

## Profile of Revolution Design

Revolution Design was formed in 2002 to provide design and consulting services to the high speed ferry industry. The company was established from the research and design group that was formerly a part of INCATS Australia. Operating as a separate company Revolution Design aims to use its expertise base in the high speed ferry industry provide services to a range of shipyards and firms. Its main activity is to provide research and design services to INCATS Australia, and at present it is heavily involved in the classification and design requirements for the new 112m wave piercer catamaran.

Revolution Design undertakes a range of activities, including:

- New concept design and development for future high speed ferries and military support vessels.
- Performance and propulsion analysis of new designs, including guarantee on speeds and the requirements of propulsion systems.
- Analysis of maneuvering performance at speed and when docking.
- Performance of ride control systems.
- Negotiation of classification requirements with class societies, such as Det Norske Veritas (DNV) and American Bureau of Shipping (ABS)
- Hydrodynamic analysis to determine regular and slam wave loading on ship structures.
- Detail structural design and analysis for specific projects using finite element analysis.
- Trials instrumentation design and installation.
- Collection of trial and service data and the analysis of trials data.
- Failure Mode Effect Analysis & Risk Assessment for Fast Craft.
- Structural Engineering & Design of Lightweight Structures for Fast Craft Transport Systems.

Examples of work undertaken include:

- Design of military conversions on fast ferries HSV-X1 *Joint Venture*, TSV-1X *Spearhead and* HSV 2 *Swift*, as part of the Advanced Concept Technology Demonstrator (ACTD) program, a joint effort by the acquisition and operational (war fighter) communities within the US Department of Defence (DoD).
- Structural Design of on board towing frames and derricks for research vessels operating in the Southern Ocean.
- Design of ship borne hull monitoring & alarm systems for high speed military vessels.