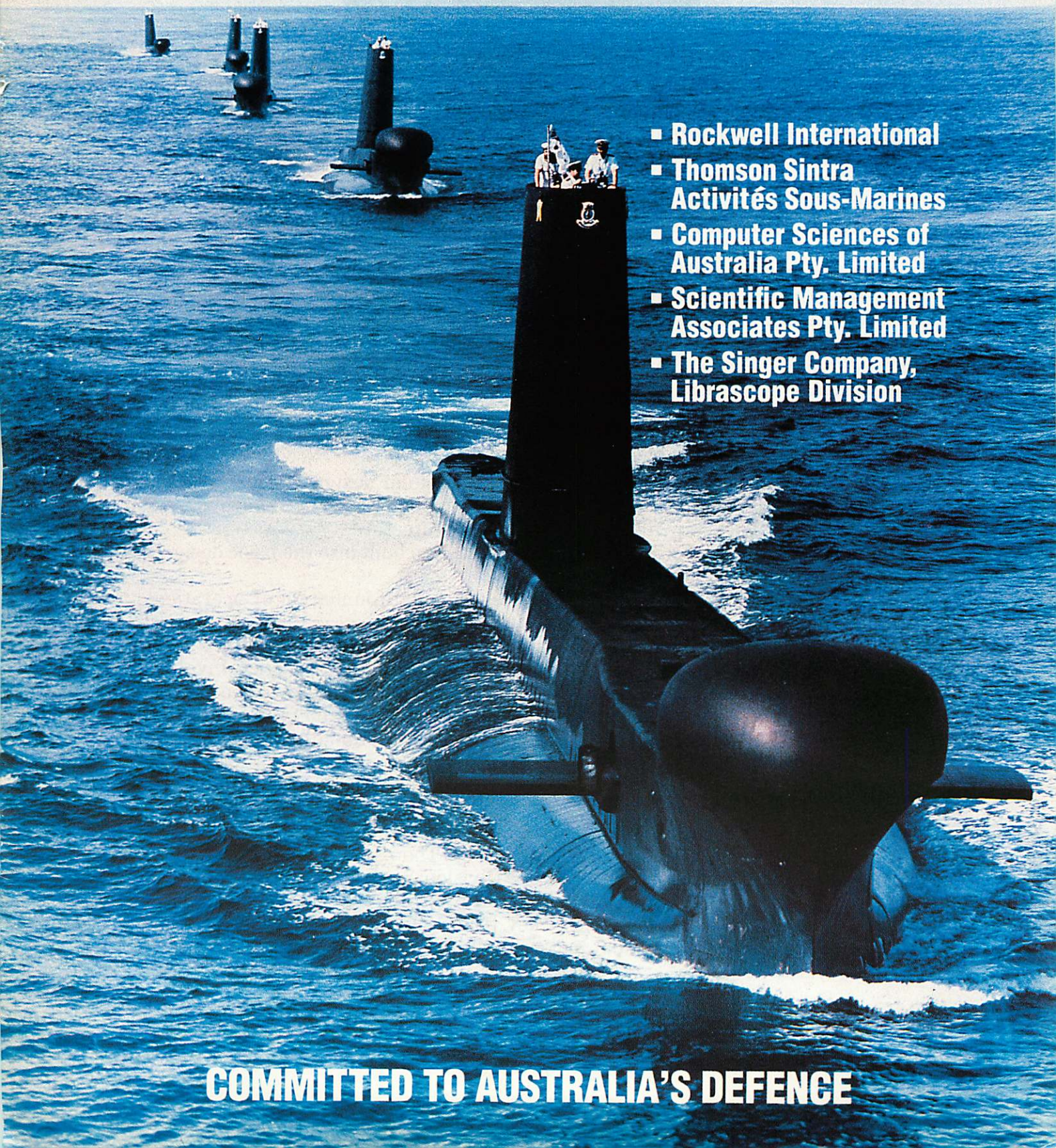
TEAM ROCKWELL

NEW CONSTRUCTION SUBMARINE PROJECT



- Rockwell International
- Thomson Sintra Activités Sous-Marines
- Computer Sciences of Australia Pty. Limited
- Scientific Management Associates Pty. Limited
- The Singer Company, Librascope Division

COMMITTED TO AUSTRALIA'S DEFENCE

Team Rockwell: Helping Secure Australia's Future

Australia is undergoing a momentous reevaluation of its strategic military posture. Central to the evolving strategy is the requirement for quick deterrent response when circumstances warrant.

The Royal Australian Navy has an extraordinarily large coastline to patrol and a widespread oceanic theatre of action. The goal of the New Construction Submarine Project (NCSM) is a class of Australian-built submarines capable of meeting emergent threats with operational effectiveness, improved operability, rapid response time, reduced manning, flexibility to accommodate a wide range of missions, and the ability for expansion and improvement.

