BOLTED JOINTS REVISITED: LEAK REDUCTION BY DESIGN AND MANAGEMENT.

13 September 2011
Aberdeen Conference Centre, Aberdeen

Book now:
www.imeche.org/events/s1617

THIS SEMINAR WILL COVER:
- Selection of flanges, gaskets and bolting
- Developments in flange and gasket standards
- Qualification of personnel
- Integrity management of bolted connections
- Leak and failure investigation case histories

Improving the world through engineering
Bolted joints continue to be one of the main causes of hydrocarbon leaks and other emissions. Recent developments in design, materials and tightening technology, together with in-service integrity management, have the potential to bring about a step change in leak reduction.

This seminar will highlight some of the new solutions to problems associated with design, assembly and operation of bolted flanged joints in pressure systems. As well as covering the technical aspects of flange, bolting and gasket selection, the seminar will focus on the personnel competences and management of actions required to ensure proper bolt load control and avoid costly leaks and failures.

The theory will be illustrated with case studies of bolted connections in working pressure systems. Experts in the field of bolted joints will share their knowledge, insights and experience.

**THIS EVENT WILL BE USEFUL FOR:**
All engineers involved with bolted connections in the offshore and onshore oil and gas, power, process, chemical and other industrial sectors, specifically:
- Designers of flanged pressure systems
- Manufacturers and suppliers of flanges, gaskets and fasteners
- Operators of pressure systems with bolted joints
- Maintenance and inspector personnel
- Those involved in health and safety and emissions control

**BENEFITS OF ATTENDING THIS SEMINAR WILL HELP YOU:**
- Reduce risk of hydrocarbon leaks and emissions
- Exploit advantages of compact design and new gasket materials
- Avoid problems caused by inappropriate flange, gasket and bolt combinations
- Improve control over fastener tightening
- More effective management of in-service integrity
- Raise personnel competency by training and qualification
- Appreciate the reasons why bolted joints leak and fail

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**SUPPORTING ORGANISATIONS**

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![SaRS](image)
Bolted joints revisited: leak reduction by design and management.
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09:30 Registration and refreshments

10:00 Chairman’s welcome and introduction

10:10 Keynote address
- Comparison of the bolted joint with the welded joint
- The bolted joint in the Pressure Equipment Directive
- Changing standards and guidelines around the bolted joint

Robert Noble, Technical Services Leader, Hydratight

10:35 Bolt selection
- The physical and metallurgical properties of key metals/alloying elements and their impact on bolt alloy selection
- Material selection for bolt strength; comparison with relevant bolt standards
- Material selection for high temperature, cryogenic and corrosion resistance applications; medium carbon low alloy steels versus non ferrous alloys
- Selection criteria for resistance to environmental embrittlement such as stress corrosion cracking, hydrogen and liquid metal
- The impact of bolt alloy selection on the effectiveness of the bolt tightening process

Rod Corbett, Managing Director, James Walker Rotabolt

11:00 Q&A session

11:20 Refreshments

11:50 Flange selection
- Standard flanges (EN 1092, EN 1759, ASME B16.5 and B16.47)
- Proprietary flanges (Taper-Lok, Grayloc, Verax, etc.)
- Custom designed flanges
- Quick release openings

Dr David Nash, Reader & Vice Dean, University of Strathclyde
Simon Earland, Director, Earland Engineering

12:15 Gasket selection
Corrosion is an ever present problem in the upstream oil and gas industry that can have a direct bearing on joint integrity. Its impact on reliability can be significant especially on older assets. As part of an overall asset management programme the correct selection of appropriate sealing technology can play a key role in mitigating corrosion related joint integrity issues

Dene Halkyard, Applications Engineer Flexitallic

12:40 Q&A session
13:00 LUNCH

14:00 QUALIFICATION OF PERSONNEL
- Why is standardisation necessary
- Offshore precedent
- Evolution of a CEN standard
- Interaction with the Pressure Equipment Directive
- Upgrading of TS 1591 Part 4 to a full EN standard
John Hoyes, Technical Director, Emeritus, Flexitallic

14:25 CLAMPED HUBBED CONNECTORS AND THE ROUTES TO COMPETENCY AROUND THEM
Les Linklater, Manager, Strategic Organisational Development, Aker Solutions

14:50 Q&A SESSION

15:10 REFRESHMENTS

15:30 MANAGEMENT OF THE INTEGRITY OF BOLTED JOINTS FOR PRESSURISED SYSTEMS
The Essential Elements of a Management System
- Ownership
- Technology and practice
- Criticality assessment
- Training and competence
- Records, data management and tagging
- In service inspection
- Management of leaks
- Analysis learning and improvement
Robert Noble, Technical Services Leader, Hydratight

15:55 HOW TO SUCCEED WITH COMPACT FLANGES
Tor Eriksen, Product Manager SPO CF, Vector AS

16:20 Q&A SESSION

16:40 CLOSE

This programme is subject to change.

The Institution is not responsible for the views or opinions expressed by individual speakers.

