WTIA 46TH ANNUAL CONFERENCE

Planning, Production and Productivity

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Don Tuxford  Nasir Ahmed  Ian Henderson

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EDITORS

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BHP  University of Adelaide
WTIA Sustaining Members  WA Shipbuilders Association
WA Institute of Minerals  WTIA Corporate Members
TWI  University of Wollongong
Perth Convention Bureau  IMEA
COGE  WA Dept of Commerce & Trade
AMTC  Department of Resources Development

THE WELDING TECHNOLOGY INSTITUTE OF AUSTRALIA (WTIA)
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The WTIA has joined forces with industry and government to create a $3.5 million dollar Technology Support Centres Network. This network will assist industry to identify and exploit world's best technology and manufacturing methods to establish a vibrant Australian industry by 2000. Together we will be implementing a step by step process which will lead to ongoing viability and greater profitability for all concerned.

(1) Determine your technological and manufacturing needs.
(2) Identify world's best practice.
(3) Draw upon the network to implement world's best practice at your site.
Day One - 16 November 1998
Plenary Session

Session Chairman - Mike Horsfall, State Manager WA, ABB Engineering

08:30-08:40
Introduction
Bob Sim, President, WTIA

08:40-08:55
Welcome
The Hon. Colin Barnett, Minister for Resources, Development & Energy, WA

08:55-09:00
Gold Sponsor - Dynes Woodrow, Business Manager-Fabrication, BOC Gases.

1. 09:00-09:35
Keynote Address - Australia’s Aluminium Shipbuilding & Fabrication Industry
John Rothwell, Chairman and Managing Director, Austal Ships Pty Ltd

2. 09:35-10:10
Keynote Address - Welded Structures in the WA Offshore Oil & Gas Industry
Beverley Ronalds, Director, Centre for Oil & Gas Engineering, UWA

10:10-10:30 MORNING TEA

3. 10:30-11:05
Keynote Address - Mining Industry
Jim Limerick, Executive Director, Department of Resources Development

4. 11:05-11:40
Keynote Address - Development of the Fabrication & Construction Industry
Dennis O’Neill, Managing Director and Chief Executive Officer, United Group Ltd.

11:40-12:00
Panel Discussion

12:00-12:05
Gold Sponsor - John Wilson, General Manager, CIGWELD

12:05-13:05 LUNCH

13:05-13:10
Gold Sponsor - Welding Industries of Australia.

Session Chairman - Richard Clark, Business Development Manager, Transfield Construction

5. 13:10-13:40
Quality and Productivity Improvements in the Field Welding of High Strength Thin Walled Pipelines
John Norrish, Professor of Materials Welding, The University of Wollongong.

6. 13:40-14:10
Latest Developments in Non-Destructive Evaluation in Specific Industry Sectors
David Battle, NDE Engineer, ANSTO

7. 14:10-14:40
Robotic Arc Welding of Aluminium Anode Assemblies
Rod Lane, Chief Executive Officer, ANI Engineering

14:40-15:00 AFTERNOON TEA

15:00-15:05
Gold Sponsor - The Lincoln Electric Co. (Aust.)

8. 15:05-15:35
New Generation Welding Consumables for Refinery Catalytic Cracker Fabrication and Repair
Chris Farrar, Technical Director, Metrode Products Ltd (UK)

9. 15:35-16:05
GMAW - High Deposition Welding in Automotive Applications
Robert Lahnsteiner, Chief Executive Officer & Manfred Meyer, Fronius (Germany)

10. 16:05-16:35
Re-Engineering the Paperwork Maze
Ted Fletcher, Group Quality Manager, United Construction Pty Ltd

11. 16:35-17:05
Improved Welded Connections for Earthquake Loading
Alan McClintock, Welding Engineer, HERA - New Zealand Welding Centre

17:05-17:35
Panel Discussion

17:35-17:40
Gold Sponsor - Pinches Alloys
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| 12. 08:40-09:10 | Product Modelling of Steel Structures and its Application to Production Planning  
                        Toshiharu Nomoto, Professor, University of Tokyo (Japan) |
| 13. 09:10-09:40 | Effects of Welding Conditions on Out-of-Plane Deformation and Residual Stress in Fillet Welding  
                        You Chul Kim, Associate Professor, Osaka University (Japan) |
| 14. 09:40-10:10 | Experience with Welding Technology on HSLA Steel in the Collins Submarine  
                        John Ritter, Research Leader, DSTO-AMRL |
| 15. 10:10-10:40 | Harmonisation of International Standards and Specifications of Laser Welding and Cutting in Japan  
                        Itsuhiko Sejima, Executive Director, In Tech Information s.c. Ltd (Japan) |
| 16. 11:00-11:30 | Improvements in Estimating Structural Steelwork  
                        John Meikle, Executive Director, HERA |
| 11:30-12:15 | Panel Discussion |
| 12:15-13:15 | LUNCH |
| 17. 13:15-13:45 | Welding...A Career Life Cycle  
                        Shirley Bollinger, President, American Welding Society (USA) |
| 18. 13:45-14:15 | Recent Advances in Submerged Arc Welding in the Vertical Position  
                        Horst Herold, Head of Institute & Stefan Zahariev, Scientific Assistant, Otto-von Guericke-Universitat Magdeburg Institut fur Fuge-u Strahltechnik (Germany) |
| 19. 14:15-14:45 | Statistical Process Control of Robotic GMAW Processes  
                        Andre Sannazzaro, Student, The University of Wollongong |
| 14:45-15:05 | AFTERNOON TEA |
| 20. 15:05-15:35 | The Ramifications of Complying with Health and Safety Requirements  
                        Alistair Forbes, Manager - Technical Panels, WTIA |
| 21. 15:35-16:05 | Collaborative R & D in the Application of Friction Welding Processes  
                        Ian Henderson, Professor, The University of Adelaide |
| 16:05-17:05 | Panel Discussion |
Day Two - 17 November 1998  
Colloquium 2 -  
Aluminium Shipbuilding and Fabrication