Implications of Australia's defence requirements and goals have been carefully considered by Team Rockwell as we propose a unique responsive combat system for the RAN's new diesel-electric submarines. The purpose of our combat system is to detect, track, identify and destroy the enemy. Our system is designed to meet the operational requirements of the navy through technological innovation into the 1990s and beyond. It offers the following advantages:

- It can be easily upgraded as a result of its modular design
- It has configuration flexibility to fulfill Australia's variety of known mission requirements via our fibre optic data bus architecture
- It is cost effective because system upgrades are built into the basic design to support future requirements
- It has reliability that is built on our team's solid foundation of operational experience
- It can be supported by Australians throughout its life cycle

Team Rockwell believes in the importance of Australian self-reliance. Involving Australian companies will result in a permanent transfer of advanced technologies. Our commitment is to establish in Australia the capability to initiate and implement system improvements and to create the foundation for long-term support of the new submarines. In turn, the ability of Australian industry to propose new defence systems for its own military and those of other countries will be enhanced.

In the following pages we will introduce the members of Team Rockwell: Rockwell International, Ship Systems Australia; Thomson Sintra Activités Sous-Marines; The Singer Company, Librascope Division; Scientific Management Associates Pty. Limited; and Computer Sciences of Australia Pty. Limited. Our combination of management experience in key technologies and our commitment to Australian industry involvement makes Team Rockwell the best choice to carry out the NCSM Project.

This supplement was produced by the Newsweek International Special Projects Dept. in New York. The supplement was developed by Carol Wilk, written by Gary Walther, and designed by Ray Stone.
Cover photo courtesy of the Royal Australian Navy.

The Rockwell Corporate Commitment

Donald R. Beall

We at Rockwell International Corporation welcome this opportunity to participate in the New Construction Submarine (NCSM) Project for the Royal Australian Navy.

This is a large and complex project, and I am confident that Rockwell International's experience in successfully managing multinational projects involving large numbers of subsystems, subcontractors and suppliers, combined with the experience and expertise of our partners, will provide the strong program and cost management necessary to meet this challenge.

Rockwell International's newly formed company, Ship Systems Australia, headed by Mr. Don Dillon, will manage the project. Mr. Dillon has 26 years of management and engineering experience with our Autonetics Marine Systems Division (AMSD), whose products have been proven in USA and UK Navy submarines for the past three decades. Mr. Dillon will reside in Australia and will dedicate his full-time effort to the project's success.

Ship Systems Australia Pty. Ltd. will be supported by Rockwell personnel especially selected and qualified by virtue of their knowledge of the technical and operational aspects of submarine warfare and large-scale systems development.

Our participation in the NCSM and our long-term commitment to Australia involves substantial and steady investment of resources. As President of Rockwell International, I am pleased to pledge the diversified resources and corporate support of Rockwell International to the Royal Australian Navy's NCSM Project.

Sincerely,

Donald R. Beall

Donald R. Beall
President and
Chief Operating Officer

Rockwell International Ship Systems Australia: ■ Innovation ■ Leadership ■ Experience

Australia's objectives of self-reliance and development of a first-rate submarine combat system at a reasonable price are fundamental to the establishment of Rockwell's newest entity: Ship Systems Australia (SSA). Naval electronic systems are unique in that their design and integration should be accomplished near the launching site of the ship platform. Rockwell Ship Systems Australia will blend its technical expertise, developed over thirty years for U.S. and other allied nations, with that of Australian know-how and understanding of its own unique requirements. SSA is ready to lead a team effort to design and produce a combat system for a new generation of Australian submarines. We also believe that this capability can be provided to the Navy's future needs and other Asia/Pacific basin customer requirements.

SSA is fully supported by its parent corporation, Rockwell International, which employs 19,200 scientists and engineers and 5,800 supporting technical personnel. In fact, one out of five Rockwell International employees pursues the advanced technology that has made us a leader in our five core businesses: aerospace, electronics, automotive, general industries and industrial automation.