Pressure Systems Group
Organising Committee:
Mr Simon Earland, Earland Engineering (Chairman)
Dr David Nash, University of Strathclyde
Mr Christopher Tudor, Hydratight

The Committee would like to thank the following supporters:
Process Division
This seminar will present on the leading edge of carbon capture technology. Key industry leaders will cover the latest position and the implications across the regulatory, financial and process technology spectra.

www.imeche.org/events/S1606

25 OCTOBER 2011
LONDON
PROCESS SAFETY: AVOIDING MAJOR DISASTERS ARE YOU DOING ENOUGH?

This seminar will enable businesses to understand ways they can develop a ‘safety’ culture and manage major accident risk more effectively.

www.imeche.org/events/S1516

27 OCTOBER 2011
HAYDON PARK RACECOURSE,
WARRINGTON, WA12 0HO
LEAK AND ESCAPE OF HAZARDOUS CHEMICALS

Loss of containment is a key safety and environmental concern in the petrochemical, nuclear and offshore industries. This seminar will discuss the various legislation that applies, the factors affecting loss of containment including leak before break, detection and the use of secondary containment prevention strategies.

www.imeche.org/events/S1619

23 NOVEMBER 2011
LONDON
DEVELOPMENT IN MANUFACTURING TECHNOLOGY FOR PRESSURE SYSTEMS

This event will highlight a number of developments and opportunities for application of new technologies in the manufacture of pressure vessels and piping systems. It will cover a range of subjects relevant to manufacturing including the use of new materials, clad pipe and lined vessels and new forming and joining techniques including Hot Isostatic Pressing and mechanised high productivity multiple-wire/head welding. It will also cover automated inspection with a permanent record.

www.imeche.org/events/S1598

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BOLTED JOINTS REVISITED: LEAK REDUCTION BY DESIGN AND MANAGEMENT.

BOOKING FORM

One form per person only (forms may be photocopied)

For added convenience, you can also book online at: www.imeche.org/events/S1617

REGISTRATION (PLEASE COMPLETE IN CAPITALS)

Family Name ___________________________ Title (Mr, Mrs, Miss etc) ___________________________
First Name ___________________________ Job Title ___________________________
Membership No ___________________________ Institution ___________________________
Name of Organisation (for name badge) ___________________________
Address for Correspondence ___________________________

Town/City ___________________________ Postcode ___________________________
Country ___________________________ Contact Telephone ___________________________
Fax ___________________________ Email ___________________________

Do you have any special requirements?

How did you hear about this event? Direct Mail ☐ Website ☐ Colleague ☐ Other ☐

FEES AND CHARGES (PLEASE COMPLETE THE APPROPRIATE BOX)

Registration fees include entry to the sessions, refreshments, lunch and a copy of the event proceedings.

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Extra Items

Invoice Charging (if applicable) £10.00 £2.00 £12.00

Please do not send payment separately from this booking form.

By submitting this registration form, you will be indicating your consent to periodically receiving information on our events and publications, unless you indicate an objection to receiving such information by ticking this box ☐

PAYMENT DETAILS

Payment must accompany this registration form. Registration will be confirmed only on receipt of full payment.

Please indicate method of payment: Cheque ☐ Credit Card ☐ BACS ☐ Invoice ☐ (see below)

Cheques should be made payable to IMechE and crossed. Please note overseas delegates may pay only by credit card, BACS or banker’s draft. A copy of the draft must accompany this form. It is the delegate’s responsibility to pay any bank charges.

Credit Card: Visa ☐ MasterCard ☐ (please note we cannot accept American Express, Diners Club or Maestro)

Card No ___________________________ Valid From __/____/____ Expiry Date __/____/____

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Amount to be Deducted ___________________________

Signature ___________________________

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Invoices are payable on receipt and no alterations to these terms will be accepted.

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Contact Name ___________________________

Name and Address for Invoicing ___________________________

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Fax ___________________________

BACS bank transfers can be made to: IMechE Current Account, NatWest Charing Cross Branch.

Swift Code: NWBKGB2L

A copy of the draft must accompany this form.

IBAN Code: GB96NWKB6040050817767

Conditions of Booking

Complied application forms should be returned to the address below, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

Special Requirements

Please inform us of any special requirements is dietary or access, on the relevant section of this form.

Cancellation

For a refund (minus £25 + VAT admin charge), cancellations must be received at least 14 days prior to the event. Replacement delegates are welcomes at any time. The IMechE reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that IMechE postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, you will receive a full refund of the fee paid.

IMechE is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. IMechE shall assume no liability whatsoever in the event this conference is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. As such, IMechE reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on our web page as soon as possible.

Supporting Organisations

Members of the following organisations can register at our members’ rates: HSL, BSI, TWI, Safed, ICFVT, EEMUA, Oil and Gas UK, The Safety and Reliability Society

Venue

This event will be held at Aberdeen conference centre, Aberdeen. Details will be sent upon registration.

Liability

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

Accommodation

We have arranged special discounted rates at local hotels via the Corporate Team.

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International: +44 (0)20 7592 3050
Email: events@corporateteam.com

www.corporateteam.com/events/84880bc

Enquiries

For event enquiries please call staff on +44(0) 207 304 6829 or email psg@imeche.org

The Institution of Mechanical Engineers is a registered charity (No 206882)

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Fax +44 (0)20 7222 9881

For registration enquiries call Tina Churcher on +44 (0)20 7973 1258 or email t_churcher@imeche.org