

A large, dark grey submarine hull is the central focus, showing various circular openings and a rectangular panel. In the background, two workers in white hard hats and safety vests are positioned on a red scissor lift, working on the hull. The scene is set outdoors near a body of water under a clear sky.

**COMPANY  
PROFILE  
SUMMARY:**  
Submarines Business

**ASC**  
[www.asc.com.au](http://www.asc.com.au)

## OUR BUSINESS ACTIVITIES

**ASC SERVES THE FRONTLINE OF AUSTRALIA'S NAVAL DEFENCE CAPABILITIES.** ASC was the prime contractor for the design, manufacture and delivery of the Royal Australian Navy's (RAN) fleet of large long range conventional submarines. The six submarines of the Collins Class were the first submarines built by ASC, using largely new facilities constructed on reclaimed land and using labour not previously experienced in building submarines. The first of class submarine was laid down in 1990 and launched in 1994, and the last of the fleet being delivered in 2003.

Following the delivery of HMAS *Collins*, the first of class, ASC commenced a through-life support program with the Defence Materiel Organisation (DMO) and the Royal Australian Navy for the ongoing repair, maintenance and upgrade of the submarines. ASC has developed over 20 years of knowledge in supporting the fleet of submarines in the Australian operating environment.

ASC currently provides technical expertise to the SEA 1000 project office in support of the Future Submarine project.

ASC is the lead shipbuilder for the Hobart Class Air Warfare Destroyer (AWD) project. These are the most advanced and complex warships ever built in Australia and are being constructed at ASC's modern shipbuilding facility - ASC South, located at Osborne, South Australia.

We employ more than 2,600 permanent employees across our three purpose built modern facilities in South Australia and Western Australia. In addition, ASC works with more than 3,500 companies to support maintenance and upgrades of the Collins Class submarines.

ASC is committed to supporting the Australian Defence Force by effective communication with our customer, understanding our customer's expectations and priorities, implementing continuous improvements, and striving to deliver the best results for defence.



Figure 1: ASC North and South - submarine and shipbuilding facilities at Osborne, South Australia.

# CAPABILITY



**WE DELIVER ADVANCED ENGINEERING DESIGN, DEVELOPMENT, INTEGRATION, CONSTRUCTION AND THROUGH-LIFE-SUPPORT SERVICES FOR THE COLLINS CLASS SUBMARINES (CCSM).** As Industrial Lead for constructing, maintaining and upgrading the CCSM, ASC is an integral part of the CCSM Authorised Engineering Organisation (AEO). Our Engineers are delegated Level 2 Engineering Domain Authorities for submarine sustainment and upgrades in accordance with the Royal Australian Navy Technical Regulations (ABR-6429). Submarine-related capabilities include:

- Submarine Engineering;
- Submarine Construction;
- Supply Chain and Materials Management;
- Submarine Systems Integration;
- SUBSAFE Engineering;
- Signatures Engineering;
- Concept Modelling;
- Shock Engineering;
- Application of Composite Materials;
- Corrosion Management;
- Configuration Management and Data Management;

- Management of Australian and Licensed IP including ITAR data;
  - Integrated Logistics Support;
  - Research and Development;
  - Commissioning, Test and Trials;
  - Submarine Fabrication and Construction;
  - Submarine Maintenance, Planned, Emergent, and Upgrades.
- Support is provided in-country and internationally;
- Submarine Crew Training; and
  - Through-Life Support Planning and Management.

Figure 2: Submarine modules being integrated at ASC North (left). Submarine refit activities also at ASC North (right).

## OUR PEOPLE, KNOWLEDGE AND SKILLS

## OUR FACILITIES



### WE EMPLOY MORE THAN 2,600 PERMANENT PERSONNEL ACROSS OUR THREE FACILITIES IN SOUTH AUSTRALIA AND WESTERN AUSTRALIA.

The experience base of ASC's personnel in submarine programs spans the entire life cycle from concept, preliminary, detailed design through construction, sustainment and upgrade. The breadth and depth of this experience base of our personnel also spans many submarine programs across the world including from Australia, UK and Sweden. ASC conducts an ongoing training program for our personnel including Masters of Marine Engineering, engineering graduate programs, apprentice programs and many specialist in-house courses. Our submarine skill base was developed during the Collins build program, and is being further developed through Collins maintenance and upgrade activities.