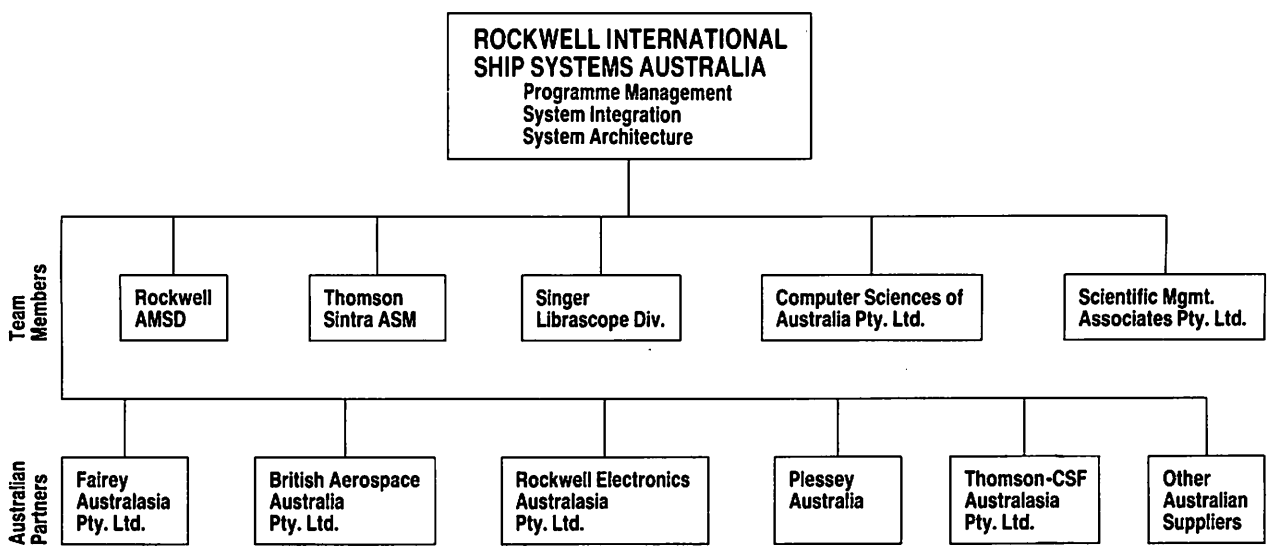
Our employee's efforts have contributed to the success of many ambitious high-technology civilian and defence projects undertaken in the past decade. Rockwell International is prime contractor for America's Space Shuttle Orbiter programme. We were instrumental in Australia's historic launching of its first two national satellites, AUSSAT 1 and AUSSAT 2.

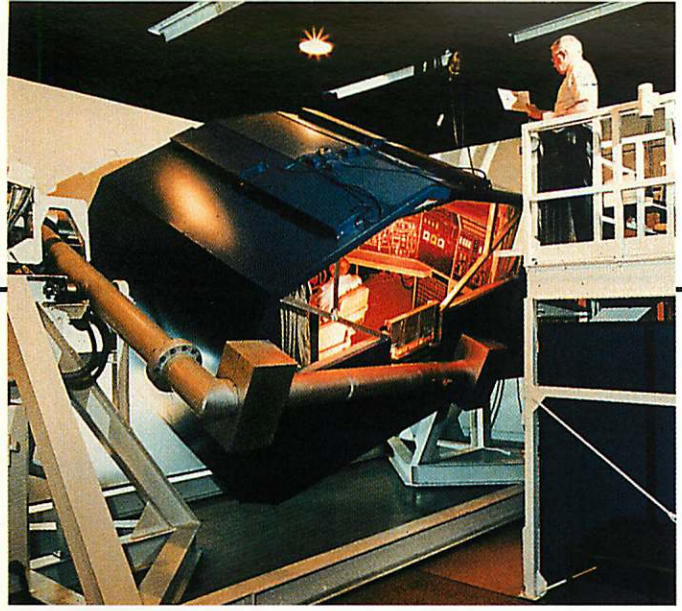
Rockwell International has an exemplary record of being at the forefront of technology.

We have been the principal supplier of navigation and control instrumentation to the United States Navy for more than a quarter century. As technology advances, our navigation systems will continue to be the most accurate in the world.

The ever increasing use of electronics in complicated ship systems means that systems engineering has become a product in its own right. Activities ranging from computer-aided ship design to the development of major systems based on data multiplexing have required meticulous attention to systems integration ... something we do very well at Rockwell International.

We are also on the leading edge of shipboard information management with our Data Multiplex System. The successfully tested surface





Motion Base Simulator: Navy submarine crews are trained in advanced ship control

ship version weighs up to 55 tons less than conventional hard-wired systems and is significantly more durable. Its modular design provides excellent configuration modification flexibility. The fibre optic-based Expanded Service Data Multiplex System forms the foundation for international combat systems designs.

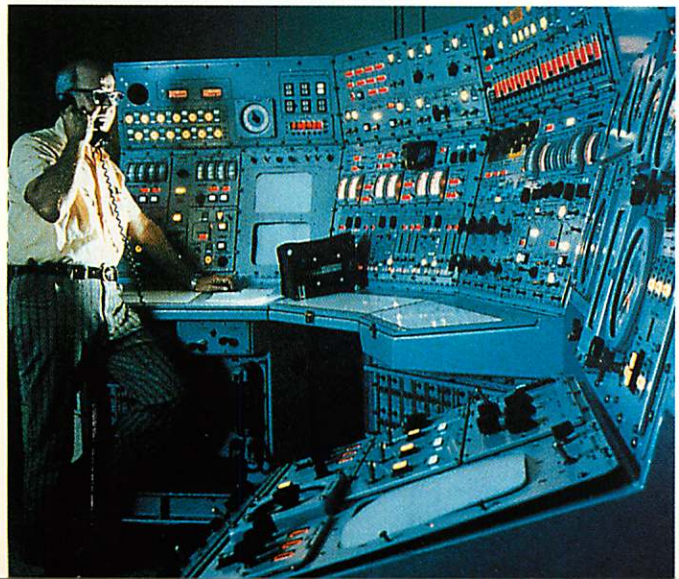
We have been active abroad, meeting the requirements of international navies and the special demands these partnerships impose. Fast Time Analyzer Systems, among our many electronic signal processing products, have been built for the governments of Japan and the Netherlands. Rockwell is also providing the French Navy with a prototype of a Data Multiplex System for testing aboard its new aircraft carrier. And we are currently discussing combat systems integration with several international governments.

