SIXTH TECHNICAL MEETING

On Thursday 1 July 2004 the sixth combined meeting with RINA will be held at the Harricks Auditorium, Engineers Australia, 118 Alfred Street, Milsons Point. A paper, “A New Approach to Outsourcing Small Ship Fleet Management”, will be presented by Jon Clemesha and Mark Taylor, Defence Maritime Services. Refreshments will be served at 5.30 pm then the lecture will commence at 6 pm. Please note the date of the meeting – Thursday 1 July.

This paper describes the approach taken by DMS to develop the ship and support system design for the new RAN patrol boats – Armidale Class. It provides an overview of the project, ship and support system designs and an overview of service led project management.

The Armidale Class patrol boats have forged new frontiers in the working relationships between the Department of Defence and contractors, as it is the first time a specialist support company has been tasked with all aspects of Design, Construction, Delivery and through life support on an outcomes basis.

* Please note that members of the Australian Society of Defence Engineering, ASDE, have been invited to join our members and attend this most interesting technical meeting.

SYDNEY & NEWCASTLE ANNUAL GOLF & BOWLS DAY.

- The Combined Annual Golf Day was held at Morisset Golf Club on 23 May. Newcastle has retained the Silk Cup by 336 points to Sydney’s 352 points. The scratch winner was Davron French while the runner-up was Geoff Eckersley; the net winner was Vince Klaas and the runner-up was Jack Elloy. The winner of the Ladies event was Barbara Starr.
- The Combined Annual Bowls Day was played at Wyong Bowling Club on 23 May in perfect weather. There were three games played, two triples and one of fours. When the numbers were tallied it was found the Newcastle defeated Sydney by 57 points to 56 and the Wartsila Trophy goes to Newcastle for the next twelve months. On behalf of the Sydney Branch, Dick Edwards offered his congratulations to Bob Mate and his team.
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CANBERRA CORNER
The next technical meeting is Wednesday 2 June at 1730 for 1800 at the Russell RI Theatrette where Mr Rob Madders of Rolls-Royce will address the subject of marine batteries. Rob is a former Royal Naval engineer officer and submariner.

A small but interested gathering heard Noel Riley present the final paper of his working career on 18 May. The presentation on tug design in Australia was most interesting and showed the diverse nature of these small, but oft forgotten vessels. Thank you Noel for all that you have contributed to the maritime community of Australia.

Our Chairman, John McCorriston, will be absent for about five months while he resumes his work with Blohm & Voss in Germany. As Vice Chairman, Gus Antony, will assume the duties until further notice. Have a safe trip John, and don’t work too hard.

To date there is nothing planned for July, however if someone has a topic, please do not hesitate to contact Gus Antony (02 6266n3887) or myself (02 6275 6224).

Kind regards. Greg Hellessey, Hon Sec. (imarest.act@bigpond.com )

THE RISE & FALL OF THE DOXFORD ENGINE
Another one of Doug Taylor’s tales:
The Doxford was a most remarkable British engine; it is thought that the first Doxford engine to be installed in a ship was in 1921 in the 5,247 GT Yngaren owned by Transatlantic S.S. Co.

It was not a true diesel engine as far as it did not rely on the heat of compression alone to fire the charge but had to have the distilled water cooling heated to 180 degrees Fahrenheit before starting. I recall there was an engineer examiner in London who, when he found you had sailed with Doxfords, would ask what type of engine this was, the correct answer was a “semi diesel” according to him. One confused candidate replied “a full semi diesel Sir”.

The crowning glory of Doxfords was the quadrupal screw Shaw Savill passenger ship Dominion Monarch with 4 five cylinder Doxford engines. What a sight it must have been in the top of the engine room to see 20 top pistons all bobbing up and down together with the huffing and puffing of 4 scavenge pumps. She was one of only three quadruple screw passenger motor ships that I recall, ie Aorangi (Sulzer), Reino Del Pacifico (B & W) and Dominion Monarch (Doxford).

The Doxford “economy ship” was a popular tramp ship at one time, while at sea the only item using fuel was the main engine of 3 or 4 cylinders, the few auxiliaries being steam driven, the steam was supplied by a waste heat boiler. The winches were also steam driven so before reaching port steam had to be raised in an oil fired Scotch boiler.

The Doxford was a kind of flexible engine in that the main and bottom end bearings had a 0.004” clearance in their housings. Some Doxfords had a bad critical speed in their operating range as I found in convoy running during WW2 when trying to keep station. To minimize this they were sometimes fitted with a Doxford-Bibby detuner on the for’d end of the crankshaft connected around the periphery with a flat section spring sitting in tapered slots. As will be remembered several Doxfords were built under licence by the Commonwealth Marine Engine Works.

