. His presentation considered the potential of WIG-effect craft in terms of commercial operation.

This niche market is still large enough to attract wide interest and will broaden with technological evolution. At present, he said, this type of craft must be considered as a coastal, inland waterway or inter-island vessel - implying short routes. Operations are limited by low sea states, low wind speed, and the imposition of restrictive navigational limitations. However, the economics of short route operations compare favourably to alternative transport options.

Mr Taylor identified three key regions of potential operation that depend on matching craft capabilities against geography and population: East Asia, the Caribbean, and Europe (mainly Mediterranean and Baltic). In Asia, most economies have recovered to pre-1997 levels. This trend and the continuing growth of China will increase demand for transport solutions. In the Caribbean the market potential is heavily tourism-dependent but is fast growing. In Cuba, for example, 1.6 million tourists visited in 2000 and this is forecast to rise to 7 million by 2010. European interest will be more cautious due to relatively low GDP growth and the lingering impact of terrorism on travel and tourism generally in the region.

* Are you missing the boat? The Ekranoplan in the 21st Century - its possibilities and limitations.