Our commitment to the countries in which we do business is strong. We have 460 manufacturing, research and sales and service facilities on five continents.

Our current business links to Australia: Rockwell Standard of Australia Pty. Limited, which produces nearly 50% of all brakes and axles used on trucks manufactured in Australia; Wilmot Breeden Australia Pty. Limited, a supplier of component systems on passenger cars built in Australia; Allen-Bradley Pty. Limited, a world leader in industrial automation; Rockwell Electronics Australasia Pty. Limited, which has been producing avionics systems to meet Australia's defence requirements for the past 25 years; and our newest entity, Ship Systems Australia, established specifically to manage the NCSM's combat system.

Dedicated employees, a history of technological innovation, extensive experience in managing large-scale complicated projects and a belief in the value of long-term business relationships—these are Rockwell International's strengths and the qualities we feel will make Team Rockwell Australia's best choice to carry out the New Construction Submarine Project. They are the reason that we say, "Rockwell International is where science gets down to business."

Submarine Ship Control Station



Rockwell International Ship Systems Australia

Rockwell International

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David Lodwick, Chairman
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Date Founded:
Rockwell International is a combination of Rockwell Standard and North American Aviation, which were founded in 1909 and 1928, respectively

Number of Employees:
Rockwell International: 120,000 worldwide

Sales for 1985:
Rockwell International: $U.S. 11.5 billion

Role in Australian Submarine Project:
Programme management and systems integration;
fibre optic data bus
and central processing units

Thomson Sintra Activités Sous-Marines: Sonar for Today and Tomorrow

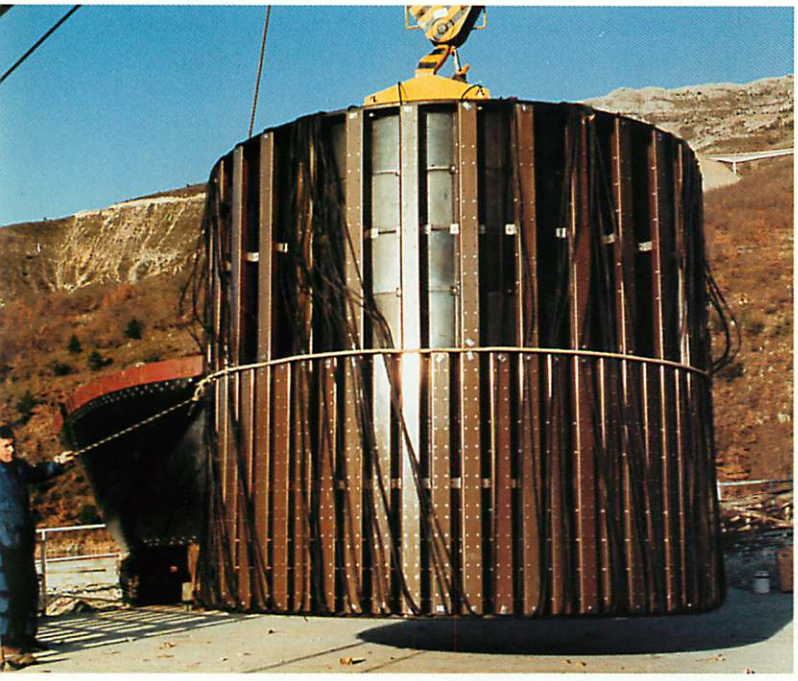
■ *We at Thomson Sintra ASM appreciate the Royal Australian Navy's requirement for a high performance sonar system for the New Construction Submarine Project (NCSM).*

I am confident that the vast experience acquired by Thomson Sintra ASM in running major programmes for the French Navy and other NATO navies will provide a strong technical background.

At Thomson Sintra ASM, which is a fully owned subsidiary of the Thomson Group, the NCSM project will be assigned to the "Department of Cagnes" which specializes in low frequency sonars. Special care will be taken in gathering a team of the most experienced engineers involved in sonar hardware and software to run the NCSM project under the leadership of Rockwell International in cooperation with Australian industry.