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<td>22. 08:40-09:20</td>
<td>Technology Transfer in the Application of Aluminium</td>
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<td>Alistair Forbes, Manager - Technical Panels, WTIA</td>
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<td>23. 09:20-10:00</td>
<td>Aluminium Alloys and Tempers for Extruded Products in Marine Application</td>
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<td>Garry Martin, Technical Manager, Capral Aluminium Ltd Extruded Division</td>
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<td>24. 10:00-10:40</td>
<td>An Overview of Aluminium Shipbuilding at Incat</td>
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<td>Trevor Hardstaff, Shipbuilding Director</td>
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<td>25. 11:00-11:40</td>
<td>Welder Training - Trends and Issues</td>
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<td>Fred Osborne, Manager Training Services, South Metropolitan College of TAFE</td>
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<td>Denny Graham, Visiting Research Fellow, The University of Adelaide</td>
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<td>27. 13:45-14:15</td>
<td>Research Activities in Aluminium at the CSIRO</td>
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<td>Nasir Ahmed, R &amp; D Manager, CSIRO-DMST</td>
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<td>28. 14:15-14:45</td>
<td>The Development of Gas Mixtures and Welding Procedures for GMA and GTA</td>
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<td>Welding of Thick Section Aluminium</td>
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<td>Duncan Yates, Manager - Compressed Gases Technical Centre, BOC Gases (UK)</td>
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<td>Porosity Reduction in the GMA Welding of Aluminium and Light Alloys</td>
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Colloquium 3 -
Mining and Mineral Processing

Session Chairman - Don Marshall, Maintenance Engineer - Fabrication, Hammersley Iron Pty Ltd

08:30-08:40  Welcome

30. 08:40-09:20  Managing Maintenance Practices Within the Mining Industry
Bruce Cannon, Development Officer, BHP Integrated Steel

31. 09:20-10:00  Cost Effective Management of Plant Integrity
Bruce Ham, Plant Assessment Manager, HRL Technology

32. 10:00-10:40  Weld Repairs of Heavy Mining Equipment
Glen Allan, Business Development Manager, C W Pope & Associates Pty Ltd

10:40-11:00  MORNING TEA

33. 11:00-11:40  Self Regulation and its Effect on Change in Industry
Stan Ambrose, Pressure Equipment Engineer & Chris Smallbone, Executive Director, WTIA

11:40-12:15  Panel Discussion

12:15-13:15  LUNCH

Session Chairman - Rex Tomlins, Chief Metallurgist, Queensland Alumina Ltd

34. 13:15-13:45  Fatigue Life Improvement Methods for Welded Joints
Reza Razmjoo, Chairman, Oil & Gas Industry Team, TWI (UK)

35. 13:45-14:15  A Review of Nickel-Base Welding Consumables
Phill Stubbington, National Technical Manager, Specialised Welding Products Pty Ltd

36. 14:15-14:45  The Effect of Stress Relieving on Iron-Based Weld Deposits Resistant to Metal to Metal Wear
Milo Dumovic, Product Specialist - Consumables, The Lincoln Electric Co.

14:45-15:05  AFTERNOON TEA

37. 15:05-15:35  New, High Productivity PTA Hardfacing Technology
Paul Howard, Technical Development Manager, Austral Technologies

15:35-17:05  Panel Discussion
Day Two - 17 November 1998
Colloquium 4 - Oil and Gas

Session Chairman - Brendan Barker, QA Superintendent - Onshore Projects Division, Woodside Offshore Petroleum Pty Ltd

08:30-08:40
Welcome

38. 08:40-09:20
Structural Integrity Challenges for New Offshore Technology
Reza Razmjoo, Chairman, Oil & Gas Industry Team, TWI (UK)

39. 09:20-10:00
Fabrication of Copper-Nickel Alloys for Offshore Applications
David Jenkinson, Director - Australasia, Nickel Development Institute

40. 10:00-10:40
Advancements in the Welding Industry in Singapore
Seiichi Inoue, President, Singapore Welding Society

10:40-11:00 MORNING TEA

41. 11:00-11:40
Retained Productivity in High Strength Pipeline Production
Peter Nicholson, Application Engineer, The Lincoln Electric Co. (USA)

11:40-12:15 Panel Discussion

12:15-13:15 LUNCH

Session Chairman - Antony Polomka, Senior Corrosion & Materials Engineer, BHP Petroleum

42. 13:15-13:45
Exploiting Automated Gas Metal Arc Roll Welding Technology in Pipe Spool Prefabrication
Gerald Tahash, Welding Coordinator, GE Gas Turbine (USA)

43. 13:45-14:15
Welding Methods and Consumable Selection for Welding of Stainless Steels in Chemical Tankers
Hans Astroem, R & D Manager, Elga AB (Sweden)

44. 14:15-14:45
The ACFM Inspection Technique & Recent Advances for Subsea & Topside Crack Detection & Sizing
Michael Smith, Senior Development Engineer, Technical Software Consultants Ltd (UK)

14:45-15:05 AFTERNOON TEA

15:05-17:05 Panel Discussion
Day Three - 18 November 1998
Plenary Session

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<td>Fabrication, Construction and Maintenance - Industry Challenges</td>
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<td>National Welding Industry Plan - Do We Need One?</td>
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