

SHIP TO SHORE PORT INTERFACE



Report on the PIANC Technical Seminar held at the Institution of Civil Engineers on Friday 27th November 2009

This afternoon seminar was organised by the PIANC UK Section and chaired by the PIANC UK Section Chairman Stephen Cork. The seminar was well attended with around 100 members of PIANC and ICE members with an interest in ports and maritime issues. A total of five presentations were made by Mark McBride of HR Wallingford, Jakob Tolsgaard of Cavotek, Mike Harrison of System Fender, Neil Griffiths of Gottwald and Chris Boysons of Halcrow.

The first presentation was given by **Dr. Mark McBride**, manager of the Ships Group at HR Wallingford, where he is responsible for all consultancy and research work regarding ship motion, computational and physical modelling of ship and offshore applications, vessel manoeuvring studies and port/terminal operations simulation. His presentation concerned **“The impact of passing ships on moored vessels”** at berth and was illustrated using examples of both computational and physical modelling.



Any moored vessel can be affected by passing ships, and separation distances of about 3 or 4 beams are normal. The effects can be exacerbated by high passing speed and low under keel clearance and can cause serious disruption of cargo handling activities (especially containers and tankers with hard arms) and in extreme circumstances can cause mooring lines to break. Tools exist to model these effects and can be used to develop empirical guidelines for safe operations in confined waters. More details can be obtained from Mark at m.mcbride@hrwallingford.co.uk

The second presentation was given by **Jakob Tolsgaard**, who has worked in the ports and maritime industry for over twelve years and founded Cavotec Denmark A/S in 1999 as a subsidiary of the global Cavotec MoorMaster Group. Jakob's presentation introduced the **Cavotec MoorMaster** vacuum mooring systems.



The MoorMaster uses large 2.2m² vacuum pads, each representing 20t holding force and 10t shear force and offers a number of benefits over conventional rope mooring. This includes speed of mooring and releasing vessels and reduction in vessel surge, sway and yaw motion caused by swell, wind, current, long wave, passing vessels etc when moored. MoorMaster systems have been in use since 1999 with installations in 6 countries in use for mooring of vessels from 91-362m in length and with over 25,000 moorings completed to date. Further details can be obtained from Jakob Tolsgaard at jakob.tolsgaard@cavotec.com

The next presentation was given by **Mike Harrison**, who has worked in the fender industry for over 25 years. Mike is a graduate of Imperial College, London, and has extensive experience of structures, materials, manufacture and testing with particular reference to fenders and mooring systems used in extreme environments. Mike provides fender and mooring support to manufacturers, ports and civil designers around the world, particularly for new structures, upgrades and investigation of berthing incidents.



His presentation entitled “**Fender Systems - The Way Forward**” discussed the PIANC 2002 guidelines for the design of fender systems and the current work in advanced fender design and testing in progress since its publication in 2002. More details can be obtained from Mike Harrison at mike.harrison@systemfender.com

Neil Griffiths, Sales & Operations Manager of Gottwald Port Technology then gave a presentation on “**Mobile Harbour Cranes**”. Neil is based in the UK working as Sales & Operations Manager for Gottwalds North Europe Division, responsible for new crane sales, service contracts, spare parts supply and co-ordinating his customers engineering requirements.



Neil outlined the development of the mobile harbour crane and introduced the latest state of the art models being supplied for both fixed quay structures and floating transshipment terminals. Further details can be obtained from Neil Griffiths at Neil.Griffiths@gottwald.com

Lastly, 16:00 Chris Boysons introduced the work of the PIANC MarCom working group 52 investigating how vessel movements impact on the efficiency of container handling. Chris is a Projects Directors at Halcrow with over 30 years experience in the design, planning and construction of ports, harbours and coastal. He is a member of the PIANC UK committee and is a member of British Standards Committee CB/502, Maritime Works for the redrafting of BS6349, Maritime Structures and a member of PIANC MARCOM Working Group 52, Criteria for the (un-)loading of container ships.



In the 14 years since PIANC Report of Working Group no.24, “Criteria for Movements of Moored Vessels in Harbours”, cranes have increased significantly in size, outreach, and capacity to match the dramatic increase in ship size. Chris’ presentation gave an update on the on-going work of WG 52 and discussed the problems that have been experienced by terminal operators where vessels move on their berths and gave some ideas on how these problems can be overcome. Further details can be obtained from Chris Boysons at boysonsca@halcrow.com

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