It is a great pleasure for me to commit all the resources of our company in support of the Royal Australian Navy's NCSM Project.

L. Clavelloux, Le Président Directeur Général



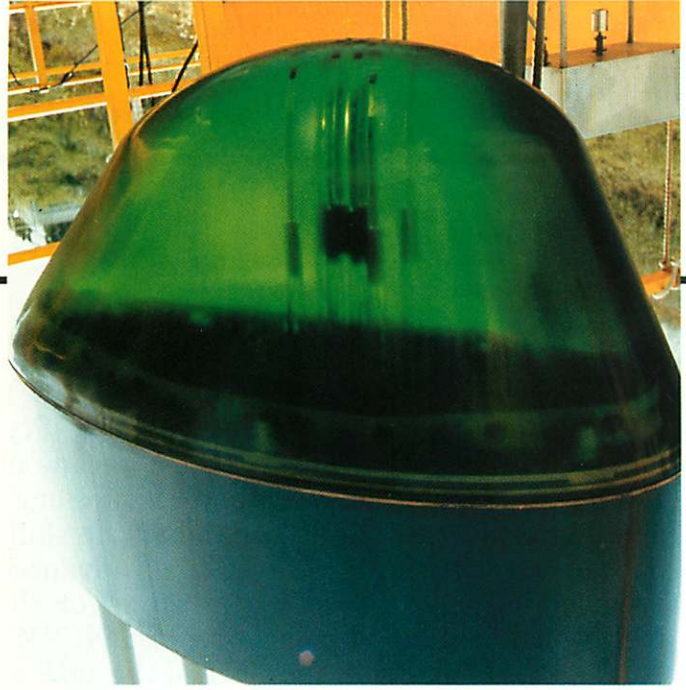
Search/Attack Array: Part of an integrated sonar system which provides detection and attack facilities

The ocean depths are anything but silent. At Thomson Sintra Activités Sous-Marines, we are dedicated to turning the ceaseless murmur of the sea into hard data that submariners can rely upon—and to providing and displaying that information clearly in seconds.

We accomplish this through the state-of-the-art sonar systems we design and manufacture. The ELEDONE Sonar System—the most advanced, integrated, passive sonar system we make—gives a submarine an unparalleled ability to hear without being heard, the essence of submarine warfare. A new, more powerful version of the ELEDONE system will be provided as part of Team Rockwell's effort to build Australia's new submarines.

Thomson Sintra Activités Sous-Marines is an affiliate company of the Thomson SA group of electronics companies, based in France but operating in more than 100 countries. We specialize in the design and production of all types of submarine sonar and combat systems, as well as surface ship sonar systems, airborne antisubmarine warfare systems and mine warfare systems.

Thomson Sintra ASM devotes 40% of its activities to the development of new products. We designed and produced the special sonar used in the search and discovery of the RMS Titanic



Intercept Array: provides an accurate, early warning system

earlier this year. Our sonar has also been used extensively in the mine-clearing operations that made the Suez Canal safe for freighters and to position the world's deepest offshore undersea probe.

Our expertise in submarine sonar is internationally recognized, as we have designed and produced more than 200 major systems for the world's navies. The experience that we have gained by working with the navies of many different countries makes us uniquely qualified to provide the sonar for Australia's new generation of submarines—an improved system based on our ELEDONE system.

ELEDONE is currently used by five European navies. Moreover, the Royal Netherlands Navy recently chose the system for its Walrus-class submarines; the Royal Navy chose it for its Upholder-class submarines; and the Royal Spanish Navy selected it for its Daphne- and Agosta-class submarines.

Thomson Sintra ASM recognizes the importance of working with Australian companies on the New Construction Submarine Project. Since 1983 we have been cooperating with Computer Sciences of Australia Pty. Limited, Scientific Management Associates Pty. Limited and British Aerospace Australia Pty. Limited. In 1985 we began collaborating with Plessey Australia. These partnerships are in addition to the presence in Australia of Thomson-CSF Australasia Pty. Limited, which has been supplying radar and communications equipment and services to the Australian Defence Department since the 1960s.

Our commitment to Australia will ensure that a high proportion of NCSM will remain in Australia through technology transfer and through the ability of Australian companies to support the new generation of submarines.

State-of-the-art production control center

THOMSON SINTRA

Thomson SA
Thomson Sintra Activités Sous-Marines

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Telephone: (062) 733-266
Telex: Thomaus AA61975

Date Founded:
July 1985: Amalgamation of Thomson-CSF Division Activites Sous-Marines and the Sintra Alcatel Company, which have over 20 years experience with the French Navy

Number of Employees:
Thomson SA: 140,000 worldwide
Thomson Sintra ASM: 2,600

Sales for 1985:
Thomson SA: $A 5 billion
Thomson Sintra ASM: $A 200 million

Role in Australian Submarine Project:
Integrated sonar system

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Computer Sciences of Australia Pty. Limited

■ *Computer Sciences of Australia Pty. Limited is proud to be a part of the Royal Australian Navy's New Construction Submarine Project.*

CSA has a history of successful performance on major defence projects. These include two similar major programmes—the RAAF P-3C programme and the NAVY Seahawk RAWS contract.