This skill base includes:

- Engineering, project management, logistics and test and trials, including:
  - o Naval Architecture;
  - o Production Engineering;
  - o Mechanical Engineering;
  - o Structural Engineering;
  - o Electrical Engineering;
  - o Materials Engineering;
  - o Systems Engineering;
  - o Software Engineering;
  - o SUBSAFE Engineering;
  - o Configuration Management;
  - o Integrated Logistics Support;
  - o Certification, SUBSAFE and Trials;
  - o Contract Management;
  - o Project Management;
  - o Earned Value Management;
  - o Intellectual Property and US ITAR Management;
  - o Quality Management, Assurance and Control;
  - o Maintenance Engineering Services;
- o System Integration;
- o Crew Training;
- o Workplace Health, Safety and Environmental Management; and
- o Engineering Assurance, Product Safety and Technical Integrity.
- Procurement, Supply Chain and Materials Management
- Fabrication, construction, and repair, including:
  - o High Yield Strength Fabrication and precision welding;
  - o Dimensional control;
  - o Repair and maintenance;
  - o Mechanical Systems;
  - o Outfitting;
  - o Electrical Systems;
  - o Support Services;
  - o Installation;
  - o Set to work;
  - o Non-destructive testing; and
  - o Managing offsite subcontract construction and repair activities.

We conduct submarine business activities in Australia from two of our three facilities:

- Submarine construction and refit facilities at ASC North, Osborne, South Australia; and
- Submarine intermediate level maintenance facilities at ASC West, Henderson, Western Australia.

Our existing submarine construction facilities are designed for modern modular construction techniques and are able to accommodate a vessel considerably larger than the Collins. These construction facilities are currently the centre of our submarine refit activities.

The key submarine facilities at ASC North include:

- Hull Shop including 80 tonne gantry cranes;
- Outfitting Shop including a Maintenance Support Tower and 80 tonne gantry cranes;
- Blast and Paint Shop;
- Ship Lift 5,200 tonnes maximum and 3,200 tonnes nominal capacity;
- A 18,000 tonnes maximum and 8,400 tonnes nominal capacity ship lift in the adjacent Common User Facility;
- Submarine Transfer System;
- Warehousing;
- Land based test facilities including diesel test facility;
- NATA registered laboratory for performing a range non-destructive testing;
- Submarine Wharf;
- Electrical, Piping and Mechanical assembly and testing Workshops;
- Hydraulic and High Pressure Air Clean Rooms;
- Machining centres, including propeller casting machining and manufacture; and
- Submarine Control and Manoeuvring Simulation Centre.

Figure 3: Submarine construction and refit facilities at ASC North (left) and Intermediate Level Maintenance Facility at ASC West (right)

## OUR SUPPLY CHAIN AND MATERIALS MANAGEMENT



WE MANAGE A LARGE, COMPLEX AND DIVERSE SUPPLY CHAIN. Materials and subcontractors account for the majority of submarine and warship building program costs and some half of submarine maintenance. ASC sources materials and services from the local and international supply chain. The ability to deliver value in both on-shore and off-shore elements of the complete value chain is an important part of any submarine build or maintenance program. In-country engineering know-how and supply chain applied to improvements in design – along with more efficient production and supply chain activities – helps reduce the time lost to maintenance and improves reliability of fleet in service. We are responsible for procurement of over 92% of all platform related materiel used in the maintenance and upgrades of the CCSMs. We currently source products and services from over 3,500 companies to support maintenance and upgrades of the CCSMs. These companies evolved from the submarine construction phase and are predominantly Australian or Australian-based companies.

With ongoing transfer of technology the value of sustainment materiel being sourced in-country has grown from 70% to over 90%, which has contributed significantly to the effective sustainment of the submarine fleet. Our local and international supplier base includes some:

- 40 strategic suppliers;
- 150 significant suppliers; and,
- Many commodity suppliers.

Our Supply Chain management capability includes source selection processes, purchasing, subcontracting, compliance with the national regulatory environment, quality assurance and control, warehousing and materials management and distribution, underpinned by logistics information and an automated Enterprise Resource Planning system.

Figure 4: Large warehouse facility at ASC North.

# OUR TECHNICAL SUPPORT NETWORK

ASC HAS LONG STANDING COLLABORATIVE RELATIONSHIPS WITH ORGANISATIONS THAT PROVIDE SPECIALISED EXPERTISE IN TECHNOLOGIES THAT CONTRIBUTE TO THE CONTINUOUS IMPROVEMENT OF OUR SUBMARINE MAINTENANCE ACTIVITIES. Areas of continuous improvement include maintenance methods, SUBSAFE engineering, occupational safety practises, surface treatments, metallurgy, corrosion, specialised materials and propulsion and energy systems.

Our Technical Support Network includes:

- Defence Science and Technology Organisation (DSTO);
- Commonwealth Science and Industrial Research Organisation (CSIRO);
- US Navy Sea Systems Command (NAVSEA);
- Local and International Industry;
- Academia - Universities, laboratories and research institutions;
- Capability Partner - General Dynamics Electric Boat; and
- Subject Matter Experts.



Figure 5: ASC's key Technical Support Network for submarine maintenance and upgrades.

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