In 1965 the Doxford “J” type engine was introduced with a bore of 760mm and 2180mm total stroke, it was turbo charged in lieu of a scavenge pump. This engine developed 2,360 horsepower per cylinder. To achieve this its well known crankshaft had to be re-designed and shortened by using the side crank webs as bearing journals thus doing away with the spherical bearings. One problem with the Doxford was the bottom piston water cooling service arms causing water leaks within the crank case; this was overcome by oil cooling the lower piston introduced in the later LB series; the first one I struck was in the CSR’s mv Rona.
Doxford’s last fling was the Seahorse engine in 1972, it ran at 300 RPM with a 580mm bore being a geared drive. It was not a success. As ships grew bigger Doxford finally went out of business as they, owing to their design, could not get the power per cylinder of the more modern engines.

**ROBOTIC VEHICLES DESERT CHALLENGE**

You may have recently seen on the TV an autonomous vehicle traversing the landscape on Mars. Engineers Australia reported that the US Defense Advanced Research Project Agency (DARPA) has offered US $1 million to the first autonomous ground vehicle that is able to drive about 350 km from Los Angeles to Las Vegas in under 10 hours, the route crosses mostly off road terrain. About 100 teams considered they were capable of meeting the Grand Challenge. On the 13 March only 15 vehicles, including a motor bike, attempted the challenge and not one of the competitors was successful.

Those who attended the recent Pacific 2004 International Maritime conference would have had the privilege of attending a paper on “Automation of Container Handling Operations” presented by Prof. Hugh Durrant-Whyte, Australian Centre for Field Robotics, and, on 4 August, he will present an update of his work for Patrick's automated container terminal at the Brisbane waterfront. We hope to attract a good attendance for this topic.
100 YEARS OF CP PROPELLERS
At a recent propeller conference at MAN B&W Diesel in Denmark exactly on the day of the anniversary it was stated that the first Alpha Controllable Pitch Propeller was produced in 1902 and was patented in 1903. Since then more than 6,500 MAN B&W propellers have gone into service in nearly all conceivable applications.
Source: DIESELFACTS.

SPILLCON 2004
The 10th International Oil Spill Conference will be held at the Brisbane Convention and Exhibition Centre on the 23-27 August 2004; the conference is being organised by the Australian Maritime Safety Authority and the Australian Institute of Petroleum. The Keynote Address is to be given by Ian Kiernan AO, OAM, the environmentalist and creator of Clean Up Australia.
For further details contact: Spillcon2004, Conference Secretariat
GPO Box 2181
Canberra City ACT2601
Fax: +61 2 6279 5858, Website: www.spillcon.com

FAST’2005
The eighth international conference on Fast Sea Transportation, FAST’2005, will be held on 27-30 June 2005 at St Petersburg, Russia. Papers are invited on the following subjects related to fast sea transportation:

1. Fast ship concepts and designs
   1.1 Monohulls
   1.2 Multihulls
   1.3 Hybrids
   1.4 Ground effect machines
   1.5 Fast ships for naval missions
   1.6 High-speed vehicles, using cavities
   1.7 High-speed vessels for racing and leisure

2. Propulsion

3. Hydro and aerodynamics of fast ships

4. Loads, structures and materials

5. Manoeuvring, motion control and simulation

6. Operation and Safety

7. Fast ship transportation infrastructure and economics
Deadline: 15 October for submission of abstracts.
Contact: Prof. Kirill V Rozhdestvensky, tel/fax: 7 812 114 2923,
   Email: kvr@smtu.ru, copy to: fast2005spb@yahoo.com

THE GROWTH OF CRUISE SHIPPING
The paper at our last technical meeting by Jeremy Spear was most topical and very well received. In the March 2004 issue of HANSA there was an article on the growth and innovativeness of cruise shipping. It was reported that the global cruise passenger expenditure in 2002 was US$ 14.04 billion and it was predicted that it would grow at a rate of 5.1% per annum over the next 5 years. With larger ships they can have cruising for the masses (economies of scale) which consequently reduces the price per person of cruising.

Besides frequent updates in styling, the cruise ships have product innovation and have introduced ice-skating rinks, rock-climbing walls, sophisticated golf simulators, spa and health facilities together with new itineraries in an attempt to compete with land-based resorts.

Mark Conroy, President and CEO of Radisson Seven Seas Cruises, summarized by stating that- “The cruise industry has gone through a tremendous evolution in the past two decades. The number of annual cruise passengers has grown from approx. 1.5 million in 1980 to approx. 11 million this year.”

NEXT MEETING
04-08-04 “Automation of Container Handling Operations” – Prof. Hugh Durrant-Whyte, Uni. of Sydney

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