I can assure you of my personal interest, CSA's commitment to the programme and the support of CSA's owners, for both the development phase and the long term.

Peter F. Rehn
General Manager

Krupp/RAN Bridge Simulator

Computer Sciences of Australia Pty. Limited CSA

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Contact:
Alan Page
Marketing Manager
Systems Engineering Division

Date Founded:
January 5, 1970

Number of Employees:
646

Sales for 1985:
$A 40 million

Role in Australian Submarine Project:
Operational software for the combat system; software support to the other team members; development of shore facilities

At Computer Sciences of Australia Pty. Limited (CSA) we have over a decade of involvement in software and systems engineering, project management and all the skills needed for successful completion of advanced programmes like the combat system for the New Construction Submarine Project (NCSM).

When Defence first approached the task of the integration and support of software-based operational systems with the integration of a British-designed acoustic system into its Lockheed Orion P-3C aircraft, it turned to CSA. We ensured that the on-board acoustic and tactical systems worked together, and went on to perform much of the system engineering for the unique ground facility. We helped introduce many of the concepts of project management, quality assurance, configuration management and software development methodologies that are germane to today's major Defence systems programmes.

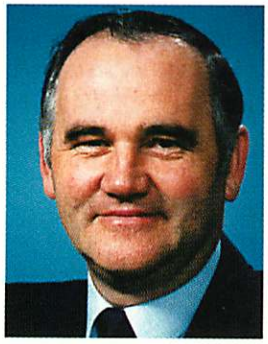
CSA is the largest independent software and systems house in Australia. And we are the leading supplier of digital systems engineering and operational software to the Australian military. Our track record covers Defence research and development projects such as JINDALEE and LADS, technology development in artificial intelligence and space, and major procurement programmes for helicopters, radar and acoustic systems, communications, simulators and electronic warfare.

All of this enables us to make a valuable contribution to Team Rockwell—and to Australia's future. Our mission will be to develop and implement the operational software for the new generation of diesel-electric submarines, and to supply the shore facilities that will support them.

CSA regards NCSM as a key strategic undertaking necessary to secure Australia's future. We will provide our best technical and management resources to achieve this goal, and we will be there to give continued support to the new submarine fleet.

Scientific Management Associates Pty. Limited

■ *Scientific Management Associates (SMA) Pty. Limited welcomes the opportunity to participate in the Royal Australian Navy's New Construction Submarine Project as a member of Team Rockwell. Since 1981, we have established an effective and responsive naval project management, combat system engineering and ILS support organization. I am pleased, therefore, to commit the full resources and capabilities of SMA to this programme and to the future support of the Royal Australian Navy.*



Keith Snell
Managing Director

Since its incorporation in 1981, Scientific Management Associates Pty. Limited has worked extensively with Australia's Department of Defence and the individual branches of the military service. Hence we are uniquely qualified to provide management, engineering and logistic support for the New Construction Submarine Project (NCSM).

Our company has grown constantly, spearheaded by its core group of naval engineers experienced in defence project management and engineering support. We currently provide services in the fields of naval combat systems design, analysis and integration, conceptual engineering, systems engineering, documentation development, and follow-on technical support. Our specific experience includes providing engineering design and management support for the following Royal Australian Navy projects:

- DDG Modernization Project;
- Guided Missile Frigate Acquisition Programme;
- Frigate Construction Programme;
- Oberon-Class Submarine Construction Programme.

Now we are working closely with Rockwell International on proposals for combat system requirements of the new generation of Australian diesel-electric submarines. Scientific Management Associates Pty. Limited strongly believes that Australia's industries should play a major role in the New Construction Submarine Project. Our personnel have been involved in all aspects of Australian Industry Involvement (AII) planning and implementation. Scientific Management Associate's expertise in AII has been recognized by the Australian Department of Defence, which awarded us a contract for AII planning for the Royal Australian Navy's DDG Modernization project. Now our expertise will be part of Team Rockwell's commitment to achieve the goals of Australian Industry Involvement in NCSM.

SMA Services:

- **Maintenance Planning**
- **Supply Support**
- **Training**
- **Technical Data**
- **Manpower & Personnel**
- **Facilities**
- **Support & Test Equipment**
- **Computer Resources Support**
- **Packaging, Handling, Storage & Transportation**
- **Field Service**

Scientific Management Associates Pty. Limited SMA

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Contact:
Keith Snell
Managing Director

Date Founded:
February 4, 1981

Number of Employees:
25, plus consultants

Sales for 1985:
$A 1.25 million

Role in Australian Submarine Project:
Integrated logistic support, engineering support

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The Singer Company Librascope Division: Three Decades of Weapons-Control Expertise

■ *The Singer Company, Librascope Division, appreciates this opportunity to continue its relationship with the Royal Australian Navy and Australian industry on the New Construction Submarine Project (NCSM). This relationship began in 1974 when Librascope was awarded the Weapon Control System contract for the Oberon Submarine Weapons Update Programme (SWUP).*

For SWUP, Librascope developed an extensive technology transfer programme with Australian industry. To maintain this experience base, key participants in SWUP are principal contributors in the NCSM programme. Librascope will negotiate appropriate agreements with Australian industry to enhance long-term Australian technical support for the programme.

The full resources of The Singer Company are dedicated to winning and successfully completing the production phase of this vital project.

Walter Picker, President The Singer Company, Librascope Division

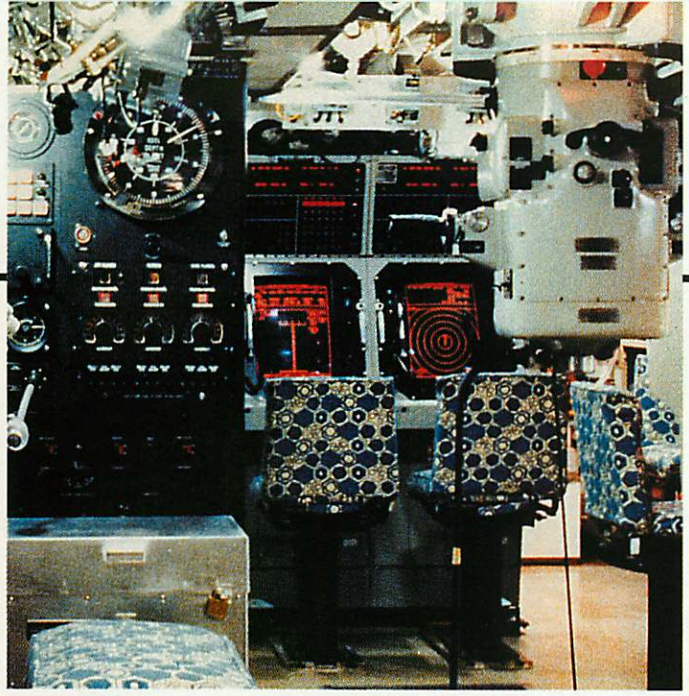
SFCS Mk 1 Combat Control System

The Singer Company, Librascope Division's history of technological innovation dates back to the founding of the company in 1937, when we produced one of the first aircraft loading weight and balance computers with a commercial application. Called a Librascope, which means balance indicator, the computer won immediate acceptance—and gave our company its name.

Today Librascope is one of five divisions of The Singer Company's Products and Services for Government Group. Librascope specializes in the design and production of tactical information and weapons control systems, and dominates the field of antisubmarine warfare weapons control. In fact, Librascope built the first computerized submarine fire-control system ever, the Attack Director Mk 5, which went to sea aboard U.S. Navy submarines in the 1950s.

Since then we have continued to pioneer in the field of antisubmarine warfare weapons control. Among the milestones that we have achieved through our expertise in advanced computer technology applied to weapons control are:

- developing the Mk 130, the first digital computer to be deployed aboard a submarine for antisubmarine warfare;
- modifying all submarine fire control sys-



Interior of an Oberon-class submarine featuring SFCS Mk 1 equipment

tems of the U.S. Navy to incorporate the new Mk 48 torpedo;

•designing and building weapons control equipment for FCS Mk 117 and Mk 118, the first all-digital submarine attack center;

•providing more ASN weapons control equipment for the U.S. Navy than any other manufacturer over the past 30 years.

For the past 12 years Librascope has produced tactical weapons control systems for the navies of the world. The Oberon-class submarines of the Royal Australian Navy use the Librascope Mk 1 Mod 0 System to fire Mk 48 torpedoes and Harpoon missiles.

We bring our penchant for high-tech innovation to the Royal Australian Navy's New Construction Submarine Project. Our role will be to supply the display and weapons control system on this new generation of diesel-electric submarines. That system will be a version of our Advanced Combat Control System Mk 2, which we designed. We believe it to be the most advanced submarine combat control system currently available for use with wire-guided torpedoes and submarine-launched tactical missiles.

Like the other members of Team Rockwell, Librascope is committed to working with Australian contractors and sharing technology. We bring to the project not only more than three decades of experience in submarine weapons control systems but the resources of the entire Products and Services for Government Group of The Singer Company. These include the Kearfott Division (electronic and electromechanical products for national defence), the Link Division (simulation systems), and the HRB-Singer Division (systems for the collection, processing and analysis of electromagnetic signals). We are proud to contribute our know-how to this undertaking.

Simulation lab featuring the Mk 2 Combat Control System

The Singer Company
Librascope Division

SINGER

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Telex: AA61444

Date Founded:
1937

Number of Employees:
46,000 (The Singer Company)

Sales for 1985:
$U.S. 2 billion (The Singer Company)

Role in Australian Submarine Project:
Weapon control hardware

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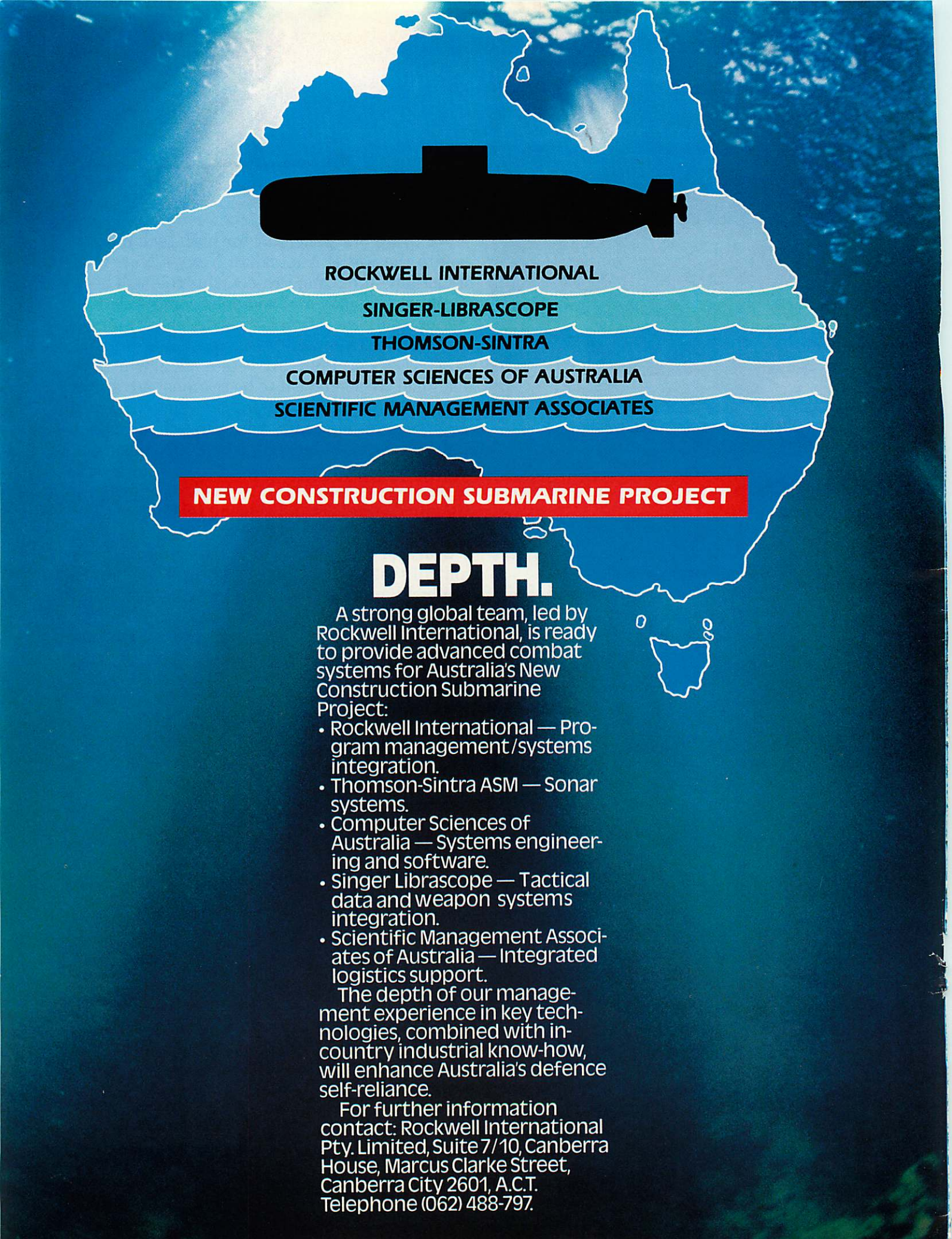

DEPTH.

A strong global team, led by Rockwell International, is ready to provide advanced combat systems for Australia's New Construction Submarine Project:

- Rockwell International — Program management/systems integration.
- Thomson-Sintra ASM — Sonar systems.
- Computer Sciences of Australia — Systems engineering and software.
- Singer Librascope — Tactical data and weapon systems integration.
- Scientific Management Associates of Australia — Integrated logistics support.

The depth of our management experience in key technologies, combined with in-country industrial know-how, will enhance Australia's defence self-reliance.

For further information contact: Rockwell International Pty. Limited, Suite 7/10, Canberra House, Marcus Clarke Street, Canberra City 2601, A.C.T. Telephone (062) 488-797.